DRILLCO

Cutting Tools



Catalog 03

DRILLCO GROUP

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Tap & Die

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Masonry Drills

MAGNUM
Solid Carbide

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DrillCo Cutting Tools, Inc.

Terms and Conditions

Freight Policy

Freight prepaid via economical route of our choice on individual orders valued at $300 net billing or more, within the continental U S (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.

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.

Sales Policy

All DrillCo products are sold exclusively through authorized distributors. Possession of our catalogs and or price list does not infer 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.

UPS Ground Service

UPS 3 Day Service (Orange)

UPS 2nd Day Service (Blue)

UPS Next Day Service (Red)

UPS Saturday Delivery

Federal Express Priority One Service

Federal Express Economy Overnight Service

Federal Express Standard Second Day Service

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Nitro

Drills

Give You

MORE HOLES PER DOLLAR



The *NITRO* ruggedly constructed heavy duty drills were developed to drill the harder alloy steels, including the aluminum alloys, the harder stainless steels and titanium alloys.

◆POINT

The *NITRO* 135° Split Points main advantage is the large reduction in high end thrust and a positive rake cutting edge extending to the center of the drill which makes the drill generate less heat therefore last longer. In many materials this point will act as a chip breaker to produce small chips which can be readily ejected through the flutes also making the drill cut cooler. The self-starting split point minimizes skidding or walking and quickly bites into hard materials. This is a distinct advantage when portable drilling is used, or in drillpress work where bushings cannot be used.

◆WEB

The *NITRO* has a heavy duty web construction that promotes quick penetration at the point, longer cutting life and provides greater strength and rigidity which improves hole tolerances, resists deflection, permits higher feed rates and gives greater breakage resistance.

◆FLUTE

The *NITRO* has a wide flute that enhances chip removal, reduces drill retractions (woodpeckering), and improves coolant flow to the point.

◆BODY

The *NITRO* is manufactured from a Premium Grade of M-7N Molybdenum High Speed Steel, which has a high vanadium content.

The *NITRO* also has a Superhard Nitride surface treatment which increases the Rockwell Hardness without increasing brittleness, improves drill life and productivity.

The *NITRO* is Black and Bronze surface treated for

◆MATERIAL APPLICATIONS:

- **Work Hardening Grades of Stainless Steel**

  301, 302, 304, 310 and 316.

- **Precipitation Hardening Grades of Stainless Steel**

  PH-15-7, 17-7PH, AM-355, 17-4PH and AM-350.

- **Alloys**

  A-286 19-9DL, N-155, Haynes 56, Timken 16-25-6.

- **Low Alloy and Die Steels**

  4130, 4135, 4140, 4340, Hy-Tuff, Vasco Jet 1000 and Thermold J

- **Titanium Alloys**

  A-110AT, 251AL-16V, B-120VCA, RS140, 6AL-4V, 8AL-MO-1V, 5AL-2-5SN, 3AL-13V-11CR and 5AL-1.25/2.75CR.

- **Aluminum and Magnesium Alloys**

  2014-T6, 2017-T4, 2024-T4, 6061-T615, 7075-T6, 7079-T6 and 7178-T6.

- **Carbon Steels**

  10 XX Plain Carbon Steel, 11 XX Free Cutting Carbon Steel, 13 XX Manganese Steel, 23 XX Nickel Steel and 31 XX Nickel-Chrome Steel.

- **Copper and Copper Alloys**

  Yellow Brass, Medium Leaded Brass, Naval Brass, Leaded Muntz Brass, Leaded Commercial Bronze, Red Brass, Commercial Bronze, Cartridge Brass, Admiralty, Muntz Metal, Phosphor Bronze, Nickel Silver, Aluminum Bronze, Beryllium Copper and Oxygen Free-Hand Copper (PFHC) Plus.

Nitro TAPS

SUPER HIGH SPEED STEEL
NO PROBLEM TAPPING STAINLESS STEEL AND OTHER EXOTIC MATERIALS.
EXTENDED LIFE. LESS HEAT AND STRESS.



New *Nitro* TAPS go straight to the heart of tough work with problem free tapping ofstainlestorque, faster chip removal and cooler tapping job after job.

All this, because *Nitro* TAPS are made exclusively of super high speed steel, and heat treated to maximize the advanced heat resistance characteristics of Tungsten and the wear resistance of Vanadium.

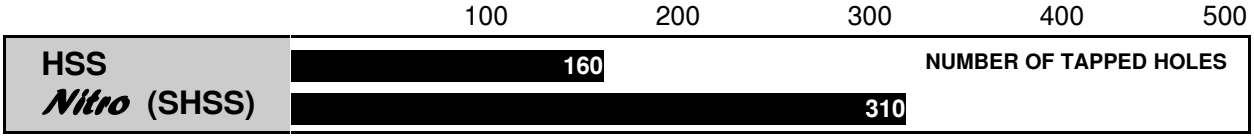
No tap is better engineered than the *Nitro* to demonstrate a longer tool life working advanced materials, less down time or more economy.

TESTS SUPPORT *Nitro* TAPS HIGH STANDARDS

TOOL LIFE COMPARISON TEST RESULTS

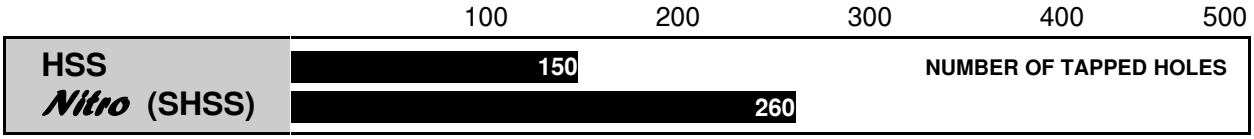
TAP Spiral point tap 3/8-16 plug
MATERIAL SUS 630 (HRC = 45) Thickness 3/4"
DRILL 5/16" diameter
TAPPING SPEED 8.8 m/min.

TEST #1



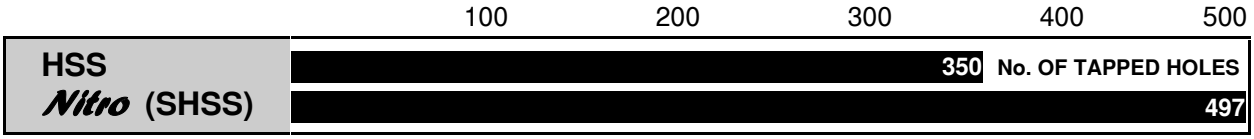
TAP Spiral point tap 1/2-13 plug
MATERIAL SUS 304 (HRC = 30–35) Thickness 5/8"
DRILL 27/64" diameter
TAPPING SPEED 9.5 m/min.

TEST #2



TAP Spiral point tap 5/16-18
MATERIAL SUS 18-8 (HRC = 20–25) Thickness 11/16"
DRILL "F" diameter
TAPPING SPEED 8.2 m/min.

TEST #3



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Jobber Length Drills

HIGH SPEED STEEL GENERAL PURPOSE SURFACE TREATED



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.

Packaging: 1/64" thru 19/64" and "A" thru "L", 12 per pack. 5/16" thru 1/2" and "M" thru "Z", 6 per pack.

MADE IN USA SERIES 200 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/64	3/16	3/4	200A101	**$2.09**
1/32	1/2	1-3/8	200A102	**1.44**
3/64	3/4	1-3/4	200A103	**1.35**
1/16	7/8	1-7/8	200A104	**1.22**
5/64	1"	2"	200A105	**1.26**
3/32	1-1/4	2-1/4	200A106	**1.09**
7/64	1-1/2	2-5/8	200A107	**1.17**
1/8	1-5/8	2-3/4	200A108	**1.31**
9/64	1-3/4	2-7/8	200A109	**1.35**
5/32	2"	3-1/8	200A110	**1.57**
11/64	2-1/8	3-1/4	200A111	**1.78**
3/16	2-5/16	3-1/2	200A112	**1.96**
13/64	2-7/16	3-5/8	200A113	**2.18**
7/32	2-1/2	3-3/4	200A114	**2.44**
15/64	2-5/8	3-7/8	200A115	**2.70**
1/4	2-3/4	4"	200A116	**2.70**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
17/64	2-7/8	4-1/8	200A117	**$3.35**
9/32	2-15/16	4-1/4	200A118	**3.78**
19/64	3-1/16	4-3/8	200A119	**4.31**
5/16	3-3/16	4-1/2	200A120	**4.44**
21/64	3-5/16	4-5/8	200A121	**4.92**
11/32	3-7/16	4-3/4	200A122	**5.48**
23/64	3-1/2	4-7/8	200A123	**6.18**
3/8	3-5/8	5"	200A124	**6.18**
25/64	3-3/4	5-1/8	200A125	**7.22**
13/32	3-7/8	5-1/4	200A126	**7.40**
27/64	3-15/16	5-3/8	200A127	**8.31**
7/16	4-1/16	5-1/2	200A128	**8.57**
29/64	4-3/16	5-5/8	200A129	**9.66**
15/32	4-5/16	5-3/4	200A130	**10.18**
31/64	4-3/8	5-7/8	200A131	**11.44**
1/2	4-1/2	6"	200A132	**11.48**

MADE IN USA SERIES 240 118° POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	2-5/8	3-7/8	240A501	**$3.31**
B	2-3/4	4"	240A502	**3.39**
C	2-3/4	4"	240A503	**3.18**
D	2-3/4	4"	240A504	**3.18**
E	2-3/4	4"	240A505	**3.39**
F	2-7/8	4-1/8	240A506	**3.92**
G	2-7/8	4-1/8	240A507	**4.18**
H	2-7/8	4-1/8	240A508	**4.35**
I	2-7/8	4-1/8	240A509	**4.35**
J	2-7/8	4-1/8	240A510	**4.74**
K	2-15/16	4-1/4	240A511	**4.74**
L	2-15/16	4-1/4	240A512	**5.39**
M	3-1/16	4-3/8	240A513	**5.39**

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
N	3-1/16	4-3/8	240A514	**$5.70**
O	3-3/16	4-1/2	240A515	**5.70**
P	3-5/16	4-5/8	240A516	**6.26**
Q	3-7/16	4-3/4	240A517	**6.35**
R	3-7/16	4-3/4	240A518	**6.61**
S	3-1/2	4-7/8	240A519	**7.31**
T	3-1/2	4-7/8	240A520	**7.61**
U	3-5/8	5"	240A521	**7.66**
V	3-5/8	5"	240A522	**7.92**
W	3-3/4	5-1/8	240A523	**8.44**
X	3-3/4	5-1/8	240A524	**8.53**
Y	3-7/8	5-1/4	240A525	**10.44**
Z	3-7/8	5-1/4	240A526	**11.53**

Jobber Length Drills

HIGH SPEED STEEL **GENERAL PURPOSE** **SURFACE TREATED**



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.

Packaging: #1 thru #80, 12 per pack.

MADE IN USA **SERIES 280** **118° POINT**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	280A001	**$2.96**
2	2-1/2	3-7/8	280A002	**2.96**
3	2-1/2	3-3/4	280A003	**2.78**
4	2-1/2	3-3/4	280A004	**2.78**
5	2-1/2	3-3/4	280A005	**2.78**
6	2-1/2	3-3/4	280A006	**2.78**
7	2-7/16	3-5/8	280A007	**2.52**
8	2-7/16	3-5/8	280A008	**2.52**
9	2-7/16	3-5/8	280A009	**2.52**
10	2-7/16	3-5/8	280A010	**2.52**
11	2-5/16	3-1/2	280A011	**2.35**
12	2-5/16	3-1/2	280A012	**2.35**
13	2-5/16	3-1/2	280A013	**2.26**
14	2-3/16	3-3/8	280A014	**2.18**
15	2-3/16	3-3/8	280A015	**2.18**
16	2-3/16	3-3/8	280A016	**2.18**
17	2-3/16	3-3/8	280A017	**2.18**
18	2-1/8	3-1/4	280A018	**2.00**
19	2-1/8	3-1/4	280A019	**2.00**
20	2-1/8	3-1/4	280A020	**2.00**
21	2-1/8	3-1/4	280A021	**1.87**
22	2"	3-1/8	280A022	**1.87**
23	2"	3-1/8	280A023	**1.83**
24	2"	3-1/8	280A024	**1.83**
25	1-7/8	3"	280A025	**1.57**
26	1-7/8	3"	280A026	**1.57**
27	1-7/8	3"	280A027	**1.57**
28	1-3/4	2-7/8	280A028	**1.48**
29	1-3/4	2-7/8	280A029	**1.48**
30	1-5/8	2-3/4	280A030	**1.44**
31	1-5/8	2-3/4	280A031	**1.31**
32	1-5/8	2-3/4	280A032	**1.31**
33	1-1/2	2-5/8	280A033	**1.31**
34	1-1/2	2-5/8	280A034	**1.31**
35	1-1/2	2-5/8	280A035	**1.31**
36	1-7/16	2-1/2	280A036	**1.31**
37	1-7/16	2-1/2	280A037	**1.31**
38	1-7/16	2-1/2	280A038	**1.31**
39	1-3/8	2-3/8	280A039	**1.31**
40	1-3/8	2-3/8	280A040	**1.31**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
41	1-3/8	2-3/8	280A041	**$1.31**
42	1-1/4	2-1/4	280A042	**1.31**
43	1-1/4	2-1/4	280A043	**1.31**
44	1-1/8	2-1/8	280A044	**1.31**
45	1-1/8	2-1/8	280A045	**1.39**
46	1-1/8	2-1/8	280A046	**1.39**
47	1"	2"	280A047	**1.39**
48	1"	2"	280A048	**1.39**
49	1"	2"	280A049	**1.39**
50	1"	2"	280A050	**1.39**
51	1"	2"	280A051	**1.39**
52	7/8	1-7/8	280A052	**1.39**
53	7/8	1-7/8	280A053	**1.39**
54	7/8	1-7/8	280A054	**1.39**
55	7/8	1-7/8	280A055	**1.39**
56	3/4	1-3/4	280A056	**1.39**
57	3/4	1-3/4	280A057	**1.61**
58	11/16	1-5/8	280A058	**1.61**
59	11/16	1-5/8	280A059	**1.61**
60	11/16	1-5/8	280A060	**1.61**
61	11/16	1-5/8	280A061	**1.61**
62	5/8	1-1/2	280A062	**1.61**
63	5/8	1-1/2	280A063	**1.61**
64	5/8	1-1/2	280A064	**1.61**
65	5/8	1-1/2	280A065	**1.61**
66	1/2	1-3/8	280A066	**1.61**
67	1/2	1-3/8	280A067	**1.61**
68	1/2	1-3/8	280A068	**1.61**
69	1/2	1-3/8	280A069	**1.96**
70	3/8	1-1/4	280A070	**1.96**
71	3/8	1-1/4	280A071	**1.96**
72	5/16	1-1/8	280A072	**1.96**
73	5/16	1-1/8	280A073	**1.96**
74	1/4	1"	280A074	**1.96**
75	1/4	1"	280A075	**2.18**
76	3/16	7/8	280A076	**2.18**
77	3/16	7/8	280A077	**2.18**
78	3/16	7/8	280A078	**2.18**
79	1/8	3/4	280A079	**2.18**
80	1/8	3/4	280A080	**2.18**

Jobber Length Drills

HIGH SPEED STEEL **GENERAL PURPOSE** **BRIGHT FINISH**



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 softer alloys (Aluminum and Aluminum Alloys) will require drills with bright, polished flutes to prevent chip packing and material buildup.

Packaging: 1/64" thru 19/64" and "A" thru "L", 12 per pack. 5/16" thru 1/2" and "M" thru "Z", 6 per pack.

MADE IN USA — SERIES 200B — 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/64	3/16	3/4	200B101	**$2.09**
1/32	1/2	1-3/8	200B102	**1.44**
3/64	3/4	1-3/4	200B103	**1.35**
1/16	7/8	1-7/8	200B104	**1.22**
5/64	1"	2"	200B105	**1.26**
3/32	1-1/4	2-1/4	200B106	**1.09**
7/64	1-1/2	2-5/8	200B107	**1.17**
1/8	1-5/8	2-3/4	200B108	**1.31**
9/64	1-3/4	2-7/8	200B109	**1.35**
5/32	2"	3-1/8	200B110	**1.57**
11/64	2-1/8	3-1/4	200B111	**1.78**
3/16	2-5/16	3-1/2	200B112	**1.96**
13/64	2-7/16	3-5/8	200B113	**2.18**
7/32	2-1/2	3-3/4	200B114	**2.44**
15/64	2-5/8	3-7/8	200B115	**2.70**
1/4	2-3/4	4"	200B116	**2.70**
17/64	2-7/8	4-1/8	200B117	**$3.35**
9/32	2-15/16	4-1/4	200B118	**3.87**
19/64	3-1/16	4-3/8	200B119	**4.31**
5/16	3-3/16	4-1/2	200B120	**4.44**
21/64	3-5/16	4-5/8	200B121	**4.92**
11/32	3-7/16	4-3/4	200B122	**5.48**
23/64	3-1/2	4-7/8	200B123	**6.18**
3/8	3-5/8	5"	200B124	**6.18**
25/64	3-3/4	5-1/8	200B125	**7.22**
13/32	3-7/8	5-1/4	200B126	**7.40**
27/64	3-15/16	5-3/8	200B127	**8.31**
7/16	4-1/16	5-1/2	200B128	**8.57**
29/64	4-3/16	5-5/8	200B129	**9.66**
15/32	4-5/16	5-3/4	200B130	**10.18**
31/64	4-3/8	5-7/8	200B131	**11.44**
1/2	4-1/2	6"	200B132	**11.48**

MADE IN USA — SERIES 240B — 118° POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	2-5/8	3-7/8	240B501	**$3.31**
B	2-3/4	4"	240B502	**3.39**
C	2-3/4	4"	240B503	**3.18**
D	2-3/4	4"	240B504	**3.18**
E	2-3/4	4"	240B505	**3.39**
F	2-7/8	4-1/8	240B506	**3.92**
G	2-7/8	4-1/8	240B507	**4.18**
H	2-7/8	4-1/8	240B508	**4.35**
I	2-7/8	4-1/8	240B509	**4.35**
J	2-7/8	4-1/8	240B510	**4.74**
K	2-15/16	4-1/4	240B511	**4.74**
L	2-15/16	4-1/4	240B512	**5.39**
M	3-1/16	4-3/8	240B513	**5.39**
N	3-1/16	4-3/8	240B514	**$5.70**
O	3-3/16	4-1/2	240B515	**5.70**
P	3-5/16	4-5/8	240B516	**6.26**
Q	3-7/16	4-3/4	240B517	**6.35**
R	3-7/16	4-3/4	240B518	**6.61**
S	3-1/2	4-7/8	240B519	**7.31**
T	3-1/2	4-7/8	240B520	**7.61**
U	3-5/8	5"	240B521	**7.66**
V	3-5/8	5"	240B522	**7.92**
W	3-3/4	5-1/8	240B523	**8.34**
X	3-3/4	5-1/8	240B524	**8.53**
Y	3-7/8	5-1/4	240B525	**10.44**
Z	3-7/8	5-1/4	240B526	**11.53**

Jobber Length Drills

HIGH SPEED STEEL **GENERAL PURPOSE** **BRIGHT FINISH**



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 softer alloys (Aluminum and Aluminum Alloys) will require drills with bright, polished flutes to prevent chip packing and material buildup.

Packaging: #1 thru #80, 12 per pack.

MADE IN USA **SERIES 280B** **118° POINT**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	280B001	**$2.96**
2	2-1/2	3-7/8	280B002	**2.96**
3	2-1/2	3-3/4	280B003	**2.78**
4	2-1/2	3-3/4	280B004	**2.78**
5	2-1/2	3-3/4	280B005	**2.78**
6	2-1/2	3-3/4	280B006	**2.78**
7	2-7/16	3-5/8	280B007	**2.52**
8	2-7/16	3-5/8	280B008	**2.52**
9	2-7/16	3-5/8	280B009	**2.52**
10	2-7/16	3-5/8	280B010	**2.52**
11	2-5/16	3-1/2	280B011	**2.35**
12	2-5/16	3-1/2	280B012	**2.35**
13	2-5/16	3-1/2	280B013	**2.26**
14	2-3/16	3-3/8	280B014	**2.18**
15	2-3/16	3-3/8	280B015	**2.18**
16	2-3/16	3-3/8	280B016	**2.18**
17	2-3/16	3-3/8	280B017	**2.18**
18	2-1/8	3-1/4	280B018	**2.00**
19	2-1/8	3-1/4	280B019	**2.00**
20	2-1/8	3-1/4	280B020	**2.00**
21	2-1/8	3-1/4	280B021	**1.87**
22	2"	3-1/8	280B022	**1.87**
23	2"	3-1/8	280B023	**1.83**
24	2"	3-1/8	280B024	**1.83**
25	1-7/8	3"	280B025	**1.57**
26	1-7/8	3"	280B026	**1.57**
27	1-7/8	3"	280B027	**1.57**
28	1-3/4	2-7/8	280B028	**1.48**
29	1-3/4	2-7/8	280B029	**1.48**
30	1-5/8	2-3/4	280B030	**1.44**
31	1-5/8	2-3/4	280B031	**1.31**
32	1-5/8	2-3/4	280B032	**1.31**
33	1-1/2	2-5/8	280B033	**1.31**
34	1-1/2	2-5/8	280B034	**1.31**
35	1-1/2	2-5/8	280B035	**1.31**
36	1-7/16	2-1/2	280B036	**1.31**
37	1-7/16	2-1/2	280B037	**1.31**
38	1-7/16	2-1/2	280B038	**1.31**
39	1-3/8	2-3/8	280B039	**1.31**
40	1-3/8	2-3/8	280B040	**1.31**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
41	1-3/8	2-3/8	280B041	**$1.31**
42	1-1/4	2-1/4	280B042	**1.31**
43	1-1/4	2-1/4	280B043	**1.31**
44	1-1/8	2-1/8	280B044	**1.31**
45	1-1/8	2-1/8	280B045	**1.39**
46	1-1/8	2-1/8	280B046	**1.39**
47	1"	2"	280B047	**1.39**
48	1"	2"	280B048	**1.39**
49	1"	2"	280B049	**1.39**
50	1"	2"	280B050	**1.39**
51	1"	2"	280B051	**1.39**
52	7/8	1-7/8	280B052	**1.39**
53	7/8	1-7/8	280B053	**1.39**
54	7/8	1-7/8	280B054	**1.39**
55	7/8	1-7/8	280B055	**1.39**
56	3/4	1-3/4	280B056	**1.39**
57	3/4	1-3/4	280B057	**1.61**
58	11/16	1-5/8	280B058	**1.61**
59	11/16	1-5/8	280B059	**1.61**
60	11/16	1-5/8	280B060	**1.61**
61	11/16	1-5/8	280B061	**1.61**
62	5/8	1-1/2	280B062	**1.61**
63	5/8	1-1/2	280B063	**1.61**
64	5/8	1-1/2	280B064	**1.61**
65	5/8	1-1/2	280B065	**1.61**
66	1/2	1-3/8	280B066	**1.61**
67	1/2	1-3/8	280B067	**1.61**
68	1/2	1-3/8	280B068	**1.61**
69	1/2	1-3/8	280B069	**1.96**
70	3/8	1-1/4	280B070	**1.96**
71	3/8	1-1/4	280B071	**1.96**
72	5/16	1-1/8	280B072	**1.96**
73	5/16	1-1/8	280B073	**1.96**
74	1/4	1"	280B074	**1.96**
75	1/4	1"	280B075	**2.18**
76	3/16	7/8	280B076	**2.18**
77	3/16	7/8	280B077	**2.18**
78	3/16	7/8	280B078	**2.18**
79	1/8	3/4	280B079	**2.18**
80	1/8	3/4	280B080	**2.18**

Jobber Length Drills

HIGH SPEED STEEL M-2 CONSTRUCTION DRILL ROLL FORGED



Packaging: 1/64" thru 19/64", "A" thru "L" and #1 thru #40, 12 per pack. 5/16" thru 1/2" and "M" thru "Z", 6 per pack.

IMPORT 100E 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/64	3/16	3/4	100E101	**$0.66**
1/32	1/2	1-3/8	100E102	**0.66**
3/64	3/4	1-3/4	100E103	**0.66**
1/16	7/8	1-7/8	100E104	**0.66**
5/64	1"	2"	100E105	**0.66**
3/32	1-1/4	2-1/4	100E106	**0.66**
7/64	1-1/2	2-5/8	100E107	**0.70**
1/8	1-5/8	2-3/4	100E108	**0.70**
9/64	1-3/4	2-7/8	100E109	**0.74**
5/32	2"	3-1/8	100E110	**0.74**
11/64	2-1/8	3-1/4	100E111	**0.83**
3/16	2-5/16	3-1/2	100E112	**0.91**
13/64	2-7/16	3-5/8	100E113	**1.03**
7/32	2-1/2	3-3/4	100E114	**1.12**
15/64	2-5/8	3-7/8	100E115	**1.24**
1/4	2-3/4	4"	100E116	**1.32**
17/64	2-7/8	4-1/8	100E117	**1.57**
9/32	2-15/16	4-1/4	100E118	**1.65**
19/64	3-1/16	4-3/8	100E119	**1.90**
5/16	3-3/16	4-1/2	100E120	**2.11**
21/64	3-5/16	4-5/8	100E121	**2.31**
11/32	3-7/16	4-3/4	100E122	**2.60**
23/64	3-1/2	4-7/8	100E123	**2.93**
3/8	3-5/8	5"	100E124	**3.02**
25/64	3-3/4	5-1/8	100E125	**3.43**
13/32	3-7/8	5-1/4	100E126	**3.51**
27/64	3-15/16	5-3/8	100E127	**3.88**
7/16	4-1/16	5-1/2	100E128	**4.05**
29/64	4-3/16	5-5/8	100E129	**4.55**
15/32	4-5/16	5-3/4	100E130	**4.84**
31/64	4-3/8	5-7/8	100E131	**5.04**
1/2	4-1/2	6"	100E132	**5.38**

IMPORT 180E 118° POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	180E001	**$1.77**
2	2-1/2	3-7/8	180E002	**1.77**
3	2-1/2	3-3/4	180E003	**1.60**
4	2-1/2	3-3/4	180E004	**1.60**
5	2-1/2	3-3/4	180E005	**1.60**
6	2-1/2	3-3/4	180E006	**1.60**
7	2-7/16	3-5/8	180E007	**1.43**
8	2-7/16	3-5/8	180E008	**1.43**
9	2-7/16	3-5/8	180E009	**1.43**
10	2-7/16	3-5/8	180E010	**1.43**
11	2-5/16	3-1/2	180E011	**1.32**
12	2-5/16	3-1/2	180E012	**1.32**
13	2-5/16	3-1/2	180E013	**1.29**
14	2-3/16	3-3/8	180E014	**1.29**
15	2-3/16	3-3/8	180E015	**1.29**
16	2-3/16	3-3/8	180E016	**1.29**
17	2-3/16	3-3/8	180E017	**1.29**
18	2-1/8	3-1/4	180E018	**1.04**
19	2-1/8	3-1/4	180E019	**1.04**
20	2-1/8	3-1/4	180E020	**1.04**
21	2-1/8	3-1/4	180E021	**1.01**
22	2"	3-1/8	180E022	**1.01**
23	2"	3-1/8	180E023	**0.97**
24	2"	3-1/8	180E024	**0.97**
25	1-7/8	3"	180E025	**0.94**
26	1-7/8	3"	180E026	**0.94**
27	1-7/8	3"	180E027	**0.94**
28	1-3/4	2-7/8	180E028	**0.87**
29	1-3/4	2-7/8	180E029	**0.87**
30	1-5/8	2-3/4	180E030	**0.87**
31	1-5/8	2-3/4	180E031	**0.84**
32	1-5/8	2-3/4	180E032	**0.84**
33	1-1/2	2-5/8	180E033	**0.84**
34	1-1/2	2-5/8	180E034	**0.84**
35	1-1/2	2-5/8	180E035	**0.84**
36	1-7/16	2-1/2	180E036	**0.84**
37	1-7/16	2-1/2	180E037	**0.84**
38	1-7/16	2-1/2	180E038	**0.84**
39	1-3/8	2-3/8	180E039	**0.84**
40	1-3/8	2-3/8	180E040	**0.84**

IMPORT SERIES 140E 118° POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	2-5/8	3-7/8	140E501	**$1.91**
B	2-3/4	4"	140E502	**1.91**
C	2-3/4	4"	140E503	**1.91**
D	2-3/4	4"	140E504	**1.91**
E	2-3/4	4"	140E505	**1.77**
F	2-7/8	4-1/8	140E506	**2.05**
G	2-7/8	4-1/8	140E507	**2.30**
H	2-7/8	4-1/8	140E508	**2.30**
I	2-7/8	4-1/8	140E509	**2.30**
J	2-7/8	4-1/8	140E510	**2.44**
K	2-15/16	4-1/4	140E511	**2.71**
L	2-15/16	4-1/4	140E512	**2.71**
M	3-1/16	4-3/8	140E513	**2.85**
N	3-1/16	4-3/8	140E514	**$2.85**
O	3-3/16	4-1/2	140E515	**2.89**
P	3-5/16	4-5/8	140E516	**3.27**
Q	3-7/16	4-3/4	140E517	**3.27**
R	3-7/16	4-3/4	140E518	**3.51**
S	3-1/2	4-7/8	140E519	**3.69**
T	3-1/2	4-7/8	140E520	**4.21**
U	3-5/8	5"	140E521	**4.21**
V	3-5/8	5"	140E522	**4.32**
W	3-3/4	5-1/8	140E523	**4.45**
X	3-3/4	5-1/8	140E524	**5.43**
Y	3-7/8	5-1/4	140E525	**6.47**
Z	3-7/8	5-1/4	140E526	**6.09**

Jobber Length Drills

HIGH SPEED STEEL M-2 GENERAL PURPOSE GROUND FLUTED



The 100SE Series drill is ground from a solid, imported drill, 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.

Packaging: 1/16" thru 19/64" and #1 thru #40, 12 per pack. 5/16" thru 1/2" , 6 per pack.

QUALITY IMPORT SERIES 100SE 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	100SE104	**$0.83**
5/64	1"	2"	100SE105	**$0.86**
3/32	1-1/4	2-1/4	100SE106	**$0.74**
7/64	1-1/2	2-5/8	100SE107	**$0.79**
1/8	1-5/8	2-3/4	100SE108	**$0.88**
9/64	1-3/4	2-7/8	100SE109	**$0.91**
5/32	2"	3-1/8	100SE110	**$1.06**
11/64	2-1/8	3-1/4	100SE111	**$1.21**
3/16	2-5/16	3-1/2	100SE112	**$1.32**
13/64	2-7/16	3-5/8	100SE113	**$1.48**
7/32	2-1/2	3-3/4	100SE114	**$1.65**
15/64	2-5/8	3-7/8	100SE115	**$1.83**
1/4	2-3/4	4"	100SE116	**$1.83**
17/64	2-7/8	4-1/8	100SE117	**$2.26**
9/32	2-15/16	4-1/4	100SE118	**$2.56**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	4-3/8	100SE119	**$2.91**
5/16	3-3/16	4-1/2	100SE120	**$3.00**
21/64	3-5/16	4-5/8	100SE121	**$3.32**
11/32	3-7/16	4-3/4	100SE122	**$3.70**
23/64	3-1/2	4-7/8	100SE123	**$4.18**
3/8	3-5/8	5"	100SE124	**$4.18**
25/64	3-3/4	5-1/8	100SE125	**$4.88**
13/32	3-7/8	5-1/4	100SE126	**$5.00**
27/64	3-15/16	5-3/8	100SE127	**$5.61**
7/16	4-1/16	5-1/2	100SE128	**$5.79**
29/64	4-3/16	5-5/8	100SE129	**$6.53**
15/32	4-5/16	5-3/4	100SE130	**$6.88**
31/64	4-3/8	5-7/8	100SE131	**$7.73**
1/2	4-1/2	6"	100SE132	**$7.75**

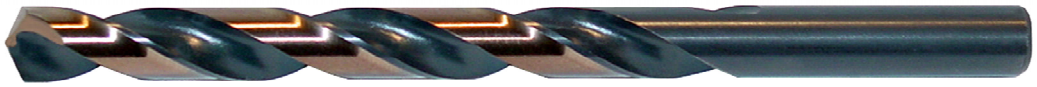
IMPORT SERIES 180SE 118° POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	180SE001	**$2.22**
2	2-1/2	3-7/8	180SE002	**2.22**
3	2-1/2	3-3/4	180SE003	**2.09**
4	2-1/2	3-3/4	180SE004	**2.09**
5	2-1/2	3-3/4	180SE005	**2.09**
6	2-1/2	3-3/4	180SE006	**2.09**
7	2-7/16	3-5/8	180SE007	**1.89**
8	2-7/16	3-5/8	180SE008	**1.89**
9	2-7/16	3-5/8	180SE009	**1.89**
10	2-7/16	3-5/8	180SE010	**1.89**
11	2-5/16	3-1/2	180SE011	**1.76**
12	2-5/16	3-1/2	180SE012	**1.76**
13	2-5/16	3-1/2	180SE013	**1.70**
14	2-3/16	3-3/8	180SE014	**1.64**
15	2-3/16	3-3/8	180SE015	**1.64**
16	2-3/16	3-3/8	180SE016	**1.64**
17	2-3/16	3-3/8	180SE017	**1.64**
18	2-1/8	3-1/4	180SE018	**1.50**
19	2-1/8	3-1/4	180SE019	**1.50**
20	2-1/8	3-1/4	180SE020	**1.50**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	3-1/4	180SE021	**$1.40**
22	2"	3-1/8	180SE022	**1.40**
23	2"	3-1/8	180SE023	**1.37**
24	2"	3-1/8	180SE024	**1.37**
25	1-7/8	3"	180SE025	**1.18**
26	1-7/8	3"	180SE026	**1.18**
27	1-7/8	3"	180SE027	**1.18**
28	1-3/4	2-7/8	180SE028	**1.11**
29	1-3/4	2-7/8	180SE029	**1.11**
30	1-5/8	2-3/4	180SE030	**1.08**
31	1-5/8	2-3/4	180SE031	**0.98**
32	1-5/8	2-3/4	180SE032	**0.98**
33	1-1/2	2-5/8	180SE033	**0.98**
34	1-1/2	2-5/8	180SE034	**0.98**
35	1-1/2	2-5/8	180SE035	**0.98**
36	1-7/16	2-1/2	180SE036	**0.98**
37	1-7/16	2-1/2	180SE037	**0.98**
38	1-7/16	2-1/2	180SE038	**0.98**
39	1-3/8	2-3/8	180SE039	**0.98**
40	1-3/8	2-3/8	180SE040	**0.98**

Jobber Length Drills

HIGH SPEED STEEL **METRIC SIZES** **BLACK & GOLD FINISH**



Same as Heavy Duty Jobber Length Series 400 except conforms to metric dimensions.

Packaging: 0.35mm thru 6.60mm, 12 per pack. 6.70mm thru 12.50mm, 6 per pack. 13.00mm and above, 1 per pack.

SERIES 800 — 135° POINT

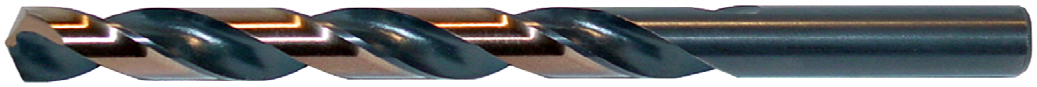
MM SIZES	FLUTE LENGTH MM	OVERALL LENGTH MM	EDP NUMBERS	LIST PRICE
0.35	3	19	800A0035	**$2.96**
0.40	5	19	800A0040	**2.96**
0.45	5	22	800A0045	**2.96**
0.50	5	22	800A0050	**2.96**
0.55	6	25	800A0055	**2.96**
0.60	8	29	800A0060	**2.96**
0.65	10	32	800A0065	**2.96**
0.70	10	32	800A0070	**2.96**
0.75	13	35	800A0075	**2.96**
0.80	13	35	800A0080	**2.22**
0.85	16	38	800A0085	**2.22**
0.90	16	38	800A0090	**2.22**
0.95	16	38	800A0095	**2.22**
1.00	17	41	800A0100	**2.22**
1.05	17	41	800A0105	**2.22**
1.10	19	44	800A0110	**2.22**
1.15	19	44	800A0115	**2.22**
1.20	22	48	800A0120	**1.91**
1.25	22	48	800A0125	**1.91**
1.30	22	48	800A0130	**1.91**
1.35	22	48	800A0135	**1.91**
1.40	22	48	800A0140	**1.91**
1.45	22	48	800A0145	**1.91**
1.50	22	48	800A0150	**1.91**
1.55	22	48	800A0155	**1.91**
1.60	22	48	800A0160	**1.78**
1.65	25	51	800A0165	**1.78**
1.70	25	51	800A0170	**1.78**
1.75	25	51	800A0175	**1.78**
1.80	25	51	800A0180	**1.78**
1.85	25	51	800A0185	**1.78**
1.90	25	51	800A0190	**1.78**
1.95	25	51	800A0195	**1.78**
2.00	25	51	800A0200	**1.78**
2.05	29	54	800A0205	**1.78**
2.10	29	54	800A0210	**1.78**
2.15	29	54	800A0215	**1.78**

MM SIZES	FLUTE LENGTH MM	OVERALL LENGTH MM	EDP NUMBERS	LIST PRICE
2.20	32	57	800A0220	**$1.78**
2.25	32	57	800A0225	**1.78**
2.30	32	57	800A0230	**1.78**
2.35	32	57	800A0235	**1.78**
2.40	35	60	800A0240	**1.78**
2.45	35	60	800A0245	**1.78**
2.50	35	60	800A0250	**1.78**
2.60	37	64	800A0260	**1.78**
2.70	37	64	800A0270	**1.78**
2.75	37	64	800A0275	**1.78**
2.80	38	67	800A0280	**2.04**
2.90	41	70	800A0290	**2.04**
3.00	41	70	800A0300	**2.04**
3.10	41	70	800A0310	**2.04**
3.20	41	70	800A0320	**2.18**
3.25	41	70	800A0325	**2.18**
3.30	44	73	800A0330	**2.18**
3.40	44	73	800A0340	**2.18**
3.50	44	73	800A0350	**2.18**
3.60	48	76	800A0360	**2.26**
3.70	48	76	800A0370	**2.26**
3.75	48	76	800A0375	**2.26**
3.80	48	76	800A0380	**2.26**
3.90	51	79	800A0390	**2.26**
4.00	54	83	800A0400	**2.52**
4.10	54	83	800A0410	**2.52**
4.20	54	83	800A0420	**2.52**
4.25	54	83	800A0425	**2.52**
4.30	54	83	800A0430	**2.52**
4.40	56	86	800A0440	**2.96**
4.50	56	86	800A0450	**2.96**
4.60	56	86	800A0460	**2.96**
4.70	59	89	800A0470	**2.96**
4.75	59	89	800A0475	**3.35**
4.80	59	89	800A0480	**3.35**
4.90	62	92	800A0490	**3.35**
5.00	62	92	800A0500	**3.35**

CONTINUED ON NEXT PAGE

Jobber Length Drills

HIGH SPEED STEEL | **METRIC SIZES** | **BLACK & GOLD FINISH**



Same as Heavy Duty Jobbers Length Series 400 except conforms to metric dimensions.

Packaging: 0.35mm thru 6.60mm, 12 per pack. 6.70mm thru 12.50mm, 6 per pack. 13.00mm and above, 1 per pack.

SERIES 800 — 135° POINT

MM SIZES	FLUTE LENGTH MM	OVERALL LENGTH MM	EDP NUMBERS	LIST PRICE
5.10	62	92	800A0510	**$3.35**
5.20	64	95	800A0520	**3.61**
5.25	64	95	800A0525	**3.61**
5.30	64	95	800A0530	**3.61**
5.40	64	95	800A0540	**3.61**
5.50	64	95	800A0550	**3.61**
5.60	67	98	800A0560	**3.96**
5.70	67	98	800A0570	**3.96**
5.75	67	98	800A0575	**3.96**
5.80	67	98	800A0580	**3.96**
5.90	67	98	800A0590	**3.96**
6.00	70	102	800A0600	**4.48**
6.10	70	102	800A0610	**4.48**
6.20	70	102	800A0620	**4.48**
6.25	70	102	800A0625	**4.48**
6.30	70	102	800A0630	**4.48**
6.40	73	105	800A0640	**5.70**
6.50	73	105	800A0650	**5.70**
6.60	73	105	800A0660	**5.70**
6.70	73	105	800A0670	**5.70**
6.75	73	105	800A0675	**6.48**
6.80	73	105	800A0680	**6.48**
6.90	73	105	800A0690	**6.48**
7.00	73	105	800A0700	**6.48**
7.10	75	108	800A0710	**6.48**
7.20	75	108	800A0720	**7.00**
7.25	75	108	800A0725	**7.00**
7.30	75	108	800A0730	**7.00**
7.40	78	111	800A0740	**7.00**
7.50	78	111	800A0750	**7.00**
7.60	78	111	800A0760	**7.00**
7.70	81	114	800A0770	**7.22**
7.75	81	114	800A0775	**7.22**
7.80	81	114	800A0780	**7.22**
7.90	81	114	800A0790	**7.22**
8.00	81	114	800A0800	**8.05**
8.10	84	117	800A0810	**8.05**
8.20	84	117	800A0820	**$8.05**
8.25	84	117	800A0825	**8.05**
8.30	84	117	800A0830	**8.05**
8.40	87	121	800A0840	**9.09**
8.50	87	121	800A0850	**9.09**
8.60	87	121	800A0860	**9.09**
8.70	87	121	800A0870	**9.09**
8.75	87	121	800A0875	**10.40**
8.80	89	124	800A0880	**10.40**
8.90	89	124	800A0890	**10.40**
9.00	89	124	800A0900	**10.40**
9.10	89	124	800A0910	**10.40**
9.20	92	127	800A0920	**10.66**
9.25	92	127	800A0925	**10.66**
9.30	92	127	800A0930	**10.66**
9.40	92	127	800A0940	**10.66**
9.50	92	127	800A0950	**10.66**
9.60	95	130	800A0960	**12.05**
9.70	95	130	800A0970	**12.05**
9.75	95	130	800A0975	**12.05**
9.80	95	130	800A0980	**12.05**
9.90	95	130	800A0990	**12.05**
10.00	95	130	800A1000	**12.22**
10.50	98	133	800A1050	**13.53**
11.00	103	140	800A1100	**14.53**
11.50	106	143	800A1150	**16.97**
12.00	111	149	800A1200	**18.27**
12.50	114	152	800A1250	**18.27**
13.00	114	152	800A1300	**28.01**
13.50	122	168	-----	**---**
14.00	122	168	-----	**----**
14.50	122	168	-----	**---**
15.00	132	181	-----	**---**
15.50	132	181	-----	**---**
16.00	132	181	-----	**---**
16.50	132	181	-----	**---**
17.00	143	194	-----	**---**

Jobber Length Drills

HIGH SPEED M-2 STEEL **METRIC SIZES** **SURFACE TREATED**



Same as General Purpose Jobber Length Series 100E except conforms to metric dimensions.

Packaging: 0.30mm thru 6.60mm, 12 per pack. 6.70mm thru 12.50mm, 6 per pack. 13.00mm and above, 1 per pack.

IMPORT **SERIES 800E** **118° POINT**

MM SIZES	FLUTE LENGTH MM	OVERALL LENGTH MM	EDP NUMBERS	LIST PRICE
0.30	3	19	800E0030	**$2.09**
0.32	3	19	800E0032	**1.87**
0.35	3	19	800E0035	**1.87**
0.38	3	19	800E0038	**1.78**
0.40	5	20	800E0040	**1.65**
0.42	5	20	800E0042	**1.65**
0.45	5	20	800E0045	**1.65**
0.48	5	20	800E0048	**1.65**
0.50	5	22	800E0050	**1.61**
0.55	6	24	800E0055	**1.61**
0.60	6	24	800E0060	**1.61**
0.65	6	26	800E0065	**1.61**
0.70	8	28	800E0070	**1.52**
0.75	8	28	800E0075	**1.52**
0.80	9	30	800E0080	**1.31**
0.85	9	30	800E0085	**1.31**
0.90	10	32	800E0090	**1.31**
0.95	10	32	800E0095	**1.35**
1.00	12	34	800E0100	**1.48**
1.05	12	34	800E0105	**1.48**
1.10	14	36	800E0110	**1.04**
1.15	14	36	800E0115	**1.04**
1.20	16	38	800E0120	**1.13**
1.25	16	38	800E0125	**1.13**
1.30	16	38	800E0130	**1.13**
1.35	17	40	800E0135	**1.13**
1.40	17	40	800E0140	**1.13**
1.45	17	40	800E0145	**1.13**
1.50	17	40	800E0150	**1.13**
1.55	18	43	800E0155	**1.13**
1.60	18	43	800E0160	**1.13**
1.65	18	43	800E0165	**1.13**
1.70	18	43	800E0170	**1.13**
1.75	20	46	800E0175	**1.13**
1.80	20	46	800E0180	**1.13**
1.85	20	46	800E0185	**1.13**
1.90	20	46	800E0190	**1.13**
1.95	22	49	800E0195	**1.13**
2.00	22	49	800E0200	**1.13**
2.05	22	49	800E0205	**1.13**
2.10	22	49	800E0210	**1.13**
2.15	22	49	800E0215	**1.13**

MM SIZES	FLUTE LENGTH MM	OVERALL LENGTH MM	EDP NUMBERS	LIST PRICE
2.20	29	53	800E0220	**$1.13**
2.25	29	53	800E0225	**1.13**
2.30	29	53	800E0230	**1.13**
2.35	29	53	800E0235	**1.13**
2.40	32	57	800E0240	**1.13**
2.45	32	57	800E0245	**1.13**
2.50	32	57	800E0250	**1.13**
2.60	32	57	800E0260	**1.13**
2.70	35	61	800E0270	**1.22**
2.75	35	61	800E0275	**1.22**
2.80	35	61	800E0280	**1.22**
2.90	35	61	800E0290	**1.22**
3.00	35	61	800E0300	**1.22**
3.10	37	65	800E0310	**1.22**
3.20	37	65	800E0320	**1.32**
3.25	37	65	800E0325	**1.32**
3.30	37	65	800E0330	**1.32**
3.40	41	70	800E0340	**1.52**
3.50	41	70	800E0350	**1.52**
3.60	41	70	800E0360	**1.52**
3.70	41	70	800E0370	**1.52**
3.75	41	70	800E0375	**1.52**
3.80	46	75	800E0380	**1.52**
3.90	46	75	800E0390	**1.52**
4.00	46	75	800E0400	**1.52**
4.10	46	75	800E0410	**1.52**
4.20	46	75	800E0420	**1.52**
4.25	52	80	800E0425	**1.52**
4.30	52	80	800E0430	**1.52**
4.40	52	80	800E0440	**1.61**
4.50	52	80	800E0450	**1.61**
4.60	52	80	800E0460	**1.61**
4.70	52	80	800E0470	**1.61**
4.75	52	80	800E0475	**1.87**
4.80	56	86	800E0480	**1.87**
4.90	56	86	800E0490	**1.87**
5.00	56	86	800E0500	**1.87**
5.10	56	86	800E0510	**1.87**
5.20	56	86	800E0520	**1.96**
5.25	56	86	800E0525	**1.96**
5.30	56	86	800E0530	**1.96**
5.40	63	93	800E0540	**2.35**

CONTINUED ON NEXT PAGE

Jobber Length Drills

HIGH SPEED M-2 STEEL **METRIC SIZES** **SURFACE TREATED**



Same as General Purpose Jobber Length Series 100E except conforms to metric dimensions.

Packaging: 0.30mm thru 6.60mm, 12 per pack. 6.70mm thru 12.50mm, 6 per pack. 13.00mm and above, 1 per pack.

IMPORT **SERIES 800E** **118° POINT**

MM SIZES	FLUTE LENGTH MM	OVERALL LENGTH MM	EDP NUMBERS	LIST PRICE
5.50	63	93	800E0550	**$2.35**
5.60	63	93	800E0560	**2.35**
5.70	63	93	800E0570	**2.35**
5.75	63	93	800E0575	**2.35**
5.80	63	93	800E0580	**2.35**
5.90	63	93	800E0590	**2.35**
6.00	63	93	800E0600	**2.35**
6.10	69	101	800E0610	**2.48**
6.20	69	101	800E0620	**2.48**
6.25	69	101	800E0625	**2.48**
6.30	69	101	800E0630	**2.48**
6.40	69	101	800E0640	**2.61**
6.50	69	101	800E0650	**2.61**
6.60	69	101	800E0660	**2.61**
6.70	69	101	800E0670	**2.61**
6.75	76	109	800E0675	**3.05**
6.80	76	109	800E0680	**3.05**
6.90	76	109	800E0690	**3.05**
7.00	76	109	800E0700	**3.05**
7.10	76	109	800E0710	**3.05**
7.20	76	109	800E0720	**3.05**
7.25	76	109	800E0725	**3.05**
7.30	76	109	800E0730	**3.05**
7.40	76	109	800E0740	**3.05**
7.50	76	109	800E0750	**3.05**
7.60	84	117	800E0760	**3.74**
7.70	84	117	800E0770	**3.74**
7.75	84	117	800E0775	**3.74**
7.80	84	117	800E0780	**3.74**
7.90	84	117	800E0790	**3.74**
8.00	84.	117	800E0800	**3.96**
8.10	84	117	800E0810	**3.96**
8.20	84	117	800E0820	**3.96**
8.25	84	117	800E0825	**3.96**
8.30	84	117	800E0830	**3.96**
8.40	84	117	800E0840	**3.96**
8.50	84	117	800E0850	**3.96**

MM SIZES	FLUTE LENGTH MM	OVERALL LENGTH MM	EDP NUMBERS	LIST PRICE
8.60	90	125	800E0860	**$4.57**
8.70	90	125	800E0870	**4.57**
8.75	90	125	800E0875	**4.83**
8.80	90	125	800E0880	**4.83**
8.90	90	125	800E0890	**4.83**
9.00	90	125	800E0900	**4.83**
9.10	90	125	800E0910	**4.83**
9.20	90	125	800E0920	**5.52**
9.25	90	125	800E0925	**5.52**
9.30	90	125	800E0930	**5.52**
9.40	90	125	800E0940	**5.52**
9.50	90	125	800E0950	**5.52**
9.60	98	133	800E0960	**6.22**
9.70	98	133	800E0970	**6.22**
9.75	98	133	800E0975	**6.22**
9.80	98	133	800E0980	**6.22**
9.90	98	133	800E0990	**6.22**
10.00	98	133	800E1000	**6.22**
10.50	98	133	800E1050	**7.18**
11.00	105	142	800E1100	**8.57**
11.50	105	142	800E1150	**9.53**
12.00	113	151	800E1200	**10.57**
12.50	113	151	800E1250	**10.57**
13.00	113	151	800E1300	**11.09**
13.50	117	160	800E1350	**13.92**
14.00	117	160	800E1400	**15.92**
14.50	123	169	800E1450	**15.92**
15.00	123	169	800E1500	**17.27**
15.50	130	178	800E1550	**19.75**
16.00	130	178	800E1600	**19.75**
16.50	130	187	800E1650	**21.32**
17.00	130	187	800E1700	**21.32**
17.50	145	196	800E1750	**23.45**
18.00	145	196	800E1800	**24.66**
18.50	149	205	800E1850	**26.75**
19.00	149	205	800E1900	**29.58**
19.50	154	214	800E1950	**29.58**
20.00	154	214	800E2000	**29.58**

Fast Spiral Jobber Length Drills

HIGH SPEED STEEL **HIGH-HELIX** **BRIGHT FINISH**



Have been developed especially for drilling deep holes in materials of low tensile strength, such as aluminum, magnesium, copper, die casting materials and some plastic materials. Its wide flutes and high helix help to clear the chips

Packaging: 1/16" thru 19/64" and #1 thru #40, 12 per pack. 5/16" thru 1/2", 6 per pack.

MADE IN USA — SERIES 200F — 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	200F104	**$3.13**
5/64	1"	2"	200F105	**3.13**
3/32	1-1/4	2-1/4	200F106	**3.13**
7/64	1-1/2	2-5/8	200F107	**3.13**
1/8	1-5/8	2-3/4	200F108	**3.13**
9/64	1-3/4	2-7/8	200F109	**3.13**
5/32	2"	3-1/8	200F110	**3.39**
11/64	2-1/8	3-1/4	200F111	**3.96**
3/16	2-5/16	3-1/2	200F112	**4.65**
13/64	2-7/16	3-5/8	200F113	**5.05**
7/32	2-1/2	3-3/4	200F114	**5.70**
15/64	2-5/8	3-7/8	200F115	**6.05**
1/4	2-3/4	4"	200F116	**6.26**
17/64	2-7/8	4-1/8	200F117	**7.79**
9/32	2-15/16	4-1/4	200F118	**8.31**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	4-3/8	200F119	**$9.00**
5/16	3-3/16	4-1/2	200F120	**10.05**
21/64	3-5/16	4-5/8	200F121	**10.74**
11/32	3-7/16	4-3/4	200F122	**12.18**
23/64	3-1/2	4-7/8	200F123	**14.18**
3/8	3-5/8	5"	200F124	**14.92**
25/64	3-3/4	5-1/8	200F125	**16.49**
13/32	3-7/8	5-1/4	200F126	**17.14**
27/64	3-15/16	5-3/8	200F127	**19.18**
7/16	4-1/16	5-1/2	200F128	**20.10**
29/64	4-3/16	5-5/8	200F129	**20.66**
15/32	4-5/16	5-3/4	200F130	**22.01**
31/64	4-3/8	5-7/8	200F131	**23.32**
1/2	4-1/2	6"	200F132	**23.32**

MADE IN USA — SERIES 280F — 118° POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	280F001	**$6.35**
2	2-5/8	3-7/8	280F002	**6.35**
3	2-1/2	3-3/4	280F003	**6.00**
4	2-1/2	3-3/4	280F004	**6.00**
5	2-1/2	3-3/4	280F005	**6.00**
6	2-1/2	3-3/4	280F006	**6.00**
7	2-7/16	3-5/8	280F007	**6.00**
8	2-7/16	3-5/8	280F008	**5.05**
9	2-7/16	3-5/8	280F009	**5.05**
10	2-7/16	3-5/8	280F010	**5.05**
11	2-5/16	3-1/2	280F011	**4.92**
12	2-5/16	3-1/2	280F012	**4.92**
13	2-5/16	3-1/2	280F013	**4.61**
14	2-3/16	3-3/8	280F014	**4.61**
15	2-3/16	3-3/8	280F015	**4.61**
16	2-3/16	3-3/8	280F016	**4.61**
17	2-3/16	3-3/8	280F017	**4.61**
18	2-1/8	3-1/4	280F018	**3.96**
19	2-1/8	3-1/4	280F019	**3.96**
20	2-1/8	3-1/4	280F020	**3.96**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	3-1/4	280F021	**$3.65**
22	2"	3-1/8	280F022	**3.65**
23	2"	3-1/8	280F023	**3.35**
24	2"	3-1/8	280F024	**3.35**
25	1-7/8	3"	280F025	**3.35**
26	1-7/8	3"	280F026	**3.35**
27	1-7/8	3"	280F027	**3.35**
28	1-3/4	2-7/8	280F028	**3.13**
29	1-3/4	2-7/8	280F029	**3.13**
30	1-5/8	2-3/4	280F030	**3.13**
31	1-5/8	2-3/4	280F031	**3.13**
32	1-5/8	2-3/4	280F032	**3.13**
33	1-1/2	2-5/8	280F033	**3.13**
34	1-1/2	2-5/8	280F034	**3.13**
35	1-1/2	2-5/8	280F035	**3.13**
36	1-7/16	2-1/2	280F036	**3.13**
37	1-7/16	2-1/2	280F037	**3.13**
38	1-7/16	2-1/2	280F038	**3.13**
39	1-3/8	2-3/8	280F039	**3.13**
40	1-3/8	2-3/8	280F040	**3.13**

Slow Spiral Jobber Length Drill

HIGH SPEED STEEL **LOW-HELIX** **BRIGHT FINISH**



Designed primarily for use in brass & copper, although in many cases successful applications have been made in shallow drilling some of the aluminum and magnesium alloys. The flute construction will readily remove a large volume of chips.

Packaging: 1/16" thru 19/64" and #1 thru #40, 12 per pack. 5/16" thru 1/2", 6 per pack.

MADE IN USA — SERIES 200S — 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	200S104	$3.39
5/64	1"	2"	200S105	3.39
3/32	1-1/4	2-1/4	200S106	3.39
7/64	1-1/2	2-5/8	200S107	3.39
1/8	1-5/8	2-3/4	200S108	3.39
9/64	1-3/4	2-7/8	200S109	3.39
5/32	2"	3-1/8	200S110	4.05
11/64	2-1/8	3-1/4	200S111	4.52
3/16	2-5/16	3-1/2	200S112	4.79
13/64	2-7/16	3-5/8	200S113	5.39
7/32	2-1/2	3-3/4	200S114	6.31
15/64	2-5/8	3-7/8	200S115	6.92
1/4	2-3/4	4"	200S116	6.92
17/64	2-7/8	4-1/8	200S117	8.35
9/32	2-15/16	4-1/4	200S118	9.27

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	4-3/8	200S119	$10.27
5/16	3-3/16	4-1/2	200S120	11.35
21/64	3-5/16	4-5/8	200S121	12.01
11/32	3-7/16	4-3/4	200S122	13.40
23/64	3-1/2	4-7/8	200S123	16.01
3/8	3-5/8	5"	200S124	16.01
25/64	3-3/4	5-1/8	200S125	17.70
13/32	3-7/8	5-1/4	200S126	18.40
27/64	3-15/16	5-3/8	200S127	20.79
7/16	4-1/16	5-1/2	200S128	21.36
29/64	4-3/16	5-5/8	200S129	24.32
15/32	4-5/16	5-3/4	200S130	26.23
31/64	4-3/8	5-7/8	200S131	27.36
1/2	4-1/2	6"	200S132	27.36

MADE IN USA — SERIES 280S — 118° POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	280S001	$7.13
2	2-5/8	3-7/8	280S002	7.13
3	2-1/2	3-3/4	280S003	6.87
4	2-1/2	3-3/4	280S004	6.87
5	2-1/2	3-3/4	280S005	6.87
6	2-1/2	3-3/4	280S006	6.87
7	2-7/16	3-5/8	280S007	5.87
8	2-7/16	3-5/8	280S008	5.87
9	2-7/16	3-5/8	280S009	5.87
10	2-7/16	3-5/8	280S010	5.87
11	2-5/16	3-1/2	280S011	5.48
12	2-5/16	3-1/2	280S012	4.48
13	2-5/16	3-1/2	280S013	5.13
14	2-3/16	3-3/8	280S014	5.13
15	2-3/16	3-3/8	280S015	5.13
16	2-3/16	3-3/8	280S016	5.13
17	2-3/16	3-3/8	280S017	5.13
18	2-1/8	3-1/4	280S018	4.52
19	2-1/8	3-1/4	280S019	4.52
20	2-1/8	3-1/4	280S020	4.52

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	3-1/4	280S021	$4.39
22	2"	3-1/8	280S022	4.39
23	2"	3-1/8	280S023	4.39
24	2"	3-1/8	280S024	4.26
25	1-7/8	3"	280S025	4.26
26	1-7/8	3"	280S026	3.87
27	1-7/8	3"	280S027	3.87
28	1-3/4	2-7/8	280S028	3.87
29	1-3/4	2-7/8	280S029	3.39
30	1-5/8	2-3/4	280S030	3.39
31	1-5/8	2-3/4	280S031	3.39
32	1-5/8	2-3/4	280S032	3.39
33	1-1/2	2-5/8	280S033	3.39
34	1-1/2	2-5/8	280S034	3.39
35	1-1/2	2-5/8	280S035	3.39
36	1-7/16	2-1/2	280S036	3.39
37	1-7/16	2-1/2	280S037	3.39
38	1-7/16	2-1/2	280S038	3.39
39	1-3/8	2-3/8	280S039	3.39
40	1-3/8	2-3/8	280S040	3.39

Left Hand Jobber Drills

HIGH SPEED M-7 STEEL LEFT HAND SPIRAL BRIGHT FINISH



They are 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.

Packaging: 1/16" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack. #1 thru #40, 12 per pack.

SERIES 200LH 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	200LH104	**$5.18**
5/64	1"	2"	200LH105	**5.18**
3/32	1-1/4	2-1/4	200LH106	**5.39**
7/64	1-1/2	2-5/8	200LH107	**5.44**
1/8	1-5/8	2-3/4	200LH108	**5.61**
9/64	1-3/4	2-7/8	200LH109	**5.83**
5/32	2"	3-1/8	200LH110	**6.48**
11/64	2-1/8	3-1/4	200LH111	**7.31**
3/16	2-5/16	3-1/2	200LH112	**8.09**
13/64	2-7/16	3-5/8	200LH113	**8.09**
7/32	2-1/2	3-3/4	200LH114	**8.09**
15/64	2-5/8	3-7/8	200LH115	**11.22**
1/4	2-3/4	4"	200LH116	**11.22**
17/64	2-7/8	4-1/8	200LH117	**11.88**
9/32	2-15/16	4-1/4	200LH118	**12.27**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	4-3/8	200LH119	**$13.40**
5/16	3-3/16	4-1/2	200LH120	**14.31**
21/64	3-5/16	4-5/8	200LH121	**15.40**
11/32	3-7/16	4-3/4	200LH122	**17.66**
23/64	3-1/2	4-7/8	200LH123	**20.53**
3/8	3-5/8	5"	200LH124	**21.58**
25/64	3-3/4	5-1/8	200LH125	**23.62**
13/32	3-7/8	5-1/4	200LH126	**24.58**
27/64	3-15/16	5-3/8	200LH127	**27.67**
7/16	4-1/16	5-1/2	200LH128	**28.93**
29/64	4-3/16	5-5/8	200LH129	**32.97**
15/32	4-5/16	5-3/4	200LH130	**35.10**
31/64	4-3/8	5-7/8	200LH131	**37.06**
1/2	4-1/2	6"	200LH132	**37.06**

MADE IN USA SERIES 280LH 118° POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	280LH001	**$10.40**
2	2-5/8	3-7/8	280LH002	**10.40**
3	2-1/2	3-3/4	280LH003	**9.74**
4	2-1/2	3-3/4	280LH004	**9.74**
5	2-1/2	3-3/4	280LH005	**9.74**
6	2-1/2	3-3/4	280LH006	**9.74**
7	2-7/16	3-5/8	280LH007	**8.22**
8	2-7/16	3-5/8	280LH008	**8.22**
9	2-7/16	3-5/8	280LH009	**8.22**
10	2-7/16	3-5/8	280LH010	**8.22**
11	2-5/16	3-1/2	280LH011	**7.92**
12	2-5/16	3-1/2	280LH012	**7.92**
13	2-5/16	3-1/2	280LH013	**7.35**
14	2-3/16	3-3/8	280LH014	**7.35**
15	2-3/16	3-3/8	280LH015	**7.35**
16	2-3/16	3-3/8	280LH016	**7.35**
17	2-3/16	3-3/8	280LH017	**7.35**
18	2-1/8	3-1/4	280LH018	**6.44**
19	2-1/8	3-1/4	280LH019	**6.44**
20	2-1/8	3-1/4	280LH020	**6.44**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	3-1/4	280LH021	**$6.13**
22	2"	3-1/8	280LH022	**6.13**
23	2"	3-1/8	280LH023	**5.87**
24	2"	3-1/8	280LH024	**5.87**
25	1-7/8	3"	280LH025	**5.66**
26	1-7/8	3"	280LH026	**5.66**
27	1-7/8	3"	280LH027	**5.66**
28	1-3/4	2-7/8	280LH028	**5.00**
29	1-3/4	2-7/8	280LH029	**5.00**
30	1-5/8	2-3/4	280LH030	**5.00**
31	1-5/8	2-3/4	280LH031	**5.00**
32	1-5/8	2-3/4	280LH032	**5.00**
33	1-1/2	2-5/8	280LH033	**5.00**
34	1-1/2	2-5/8	280LH034	**5.00**
35	1-1/2	2-5/8	280LH035	**5.00**
36	1-7/16	2-1/2	280LH036	**5.00**
37	1-7/16	2-1/2	280LH037	**5.00**
38	1-7/16	2-1/2	280LH038	**5.00**
39	1-3/8	2-3/8	280LH039	**5.00**
40	1-3/8	2-3/8	280LH040	**5.00**

Left Hand Jobber Drills

HIGH SPEED STEEL — LEFT HAND SPIRAL — SURFACE TREATED



For removing broken screw, bolts and threaded products. Broken part is backed out by the drill turning left and backing part out. They are also 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.

Packaging: 1/16" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack. #1 thru #40, 12 per pack.

SERIES 400LH — 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	400LH104	**$3.11**
5/64	1"	2"	400LH105	**3.11**
3/32	1-1/4	2-1/4	400LH106	**3.24**
7/64	1-1/2	2-5/8	400LH107	**3.27**
1/8	1-5/8	2-3/4	400LH108	**3.37**
9/64	1-3/4	2-7/8	400LH109	**3.50**
5/32	2"	3-1/8	400LH110	**3.89**
11/64	2-1/8	3-1/4	400LH111	**4.39**
3/16	2-5/16	3-1/2	400LH112	**4.86**
13/64	2-7/16	3-5/8	400LH113	**4.92**
7/32	2-1/2	3-3/4	400LH114	**4.86**
15/64	2-5/8	3-7/8	400LH115	**6.74**
1/4	2-3/4	4"	400LH116	**6.74**
17/64	2-7/8	4-1/8	400LH117	**7.13**
9/32	2-15/16	4-1/4	400LH118	**7.37**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	4-3/8	400LH119	**$8.04**
5/16	3-3/16	4-1/2	400LH120	**8.59**
21/64	3-5/16	4-5/8	400LH121	**9.24**
11/32	3-7/16	4-3/4	400LH122	**10.60**
23/64	3-1/2	4-7/8	400LH123	**12.32**
3/8	3-5/8	5"	400LH124	**12.95**
25/64	3-3/4	5-1/8	400LH125	**14.18**
13/32	3-7/8	5-1/4	400LH126	**14.76**
27/64	3-15/16	5-3/8	400LH127	**16.61**
7/16	4-1/16	5-1/2	400LH128	**17.37**
29/64	4-3/16	5-5/8	400LH129	**19.79**
15/32	4-5/16	5-3/4	400LH130	**21.07**
31/64	4-3/8	5-7/8	400LH131	**22.25**
1/2	4-1/2	6"	400LH132	**22.25**

IMPORT — SERIES 480LH — 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	480LH001	**$6.24**
2	2-5/8	3-7/8	480LH002	**6.24**
3	2-1/2	3-3/4	480LH003	**5.85**
4	2-1/2	3-3/4	480LH004	**5.85**
5	2-1/2	3-3/4	480LH005	**5.85**
6	2-1/2	3-3/4	480LH006	**5.85**
7	2-7/16	3-5/8	480LH007	**4.93**
8	2-7/16	3-5/8	480LH008	**4.93**
9	2-7/16	3-5/8	480LH009	**4.93**
10	2-7/16	3-5/8	480LH010	**4.93**
11	2-5/16	3-1/2	480LH011	**4.75**
12	2-5/16	3-1/2	480LH012	**4.75**
13	2-5/16	3-1/2	480LH013	**4.41**
14	2-3/16	3-3/8	480LH014	**4.41**
15	2-3/16	3-3/8	480LH015	**4.41**
16	2-3/16	3-3/8	480LH016	**4.41**
17	2-3/16	3-3/8	480LH017	**4.41**
18	2-1/8	3-1/4	480LH018	**3.87**
19	2-1/8	3-1/4	480LH019	**3.87**
20	2-1/8	3-1/4	480LH020	**3.87**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	3-1/4	480LH021	**$3.68**
22	2"	3-1/8	480LH022	**3.68**
23	2"	3-1/8	480LH023	**3.52**
24	2"	3-1/8	480LH024	**3.52**
25	1-7/8	3"	480LH025	**3.40**
26	1-7/8	3"	480LH026	**3.40**
27	1-7/8	3"	480LH027	**3.40**
28	1-3/4	2-7/8	480LH028	**3.00**
29	1-3/4	2-7/8	480LH029	**3.00**
30	1-5/8	2-3/4	480LH030	**3.00**
31	1-5/8	2-3/4	480LH031	**3.00**
32	1-5/8	2-3/4	480LH032	**3.00**
33	1-1/2	2-5/8	480LH033	**3.00**
34	1-1/2	2-5/8	480LH034	**3.00**
35	1-1/2	2-5/8	480LH035	**3.00**
36	1-7/16	2-1/2	480LH036	**3.00**
37	1-7/16	2-1/2	480LH037	**3.00**
38	1-7/16	2-1/2	480LH038	**3.00**
39	1-3/8	2-3/8	480LH039	**3.00**
40	1-3/8	2-3/8	480LH040	**3.00**

Heavy Duty Jobber Drills

HIGH SPEED STEEL **HEAVY DUTY** **SURFACE TREATED**



Web construction is heavier than general purpose construction making it particularly suitable for cotter pin hole drilling and cross hole drilling in heads of bolts. The heavy construction affords efficient drilling in stainless steel and other hard materials. The split point reduces the thrust requirements and minimizes walking.

Packaging: 1/16" thru 19/64" and "A" thru "L", 12 per pack. 5/16" thru 1/2" and "M" thru "Z", 6 per pack.

MADE IN USA — SERIES 400 — 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	400A104	**$1.44**
5/64	1"	2"	400A105	**1.52**
3/32	1-1/4	2-1/4	400A106	**1.31**
7/64	1-1/2	2-5/8	400A107	**1.39**
1/8	1-5/8	2-3/4	400A108	**1.52**
9/64	1-3/4	2-7/8	400A109	**1.70**
5/32	2"	3-1/8	400A110	**2.04**
11/64	2-1/8	3-1/4	400A111	**2.22**
3/16	2-5/16	3-1/2	400A112	**2.39**
13/64	2-7/16	3-5/8	400A113	**2.74**
7/32	2-1/2	3-3/4	400A114	**2.91**
15/64	2-5/8	3-7/8	400A115	**3.22**
1/4	2-3/4	4"	400A116	**3.22**
17/64	2-7/8	4-1/8	400A117	**4.44**
9/32	2-15/16	4-1/4	400A118	**4.83**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	4-3/8	400A119	**$5.35**
5/16	3-3/16	4-1/2	400A120	**5.52**
21/64	3-5/16	4-5/8	400A121	**6.13**
11/32	3-7/16	4-3/4	400A122	**7.09**
23/64	3-1/2	4-7/8	400A123	**7.61**
3/8	3-5/8	5"	400A124	**7.61**
25/64	3-3/4	5-1/8	400A125	**8.96**
13/32	3-7/8	5-1/4	400A126	**9.44**
27/64	3-15/16	5-3/8	400A127	**10.44**
7/16	4-1/16	5-1/2	400A128	**11.22**
29/64	4-3/16	5-5/8	400A129	**12.18**
15/32	4-5/16	5-3/4	400A130	**13.14**
31/64	4-3/8	5-7/8	400A131	**13.70**
1/2	4-1/2	6"	400A132	**13.35**

MADE IN USA — SERIES 440 — 135° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	2-5/8	3-7/8	440A501	**$3.96**
B	2-3/4	4"	440A502	**3.96**
C	2-3/4	4"	440A503	**3.78**
D	2-3/4	4"	440A504	**3.78**
E	2-3/4	4"	440A505	**3.78**
F	2-7/8	4-1/8	440A506	**4.31**
G	2-7/8	4-1/8	440A507	**4.44**
H	2-7/8	4-1/8	440A508	**4.61**
I	2-7/8	4-1/8	440A509	**4.61**
J	2-7/8	4-1/8	440A510	**5.48**
K	2-15/16	4-1/4	440A511	**5.48**
L	2-15/16	4-1/4	440A512	**6.22**
M	3-1/16	4-3/8	440A513	**6.57**

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
N	3-1/16	4-3/8	440A514	**$6.57**
O	3-3/16	4-1/2	440A515	**6.57**
P	3-5/16	4-5/8	440A516	**6.87**
Q	3-7/16	4-3/4	440A517	**6.87**
R	3-7/16	4-3/4	440A518	**6.87**
S	3-1/2	4-7/8	440A519	**8.05**
T	3-1/2	4-7/8	440A520	**8.05**
U	3-5/8	5"	440A521	**8.66**
V	3-5/8	5"	440A522	**8.66**
W	3-3/4	5-1/8	440A523	**9.31**
X	3-3/4	5-1/8	440A524	**10.92**
Y	3-7/8	5-1/4	440A525	**11.75**
Z	3-7/8	5-1/4	440A526	**12.66**

Heavy Duty Jobber Drills

HIGH SPEED STEEL **HEAVY DUTY** **SURFACE TREATED**



Web construction is heavier than general purpose construction making it particularly suitable for cotter pin hole drilling and cross hole drilling in heads of bolts. The heavy construction affords efficient drilling in stainless steel and other hard materials. The split point reduces the thrust requirements and minimizes walking.

Packaging: #1 thru #60, 12 per pack.

MADE IN USA **SERIES 480** **135° SPLIT POINT**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	480A001	**$3.31**
2	2-1/2	3-7/8	480A002	**3.31**
3	2-1/2	3-3/4	480A003	**3.05**
4	2-1/2	3-3/4	480A004	**3.05**
5	2-1/2	3-3/4	480A005	**3.05**
6	2-1/2	3-3/4	480A006	**3.05**
7	2-7/16	3-5/8	480A007	**2.87**
8	2-7/16	3-5/8	480A008	**2.87**
9	2-7/16	3-5/8	480A009	**2.87**
10	2-7/16	3-5/8	480A010	**2.65**
11	2-5/16	3-1/2	480A011	**2.65**
12	2-5/16	3-1/2	480A012	**2.65**
13	2-5/16	3-1/2	480A013	**2.65**
14	2-3/16	3-3/8	480A014	**2.57**
15	2-3/16	3-3/8	480A015	**2.57**
16	2-3/16	3-3/8	480A016	**2.57**
17	2-3/16	3-3/8	480A017	**2.31**
18	2-1/8	3-1/4	480A018	**2.31**
19	2-1/8	3-1/4	480A019	**2.26**
20	2-1/8	3-1/4	480A020	**2.18**
21	2-1/8	3-1/4	480A021	**2.18**
22	2"	3-1/8	480A022	**2.13**
23	2"	3-1/8	480A023	**2.13**
24	2"	3-1/8	480A024	**2.13**
25	1-7/8	3"	480A025	**1.87**
26	1-7/8	3"	480A026	**1.87**
27	1-7/8	3"	480A027	**1.87**
28	1-3/4	2-7/8	480A028	**1.78**
29	1-3/4	2-7/8	480A029	**1.78**
30	1-5/8	2-3/4	480A030	**1.70**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	1-5/8	2-3/4	480A031	**$1.57**
32	1-5/8	2-3/4	480A032	**1.57**
33	1-1/2	2-5/8	480A033	**1.57**
34	1-1/2	2-5/8	480A034	**1.57**
35	1-1/2	2-5/8	480A035	**1.57**
36	1-7/16	2-1/2	480A036	**1.57**
37	1-7/16	2-1/2	480A037	**1.57**
38	1-7/16	2-1/2	480A038	**1.57**
39	1-3/8	2-3/8	480A039	**1.57**
40	1-3/8	2-3/8	480A040	**1.57**
41	1-3/8	2-3/8	480A041	**1.57**
42	1-1/4	2-1/4	480A042	**1.57**
43	1-1/4	2-1/4	480A043	**1.57**
44	1-1/8	2-1/8	480A044	**1.57**
45	1-1/8	2-1/8	480A045	**1.57**
46	1-1/8	2-1/8	480A046	**1.57**
47	1"	2"	480A047	**1.57**
48	1"	2"	480A048	**1.57**
49	1"	2"	480A049	**1.57**
50	1"	2"	480A050	**1.57**
51	1"	2"	480A051	**1.57**
52	7/8	1-7/8	480A052	**1.57**
***53**	7/8	1-7/8	480A053	**1.57**
***54**	7/8	1-7/8	480A054	**1.57**
***55**	7/8	1-7/8	480A055	**1.57**
***56**	3/4	1-3/4	480A056	**1.57**
***57**	3/4	1-3/4	480A057	**1.65**
***58**	11/16	1-5/8	480A058	**1.65**
***59**	11/16	1-5/8	480A059	**1.65**
***60**	11/16	1-5/8	480A060	**1.65**

*Not Split Point

Heavy Duty Drills

HIGH SPEED M-2 STEEL — HEAVY DUTY — BRONZE & BLACK FINISH



This drill does not have the special features of the Nitro drill. The heavy construction affords effcient portabel drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. This is a sitable drill for the construction industry.

Packaging: 1/64" thru 19/64" and #1 thru #60, 12 per pack. 5/16" thru 1/2", 6 per pack.

IMPORT — SERIES 400E — 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	400E104	$1.08
5/64	1"	2"	400E105	1.14
3/32	1-1/4	2-1/4	400E106	1.14
7/64	1-1/2	2-5/8	400E107	1.11
1/8	1-5/8	2-3/4	400E108	1.14
9/64	1-3/4	2-7/8	400E109	1.28
5/32	2"	3-1/8	400E110	1.53
11/64	2-1/8	3-1/4	400E111	1.67
3/16	2-5/16	3-1/2	400E112	1.79
13/64	2-7/16	3-5/8	400E113	2.06
7/32	2-1/2	3-3/4	400E114	2.18
15/64	2-5/8	3-7/8	400E115	2.42
1/4	2-3/4	4"	400E116	2.41

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	2-15/16	4-1/4	400E118	$3.62
19/64	3-1/16	4-3/8	400E119	4.01
5/16	3-3/16	4-1/2	400E120	4.14
21/64	3-5/16	4-5/8	400E121	4.60
11/32	3-7/16	4-3/4	400E122	5.32
23/64	3-1/2	4-7/8	400E123	5.71
3/8	3-5/8	5"	400E124	5.71
25/64	3-3/4	5-1/8	400E125	6.72
13/32	3-7/8	5-1/4	400E126	7.08
27/64	3-15/16	5-3/8	400E127	7.83
7/16	4-1/16	5-1/2	400E128	8.42
29/64	4-3/16	5-5/8	400E129	9.14
15/32	4-5/16	5-3/4	400E130	9.86
31/64	4-3/8	5-7/8	400E131	10.28
1/2	4-1/2	6"	400E132	10.02

IMPORT — SERIES 480E — 135° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	480E001	$2.48
2	2-1/2	3-7/8	480E002	2.48
3	2-1/2	3-3/4	480E003	2.29
4	2-1/2	3-3/4	480E004	2.29
5	2-1/2	3-3/4	480E005	2.29
6	2-1/2	3-3/4	480E006	2.29
7	2-7/16	3-5/8	480E007	2.15
8	2-7/16	3-5/8	480E008	2.15
9	2-7/16	3-5/8	480E009	2.15
10	2-7/16	3-5/8	480E010	1.99
11	2-5/16	3-1/2	480E011	1.99
12	2-5/16	3-1/2	480E012	1.99
13	2-5/16	3-1/2	480E013	1.99
14	2-3/16	3-3/8	480E014	1.93
15	2-3/16	3-3/8	480E015	1.93
16	2-3/16	3-3/8	480E016	1.93
17	2-3/16	3-3/8	480E017	1.73
18	2-1/8	3-1/4	480E018	1.73
19	2-1/8	3-1/4	480E019	1.70
20	2-1/8	3-1/4	480E020	1.64
21	2-1/8	3-1/4	480E021	1.64
22	2"	3-1/8	480E022	1.60
23	2"	3-1/8	480E023	1.60
24	2"	3-1/8	480E024	1.60
25	1-7/8	3"	480E025	1.40
26	1-7/8	3"	480E026	1.40
27	1-7/8	3"	480E027	1.40
28	1-3/4	2-7/8	480E028	1.34
29	1-3/4	2-7/8	480E029	1.34
30	1-5/8	2-3/4	480E030	1.28

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	1-5/8	2-3/4	480E031	$1.18
32	1-5/8	2-3/4	480E032	1.18
33	1-1/2	2-5/8	480E033	1.18
34	1-1/2	2-5/8	480E034	1.18
35	1-1/2	2-5/8	480E035	1.18
36	1-7/16	2-1/2	480E036	1.18
37	1-7/16	2-1/2	480E037	1.18
38	1-7/16	2-1/2	480E038	1.18
39	1-3/8	2-3/8	480E039	1.18
40	1-3/8	2-3/8	480E040	1.18
41	1-3/8	2-3/8	480E041	1.18
42	1-1/4	2-1/4	480E042	1.18
43	1-1/4	2-1/4	480E043	1.18
44	1-1/8	2-1/8	480E044	1.15
45	1-1/8	2-1/8	480E045	1.15
46	1-1/8	2-1/8	480E046	1.15
47	1"	2"	480E047	1.15
48	1"	2"	480E048	1.15
49	1"	2"	480E049	1.15
50	1"	2"	480E050	1.15
51	1"	2"	480E051	1.15
52	7/8	1-7/8	480E052	1.15
53	7/8	1-7/8	480E053	1.07
54	7/8	1-7/8	480E054	1.07
55	7/8	1-7/8	480E055	1.07
56	3/4	1-3/4	480E056	1.18
57	3/4	1-3/4	480E057	1.24
58	11/16	1-5/8	480E058	1.24
59	11/16	1-5/8	480E059	1.24
60	11/16	1-5/8	480E060	1.24

Nitro Mechanics Length Drills

HIGH SPEED M-7N STEEL HEAVY DUTY BRONZE & BLACK FINISH



- 3 FLATS ON SHANK GIVE POSITIVE FAST– GRIP CHUCKING.
- THE SELF STARTING 135° SPLIT POINT MINIMIZES WALKING AND QUICKLY BITES INTO HARD MATERIAL.
- THE POINT AND LAND ARE BRONZE SURFACE TREATED FOR MAXIMUM LUBRICITY.
- ESPECIALLY DESIGNED FOR PORTABLE DRILLING.

Manufactured from a premium grade of M-7N molybdenum high speed steel. The *Nitro* Heavy Duty 135° Split Point drill with a Nitride surface treatment, that gives a hard, protective layer to the drill (increases hardness without increasing brittleness), which is measurably harder than high speed steel. Body and clearance are bronze and black surface treated for maximum lubricity. Recommended for use in stainless steel and other hard metal drilling.

Packaging: 1/64" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack.

MADE IN USA SERIES 350N 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
*1/16	7/8	1-7/8	350N104	$1.52
*5/64	1"	2"	350N105	1.70
*3/32	1-1/4	2-1/4	350N106	1.70
*7/64	1-5/16	2-3/8	350N107	1.70
*1/8	1-7/16	2-1/2	350N108	1.96
*9/64	1-9/16	2-5/8	350N109	1.96
*5/32	1-11/16	2-3/4	350N110	2.22
*11/64	1-13/16	2-7/8	350N111	2.26
3/16	1-7/8	3"	350N112	2.78
13/64	1-15/16	3-1/8	350N113	3.13
7/32	2"	3-1/4	350N114	3.44
15/64	2-1/16	3-3/8	350N115	3.74
1/4	2-3/32	3-1/2	350N116	4.05
17/64	2-1/8	3-5/8	350N117	4.96
9/32	2-1/4	3-3/4	350N118	5.05

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
19/64	2-3/8	3-7/8	350N119	$6.00
5/16	2-1/2	4"	350N120	6.18
21/64	2-9/16	4-1/16	350N121	6.53
11/32	2-5/8	4-1/8	350N122	7.79
23/64	2-11/16	4-3/16	350N123	8.70
3/8	2-11/16	4-1/4	350N124	9.27
25/64	2-3/4	4-5/16	350N125	10.18
13/32	2-13/16	4-3/8	350N126	10.70
27/64	2-7/8	4-7/16	350N127	11.27
7/16	2-15/16	4-1/2	350N128	11.83
29/64	3"	4-5/8	350N129	13.22
15/32	3-1/8	4-3/4	350N130	14.14
31/64	3-1/4	4-7/8	350N131	14.70
1/2	3-3/8	5"	350N132	15.18

*DOES NOT HAVE THREE FLATS

Nitro Heavy Duty Drills

HIGH SPEED M-7N STEEL HEAVY DUTY BRONZE & BLACK FINISH



Manufactured from a premium grade of M-7N molybdenum high speed steel. The *Nitro* Heavy Duty 135° Split Point drill with a Nitride surface treatment, that gives a hard, protective layer to the drill (increases hardness without increasing brittleness), which is measurably harder than high speed steel. Body and clearance are gold and black surface treated for maximum lubricity. Recommended for use in stainless steel and other hard metal drilling.

Packaging: 1/16" thru 19/64" and "A" thru "L", 12 per pack. 5/16" thru 1/2" and "M" thru "Z", 6 per pack.

MADE IN USA SERIES 400N 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	400N104	$1.52
5/64	1"	2"	400N105	1.70
3/32	1-1/4	2-1/4	400N106	1.70
7/64	1-1/2	2-5/8	400N107	1.70
1/8	1-5/8	2-3/4	400N108	1.96
9/64	1-3/4	2-7/8	400N109	1.96
5/32	2"	3-1/8	400N110	2.22
11/64	2-1/8	3-1/4	400N111	2.26
3/16	2-5/16	3-1/2	400N112	2.65
13/64	2-7/16	3-5/8	400N113	2.96
7/32	2-1/2	3-3/4	400N114	3.26
15/64	2-5/8	3-7/8	400N115	3.44
1/4	2-3/4	4"	400N116	3.70
17/64	2-7/8	4-1/8	400N117	4.52
9/32	2-15/16	4-1/4	400N118	$5.44
19/64	3-1/16	4-3/8	400N119	5.87
5/16	3-3/16	4-1/2	400N120	6.05
21/64	3-5/16	4-5/8	400N121	6.66
11/32	3-7/16	4-3/4	400N122	7.40
23/64	3-1/2	4-7/8	400N123	8.27
3/8	3-5/8	5"	400N124	8.35
25/64	3-3/4	5-1/8	400N125	9.79
13/32	3-7/8	5-1/4	400N126	10.09
27/64	3-15/16	5-3/8	400N127	11.14
7/16	4-1/16	5-1/2	400N128	12.01
29/64	4-3/16	5-5/8	400N129	13.75
15/32	4-5/16	5-3/4	400N130	14.09
31/64	4-3/8	5-7/8	400N131	14.75
1/2	4-1/2	6"	400N132	14.14

MADE IN USA SERIES 440N 135° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	2-5/8	3-7/8	440N501	$5.09
B	2-3/4	4"	440N502	5.09
C	2-3/4	4"	440N503	4.87
D	2-3/4	4"	440N504	4.87
E	2-3/4	4"	440N505	4.87
F	2-7/8	4-1/8	440N506	5.52
G	2-7/8	4-1/8	440N507	5.70
H	2-7/8	4-1/8	440N508	5.87
I	2-7/8	4-1/8	440N509	5.87
J	2-7/8	4-1/8	440N510	7.00
K	2-15/16	4-1/4	440N511	7.00
L	2-15/16	4-1/4	440N512	7.96
M	3-1/16	4-3/8	440N513	8.44
N	3-1/16	4-3/8	440N514	$8.44
O	3-3/16	4-1/2	440N515	8.44
P	3-5/16	4-5/8	440N516	8.83
Q	3-7/16	4-3/4	440N517	8.83
R	3-7/16	4-3/4	440N518	8.83
S	3-1/2	4-7/8	440N519	10.31
T	3-1/2	4-7/8	440N520	10.31
U	3-5/8	5"	440N521	11.14
V	3-5/8	5"	440N522	11.14
W	3-3/4	5-1/8	440N523	11.92
X	3-3/4	5-1/8	440N524	14.09
Y	3-7/8	5-1/4	440N525	15.05
Z	3-7/8	5-1/4	440N526	16.23

Nitro Heavy Duty Drills

HIGH SPEED M-7N STEEL **HEAVY DUTY** **BRONZE & BLACK FINISH**



Manufactured from a premium grade of M-7N molybdenum high speed steel. The *Nitro* Heavy Duty 135° Split Point drill with a Nitride surface treatment, that gives a hard, protective layer to the drill (increases hardness without increasing brittleness), which is measurably harder than high speed steel. Body and clearance are gold and black surface treated for maximum lubricity. Recommended for use in stainless steel and other hard metal drilling.

Packaging: #1 thru #60, 12 per pack.

MADE IN USA **SERIES 480N** **135° SPLIT POINT**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	480N001	$3.67
2	2-1/2	3-7/8	480N002	3.67
3	2-1/2	3-3/4	480N003	3.46
4	2-1/2	3-3/4	480N004	3.46
5	2-1/2	3-3/4	480N005	3.43
6	2-1/2	3-3/4	480N006	3.43
7	2-7/16	3-5/8	480N007	3.27
8	2-7/16	3-5/8	480N008	3.27
9	2-7/16	3-5/8	480N009	3.27
10	2-7/16	3-5/8	480N010	3.04
11	2-5/16	3-1/2	480N011	3.04
12	2-5/16	3-1/2	480N012	3.04
13	2-5/16	3-1/2	480N013	3.04
14	2-3/16	3-3/8	480N014	2.82
15	2-3/16	3-3/8	480N015	2.82
16	2-3/16	3-3/8	480N016	2.82
17	2-3/16	3-3/8	480N017	2.75
18	2-1/8	3-1/4	480N018	2.68
19	2-1/8	3-1/4	480N019	2.68
20	2-1/8	3-1/4	480N020	2.54
21	2-1/8	3-1/4	480N021	2.54
22	2"	3-1/8	480N022	2.47
23	2"	3-1/8	480N023	2.47
24	2"	3-1/8	480N024	2.47
25	1-7/8	3"	480N025	2.19
26	1-7/8	3"	480N026	2.19
27	1-7/8	3"	480N027	2.19
28	1-3/4	2-7/8	480N028	2.05
29	1-3/4	2-7/8	480N029	2.05
30	1-5/8	2-3/4	480N030	1.97

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	1-5/8	2-3/4	480N031	$1.77
32	1-5/8	2-3/4	480N032	1.77
33	1-1/2	2-5/8	480N033	1.77
34	1-1/2	2-5/8	480N034	1.77
35	1-1/2	2-5/8	480N035	1.77
36	1-7/16	2-1/2	480N036	1.66
37	1-7/16	2-1/2	480N037	1.66
38	1-7/16	2-1/2	480N038	1.66
39	1-3/8	2-3/8	480N039	1.66
40	1-3/8	2-3/8	480N040	1.66
41	1-3/8	2-3/8	480N041	1.58
42	1-1/4	2-1/4	480N042	1.58
43	1-1/4	2-1/4	480N043	1.53
44	1-1/8	2-1/8	480N044	1.53
45	1-1/8	2-1/8	480N045	1.53
46	1-1/8	2-1/8	480N046	1.53
47	1"	2"	480N047	1.53
48	1"	2"	480N048	1.53
49	1"	2"	480N049	1.53
50	1"	2"	480N050	1.53
51	1"	2"	480N051	1.53
52	7/8	1-7/8	480N052	1.47
*53	7/8	1-7/8	480N053	1.42
*54	7/8	1-7/8	480N054	1.42
*55	7/8	1-7/8	480N055	1.42
*56	3/4	1-3/4	480N056	1.42
*57	3/4	1-3/4	480N057	1.73
*58	11/16	1-5/8	480N058	1.73
*59	11/16	1-5/8	480N059	1.73
*60	11/16	1-5/8	480N060	1.73

*** NOT SPLIT POINT**

Viper Heavy Duty Drills

HIGH SPEED STEEL **SUPER HEAVY DUTY** **COBALT BLUE FINISH**



Manufactured from a premium grade of M-7 molybdenum high speed steel. The *Viper* Heavy Duty 135° Split Point drill has a Neplusultra surface treatment, which forms compounds with the M-7 steel, that gives a very hard protective surface for drilling hard materials. This treatment is measurably harder than regular high speed steel. The unique flute design produces improved chip flow, which reduces heat at the cutting surface. The *Viper* is recommended for drilling at high R P M's with air drills.

Packaging: 1/16" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack.

MADE IN USA **SERIES 400V** **135° SPLIT POINT**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	400V104	**$2.00**
5/64	1"	2"	400V105	**2.00**
3/32	1-1/4	2-1/4	400V106	**2.00**
7/64	1-1/2	2-5/8	400V107	**2.09**
1/8	1-5/8	2-3/4	400V108	**2.57**
9/64	1-3/4	2-7/8	400V109	**2.57**
5/32	2"	3-1/8	400V110	**3.05**
11/64	2-1/8	3-1/4	400V111	**3.22**
3/16	2-5/16	3-1/2	400V112	**3.78**
13/64	2-7/16	3-5/8	400V113	**4.26**
7/32	2-1/2	3-3/4	400V114	**4.57**
15/64	2-5/8	3-7/8	400V115	**4.87**
1/4	2-3/4	4"	400V116	**5.13**
17/64	2-7/8	4-1/8	400V117	**6.53**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	2-15/16	4-1/4	400V118	**$6.70**
19/64	3-1/16	4-3/8	400V119	**7.61**
5/16	3-3/16	4-1/2	400V120	**8.05**
21/64	3-5/16	4-5/8	400V121	**9.05**
11/32	3-7/16	4-3/4	400V122	**10.22**
23/64	3-1/2	4-7/8	400V123	**11.44**
3/8	3-5/8	5"	400V124	**11.79**
25/64	3-3/4	5-1/8	400V125	**13.35**
13/32	3-7/8	5-1/4	400V126	**13.79**
27/64	3-15/16	5-3/8	400V127	**15.44**
7/16	4-1/16	5-1/2	400V128	**15.79**
29/64	4-3/16	5-5/8	400V129	**17.75**
15/32	4-5/16	5-3/4	400V130	**18.71**
31/64	4-3/8	5-7/8	400V131	**19.79**
1/2	4-1/2	6"	400V132	**20.00**

Viper Heavy Duty Drills

HIGH SPEED M-7 STEEL SUPER HEAVY DUTY COBALT BLUE FINISH



Manufactured from a premium grade of M-7 molybdenum high speed steel. The *Viper* Heavy Duty 135° Split Point drill has a Neplusultra surface treatment, which forms compounds with the M-7 steel, that gives a very hard protective surface for drilling hard materials. This treatment is measurably harder than regular high speed steel. The unique flute design produces improved chip flow, which reduces heat at the cutting surface. The *Viper* is recommended for drilling at high R P M's with air drills.

Packaging: #1 thru #52, 12 per pack.

MADE IN USA 480V 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	480V001	$5.52
2	2-1/2	3-7/8	480V002	5.52
3	2-1/2	3-3/4	480V003	5.05
4	2-1/2	3-3/4	480V004	5.05
5	2-1/2	3-3/4	480V005	5.05
6	2-1/2	3-3/4	480V006	5.05
7	2-7/16	3-5/8	480V007	4.48
8	2-7/16	3-5/8	480V008	4.48
9	2-7/16	3-5/8	480V009	4.35
10	2-7/16	3-5/8	480V010	4.35
11	2-5/16	3-1/2	480V011	4.09
12	2-5/16	3-1/2	480V012	4.09
13	2-5/16	3-1/2	480V013	3.87
14	2-3/16	3-3/8	480V014	3.87
15	2-3/16	3-3/8	480V015	3.87
16	2-3/16	3-3/8	480V016	3.87
17	2-3/16	3-3/8	480V017	3.87
18	2-1/8	3-1/4	480V018	3.57
19	2-1/8	3-1/4	480V019	3.57
20	2-1/8	3-1/4	480V020	3.57
21	2-1/8	3-1/4	480V021	3.31
22	2"	3-1/8	480V022	3.31
23	2"	3-1/8	480V023	3.31
24	2"	3-1/8	480V024	3.31
25	1-7/8	3"	480V025	3.18
26	1-7/8	3"	480V026	3.18
27	1-7/8	3"	480V027	3.18
28	1-3/4	2-7/8	480V028	3.18
29	1-3/4	2-7/8	480V029	2.91
30	1-5/8	2-3/4	480V030	2.91

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	1-5/8	2-3/4	480V031	$2.91
32	1-5/8	2-3/4	480V032	2.91
33	1-1/2	2-5/8	480V033	2.91
34	1-1/2	2-5/8	480V034	2.91
35	1-1/2	2-5/8	480V035	2.91
36	1-7/16	2-1/2	480V036	2.70
37	1-7/16	2-1/2	480V037	2.70
38	1-7/16	2-1/2	480V038	2.70
39	1-3/8	2-3/8	480V039	2.70
40	1-3/8	2-3/8	480V040	2.70
41	1-3/8	2-3/8	480V041	2.70
42	1-1/4	2-1/4	480V042	2.70
43	1-1/4	2-1/4	480V043	2.70
44	1-1/8	2-1/8	480V044	2.70
45	1-1/8	2-1/8	480V045	2.70
46	1-1/8	2-1/8	480V046	2.70
47	1"	2"	480V047	2.70
48	1"	2"	480V048	2.70
49	1"	2"	480V049	2.70
50	1"	2"	480V050	2.70
51	1"	2"	480V051	2.70
52	7/8	1-7/8	480V052	2.70

Cobalt Heavy Duty Drills

COBALT M-42 HEAVY DUTY GOLD FINISH



Heavy duty construction made to 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.

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.

MADE IN USA SERIES 500 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
*3/64	3/4	1-3/4	500A103	$3.26
1/16	7/8	1-7/8	500A104	2.22
5/64	1"	2"	500A105	2.22
3/32	1-1/4	2-1/4	500A106	2.22
7/64	1-1/2	2-5/8	500A107	2.31
1/8	1-5/8	2-3/4	500A108	2.83
9/64	1-3/4	2-7/8	500A109	2.83
5/32	2"	3-1/8	500A110	3.48
11/64	2-1/8	3-1/4	500A111	3.83
3/16	2-5/16	3-1/2	500A112	4.22
13/64	2-7/16	3-5/8	500A113	4.87
7/32	2-1/2	3-3/4	500A114	5.57
15/64	2-5/8	3-7/8	500A115	5.92
1/4	2-3/4	4"	500A116	6.09
17/64	2-7/8	4-1/8	500A117	7.79

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	2-15/16	4-1/4	500A118	$8.66
19/64	3-1/16	4-3/8	500A119	9.22
5/16	3-3/16	4-1/2	500A120	9.74
21/64	3-5/16	4-5/8	500A121	11.05
11/32	3-7/16	4-3/4	500A122	11.79
23/64	3-1/2	4-7/8	500A123	13.92
3/8	3-5/8	5"	500A124	13.57
25/64	3-3/4	5-1/8	500A125	15.79
13/32	3-7/8	5-1/4	500A126	16.79
27/64	3-15/16	5-3/8	500A127	18.10
7/16	4-1/16	5-1/2	500A128	18.79
29/64	4-3/16	5-5/8	500A129	22.40
15/32	4-5/16	5-3/4	500A130	22.97
31/64	4-3/8	5-7/8	500A131	24.53
1/2	4-1/2	6"	500A132	23.79

MADE IN USA SERIES 540 135° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	2-5/8	3-7/8	540A501	$6.74
B	2-3/4	4"	540A502	7.79
C	2-3/4	4"	540A503	7.79
D	2-3/4	4"	540A504	8.74
E	2-3/4	4"	540A505	6.87
F	2-7/8	4-1/8	540A506	7.79
G	2-7/8	4-1/8	540A507	7.79
H	2-7/8	4-1/8	540A508	8.74
I	2-7/8	4-1/8	540A509	8.18
J	2-7/8	4-1/8	540A510	8.74
K	2-15/16	4-1/4	540A511	8.74
L	2-15/16	4-1/4	540A512	9.92
M	3-1/16	4-3/8	540A513	10.53

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
N	3-1/16	4-3/8	540A514	$10.53
O	3-3/16	4-1/2	540A515	11.61
P	3-5/16	4-5/8	540A516	12.35
Q	3-7/16	4-3/4	540A517	12.83
R	3-7/16	4-3/4	540A518	12.83
S	3-1/2	4-7/8	540A519	15.70
T	3-1/2	4-7/8	540A520	15.70
U	3-5/8	5"	540A521	15.70
V	3-5/8	5"	540A522	17.97
W	3-3/4	5-1/8	540A523	17.97
X	3-3/4	5-1/8	540A524	17.97
Y	3-7/8	5-1/4	540A525	19.05
Z	3-7/8	5-1/4	540A526	20.71

* NOT SPLIT POINT

Cobalt Heavy Duty Drills

COBALT M-42 | HEAVY DUTY | GOLD FINISH



Heavy duty construction made to 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.

Packaging: #1 thru #60, 12 per pack.

MADE IN USA | SERIES 580 | 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	580A001	$6.61
2	2-1/2	3-7/8	580A002	6.61
3	2-1/2	3-3/4	580A003	6.22
4	2-1/2	3-3/4	580A004	6.22
5	2-1/2	3-3/4	580A005	6.22
6	2-1/2	3-3/4	580A006	6.22
7	2-7/16	3-5/8	580A007	4.92
8	2-7/16	3-5/8	580A008	4.92
9	2-7/16	3-5/8	580A009	4.92
10	2-7/16	3-5/8	580A010	4.92
11	2-5/16	3-1/2	580A011	4.92
12	2-5/16	3-1/2	580A012	4.92
13	2-5/16	3-1/2	580A013	4.65
14	2-3/16	3-3/8	580A014	4.65
15	2-3/16	3-3/8	580A015	4.65
16	2-3/16	3-3/8	580A016	4.31
17	2-3/16	3-3/8	580A017	4.18
18	2-1/8	3-1/4	580A018	3.74
19	2-1/8	3-1/4	580A019	3.74
20	2-1/8	3-1/4	580A020	3.74
21	2-1/8	3-1/4	580A021	3.74
22	2"	3-1/8	580A022	3.74
23	2"	3-1/8	580A023	3.74
24	2"	3-1/8	580A024	3.74
25	1-7/8	3"	580A025	3.39
26	1-7/8	3"	580A026	3.35
27	1-7/8	3"	580A027	3.35
28	1-3/4	2-7/8	580A028	3.13
29	1-3/4	2-7/8	580A029	3.05
30	1-5/8	2-3/4	580A030	2.87

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	1-5/8	2-3/4	580A031	$2.83
32	1-5/8	2-3/4	580A032	2.78
33	1-1/2	2-5/8	580A033	2.70
34	1-1/2	2-5/8	580A034	2.70
35	1-1/2	2-5/8	580A035	2.70
36	1-7/16	2-1/2	580A036	2.61
37	1-7/16	2-1/2	580A037	2.61
38	1-7/16	2-1/2	580A038	2.44
39	1-3/8	2-3/8	580A039	2.44
40	1-3/8	2-3/8	580A040	2.44
41	1-3/8	2-3/8	580A041	2.39
42	1-1/4	2-1/4	580A042	2.35
43	1-1/4	2-1/4	580A043	2.35
44	1-1/8	2-1/8	580A044	2.35
45	1-1/8	2-1/8	580A045	2.35
46	1-1/8	2-1/8	580A046	2.35
47	1"	2"	580A047	2.35
48	1"	2"	580A048	2.35
49	1"	2"	580A049	2.35
50	1"	2"	580A050	2.35
51	1"	2"	580A051	2.35
*52	7/8	1-7/8	580A052	2.35
*53	7/8	1-7/8	580A053	2.57
*54	7/8	1-7/8	580A054	2.57
*55	7/8	1-7/8	580A055	2.57
*56	3/4	1-3/4	580A056	2.96
*57	3/4	1-3/4	580A057	2.96
*58	11/16	1-5/8	580A058	2.96
*59	11/16	1-5/8	580A059	2.96
*60	11/16	1-5/8	580A060	2.96

* NOT SPLIT POINT

Cobalt Heavy Duty Drills

HIGH SPEED M42 STEEL — HEAVY DUTY — BRONZE FINISH



Heavy duty construction made to 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.

Packaging: 1/16" thru 19/64" and #1 thru #60, 12 per pack. 5/16" thru 1/2", 6 per pack.

IMPORT — SERIES 500E — 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	500E104	$1.82
5/64	1"	2"	500E105	1.82
3/32	1-1/4	2-1/4	500E106	1.82
7/64	1-1/2	2-5/8	500E107	1.95
1/8	1-5/8	2-3/4	500E108	2.38
9/64	1-3/4	2-7/8	500E109	2.38
5/32	2"	3-1/8	500E110	2.67
11/64	2-1/8	3-1/4	500E111	2.80
3/16	2-5/16	3-1/2	500E112	3.14
13/64	2-7/16	3-5/8	500E113	3.77
7/32	2-1/2	3-3/4	500E114	4.16
15/64	2-5/8	3-7/8	500E115	4.41
1/4	2-3/4	4"	500E116	4.71
17/64	2-7/8	4-1/8	500E117	5.30
9/32	2-15/16	4-1/4	500E118	$5.60
19/64	3-1/16	4-3/8	500E119	6.79
5/16	3-3/16	4-1/2	500E120	7.25
21/64	3-5/16	4-5/8	500E121	8.02
11/32	3-7/16	4-3/4	500E122	8.78
23/64	3-1/2	4-7/8	500E123	10.09
3/8	3-5/8	5"	500E124	10.09
25/64	3-3/4	5-1/8	500E125	11.45
13/32	3-7/8	5-1/4	500E126	11.96
27/64	3-15/16	5-3/8	500E127	13.23
7/16	4-1/16	5-1/2	500E128	13.53
29/64	4-3/16	5-5/8	500E129	16.24
15/32	4-5/16	5-3/4	500E130	16.54
31/64	4-3/8	5-7/8	500E131	17.05
1/2	4-1/2	6"	500E132	17.05

IMPORT — SERIES 580E — 135° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	580E001	$5.00
2	2-1/2	3-7/8	580E002	5.00
3	2-1/2	3-3/4	580E003	4.71
4	2-1/2	3-3/4	580E004	4.71
5	2-1/2	3-3/4	580E005	4.71
6	2-1/2	3-3/4	580E006	4.71
7	2-7/16	3-5/8	580E007	3.65
8	2-7/16	3-5/8	580E008	3.65
9	2-7/16	3-5/8	580E009	3.65
10	2-7/16	3-5/8	580E010	3.65
11	2-5/16	3-1/2	580E011	3.65
12	2-5/16	3-1/2	580E012	3.65
13	2-5/16	3-1/2	580E013	3.52
14	2-3/16	3-3/8	580E014	3.52
15	2-3/16	3-3/8	580E015	3.52
16	2-3/16	3-3/8	580E016	3.27
17	2-3/16	3-3/8	580E017	3.22
18	2-1/8	3-1/4	580E018	3.93
19	2-1/8	3-1/4	580E019	2.84
20	2-1/8	3-1/4	580E020	2.84
21	2-1/8	3-1/4	580E021	2.84
22	2"	3-1/8	580E022	2.84
23	2"	3-1/8	580E023	2.84
24	2"	3-1/8	580E024	2.84
25	1-7/8	3"	580E025	2.59
26	1-7/8	3"	580E026	2.54
27	1-7/8	3"	580E027	2.54
28	1-3/4	2-7/8	580E028	2.38
29	1-3/4	2-7/8	580E029	2.33
30	1-5/8	2-3/4	580E030	2.16
31	1-5/8	2-3/4	580E031	$2.16
32	1-5/8	2-3/4	580E032	2.12
33	1-1/2	2-5/8	580E033	2.04
34	1-1/2	2-5/8	580E034	2.04
35	1-1/2	2-5/8	580E035	2.04
36	1-7/16	2-1/2	580E036	1.99
37	1-7/16	2-1/2	580E037	1.99
38	1-7/16	2-1/2	580E038	1.87
39	1-3/8	2-3/8	580E039	1.87
40	1-3/8	2-3/8	580E040	1.87
41	1-3/8	2-3/8	580E041	1.82
42	1-1/4	2-1/4	580E042	1.82
43	1-1/4	2-1/4	580E043	1.82
44	1-1/8	2-1/8	580E044	1.82
45	1-1/8	2-1/8	580E045	1.82
46	1-1/8	2-1/8	580E046	1.82
47	1"	2"	580E047	1.82
48	1"	2"	580E048	1.82
49	1"	2"	580E049	1.82
50	1"	2"	580E050	1.82
51	1"	2"	580E051	1.82
52	7/8	1-7/8	580E052	1.82
53*	7/8	1-7/8	580E053	2.04
54*	7/8	1-7/8	580E054	2.04
55*	7/8	1-7/8	580E055	2.04
56*	3/4	1-3/4	580E056	2.29
57*	3/4	1-3/4	580E057	2.29
58*	11/16	1-5/8	580E058	2.29
59*	11/16	1-5/8	580E059	2.29
60*	11/16	1-5/8	580E060	2.29

* NOT SPLIT POINT

SPECIAL PURPOSE DRILLS

SPOTTING & CENTERING DRILLS — HIGH SPEED STEEL — SINGLE PACK



Designed to produce accurate, true centers in all types of screw machine work, to obtain a starting spot for other drills Short flute and overall length, and no body clearance permits chucking close to the drilling point for accurate location.

SERIES 360 — 90° POINT — SERIES 365 — 118° POINT

BODY DIAMETER	FLUTE LENGTH	OVERALL LENGTH	90° POINT EDP No.	90° POINT LIST PRICE	118° POINT EDP No.	118° POINT LIST PRICE
1/8	3/8	1-1/4	360E108	$4.31	365E108	$4.31
3/16	1/2	1-3/8	360E112	5.35	365E112	5.35
1/4	5/8	1-1/2	360E116	6.66	365E116	6.66
5/16	5/8	1-1/2	360E120	9.00	365E120	9.00
3/8	1"	2"	360E124	9.14	365E124	9.14
7/16	1"	2"	360E128	12.53	365E128	12.53
1/2	1"	2"	360E132	15.01	365E132	15.01
9/16	1"	2"	360E136	21.40	365E136	21.40
5/8	1-1/8	2-1/4	360E140	24.80	365E140	24.80
3/4	1-1/8	2-1/4	360E148	42.15	365E148	42.15
7/8	1-1/4	2-1/2	360E156	45.15	365E156	45.15
1"	1-1/4	2-1/2	360E164	65.77	365E164	65.77
1-1/4	2"	4"	360E216	127.63	365E216	127.63
1-1/2	2-1/2	5"	360E232	198.88	365E232	198.88
1-3/4	2-3/4	5-1/2	360E248	300.15	365E248	300.15

PILOT DRILL FOR WHOLESAWS

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.

SERIES 400P



DRILL SIZE	FLUTE LENGTH	OAL	EDP NUMBER	LIST PRICE
1/4"	1-5/16	4"	400P116	$3.96

CENTERING DRILLS — HIGH SPEED DRILLS



Very short flute and overall length, designed for centering work, where their extreme rigidity reduces runout and eccentricity. For the same reason on larger sizes, they have been successful as starting drills in screw machine drilling.

SERIES 370 — 90° POINT — SERIES 375 — 120° POINT

BODY DIAMETER	FLUTE LENGTH	OVERALL LENGTH	90° POINT EDP No.	90° POINT LIST PRICE	120° POINT EDP No,	120° POINT LIST PRICE
1/4	3/4	2-1/2	370E1162	$7.18	375E1162	$7.18
1/4	3/4	4"	370E1164	8.87	375E1164	8.87
1/4	3/4	6"	370E1166	11.40	375E1166	11.40
3/8	1-1/8	3-1/8	370E1243	16.57	375E1243	16.57
3/8	1-1/8	5"	370E1245	21.01	375E1245	21.01
3/8	1-1/8	7"	370E1247	25.19	375E1247	25.19
1/2	1-3/8	3-3/4	370E1323	22.84	375E1323	22.84
1/2	1-3/8	6"	370E1326	31.84	375E1326	31.84
1/2	1-3/8	8"	370E1328	39.41	375E1328	39.41
5/8	1-5/8	4-3/8	370E1404	36.02	375E1404	36.02
5/8	1-5/8	7"	370E1407	50.37	375E1407	50.37
5/8	1-5/8	9"	370E1409	64.47	375E1409	64.47
3/4	1-7/8	5"	370E1485	54.16	375E1485	54.16
3/4	1-7/8	8"	370E1488	76.73	375E1488	76.73
3/4	1-7/8	10"	370E14810	94.74	375E14810	94.74
1"	2-1/4	6"	370E1646	109.10	375E1646	109.10
1"	2-1/4	8"	370E1648	115.10	375E1648	115.10
1"	2-1/4	10"	370E16410	142.51	375E16410	142.51

TiN Coated Jobber Length Drills

HIGH SPEED STEEL TITANIUM NITRITE COATED GOLD FINISH



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.

Packaging: 1/16" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack. #1 thru #40, 12 per pack.

MADE IN USA SERIES 200T 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1-7/8	200T104	$4.09
5/64	1"	2"	200T105	4.09
3/32	1-1/4	2-1/4	200T106	4.09
7/64	1-1/2	2-5/8	200T107	4.18
1/8	1-5/8	2-3/4	200T108	4.18
9/64	1-3/4	2-7/8	200T109	4.74
5/32	2"	3-1/8	200T110	4.87
11/64	2-1/8	3-1/4	200T111	5.13
3/16	2-5/16	3-1/2	200T112	5.44
13/64	2-7/16	3-5/8	200T113	7.40
7/32	2-1/2	3-3/4	200T114	7.70
15/64	2-5/8	3-7/8	200T115	7.96
1/4	2-3/4	4"	200T116	8.22
17/64	2-7/8	4-1/8	200T117	12.62

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	2-15/16	4-1/4	200T118	13.01
19/64	3-1/16	4-3/8	200T119	13.53
5/16	3-3/16	4-1/2	200T120	13.75
21/64	3-5/16	4-5/8	200T121	17.49
11/32	3-7/16	4-3/4	200T122	18.40
23/64	3-1/2	4-7/8	200T123	18.36
3/8	3-5/8	5"	200T124	19.75
25/64	3-3/4	5-1/8	200T125	22.01
13/32	3-7/8	5-1/4	200T126	22.92
27/64	3-15/16	5-3/8	200T127	23.62
7/16	4-1/16	5-1/2	200T128	24.66
29/64	4-3/16	5-5/8	200T129	27.32
15/32	4-5/16	5-3/4	200T130	28.54
31/64	4-3/8	5-7/8	200T131	29.32
1/2	4-1/2	6"	200T132	30.10

MADE IN USA SERIES 280T 118° POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	280T001	$8.92
2	2-5/8	3-7/8	280T002	8.92
3	2-1/2	3-3/4	280T003	8.92
4	2-1/2	3-3/4	280T004	8.92
5	2-1/2	3-3/4	280T005	8.92
6	2-1/2	3-3/4	280T006	8.92
7	2-7/16	3-5/8	280T007	8.05
8	2-7/16	3-5/8	280T008	8.05
9	2-7/16	3-5/8	280T009	8.05
10	2-7/16	3-5/8	280T010	8.05
11	2-5/16	3-1/2	280T011	7.70
12	2-5/16	3-1/2	280T012	7.70
13	2-5/16	3-1/2	280T013	7.66
14	2-3/16	3-3/8	280T014	7.66
15	2-3/16	3-3/8	280T015	7.66
16	2-3/16	3-3/8	280T016	7.66
17	2-3/16	3-3/8	280T017	7.66
18	2-1/8	3-1/4	280T018	7.05
19	2-1/8	3-1/4	280T019	7.05
20	2-1/8	3-1/4	280T020	7.05

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	3-1/4	280T021	$6.83
22	2"	3-1/8	280T022	6.83
23	2"	3-1/8	280T023	6.79
24	2"	3-1/8	280T024	6.79
25	1-7/8	3"	280T025	6.79
26	1-7/8	3"	280T026	6.70
27	1-7/8	3"	280T027	6.70
28	1-3/4	2-7/8	280T028	6.53
29	1-3/4	2-7/8	280T029	6.53
30	1-5/8	2-3/4	280T030	4.35
31	1-5/8	2-3/4	280T031	4.35
32	1-5/8	2-3/4	280T032	4.35
33	1-1/2	2-5/8	280T033	4.35
34	1-1/2	2-5/8	280T034	4.35
35	1-1/2	2-5/8	280T035	4.35
36	1-7/16	2-1/2	280T036	4.35
37	1-7/16	2-1/2	280T037	4.35
38	1-7/16	2-1/2	280T038	4.35
39	1-3/8	2-3/8	280T039	4.35
40	1-3/8	2-3/8	280T040	4.35

TiN Coated Jobber Length Drills

HIGH SPEED STEEL TITANIUM NITRITE COATED GOLD FINISH



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.

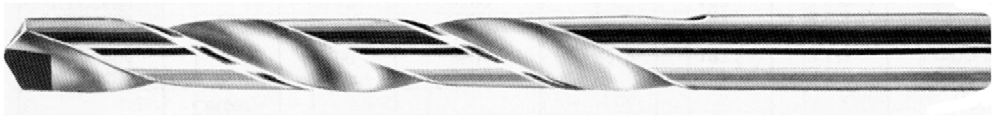
Packaging: 1/16" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack.

MADE IN USA SERIES 400T 135° SPLIT POINT

FRACTIONAL SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/16	7/8	1-7/8	400T104	**$5.05**
5/64	1"	2"	400T105	**5.13**
3/32	1-1/4	2-1/4	400T106	**5.13**
7/64	1-1/2	2-5/8	400T107	**5.44**
1/8	1-5/8	2-3/4	400T108	**5.44**
9/64	1-3/4	2-7/8	400T109	**5.83**
5/32	2"	3-1/8	400T110	**6.74**
11/64	2-1/8	3-1/4	400T111	**6.83**
3/16	2-5/16	3-1/2	400T112	**7.13**
13/64	2-7/16	3-5/8	400T113	**7.92**
7/32	2-1/2	3-3/4	400T114	**8.27**
15/64	2-5/8	3-7/8	400T115	**8.61**
1/4	2-3/4	4"	400T116	**8.74**
17/64	2.78	4-1/8	400T117	**13.05**
9/32	2-15/16	4-1/4	400T118	**13.44**
19/64	3-1/16	4-3/8	400T119	**13.96**
5/16	3-3/16	4-1/2	400T120	**17.10**
21/64	3-5/16	4-5/8	400T121	**20.31**
11/32	3-7/16	4-3/4	400T122	**20.97**
23/64	3-1/2	4-7/8	400T123	**22.19**
3/8	3-5/8	5"	400T124	**24.45**
25/64	3-3/4	5-1/8	400T125	**27.49**
13/32	3-7/8	5-1/4	400T126	**27.49**
27/64	3-15/16	5-3/8	400T127	**29.10**
7/16	4-1/16	5-1/2	400T128	**29.67**
29/64	4-3/16	5-5/8	400T129	**31.62**
15/32	4-5/16	5-3/4	400T130	**33.76**
31/64	4-3/8	5-7/8	400T131	**34.23**
1/2	4-1/2	6"	400T132	**34.45**

Carbide Tipped Jobber Drills

TUNGSTEN CARBIDE TIPPED HIGH SPEED STEEL BODIES



Carbide Tipped jobbers length drills are primarily for drilling cast iron, cast steel, bronze, hard copper, aluminum and hard non-ferrous materials which have a high degree of abrasiveness and which requires a sturdy drill for strength. They are made with the tips brazed in hardened steel bodies.

Packaging: All sizes are individually packaged.

MADE IN USA SERIES 600 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
7/64	1-1/2	2-5/8	600A107	**$23.45**
1/8	1-5/8	2-3/4	600A108	**23.45**
9/64	1-3/4	2-7/8	600A109	**24.80**
5/32	2"	3-1/8	600A110	**24.80**
11/64	2-1/8	3-1/4	600A111	**26.49**
3/16	2-5/16	3-1/2	600A112	**26.49**
13/64	2-7/16	3-5/8	600A113	**28.88**
7/32	2-1/2	3-3/4	600A114	**28.88**
15/64	2-5/8	3-7/8	600A115	**31.23**
1/4	2-3/4	4"	600A116	**31.23**
17/64	2-7/8	4-1/8	600A117	**36.71**
9/32	2-15/16	4-1/4	600A118	**36.71**
19/64	3-1/16	4-3/8	600A119	**39.72**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
5/16	3-3/16	4-1/2	600A120	**$39.72**
21/64	3-5/16	4-5/8	600A121	**42.20**
11/32	3-7/16	4-3/4	600A122	**42.20**
23/64	3-1/2	4-7/8	600A123	**44.85**
3/8	3-5/8	5"	600A124	**44.85**
25/64	3-3/4	5-1/8	600A125	**48.85**
13/32	3-7/8	5-1/4	600A126	**48.85**
27/64	3-15/16	5-3/8	600A127	**52.94**
7/16	4-1/16	5-1/2	600A128	**52.94**
29/64	4-3/16	5-5/8	600A129	**59.51**
15/32	4-5/16	5-3/4	600A130	**59.51**
31/64	4-3/8	5-7/8	600A131	**66.60**
1/2	4-1/2	6"	600A132	**66.60**

MADE IN USA SERIES 680 118° POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	3-7/8	680A001	**$29.62**
2	2-5/8	3-7/8	680A002	**29.62**
3	2-1/2	3-3/4	680A003	**28.01**
4	2-1/2	3-3/4	680A004	**28.01**
5	2-1/2	3-3/4	680A005	**28.01**
6	2-1/2	3-3/4	680A006	**28.01**
7	2-7/16	3-5/8	680A007	**28.01**
8	2-7/16	3-5/8	680A008	**28.01**
9	2-7/16	3-5/8	680A009	**28.01**
10	2-7/16	3-5/8	680A010	**27.45**
11	2-5/16	3-1/2	680A011	**27.45**
12	2-5/16	3-1/2	680A012	**27.45**
13	2-5/16	3-1/2	680A013	**26.49**
14	2-3/16	3-3/8	680A014	**26.49**
15	2-3/16	3-3/8	680A015	**26.49**
16	2-3/16	3-3/8	680A016	**26.49**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
17	2-3/16	2-3/8	680A017	**$26.49**
18	2-1/8	3-1/4	680A018	**26.49**
19	2-1/8	3-1/4	680A019	**26.49**
20	2-1/8	3-1/4	680A020	**26.49**
21	2-1/8	3-1/4	680A021	**26.49**
22	2"	3-1/8	680A022	**26.71**
23	2"	3-1/8	680A023	**25.01**
24	2"	3-1/8	680A024	**25.01**
25	1-7/8	3"	680A025	**25.01**
26	1-7/8	3"	680A026	**25.01**
27	1-7/8	3"	680A027	**25.01**
28	1-3/4	2-7/8	680A028	**25.01**
29	1-3/4	2-7/8	680A029	**24.53**
30	1-5/8	2-3/4	680A030	**23.84**
31	1-5/8	2-3/4	680A031	**23.84**
32	1-5/8	2-3/4	680A032	**23.84**

Carbide Tipped "Stuby" Drills

TUNGSTEN CARBIDE TIPPED HIGH SPEED STEEL BODIES



Reduced feed pressure requirements of the split point and the increased edge strength of the 135° faceted point combine to tackle highly abrasive and tough-to-drill solid or laminate material applications. Eight facet corner breaks, tang drive, and intermediate or metric sizes are available (priced on quantity). They are made with the tips brazed in hardened steel bodies.
Packaging: All sizes are individually packaged.

MADE IN USA SERIES 650 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/8	7/8	1-7/8	650A108	**$27.99**
9/64	1"	2-1/16	650A109	**36.83**
5/32	1"	2-1/16	650A110	**29.64**
11/64	1-1/8	2-3/16	650A111	**33.16**
3/16	1-1/8	2-3/16	650A112	**31.57**
#7	1-1/4	2-3/8	650A007	**47.52**
13/64	1-1/4	2-3/8	650A113	**36.20**
#3	1-1/4	2-3/8	650A003	**47.52**
7/32	1-1/4	2-3/8	650A114	**34.49**
#1	1-3/8	2-1/2	650A001	**47.52**
15/64	1-3/8	2-1/2	650A115	**41.02**
"D"	1-3/8	2-1/2	650A504	**47.52**
1/4	1-3/8	2-1/2	650A116	**36.55**
"F"	1-1/2	2-11/16	650A506	**55.11**
"G"	1-1/2	2-11/16	650A507	**55.11**
17/64	1-1-2	2-11/16	650A117	**45.35**
"H"	1-1/2	2-11/16	650A508	**55.11**
"I"	1-1/2	2-11/16	650A509	**55.11**
9/32	1-1/2	2-11/16	650A118	**42.02**
19/64	1-5/8	2-13/16	650A119	**52.10**
5/16	1-5/8	2-13/16	650A120	**44.85**
"O"	1-5/8	2-13/16	650A515	**68.30**
21/64	1-11/16	3"	650A121	**55.33**
"Q"	1-11/16	3"	650A517	**68.30**
'R"	1-11/16	3"	650A518	**68.30**
11/32	1-11/16	3"	650A122	**52.10**
23/64	1-13/16	3-1/8	650A123	**56.98**
"U"	1-13/16	3-1/8	650A521	**69.89**
3/8	1-13/16	3-1/8	650A124	**53.47**
"W"	1-15/16	3-5/16	650A523	**79.68**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
25/64	1-15/16	3-5/16	650A125	**$63.42**
"X"	1-15/16	3-5/16	650A524	**79.68**
13/32	1-15/16	3-5/16	650A126	**63.42**
27/64	2-1/16	3-7/16	650A127	**68.99**
7/16	2-1/16	3-7/16	650A128	**64.79**
29/64	2-1/8	3-5/8	650A129	**99.84**
15/32	2-1/8	3-5/8	650A130	**96.51**
31/64	2-1/4	3-3/4	650A131	**95.70**
1/2	2-1/4	3-3/4	650A132	**92.37**
17/32	2-3/8	3-7/8	650A134	**129.02**
9/16	2-1/2	4"	650A136	**129.02**
19/32	2-5/8	4-1/8	650A138	**147.93**
5/8	2-3/4	4-1/4	650A140	**147.93**
21/32	2-7/8	4-1/2	650A142	**177.89**
11/16	2-7/8	4-5/8	650A144	**182.45**
23/32	3"	4-3/4	650A146	**213.03**
3/4	3-1/8	5"	650A148	**207.29**
25/32	3-1/4	5-1/8	650A150	**263.56**
13/16	3-3/8	5-1/4	650A152	**256.38**
27/32	3-1/2	5-3/8	650A154	**289.04**
7/8	3-1/2	5-1/2	650A156	**281.25**
29/32	3-5/8	5-5/8	650A158	**310.50**
15/16	3-3/4	5-3/4	650A160	**302.03**
31/62	3-7/8	5-7/8	650A162	**327.98**
1"	4"	6"	650A164	**319.18**
1-1/16	4"	6-1/4	650A204	**399.79**
1-1/8	4"	6-3/8	650A208	**443.75**
1-3/16	4-1/4	6-5/8	650A212	**538.24**
1-1/4	4-3/8	6-3/4	650A216	**538.24**
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Nitro Screw Machine Drills

HIGH SPEED STEEL M-7N | **HEAVY DUTY** | **BRONZE & BLACK FINISH**

"STUBY"



Same as *Nitro* on page 20, but shorter overall and flute lengths.

MADE IN USA | **SERIES 300N** | **135° SPLIT POINT**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	5/8	1-5/8	300N104	**$1.43**
5/64	11/16	1-11/16	300N105	**1.60**
3/32	3/4	1-3/4	300N106	**1.62**
7/64	13/16	1-13/16	300N107	**1.62**
1/8	7/8	1-7/8	300N108	**1.85**
9/64	15/16	1-15/16	300N109	**1.85**
5/32	1"	2-1/16	300N110	**2.01**
11/64	1-1/16	2-1/8	300N111	**2.03**
3/16	1-1/8	2-3/16	300N112	**2.39**
13/64	1-3/16	2-1/4	300N113	**2.60**
7/32	1-1/4	2-3/8	300N114	**3.00**
15/64	1-5/16	2-7/16	300N115	**3.13**
1/4	1-3/8	2-1/2	300N116	**3.22**
17/64	1-7/16	2-5/8	300N117	**4.14**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	1-1/2	2-11/16	300N118	**$4.68**
19/64	1-9/16	2-3/4	300N119	**5.22**
5/16	1-5/8	2-13/16	300N120	**5.29**
21/64	1-11/16	2-15/16	300N121	**6.03**
11/32	1-11/16	3"	300N122	**6.59**
23/64	1-3/4	3-1/16	300N123	**7.48**
3/8	1-13/16	3-1/8	300N124	**7.56**
25/64	1-7/8	3-1/4	300N125	**9.01**
13/32	1-15/16	3-5/16	300N126	**9.33**
27/64	2"	3-3/8	300N127	**10.30**
7/16	2-1/16	3-7/16	300N128	**11.14**
29/64	2-1/8	3-9/16	300N129	**12.51**
15/32	2-1/8	3-5/8	300N130	**12.96**
31/64	2-3/16	3-11/16	300N131	**13.72**
1/2	2-1/4	3-3/4	300N132	**13.72**

Screw Machine Length Drills



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 normally furnished, wide applications have been found in machine and portable drilling.
Packaging: 1/16" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack.

MADE IN USA | **SERIES 300** | **135° SPLIT POINT**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	5/8	1-5/8	300A104	**$1.31**
5/64	11/16	1-11/16	300A105	**1.31**
3/32	3/4	1-3/4	300A106	**1.26**
7/64	13/16	1-13/16	300A107	**1.26**
1/8	7/8	1-7/8	300A108	**1.26**
9/64	15/16	1-15/16	300A109	**1.39**
5/32	1"	2-1/16	300A110	**1.78**
11/64	1-1/16	2-1/8	300A111	**1.91**
3/16	1-1/8	2-3/16	300A112	**2.04**
13/64	1-3/16	2-1/4	300A113	**2.26**
7/32	1-1/4	2-3/8	300A114	**2.52**
15/64	1-5/16	2-7/16	300A115	**2.61**
1/4	1-3/8	2-1/2	300A116	**2.70**
17/64	1-7/16	2-5/8	300A117	**3.74**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	1-1/2	2-11/16	300A118	**$3.96**
19/64	1-9/16	2-3/4	300A119	**4.31**
5/16	1-5/8	2-13/16	300A120	**4.52**
21/64	1-11/16	2-15/16	300A121	**5.09**
11/32	1-11/16	3"	300A122	**5.44**
23/64	1-3/4	3-1/16	300A123	**5.79**
3/8	1-13/16	3-1/8	300A124	**6.26**
25/64	1-7/8	3-1/4	300A125	**6.79**
13/32	1-15/16	3-5/16	300A126	**7.35**
27/64	2"	3-3/8	300A127	**7.79**
7/16	2-1/16	3-7/16	300A128	**8.53**
29/64	2-1/8	3-9/16	300A129	**9.05**
15/32	2-1/8	3-5/8	300A130	**9.87**
31/64	2-3/16	3-11/16	300A131	**10.31**
1/2	2-1/4	3-3/4	300A132	**10.88**

Screw Machine Length Drills

HIGH SPEED M-7 STEEL **HEAVY DUTY** **SURFACE TREATED**



Same as on page 16, but shorter overall and flute lengths. Packaging: #1 thru #60, 12 per pack.

MADE IN USA **SERIES 380** **135° SPLIT POINT**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	1-5/16	2-7/16	380A001	$2.65
2	1-5/16	2-7/16	380A002	2.65
3	1-1/4	2-3/8	380A003	2.48
4	1-1/4	2-3/8	380A004	2.48
5	1-1/4	2-3/8	380A005	2.48
6	1-1/4	2-3/8	380A006	2.48
7	1-3/16	2-1/4	380A007	2.26
8	1-3/16	2-1/4	380A008	2.26
9	1-3/16	2-1/4	380A009	2.26
10	1-3/16	2-1/4	380A010	2.13
11	1-3/16	2-1/4	380A011	2.13
12	1-3/16	2-1/4	380A012	2.13
13	1-1/8	2-3/16	380A013	2.09
14	1-1/8	2-3/16	380A014	2.00
15	1-1/8	2-3/16	380A015	2.00
16	1-1/8	2-3/16	380A016	2.00
17	1-1/8	2-3/16	380A017	1.96
18	1-1/16	2-1/8	380A018	1.91
19	1-1/16	2-1/8	380A019	1.87
20	1-1/16	2-1/8	380A020	1.83
21	1-1/16	2-1/8	380A021	1.78
22	1-1/16	2-1/8	380A022	1.78
23	1"	2-1/16	380A023	1.74
24	1"	2-1/16	380A024	1.74
25	1"	2-1/16	380A025	1.57
26	1"	2-1/16	380A026	1.57
27	1"	2-1/16	380A027	1.57
28	15/16	1-15/16	380A028	1.44
29	15/16	1-15/16	380A029	1.44
30	15/16	1-15/16	380A030	1.39

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	7/8	1-7/8	380A031	$1.31
32	7/8	1-7/8	380A032	1.26
33	7/8	1-7/8	380A033	1.22
34	7/8	1-7/8	380A034	1.22
35	7/8	1-7/8	380A035	1.22
36	13/16	1-13/16	380A036	1.22
37	13/16	1-13/16	380A037	1.22
38	13/16	1-13/16	380A038	1.22
39	13/16	1-13/16	380A039	1.22
40	13/16	1-13/16	380A040	1.22
41	13/16	1-13/16	380A041	1.22
42	3/4	1-3/4	380A042	1.22
43	3/4	1-3/4	380A043	1.22
44	3/4	1-3/4	380A044	1.22
45	3/4	1-3/4	380A045	1.22
46	3/4	1-3/4	380A046	1.22
47	11/16	1-11/16	380A047	1.22
48	11/16	1-11/16	380A048	1.22
49	11/16	1-11/16	380A049	1.22
50	11/16	1-11/16	380A050	1.22
51	11/16	1-11/16	380A051	1.22
52	11/16	1-11/16	380A052	1.22
*53	5/8	1-5/8	380A053	1.22
*54	5/8	1-5/8	380A054	1.22
*55	5/8	1-5/8	380A055	1.22
*56	1/2	1-3/8	380A056	1.22
*57	1/2	1-3/8	380A057	1.44
*58	1/2	1-3/8	380A058	1.44
*59	1/2	1-3/8	380A059	1.52
*60	1/2	1-3/8	380A060	1.52

Double & Single End Sheeters

* NOT SPLIT POINT



Packaging: 7/64" thru 1/4" & #11 thru #30, 12 per pack.



Packaging: 7/64" thru 1/4" & #30, 12 per pack.

DOUBLE END **SERIES 330**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
7/64	1/2	1-7/8	330A107	$1.94
1/8	1/2	2"	330A108	1.98
9/64	1/2	2"	330A109	2.22
5/32	1/2	2-1/16	330A110	2.45
3/16	1/2	2-3/16	330A112	3.14
7/32	1/2	2-3/8	330A114	4.06
1/4	1/2	2-1/2	330A116	4.61
#11	1/2	2-1/4	330A011	3.73
#20	1/2	2-1/8	330A020	3.18
#30	1/2	2"	330A030	1.98

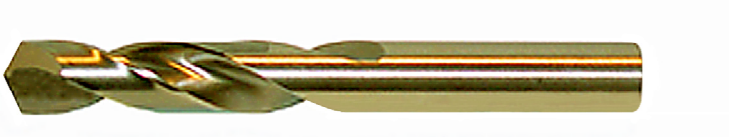
SINGLE END **SERIES 320**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
7/64	-----	-----	-----	-----
1/8	1/2	1-7/8	320A108	$1.43
9/64	1/2	1-15/16	320A109	1.47
5/32	1/2	2-1/16	320A110	1.66
3/16	1/2	2-3/16	320A112	2.16
1/4	1/2	2-1/2	320A116	3.28
#30	1/2	1-15/16	320A030	1.47
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Cobalt Screw Machine Drills

COBALT M-42 | **HEAVY DUTY** | **GOLD FINISH**

"STUBY"



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 normally furnished, wide applications have been found in machine and portable drilling.

Packaging: 1/16" thru 19/64" and #1 thru #40, 12 per pack. 5/16" thru 1/2", 6 per pack.

MADE IN USA — SERIES 300C — 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	5/8	1-5/8	300C104	$2.31
5/64	11/16	1-11/16	300C105	2.31
3/32	3/4	1-3/4	300C106	2.31
7/64	13/16	1-13/16	300C107	2.61
1/8	7/8	1-7/8	300C108	3.05
9/64	15/16	1-15/16	300C109	3.05
5/32	1"	2-1/16	300C110	3.35
11/64	1-1/16	2-1/8	300C111	3.74
3/16	1-1/8	2-3/16	300C112	4.39
13/64	1-3/16	2-1/4	300C113	5.05
7/32	1-1/4	2-3/8	300C114	5.57
15/64	1-5/16	2-7/16	300C115	5.96
1/4	1-3/8	2-1/2	300C116	6.18
17/64	1-7/16	2-5/8	300C117	7.09

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	1-1/2	2-11/16	300C118	$7.70
19/64	1-9/16	2-3/4	300C119	8.92
5/16	1-5/8	2-13/16	300C120	9.92
21/64	1-11/16	2-15/16	300C121	10.57
11/32	1-11/16	3"	300C122	11.48
23/64	1-3/4	3-1/16	300C123	13.22
3/8	1-13/16	3-1/8	300C124	13.22
25/64	1-7/8	3-1/4	300C125	15.09
13/32	1-15/16	3-5/16	300C126	15.62
27/64	2"	3-3/8	300C127	17.27
7/16	2-1/16	3-7/16	300C128	17.75
29/64	2-1/8	3-9/16	300C129	21.27
15/32	2-1/8	3-5/8	300C130	21.27
31/64	2-3/16	3-11/16	300C131	21.27
1/2	2-1/4	3-3/4	300C132	21.10

MADE IN USA — SERIES 380C — 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	1-5/16	2-7/16	380C001	$6.87
2	1-5/16	2-7/16	380C002	6.87
3	1-1/4	2-3/8	380C003	6.87
4	1-1/4	2-3/8	380C004	6.13
5	1-1/4	2-3/8	380C005	6.13
6	1-1/4	2-3/8	380C006	6.13
7	1-3/16	2-1/4	380C007	4.79
8	1-3/16	2-1/4	380C008	4.74
9	1-3/16	2-1/4	380C009	4.74
10	1-3/16	2-1/4	380C010	4.74
11	1-3/16	2-1/4	380C011	4.65
12	1-3/16	2-1/4	380C012	4.65
13	1-1/8	2-3/16	380C013	4.61
14	1-1/8	2-3/16	380C014	4.61
15	1-1/8	2-3/16	380C015	4.61
16	1-1/8	2-3/16	380C016	4.57
17	1-1/8	2-3/16	380C017	4.39
18	1-1/16	2-1/8	380C018	3.70
19	1-1/16	2-1/8	380C019	3.57
20	1-1/16	2-1/8	380C020	3.57

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21	1-1/16	2-1/8	380C021	$3.57
22	1-1/16	2-1/8	380C022	3.57
23	1"	2-1/16	380C023	3.57
24	1"	2-1/16	380C024	3.57
25	1"	2-1/16	380C025	3.35
26	1"	2-1/16	380C026	3.35
27	1"	2-1/16	380C027	3.35
28	15/16	1-15/16	380C028	3.05
29	15/16	1-15/16	380C029	3.05
30	15/16	1-15/16	380C030	2.87
31	7/8	1-7/8	380C031	2.87
32	7/8	1-7/8	380C032	2.87
33	7/8	1-7/8	380C033	2.74
34	7/8	1-7/8	380C034	2.74
35	7/8	1-7/8	380C035	2.74
36	13/16	1-13/16	380C036	2.74
37	13/16	1-13/16	380C037	2.74
38	13/16	1-13/16	380C038	2.52
39	13/16	1-13/16	380C039	2.52
40	13/16	1-13/16	380C040	2.52

Screw Machine Length Drills

HIGH SPEED M-2 STEEL **HEAVY DUTY** **SURFACE TREATED**



"STUBY"

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 normally furnished, wide applications have been found in machine and portable drilling.

Packaging: 1/16" thru 19/64", 12 per pack. 5/16" thru 1/2", 6 per pack.

IMPORT **SERIES 300E** **135° SPLIT POINT**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	5/8	1-5/8	300E104	**$1.04**
5/64	11/16	1-11/16	300E105	**1.04**
3/32	3/4	1-3/4	300E106	**1.00**
7/64	13/16	1-13/16	300E107	**1.00**
1/8	7/8	1-7/8	300E108	**1.00**
#30	15/16	1-15/16	380E030	**1.00**
9/64	15/16	1-15/16	300E109	**1.13**
5/32	1"	2-1/16	300E110	**1.44**
11/64	1-1/16	2-1/8	300E111	**1.52**
3/16	1-1/8	2-3/16	300E112	**1.65**
13/64	1-3/16	2-1/4	300E113	**1.83**
7/32	1-1/4	2-3/8	300E114	**2.00**
15/64	1-5/16	2-7/16	300E115	**2.09**
1/4	1-3/8	2-1/2	300E116	**2.18**
17/64	1-7/16	2-5/8	300E117	**3.00**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	1-1/2	2-11/16	300E118	**$3.18**
19/64	1-9/16	2-3/4	300E119	**3.44**
5/16	1-5/8	2-13/16	300E120	**3.61**
21/64	1-11/16	2-15/16	300E121	**4.09**
11/32	1-11/16	3"	300E122	**4.35**
23/64	1-3/4	3-1/16	300E123	**4.61**
3/8	1-13/16	3-1/8	300E124	**5.00**
25/64	1-7/8	3-1/4	300E125	**5.44**
13/32	1-15/16	3-5/16	300E126	**5.87**
27/64	2"	3-3/8	300E127	**6.22**
7/16	2-1/16	3-7/16	300E128	**6.83**
29/64	2-1/8	3-9/16	300E129	**7.22**
15/32	2-1/8	3-5/8	300E130	**7.92**
31/64	2-3/16	3-11/16	300E131	**8.27**
1/2	2-1/4	3-3/4	300E132	**8.70**

Multi Step Drills

50 HOLE SIZES WITH ONLY 5 STEP DRILLS



Packaging: All sizes are individually packaged.

USA **SERIES 8900** **BRIGHT FINISH**

TOOL NUMBER	MAXIMUM SIZE	MINIMUM SIZE	STEP INCREMENTS	SHANK SIZE	NUMBER OF STEPS	EDP NUMBERS	LIST PRICE
1	1/2	1/8	1/32	1/4	13	890A001	**$40.56**
2	1/2	3/16	1/16	1/4	6	890A002	**40.74**
3	3/4	1/4	1/16	3/8	9	890A003	**48.24**
4	7/8	3/16	1/16	3/8	12	890A004	**52.30**
5	1-3/8	1/4	1/16	1/2	10	890A005	**78.46**

1/2" Shank S & D Drills

HIGH SPEED STEEL **3" of FLUTE — 6" OAL** **BRIGHT & BLACK**



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 low and medium tensile strength materials.

Packaging: All sizes are individually packaged.

MADE IN USA **SERIES 1000** **118° POINT**

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
33/64	1000A133	$24.84
17/32	1000A134	24.84
35/64	1000A135	26.49
9/16	1000A136	26.23
37/64	1000A137	28.32
19/32	1000A138	28.32
39/64	1000A139	29.54
5/8	1000A140	29.54
41/64	1000A141	31.23
21/32	1000A142	31.23
43/64	1000A143	32.71
11/16	1000A144	32.71
45/64	1000A145	34.19
23/32	1000A146	34.19
47/64	1000A147	35.76
3/4	1000A148	35.76
49/64	1000A149	37.54
25/32	1000A150	37.54
51/64	1000A151	40.15
13/16	1000A152	40.15
53/64	1000A153	42.06
27/32	1000A154	42.06
55/64	1000A155	43.28
7/8	1000A156	43.28
57/64	1000A157	45.46
29/32	1000A158	45.46
59/64	1000A159	49.07

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
15/16	1000A160	$49.07
61/64	1000A161	53.20
31/32	1000A162	53.20
63/64	1000A163	56.07
1"	1000A164	56.07
1-1/64	1000A201	82.43
1-1/32	1000A202	82.43
1-3/64	1000A203	82.43
1-1/16	1000A204	82.43
1-5/64	1000A205	90.18
1-3/32	1000A206	90.18
1-7/64	1000A207	90.18
1-1/8	1000A208	90.18
1-9/64	1000A209	96.00
1-5/32	1000A210	96.00
1-11/64	1000A211	96.00
1-3/16	1000A212	96.00
1-13/64	1000A213	105.84
1-7/32	1000A214	105.84
1-15/64	1000A215	105.84
1-1/4	1000A216	105.84
1-9/32	1000A218	115.58
1-5/16	1000A220	115.58
1-3/8	1000A224	127.50
1-7/16	1000A228	146.94
1-1/2	1000A232	152.95

S & D Extensions



TOOL NUMBER	SHANK SIZE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
E6	1/2"	6"	1000A006	$182.70
E9	1/2"	9"	1000A009	195.75
E12	1/2"	12"	1000A012	208.80

1/2" Shank S & D Drills

HIGH SPEED STEEL **3" of FLUTE — 6" OAL** **BRIGHT & BLACK**

THREE FLATS ON 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 low and medium tensile strength materials.

Packaging: All sizes are individually packaged.

MADE IN USA **SERIES 1000F** **118° SPLIT POINT**

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
33/64	1000F133	$27.01
17/32	1000F134	27.01
35/64	1000F135	28.67
9/16	1000F136	28.67
37/64	1000F137	30.89
19/32	1000F138	30.89
39/64	1000F139	31.71
5/8	1000F140	31.71
41/64	1000F141	33.41
21/32	1000F142	33.41
43/64	1000F143	34.89
11/16	1000F144	34.89
45/64	1000F145	36.37
23/32	1000F146	36.37
47/64	1000F147	37.93
3/4	1000F148	37.93
49/64	1000F149	40.80
25/32	1000F150	40.80
51/64	1000F151	43.41
13/16	1000F152	43.41
53/64	1000F153	45.33
27/32	1000F154	45.33
55/64	1000F155	46.55
7/8	1000F156	46.55
57/64	1000F157	48.72
29/32	1000F158	48.72
59/64	1000F159	52.33

FRACACTIONAL SIZES	EDP NUMBER	LIST PRICE
15/16	1000F160	$52.33
61/64	1000F161	56.46
31/32	1000F162	56.46
63/64	1000F163	59.33
1"	1000F164	59.33
1-1/64	1000F201	-----
1-1/32	1000F202	86.78
1-3/64	1000F203	-----
1-1/16	1000F204	86.78
1-5/64	1000F205	-----
1-3/32	1000F206	94.53
1-7/64	1000F207	-----
1-1/8	1000F208	94.53
1-9/64	1000F209	-----
1-5/32	1000F210	100.35
1-11/64	1000F211	-----
1-3/16	1000F212	100.35
1-13/64	1000F213	-----
1-7/32	1000F214	110.19
1-15/64	1000F215	-----
1-1/4	1000F216	110.19
1-9/32	1000F218	-----
1-5/16	1000F220	119.53
1-3/8	1000F224	131.85
1-7/16	1000F228	151.29
1-1/2	1000F232	157.30

1/2" Shank S & D Drills

HIGH SPEED STEEL M-2 3" of FLUTE — 6" OAL BRIGHT & BLACK



Packaging: All sizes are individually packaged.

IMPORT 3 FLATS ON SKANK SERIES 1000E 118° POINT

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
33/64	1000E133	$11.15
17/32	1000E134	11.15
35/64	1000E135	11.92
9/16	1000E136	11.92
37/64	1000E137	12.77
19/32	1000E138	12.77
39/64	1000E139	13.40
5/8	1000E140	13.40
41/64	1000E141	14.29
21/32	1000E142	14.29
43/64	1000E143	14.84
11/16	1000E144	14.84
45/64	1000E145	15.06
23/32	1000E146	15.06
47/64	1000E147	16.33
3/4	1000E148	16.33
49/64	1000E149	17.52
25/32	1000E150	17.52
51/64	1000E151	18.36
13/16	1000E152	18.36
53/64	1000E153	19.00
27/32	1000E154	19.00
55/64	1000E155	19.72
7/8	1000E156	19.72
57/64	1000E157	20.61
29/32	1000E158	20.61
59/64	1000E159	22.05
15/16	1000E160	22.05
61/64	1000E161	23.28
31/32	1000E162	23.28
63/64	1000E163	25.91
1"	1000E164	25.91

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
1-1/64	1000E201	$39.70
1-1/32	1000E202	40.59
1-3/64	1000E203	40.59
1-1/16	1000E204	40.59
1-5/64	1000E205	41.95
1-3/32	1000E206	43.30
1-7/64	1000E207	45.17
1-1/8	1000E208	46.14
1-9/64	1000E209	46.14
1-5/32	1000E210	46.14
1-11/64	1000E211	49.54
1-3/16	1000E212	50.68
1-13/64	1000E213	53.35
1-7/32	1000E214	54.50
1-15/64	1000E215	54.50
1-1/4	1000E216	54.50
1-17/64	1000E217	54.58
1-9/32	1000E218	54.58
1-19/64	1000E219	54.58
1-5/16	1000E220	66.84
1-21/64	1000E221	72.53
1-11/32	1000E222	72.53
1-23/64	1000E223	72.53
1-3/8	1000E224	76.85
1-25/64	1000E225	76.85
1-13/32	1000E226	76.85
1-27/64	1000E227	76.85
1-7/16	1000E228	84.57
1-29/64	1000E229	84.57
1-15/32	1000E230	87.75
1-31/64	1000E231	87.75
1-1/2	1000E232	93.01

3/4" REDUCED SHANK DRILL

IMPORT SERIES 1075E 118° POINT

FRAC SIZES	EDP NUMBER	LIST PRICE
1"	1075E164	$75.69
1-1/16	1075E204	88.74
1-1/8	1075E208	98.53
1-3/16	1075E212	108.75
1-1/4	1075E216	111.80
1-5/16	1075E220	138.98

FRAC SIZES	EDP NUMBER	LIST PRICE
1-3/8	1075E224	$173.13
1-7/16	1075E228	182.05
1-1/2	1075E232	199.45
1-9/16	1075E236	225.11
1-5/8	1075E240	249.47
1-11/16	1075E244	288.62

FRAC SIZES	EDP NUMBER	LIST PRICE
1-3/4	1075E248	$299.50
1-13/16	1075E252	328.43
1-7/8	1075E256	338.00
1-15/16	1075E260	358.44
2"	1075E264	376.71

Reduced Shank Drills

HIGH SPEED STEEL **MADE IN USA** **135° SPLIT POINT**





The same as the *Nitro* drills on page 20, except series 1025N and 1035N have reduced shanks.
Packaging: 17/64" thru 1/2", 6 per pack.

1/4" SHANK SERIES 1025N

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
17/64	2-1/4	3-1/2	1025N117	**$7.57**
9/32	2-1/4	3-9/16	1025N118	**8.18**
19/64	2-3/8	3-11/16	1025N119	**8.70**
5/16	2-1/2	3-13/16	1025N120	**8.96**
21/64	2-9/16	3-15/16	1025N121	**9.87**
11/32	2-5/8	4"	1025N122	**11.18**
23/64	2-3/4	4-1/8	1025N123	**12.53**
3/8	2-7/8	4-1/4	1025N124	**12.88**
25/64	3"	4-5/16	1025N125	**13.62**
13/32	3-1/8	4-7/16	1025N126	**13.96**
27/64	3-1/8	4-9/16	1025N127	**15.23**
7/16	3-3/8	4-11/16	1025N128	**16.23**
29/64	3-3/8	4-3/4	1025N129	**18.49**
15/32	3-1/2	4-7/8	1025N130	**18.57**
31/64	3-1/2	5"	1025N131	**19.31**
1/2	3-5/8	5-1/16	1025N132	**19.66**

3/8" SHANK SERIES 1035N

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
25/64	3-3/4	5-1/8	1035N125	**$11.61**
13/32	3-7/8	5-1/4	1035N126	**11.88**
27/64	3-15/16	5-3/8	1035N127	**12.96**
7/16	4-1/16	5-1/2	1035N128	**13.79**
29/64	4-3/16	5-5/8	1035N129	**15.53**
15/32	4-5/16	5-3/4	1035N130	**15.88**
31/64	4-3/8	5-7/8	1035N131	**16.53**
1/2	4-1/2	6"	1035N132	**16.97**
17/32	4-13/16	6-5/8	1035N134	**30.84**
9/16	4-13/16	6-5/8	1035N136	**32.28**
5/8	5-3/16	7-1/8	1035N140	**34.84**
11/16	5-5/8	7-5/8	1035N144	**38.67**
3/4	6-1/16	8-1/8	1035N148	**41.19**



The same as the jobber drills on page 19, except series 1045N has reduced shanks.
Packaging: 17/64" thru 1/2", 6 per pack.

MECHANICS LENGTH 3/8" SHANK SERIES 1045N 3 FLATS ON SHANK

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
25/64	2-3/4	4-5/16	1045N125	**$12.67**
13/32	2-13/16	4-3/8	1045N126	**12.95**
27/64	2-7/8	4-7/16	1045N127	**14.18**
7/16	2-15/16	4-1/2	1045N128	**15.07**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
29/64	3"	4-5/8	1045N129	**$16.92**
15/32	3-1/8	4-3/4	1045N130	**17.33**
31/64	3-1/4	4-7/8	1045N131	**18.02**
1/2	3-3/8	5"	1045N132	**18.57**

Nitro 1/2" Shank S & D Drills

HIGH SPEED M-7N STEEL 3" of FLUTE — 6" OAL BRONZE & BLACK



Manufactured from a premium grade of M-7N molybdenum high speed steel. The *Nitro* 118° Split Point S & D drill with a Nitride surface treatment, that gives a hard, protective layer to the drill (increases hardness without increasing brittleness), which is measurably harder than high speed steel. Body and clearance are gold and black surface treated for maximum lubricity. Recommended for use in stainless steel and other hard metal drilling. The 118° split point reduces thrust and eliminates walking at the drill point.

Packaging: All sizes are individually packaged.

MADE IN USA SERIES 1000N 118° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LRNGTH	EDP NUMBER	LIST PRICE
33/64	3"	6"	1000N133	**$32.19**
17/32	3"	6"	1000N134	**31.10**
35/64	3"	6"	1000N135	**34.06**
9/16	3"	6"	1000N136	**32.15**
37/64	3"	6"	1000N137	**36.15**
19/32	3"	6"	1000N138	**34.97**
39/64	3"	6"	1000N139	**37.58**
5/8	3"	6"	1000N140	**35.50**
41/64	3"	6"	1000N141	**39.80**
21/32	3"	6"	1000N142	**38.58**
43/64	3"	6"	1000N143	**41.63**
11/16	3"	6"	1000N144	**39.28**
45/64	3"	6"	1000N145	**43.33**
23/32	3"	6"	1000N146	**41.89**
47/64	3"	6"	1000N147	**45.20**
3/4	3"	6"	1000N148	**42.63**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
49/64	3"	6"	1000N149	**$47.76**
25/32	3"	6"	1000N150	**46.20**
51/64	3"	6"	1000N151	**50.81**
13/16	3"	6"	1000N152	**47.94**
53/64	3"	6"	1000N153	**52.98**
27/32	3"	6"	1000N154	**51.24**
55/64	3"	6"	1000N155	**54.42**
7/8	3"	6"	1000N156	**51.37**
57/64	3"	6"	1000N157	**56.85**
29/32	3"	6"	1000N158	**54.94**
59/64	3"	6"	1000N159	**61.07**
15/16	3"	6"	1000N160	**57.59**
61/64	3"	6"	1000N161	**65.73**
31/32	3"	6"	1000N162	**63.60**
63/64	3"	6"	1000N163	**69.08**
1"	3"	6"	1000N164	**65.16**

1/2" Shank S & D Drills

HIGH SPEED STEEL M-2 3" of FLUTE — 6" OAL BRONZE & BLACK

THREE FLATS ON SHANK



Are of general purpose flute design but 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.

Packaging: All sizes are individually packaged.

IMPORT SERIES 1000EF 135° SPLIT POINT

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
33/64	1000EF133	$19.96
17/32	1000EF134	19.96
35/64	1000EF135	21.28
9/16	1000EF136	21.28
37/64	1000EF137	22.73
19/32	1000EF138	22.73
39/64	1000EF139	23.96
5/8	1000EF140	23.96
41/64	1000EF141	25.45
21/32	1000EF142	25.45
43/64	1000EF143	26.71
11/16	1000EF144	26.71
45/64	1000EF145	28.13
23/32	1000EF146	28.13
47/64	1000EF147	29.27
3/4	1000EF148	29.27
49/64	1000EF149	30.96
25/32	1000EF150	30.96
51/64	1000EF151	32.54
13/16	1000EF152	32.54
53/64	1000EF153	33.39
27/32	1000EF154	33.39
55/64	1000EF155	34.90
7/8	1000EF156	34.90

FRACACTIONAL SIZES	EDP NUMBER	LIST PRICE
57/64	1000EF157	$36.48
29/32	1000EF158	36.48
59/64	1000EF159	39.13
15/16	1000EF160	39.13
61/64	1000EF161	41.47
31/32	1000EF162	41.47
63/64	1000EF163	45.43
1"	1000EF164	45.55
1-1/32	1000EF202	53.87
1-1/16	1000EF204	53.87
1-3/32	1000EF206	53.87
1-1/8	1000EF208	53.87
1-5/32	1000EF210	61.28
1-3/16	1000EF212	61.28
1-7/32	1000EF214	61.28
1-1/4	1000EF216	61.28
1-9/32	1000EF218	67.20
1-5/16	1000EF220	67.20
1-11/32	1000EF222	67.20
1-3/8	1000EF224	67.20
1-13/32	1000EF226	74.81
1-7/16	1000EF228	74.81
1-15/32	1000EF230	74.81
1-1/2	1000EF232	74.81

Cobalt 1/2" Shank Drills

COBALT M-42 | **3" of FLUTE — 6" OAL** | **BRONZE FINISH**



Are of general purpose flute design but 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.

Packaging: All sizes are individually packaged.

MADE IN USA | **SERIES 1000C** | **118° POINT**

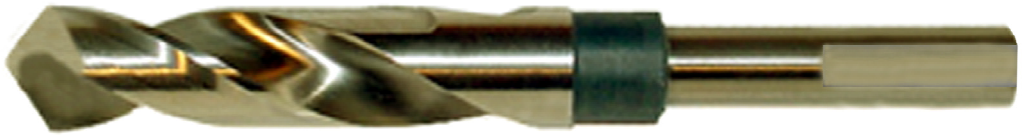
FRAC SIZES	FLUTE LENGTH	OVERALL LRNGTH	EDP NUMBER	LIST PRICE
33/64	3"	6"	1000C133	**$58.38**
17/32	3"	6"	1000C134	**58.38**
35/64	3"	6"	1000C135	**58.38**
9/16	3"	6"	1000C136	**58.38**
37/64	3"	6"	1000C137	**65.69**
19/32	3"	6"	1000C138	**65.69**
39/64	3"	6"	1000C139	**65.69**
5/8	3"	6"	1000C140	**65.69**
41/64	3"	6"	1000C141	**72.86**
21/32	3"	6"	1000C142	**72.86**
43/64	3"	6"	1000C143	**72.86**
11/16	3"	6"	1000C144	**72.86**
45/64	3"	6"	1000C145	**80.48**
23/32	3"	6"	1000C146	**80.48**
47/64	3"	6"	1000C147	**80.48**
3/4	3"	6"	1000C148	**80.48**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
49/64	3"	6"	1000C149	**$89.19**
25/32	3"	6"	1000C150	**89.19**
51/64	3"	6"	1000C151	**89.19**
13/16	3"	6"	1000C152	**89.19**
53/64	3"	6"	1000C153	**96.57**
27/32	3"	6"	1000C154	**96.57**
55/64	3"	6"	1000C155	**96.57**
7/8	3"	6"	1000C156	**96.57**
57/64	3"	6"	1000C157	**107.88**
29/32	3"	6"	1000C158	**107.88**
59/64	3"	6"	1000C159	**107.88**
15/16	3"	6"	1000C160	**107.88**
61/64	3"	6"	1000C161	**125.72**
31/32	3"	6"	1000C162	**125.72**
63/64	3"	6"	1000C163	**125.72**
1"	3"	6"	1000C164	**125.72**

1/2" Shank S & D Drills

COBALT M-42 | **3" of FLUTE — 6" OAL** | **GOLD FINISH**

THREE FLATS ON 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 tensile strength materials. The 135° split point reduces thrust and eliminates walking at the drill point.

Packaging: All sizes are individually packaged.

IMPORT | **SERIES 1000EC** | **135° SPLIT POINT**

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
33/64	1000EC133	$38.85
17/32	1000EC134	37.80
35/64	1000EC135	38.85
9/16	1000EC136	35.58
37/64	1000EC137	43.73
19/32	1000EC138	41.98
39/64	1000EC139	43.73
5/8	1000EC140	40.05
41/64	1000EC141	48.05
21/32	1000EC142	44.46
43/64	1000EC143	48.05
11/16	1000EC144	44.00
45/64	1000EC145	51.57
23/32	1000EC146	49.51
47/64	1000EC147	51.57
3/4	1000EC148	48.99
49/64	1000EC149	60.06
25/32	1000EC150	55.58
51/64	1000EC151	60.06
13/16	1000EC152	55.00
53/64	1000EC153	64.51
27/32	1000EC154	59.69
55/64	1000EC155	64.51
7/8	1000EC156	59.07

FRACACTIONAL SIZES	EDP NUMBER	LIST PRICE
57/64	1000EC157	$72.10
29/32	1000EC158	66.73
59/64	1000EC159	72.10
15/16	1000EC160	66.04
61/64	1000EC161	84.74
31/32	1000EC162	78.46
63/64	1000EC163	84.74
1"	1000EC164	77.64
1-1/32	1000EC202	89.23
1-1/16	1000EC204	100.81
1-3/32	1000EC206	107.75
1-1/8	1000EC208	114.68
1-5/32	1000EC210	120.22
1-3/16	1000EC212	125.75
1-7/32	1000EC214	132.50
1-1/4	1000EC216	139.24
1-9/32	1000EC218	156.02
1-5/16	1000EC220	172.79
1-11/32	1000EC222	185.75
1-3/8	1000EC224	198.70
1-13/32	1000EC226	208.65
1-7/16	1000EC228	218.59
1-15/32	1000EC230	289.61
1-1/2	1000CE232	289.61

Aircraft Extension Drills

HIGH SPEED STEEL 6" OVERALL LENGTH SURFACE TREATED



Manufactured to NAS 907 Type C 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.

Packaging: 1/16" thru 1/2" and #1 thru #40, 6 per pack.

SERIES 1100 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1100A104	**$5.22**
5/64	1"	1100A105	**5.22**
3/32	1-1/4	1100A106	**3.87**
7/64	1-1/2	1100A107	**3.87**
1/8	1-5/8	1100A108	**3.74**
9/64	1-3/4	1100A109	**4.79**
5/32	2"	1100A110	**4.79**
11/64	2-1/8	1100A111	**5.61**
3/16	2-5/16	1100A112	**5.39**
13/64	2-7/16	1100A113	**6.44**
7/32	2-1/2	1100A114	**6.44**
15/64	2-5/8	1100A115	**7.35**
1/4	2-3/4	1100A116	**7.05**
17/64	2-7/8	1100A117	**11.96**
9/32	2-15/16	1100A118	**13.79**

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	1100A119	**$15.57**
5/16	3-3/16	1100A120	**16.57**
21/64	3-5/16	1100A121	**19.92**
11/32	3-7/16	1100A122	**20.31**
23/64	3-1/2	1100A123	**21.00**
3/8	3-5/8	1100A124	**21.58**
25/64	3-3/4	1100A125	**23.27**
13/32	3-7/8	1100A126	**24.14**
27/64	3-15/16	1100A127	**25.45**
7/16	4-1/16	1100A128	**28.58**
29/64	4-3/16	1100A129	**29.23**
15/32	4-5/16	1100A130	**29.23**
31/64	4-3/8	1100A131	**32.49**
1/2	4-1/2	1100A132	**31.10**

MADE IN USA SERIES 1180 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	1180A001	**$7.61**
2	2-5/8	1180A002	**7.61**
3	2-1/2	1180A003	**6.87**
4	2-1/2	1180A004	**6.87**
5	2-1/2	1180A005	**6.87**
6	2-1/2	1180A006	**6.87**
7	2-7/16	1180A007	**6.87**
8	2-7/16	1180A008	**6.74**
9	2-7/16	1180A009	**6.61**
10	2-7/16	1180A010	**5.70**
11	2-5/16	1180A011	**5.70**
12	2-5/16	1180A012	**5.70**
13	2-5/16	1180A013	**5.70**
14	2-3/16	1180A014	**5.70**
15	2-3/16	1180A015	**5.70**
16	2-3/16	1180A016	**5.70**
17	2-3/16	1180A017	**5.70**
18	2-1/8	1180A018	**5.70**
19	2-1/8	1180A019	**5.70**
20	2-1/8	1180A020	**5.22**

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	1180A021	**$5.22**
22	2"	1180A022	**5.22**
23	2"	1180A023	**5.22**
24	2"	1180A024	**5.22**
25	1-7/8	1180A025	**5.22**
26	1-7/8	1180A026	**5.22**
27	1-7/8	1180A027	**5.22**
28	1-3/4	1180A028	**5.22**
29	1-3/4	1180A029	**5.22**
30	1-5/8	1180A030	**4.09**
31	1-5/8	1180A031	**4.26**
32	1-5/8	1180A032	**4.26**
33	1-1/2	1180A033	**4.26**
34	1-1/2	1180A034	**4.26**
35	1-1/2	1180A035	**4.26**
36	1-7/16	1180A036	**4.39**
37	1-7/16	1180A037	**4.39**
38	1-7/16	1180A038	**4.39**
39	1-3/8	1180A039	**4.39**
40	1-3/8	1180A040	**3.87**

Aircraft Extension Drills

HIGH SPEED STEEL 12" OVERALL LENGTH SURFACE TREATED



Manufactured to NAS 907 Type C 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.

Packaging: 1/16" thru 19/64" and #1 thru #40, 6 per pack. 5/16" thru 1/2", 3 per pack.

SERIES 1200 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1200A104	**$8.40**
5/64	1"	1200A105	**8.05**
3/32	1-1/4	1200A106	**8.66**
7/64	1-1/2	1200A107	**9.00**
1/8	1-5/8	1200A108	**9.00**
9/64	1-3/4	1200A109	**9.79**
5/32	2"	1200A110	**11.05**
11/64	2-1/8	1200A111	**11.05**
3/16	2-5/16	1200A112	**11.44**
13/64	2-7/16	1200A113	**11.96**
7/32	2-1/2	1200A114	**12.09**
15/64	2-5/8	1200A115	**12.79**
1/4	2-3/4	1200A116	**12.92**
17/64	2-7/8	1200A117	**14.92**
9/32	2-15/16	1200A118	**15.14**

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	1200A119	**$17.18**
5/16	3-3/16	1200A120	**17.44**
21/64	3-5/16	1200A121	**19.31**
11/32	3-7/16	1200A122	**19.31**
23/64	3-1/2	1200A123	**21.62**
3/8	3-5/8	1200A124	**21.62**
25/64	3-3/4	1200A125	**24.01**
13/32	3-7/8	1200A126	**24.01**
27/64	3-15/16	1200A127	**26.97**
7/16	4-1/16	1200A128	**26.97**
29/64	4-3/16	1200A129	**29.58**
15/32	4-5/16	1200A130	**29.58**
31/64	4-3/8	1200A131	**32.32**
1/2	4-1/2	1200A132	**32.32**

MADE IN USA SERIES 1280 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	1280A001	**$15.01**
2	2-5/8	1280A002	**15.01**
3	2-1/2	1280A003	**14.01**
4	2-1/2	1280A004	**14.01**
5	2-1/2	1280A005	**14.01**
6	2-1/2	1280A006	**14.01**
7	2-7/16	1280A007	**14.01**
8	2-7/16	1280A008	**14.01**
9	2-7/16	1280A009	**12.75**
10	2-7/16	1280A010	**12.75**
11	2-5/16	1280A011	**12.75**
12	2-5/16	1280A012	**12.75**
13	2-5/16	1280A013	**12.75**
14	2-3/16	1280A014	**12.75**
15	2-3/16	1280A015	**12.75**
16	2-3/16	1280A016	**12.75**
17	2-3/16	1280A017	**12.75**
18	2-1/8	1280A018	**12.75**
19	2-1/8	1280A019	**12.75**
20	2-1/8	1280A020	**11.48**

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	1280A021	**$11.48**
22	2"	1280A022	**11.48**
23	2"	1280A023	**11.48**
24	2"	1280A024	**11.48**
25	1-7/8	1280A025	**11.48**
26	1-7/8	1280A026	**11.38**
27	1-7/8	1280A027	**11.38**
28	1-3/4	1280A028	**11.38**
29	1-3/4	1280A029	**11.38**
30	1-5/8	1280A030	**11.38**
31	1-5/8	1280A031	**11.48**
32	1-5/8	1280A032	**11.48**
33	1-1/2	1280A033	**11.83**
34	1-1/2	1280A034	**11.83**
35	1-1/2	1280A035	**11.83**
36	1-7/16	1280A036	**11.83**
37	1-7/16	1280A037	**11.83**
38	1-7/16	1280A038	**11.83**
39	1-3/8	1280A039	**11.83**
40	1-3/8	1280A040	**11.83**

Aircraft Extension Drills

COBALT M-42 (8%) 6" OVERALL LENGTH GOLD FINISH



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.

Packaging: 1/16" thru 1/4" and #1 thru #40, 6 per pack.

SERIES 1100C 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1100C104	**$9.14**
5/64	1"	1100C105	**9.14**
3/32	1-1/4	1100C106	**7.22**
7/64	1-1/2	1100C107	**7.26**
1/8	1-5/8	1100C108	**7.61**
9/64	1-3/4	1100C109	**9.18**
5/32	2"	1100C110	**9.18**
11/64	2-1/8	1100C111	**10.05**

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
3/16	2-5/16	1100C112	**$9.79**
13/64	2-7/16	1100C113	**12.48**
7/32	2-1/2	1100C114	**12.48**
15/64	2-5/8	1100C115	**13.57**
1/4	2-3/4	1100C116	**13.27**
9/32	2-15/16	1100C118	**20.14**
5/16	3-3/16	1100C120	**24.93**
3/8	3-5/8	1100C124	**31.45**

MADE IN USA SERIES 1180C 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	1180C001	**$14.14**
2	2-5/8	1180C002	**14.14**
3	2-1/2	1180C003	**12.79**
4	2-1/2	1180C004	**12.79**
5	2-1/2	1180C005	**12.79**
6	2-1/2	1180C006	**12.79**
7	2-7/16	1180C007	**12.79**
8	2-7/16	1180C008	**12.31**
9	2-7/16	1180C009	**12.31**
10	2-7/16	1180C010	**11.44**
11	2-5/16	1180C011	**10.70**
12	2-5/16	1180C012	**10.70**
13	2-5/16	1180C013	**10.70**
14	2-3/16	1180C014	**10.70**
15	2-3/16	1180C015	**10.70**
16	2-3/16	1180C016	**10.70**
17	2-3/16	1180C017	**10.70**
18	2-1/8	1180C018	**10.70**
19	2-1/8	1180C019	**10.70**
20	2-1/8	1180C020	**9.66**

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	1180C021	**$9.66**
22	2"	1180C022	**9.66**
23	2"	1180C023	**9.66**
24	2"	1180C024	**9.66**
25	1-7/8	1180C025	**9.66**
26	1-7/8	1180C026	**9.66**
27	1-7/8	1180C027	**9.66**
28	1-3/4	1180C028	**9.66**
29	1-3/4	1180C029	**9.66**
30	1-5/8	1180C030	**7.83**
31	1-5/8	1180C031	**7.83**
32	1-5/8	1180C032	**7.83**
33	1-1/2	1180C033	**7.83**
34	1-1/2	1180C034	**7.83**
35	1-1/2	1180C035	**7.83**
36	1-7/16	1180C036	**7.83**
37	1-7/16	1180C037	**7.83**
38	1-7/16	1180C038	**7.83**
39	1-3/8	1180C039	**7.83**
40	1-3/8	1180C040	**7.26**

Aircraft Extension Drills

COBALT M-42 (8%) 12" OVERALL LENGTH GOLD FINISH



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.

Packaging: 1/16" thru 19/64" and #1 thru #40, 6 per pack. 5/16" thru 1/2", 3 per pack.

SERIES 1200C 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1/16	7/8	1200C104	**$19.31**
5/64	1"	1200C105	**19.31**
3/32	1-1/4	1200C106	**16.92**
7/64	1-1/2	1200C107	**16.92**
1/8	1-5/8	1200C108	**17.18**
9/64	1-3/4	1200C109	**19.31**
5/32	2"	1200C110	**17.57**
11/64	2-1/8	1200C111	**19.14**
3/16	2-5/16	1200C112	**19.14**
13/64	2-7/16	1200C113	**24.36**
7/32	2-1/2	1200C114	**21.97**
15/64	2-5/8	1200C115	**23.53**
1/4	2-3/4	1200C116	**23.53**
17/64	2-7/8	1200C117	**26.75**
9/32	2-15/16	1200C118	**27.84**

FRAC SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
19/64	3-1/16	1200C119	**$30.02**
5/16	3-3/16	1200C120	**32.41**
21/64	3-5/16	1200C121	**35.15**
11/32	3-7/16	1200C122	**37.06**
23/64	3-1/2	1200C123	**39.24**
3/8	3-5/8	1200C124	**41.93**
25/64	3-3/4	1200C125	**44.67**
13/32	3-7/8	1200C126	**49.29**
27/64	3-15/16	1200C127	**52.29**
7/16	4-1/16	1200C128	**55.98**
29/64	4-3/16	1200C129	**59.81**
15/32	4-5/16	1200C130	**63.16**
31/64	4-3/8	1200C131	**66.69**
1/2	4-1/2	1200C132	**69.69**

MADE IN USA SERIES 1280C 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
1	2-5/8	1280C001	**$30.28**
2	2-5/8	1280C002	**30.28**
3	2-1/2	1280C003	**28.19**
4	2-1/2	1280C004	**28.19**
5	2-1/2	1280C005	**28.19**
6	2-1/2	1280C006	**28.19**
7	2-7/16	1280C007	**28.19**
8	2-7/16	1280C008	**28.19**
9	2-7/16	1280C009	**25.23**
10	2-7/16	1280C010	**25.23**
11	2-5/16	1280C011	**25.23**
12	2-5/16	1280C012	**25.23**
13	2-5/16	1280C013	**25.23**
14	2-3/16	1280C014	**25.23**
15	2-3/16	1280C015	**25.23**
16	2-3/16	1280C016	**25.23**
17	2-3/16	1280C017	**25.23**
18	2-1/8	1280C018	**25.23**
19	2-1/8	1280C019	**25.23**
20	2-1/8	1280C020	**23.14**

WIRE SIZES	FLUTE LENGTH	EDP NUMBERS	LIST PRICE
21	2-1/8	1280C021	**$23.14**
22	2"	1280C022	**23.14**
23	2"	1280C023	**23.14**
24	2"	1280C024	**23.14**
25	1-7/8	1280C025	**23.14**
26	1-7/8	1280C026	**23.14**
27	1-7/8	1280C027	**23.14**
28	1-3/4	1280C028	**23.14**
29	1-3/4	1280C029	**23.14**
30	1-5/8	1280C030	**23.14**
31	1-5/8	1280C031	**23.14**
32	1-5/8	1280C032	**23.14**
33	1-1/2	1280C033	**23.14**
34	1-1/2	1280C034	**23.14**
35	1-1/2	1280C035	**23.14**
36	1-7/16	1280C036	**23.14**
37	1-7/16	1280C037	**23.14**
38	1-7/16	1280C038	**23.14**
39	1-3/8	1280C039	**23.14**
40	1-3/8	1280C040	**23.14**

Extra Length Drills

HIGH SPEED STEEL **MADE IN USA** **118° POINT**



Because of the inaccessibility or the extreme depth of a hole, it is 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 satisfactorily under the widest range of operating conditions and materials.

Package Quantity Single pack	8" OAL 6" FLUTE	12" OVERALL LENGTH 9" FLUTE LENGTH		18" OAL 13" FLUTE
	Straight Shank	Straight Shank	1/2" Shank	Straight Shank
Series	**1308**	**1312**	**1312R**	**1318**

FRAC SIZES	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE
1/8	1308A108	$25.76	1312A108	$30.40				
9/64	------	------	1312A109	33.10				
5/32	1308A110	27.81	1312A110	33.10				
11/64	------	------	1312A111	34.41				
3/16	1308A112	27.98	1312A112	34.41				
13/64	------	------	1312A113	37.07				
7/32	1308A114	30.81	1312A114	37.07				
15/64	------	------	1312A115	37.07				
1/4	1308A116	30.94	1312A116	38.50			1318A116	$77.90
17/64	------	------	1312A117	39.88			1318A117	94.96
9/32	1308A118	32.94	1312A118	39.88			1318A118	83.25
19/64	------	------	1312A119	41.28			1318A119	86.61
5/16	1308A120	33.12	1312A120	41.28			1318A120	83.25
21/64	------	------	1312A121	43.98			1318A121	91.74
11/32	1308A122	35.42	1312A122	43.98			1318A122	88.23
23/64	------	------	1312A123	43.98			1318A123	91.74
3/8	1308A124	35.28	1312A124	43.98			1318A124	88.23
25/64	------	------	1312A125	49.45			1318A125	99.35
13/32	1308A126	40.48	1312A126	49.45			1318A126	95.61
27/64	------	------	1312A127	52.18			1318A127	107.14
7/16	1308A128	42.65	1312A128	52.18			1318A128	103.11
29/64	------	------	1312A129	59.15			1318A129	122.67
15/32	1308A130	47.39	1312A130	59.15			1318A130	117.99
31/64	------	------	1312A131	61.71			1318A131	127.80
1/2	1308A132	46.22	1312A132	61.71			1318A132	122.94
33/64			1312A133	88.52	1312AR133	$118.97	1318A133	148.99
17/32			1312A134	83.18	1312AR134	113.75	1318A134	159.21
35/64			1312A135	98.09	1312AR135	128.54	1318A135	160.17
9/16			1312A136	89.97	1312AR136	120.71	1318A136	161.93
37/64			1312A137	94.61	1312AR137	121.15	1318A137	163.30
19/32			1312A138	96.79	1312AR138	127.24	1318A138	165.91
39/64			1312A139	103.31	1312AR139	133.76	1318A139	167.65
5/8			1312A140	101.10	1312AR140	131.59	1318A140	175.77
41/64			------	------	------	------	------	------
21/32			1312A142	121.15	1312AR142	151.60	1318A142	213.80
43/64			------	------	------	------	------	------
11/16			1312A144	127.24	1312AR144	157.69	1318A144	229.02
45/64			------	------	------	------	------	------
23/32			1312A146	134.85	1312AR146	165.30	1318A146	250.25
47/64			------	------	------	------	------	------
3/4			1312A148	139.42	1312AR148	170.77	1318A148	265.42
25/32							1318A150	265.42
13/16							1318A152	265.61
27/32							------	------
7/8							1318A156	275.70
29/32							------	------
15/16							1318A160	290.07
31/32							------	------
1"							1318A164	307.56

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Extra Length Drills

HIGH SPEED STEEL **IMPORT** **118° POINT**



Because of the inaccessibility or the extreme depth of a hole, it is 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 satisfactorily under the widest range of operating conditions and materials.

Package Quantity Single pack	8" OAL 6" FLUTE	12" OVERALL LENGTH 9" FLUTE LENGTH		18" OVERALL LENGTH 13" FLUTE LENGTH	
	Straight Sk.	Straight Shank	1/2" Shank	Straight Shank	1/2" Shank
Series	**1308E**	**1312E**	**1312ER**	**1318E**	**1318ER**

FRAC SIZES	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE	EDP NUMBER	LIST PRICE
1/8	1308E108	$12.61	1312E108	$18.62						
9/64	1308E109	13.74	1312E109	19.75						
5/32	1308E110	13.74	1312E110	19.75						
11/64	1308E111	13.83	1312E111	21.58						
3/16	1308E112	13.83	1312E112	21.58						
13/64	1308E113	15.38	1312E113	22.66						
7/32	1308E114	15.38	1312E114	22.66						
15/64	1308E115	15.46	1312E115	22.66						
1/4	1308E116	15.46	1312E116	22.66			1318E116	$44.68		
17/64	1308E117	16.65	1312E117	24.49			1318E117	48.15		
9/32	1308E118	16.65	1312E118	24.49			1318E118	48.15		
19/64	1308E119	16.65	1312E119	25.58			1318E119	53.60		
5/16	1308E120	16.65	1312E120	25.58			1318E120	53.60		
21/64	1308E121	17.92	1312E121	28.14			1318E121	56.42		
11/32	1308E122	17.92	1312E122	28.14			1318E122	56.42		
23/64	1308E123	17.92	1312E123	31.06			1318E123	57.15		
3/8	1308E124	17.92	1312E124	31.06			1318E124	57.15		
25/64	1308E125	20.70	1312E125	33.23			1318E125	59.95		
13/32	1308E126	20.70	1312E126	33.23			1318E126	59.95		
27/64	1308E127	21.90	1312E127	34.37			1318E127	61.77		
7/16	1308E128	21.90	1312E128	34.27			1318E128	61.77		
29/64	1308E129	24.50	1312E129	40.85			1318E129	65.07		
15/32	1308E130	24.50	1312E130	40.85			1318E130	65.07		
31/64	1308E131	24.50	1312E131	41.28			1318E131	69.57		
1/2	1308E132	24.50	1312E132	41.28			1318E132	69.57		
33/64			1312E133	61.77	1312ER133	$64.60	1318E133	112.06	1318ER133	$114.89
17/32			1312E134	61.77	1312ER134	64.60	1318E134	112.06	1318ER134	114.89
35/64			1312E135	61.77	1312ER135	64.60	1318E135	113.88	1318ER135	116.71
9/16			1312E136	61.77	1312ER136	64.60	1318E136	113.88	1318ER136	116.71
37/64			1312E137	66.38	1312ER137	69.21	1318E137	117.89	1318ER137	120.72
19/32			1312E138	66.38	1312ER138	69.21	1318E138	117.89	1318ER138	120.72
39/64			1312E139	69.73	1312ER139	72.56	1318E139	123.71	1318ER139	126.54
5/8			1312E140	69.73	1312ER140	72.56	1318E140	123.71	1318ER140	126.54
41/64			1312E141	77.26	1312ER141	80.09	1318E141	136.72	1318ER141	139.55
21/32			1312E142	77.26	1312ER142	80.09	1318E142	136.72	1318ER142	139.55
43/64			1312E143	81.74	1312ER143	84.57	1318E143	146.46	1318ER143	149.29
11/16			1312E144	81.74	1312ER144	84.57	1318E144	146.46	1318ER144	149.29
45/64			1312E145	88.48	1312ER145	91.31	1318E145	160.08	1318ER145	162.91
23/32			1312E146	88.48	1312ER146	91.31	1318E146	160.08	1318ER146	162.91
47/64			1312E147	91.48	1312ER147	94.31	1318E147	169.74	1318ER147	172.57
3/4			1312E148	91.48	1312ER148	94.31	1318E148	169.74	1318ER148	172.57
25/32							1318E150	189.36	1318ER150	192.19
13/16							1318E152	196.58	1318ER152	199.41
27/32							1318E154	202.80	1318ER154	205.63
7/8							1318E156	202.80	1318ER156	205.63
29/32							1318E158	213.28	1318ER158	216.11
15/16							1318E160	213.28	1318ER160	216.11
31/32							1318E162	226.11	1318ER162	228.94
1"							1318E164	226.11	1318ER164	228.94

Core Drills

HIGH SPEED STEEL STRAIGHT SHANK 118° CHAMFER



Three & Four Flute Core Drills are designed for enlarging and or finishing holes produced by drilling, casting or punching. Enlarges holes up to 60% of tool diameter. They will not produce original holes.

Packaging: All sizes are individually packaged.

ENLARGE EXISTING HOLES SERIES 975E 4 FLUTE

FRACTIONAL SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/4	3-3/4	6-1/8	975E116	**$43.07**
9/32	3-7/8	6-1/4	975E118	**43.07**
5/16	4"	6-3/8	975E120	**43.07**
11/32	4-1/8	6-1/2	975E122	**43.07**
3/8	4-1/4	6-3/4	975E124	**43.07**
13/32	4-3/8	7"	975E126	**49.51**
7/16	3-5/8	7-1/4	975E128	**49.51**
15/32	4-3/4	7-1/2	975E130	**55.17**
1/2	4-3/4	7-3/4	975E132	**55.17**
17/32	4-3/4	8"	975E134	**59.46**
9/16	4-7/8	8-1/4	975E136	**65.57**
19/32	4-7/8	8-3/4	975E138	**73.93**
5/8	4.7/8	8-3/4	975E140	**75.74**
21/32	5-1/8	9"	975E142	**83.88**
11/16	5-3/8	9-1/4	975E144	**89.98**
23/32	5-5/8	9-1/2	975E146	**98.35**
3/4	5-7/8	9-3/4	975E148	**104.23**
25/32	6"	9-7/8	975E150	**108.30**
13/16	6-1/8	10"	975E152	**114.63**
27/32	6-1/8	10"	975E154	**122.54**
7/8	6-1/8	10"	975E156	**129.10**
29/32	6-1/8	10"	975E158	**134.98**
15/16	6-1/8	10-3/4	975E160	**151.26**
31/32	6-3/8	11"	975E162	**165.50**
1"	6-3/8	11	975E164	**173.64**

Nitro Core Drills

HIGH SPEED M-7N STEEL 1-7/8" of FLUTE — 6" OAL BRONZE & BLACK



Packaging: All sizes are individually packaged.

1/2" SHANK SERIES 950N 118° CHAMFER

FRACTIONAL SIZES	MINIMUM STARTING HOLE SIZE	EDP NUMBER	LIST PRICE
3/8	1/4"	950N124	**$42.97**
1/2	5/16"	950N132	**56.09**
9/16	11/32"	950N136	**69.25**
5/8	3/8"	950N140	**82.41**
11/16	7/16"	950N144	**95.57**
3/4	15/32"	950N148	**108.73**
13/16	1/2"	950N152	**121.88**

FRACTIONAL SIZES	MINIMUM STARTING HOLE SIZE	EDP NUMBER	LIST PRICE
7/8	17/32"	950N156	**$135.04**
15/16	9/16"	950N160	**148.20**
1"	5/8"	950N164	**161.36**
1-1/16	21/32"	950N204	**167.48**
1-1/8	11/16"	950N208	**174.52**
1-3/16	23/32"	950N212	**180.75**
1-1/4	3/4"	950N216	**187.67**

Taper Length Drills

HIGH SPEED STEEL **STRAIGHT SHANK** **BRIGHT FINISH**



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

Packaging: All sizes are individually packaged.

MADE IN USA **SERIES 900** **118° POINT**

FRACTIONAL SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/4	3-3/4	6-1/8	900A116	**$14.35**
9/32	3-7/8	6-1/4	900A118	**17.51**
5/16	4"	6-3/8	900A120	**17.76**
11/32	4-1/8	6-1/2	900A122	**20.34**
23/64	4-1/4	6-3/4	900A123	**23.92**
3/8	4-1/4	6-3/4	900A124	**23.92**
25/64	4-3/8	7"	900A125	**24.99**
13/32	4-3/8	7"	900A126	**24.99**
27/64	4-5/8	7-1/4	900A127	**26.98**
7/16	4-5/8	7-1/4	900A128	**27.50**
29/64	4-3/4	7-1/2	900A129	**30.52**
15/32	4-3/4	7-1/2	900A130	**32.40**
31/64	4-3/4	7-3/4	900A131	**33.81**
1/2	3-3/4	7-3/4	900A132	**33.81**
33/64	4-3/4	8"	900A133	**47.91**
17/32	4-3/4	8"	900A134	**47.91**
35/64	4-7/8	8-1/4	900A135	**50.38**
9/16	4-7/8	8-1/4	900A136	**50.38**
37/64	4-7/8	8-3/4	900A137	**58.88**
19/32	4-7/8	8-3/4	900A138	**58.88**
39/64	4-7/8	8-3/4	900A139	**60.96**
5/8	4-7/8	8-3/4	900A140	**60.96**
41/64	5-1/8	9"	900A141	**69.46**
21/32	5-1/8	9"	900A142	**69.46**
43/64	5-3/8	9-1/4	900A143	**81.57**
11/16	5-3/8	9-1/4	900A144	**82.62**
45/64	5-5/8	9-1/2	900A145	**85.86**
23/32	5-5/8	9-1/2	900A146	**85.86**
47/64	5-7/8	9-3/4	900A147	**92.36**
3/4	5-7/8	9-3/4	900A148	**92.36**
49/64	6"	9-7/8	900A149	**100.46**
25/32	6"	9-7/8	900A150	**100.46**
51/64	6-1/8	10"	900A151	**108.05**
13/16	6-1/8	10"	900A152	**108.05**
53/64	6-1/8	10"	900A153	**113.71**
27/32	6-1/8	10"	900A154	**113.71**
55/64	6-1/8	10"	900A155	**119.43**
7/8	6-1/8	10"	900A156	**119.43**
57/64	6-1/8	10"	900A157	**124.45**
29/32	6-1/8	10"	900A158	**124.45**
59/64	6-1/8	10-3/4	900A159	**135.42**
15/16	6-1/8	10-3/4	900A160	**135.42**
61/64	6-3/8	11"	900A161	**149.39**
31/32	6-3/8	11"	900A162	**149.39**
63/64	6-3/8	11"	900A163	**155.71**
1"	6-3/8	11"	900A164	**155.71**

Automotive Series (Tanged) Priced on request

Taper Shank Drills

SHANKS SMALLER & LARGER THAN REGULAR — SURFACE TREATED



These drills are of general purpose design and afford maximum performance under varying conditions and in a wide range of materials. Furnished with shanks smaller & larger than American Standard shanks.

Packaging: All sizes are individually packaged.

QUALITY IMPORT | **MADE IN USA**

HIGH SPEED STEEL — SERIES 1450E & 1475E — SERIES 1450 & 1475

FRACTIONAL SIZES	MORSE TAPER	FLUTE LENGTH	OVERALL LENGTH	1450E & 1475E EDP NUMBER	1450E & 1475E LIST PRICE	1450 & 1475 EDP NUMBER	1450 & 1475 LIST PRICE
3/8*	2	3-1/2	7-3/8	1475E124	**$18.44**	1475A124	**$46.24**
25/64*	2	3-5/8	7-1/2	1475E125	**20.53**	1475A125	**48.08**
13/32*	2	3-5/8	7-1/2	1475E126	**20.53**	1475A126	**48.16**
27/64*	2	3-7/8	7-3/4	1475E127	**21.23**	1475A127	**48.16**
7/16*	2	3-7/8	7-3/4	1475E128	**20.45**	1475A128	**50.96**
29/64*	2	4-1/8	8"	1475E129	**22.79**	1475A129	**52.36**
15/32*	2	4-1/8	8"	1475E130	**24.53**	1475A130	**55.08**
31/64	1	4-3/8	7-3/4	1450E131	**24.80**	1450A131	**57.47**
1/2	1	4-3/8	7-3/4	1450E132	**21.10**	1450A132	**54.64**
33/64	1	4-5/8	8"	1450E133	**26.97**	1450A133	**63.04**
17/32	1	4-5/8	8"	1450E134	**26.97**	1450A134	**63.04**
35/64	1	4-7/8	8-1/4	1450E135	**28.28**	1450A135	**67.34**
9/16	1	4-7/8	8-1/4	1450E136	**26.62**	1450A136	**68.83**
41/64*	3	5-1/8	9-3/4	1475E141	**36.98**	1475A141	**91.83**
21/32*	3	5-1/8	9-3/4	1475E142	**37.54**	1475A142	**93.06**
43/64*	3	5-3/8	10"	1475E143	**39.76**	1475A143	**98.57**
11/16*	3	5-3/8	10"	1475E144	**41.11**	1475A144	**102.03**
45/64*	3	5-3/8	10-1/4	1475E145	**42.98**	1475A145	**106.64**
23/32*	3	5-7/8	10-1/4	1475E146	**44.07**	1475A146	**109.42**
47/64*	3	5-7/8	10-1/2	1475E147	**43.50**	1475A147	**115.43**
3/4*	3	6"	10-1/2	1475E148	**47.02**	1475A148	**116.78**
49/64*	3	6"	10-5/8	1475E149	**52.46**	1475A149	**128.39**
25/32*	3	6-3/8	10-5/8	1475E150	**52.46**	1475A150	**128.39**
51/64	2	6-1/8	10"	1450E151	**44.89**	1450A151	**123.30**
13/16	2	6-1/8	10"	1450E152	**48.02**	1450A152	**122.71**
53/64	2	6-1/8	10"	1450E153	**56.20**	1450A153	**131.24**
27/32	2	6-1/8	10"	1450E154	**52.72**	1450A154	**131.24**
55/64	2	6-1/8	10"	1450E155	**59.12**	1450A155	**136.90**
7/8	2	6-1/8	10"	1450E156	**52.77**	1450A156	**134.86**
57/64	2	6-1/8	10"	1450E157	**55.68**	1450A157	**141.16**
29/32	2	6-1/8	10"	1450E158	**58.12**	1450A158	**141.16**
1"*	4	6-3/8	12"	1475E164	**72.56**	1475A164	**183.52**
1-1/32*	4	6-1/2	12-1/8	1475E202	**85.09**	1475A202	**201.19**
1-1/16*	4	6-5/8	12-1/4	1475E204	**89.78**	1475A204	**216.14**
1-5/64	3	6-7/8	11-1/2	1450E205	**94.35**	1450A205	**218.44**
1-3/32	3	6-7/8	11-1/2	1450E206	**89.87**	1450A206	**208.14**
1-7/64	3	7-1/8	11-3/4	1450E207	**95.70**	1450A207	**221.59**

* SHANK LARGER THAN REGULAR

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Taper Shank Drills

SHANK SMALLER THAN REGULAR — SURFACE TREATED



These drills are of general purpose design and afford maximum performance under varying conditions and in a wide range of materials. Furnished with shanks smaller than American Standard taper shanks.

Packaging: All sizes are individually packaged.

HIGH SPEED STEEL — QUALITY IMPORT SERIES 1450E — MADE IN USA SERIES 1450

FRACTIONAL SIZES	MORSE TAPER	FLUTE LENGTH	OVERALL LENGTH	1450E EDP NUMBER	1450E LIST PRICE	1450 EDP NUMBER	1450 LIST PRICE
1-1/8	3	7-1/8	11-3/4	1450E208	$84.61	1450A208	$216.23
1-9/64	3	7-1/4	11-7/8	1450E209	101.70	1450A209	235.56
1-5/32	3	7-1/4	11-7/8	1450E210	101.70	1450A210	235.56
1-11/64	3	7-3/8	12"	1450E211	105.05	1450A211	243.28
1-3/16	3	7-3/8	12"	1450E212	92.00	1450A212	240.32
1-13/64	3	7-1/2	12-1/8	1450E213	112.71	1450A213	261.03
1-7/32	3	7-1/2	12-1/8	1450E214	111.49	1450A214	258.12
1-15/64	3	7-7/8	12-1/2	1450E215	122.89	1450A215	284.51
1-1/4	3	7-7/8	12-1/2	1450E216	104.44	1450A216	283.28
1-33/64	4	9-3/8	15"	1450E233	197.93	1450A233	458.32
1-17/32	4	9-./8	15"	1450E234	195.66	1450A234	453.06
1-35/64	4	9-5/8	15-1/4	1450E235	210.63	1450A235	487.61
1-9/16	4	9-5/8	15-1/4	1450E236	187.27	1450A236	484.84
1-37/64	4	6-7/8	15-1/2	1450E237	223.81	1450A237	518.17
1-19/32	4	9-7/8	15-1/2	1450E238	223.81	1450A238	518.17
1-39/64	4	10"	15-5/8	1450E239	232.42	1450A239	538.16
1-5/8	4	10"	15-5/8	1450E240	197.32	1450A240	529.96
1-41/64	4	10-1/8	15-3/4	1450E241	250.52	1450A241	580.09
1-21/32	4	10-1/8	15-3/4	1450E242	249.43	1450A242	577.53
1-43/64	4	10-1/8	15-3/4	1450E243	260.04	1450A243	602.14
1-11/16	4	10-1/8	15-3/4	1450E244	229.68	1450A244	594.14
1-45/64	4	10-1/8	15-3/4	1450E245	267.89	1450A245	620.19
1-23/32	4	10-1/8	15-3/4	1450E246	255.35	1450A246	591.18
1-47/64	4	10-3/8	16-1/4	1450E247	265.61	1450A247	615.04
1-3/4	4	10-3/8	16-1/4	1450E248	231.64	1450A248	598.99
1-25/32	4	10-3/8	16-1/4	1450E250	274.18	1450A250	634.85
1-13/16	4	10-3/8	16-1/4	1450E252	245.69	1450A252	635.77
1-27/32	4	10-3/8	16-1/4	1450E254	284.58	1450A254	658.97
1-7/8	4	10-1/2	16-1/2	1450E256	265.35	1450A256	686.47
1-29/32	4	10-1/2	16-1/2	1450E258	305.98	1450A258	708.41
1-15/16	4	10-5/8	16-5/8	1450E260	277.83	1450A260	718.61
1-31/32	4	10-5/8	16-5/8	1450E262	320.03	1450A262	740.96
2"	4	10-5/8	16-5/8	1450E264	289.84	1450A264	749.92
3-1/8	5	14-1/4	22"	1450E408	1,193.60	1450A408	2,763.61
3-1/4	5	15-1/4	23"	1450E416	1,361.64	1450A416	3,152.71
3-1/2	5	16-1/4	24"	1450E432	1,793.16	1450A432	3,480.00

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Taper Shank Drills

REGULAR SHANK | **118° POINT** | **SURFACE TREATED**



These drills are of general purpose design and afford maximum performance under varying conditions and in a wide range of materials. Furnished with American Standard taper shanks.

Packaging: All sizes are individually packaged.

HIGH SPEED STEEL | **QUALITY IMPORT SERIES 1400E** | **MADE IN USA SERIES 1400**

FRACTIONAL SIZES	MORSE TAPER	FLUTE LENGTH	OVERALL LENGTH	1400E EDP NUMBER	1400E LIST PRICE	1400 EDP NUMBER	1400 LIST PRICE
1/8	1	1-7/8	5-1/8	1400E108	**$7.92**	1400A108	**$29.24**
9/64	1	2-1/8	5-3/8	1400E109	**9.05**	1400A109	**29.24**
5/32	1	2-1/8	5-3/8	1400E110	**8.44**	1400A110	**29.24**
11/64	1	2-1/2	5-3/4	1400E111	**10.14**	1400A111	**29.24**
3/16	1	2-1/2	5-3/4	1400E112	**8.18**	1400A112	**20.36**
13/64	1	2-3/4	6"	1400E113	**9.05**	1400A113	**21.74**
7/32	1	2-3/4	6"	1400E114	**9.05**	1400A114	**21.74**
15/64	1	2-7/8	6-1/8	1400E115	**10.66**	1400A115	**24.85**
1/4	1	2-7/8	6-1/8	1400E116	**9.05**	1400A116	**22.59**
17/64	1	3"	6-1/4	1400E117	**10.14**	1400A117	**24.02**
9/32	1	3"	6-1/4	1400E118	**10.14**	1400A118	**24.02**
19/64	1	3-1/8	6-3/8	1400E119	**12.92**	1400A119	**29.76**
5/16	1	3-1/8	6-3/8	1400E120	**9.74**	1400A120	**24.22**
21/64	1	3-1/4	6-1/2	1400E121	**14.27**	1400A121	**32.62**
11/32	1	3-1/4	6-1/2	1400E122	**15.14**	1400A122	**35.50**
23/64	1	3-1/2	6-3/4	1400E123	**16.66**	1400A123	**37.80**
3/8	1	3-1/2	6-3/4	1400E124	**15.70**	1400A124	**37.80**
25/64	1	3-5/8	7"	1400E125	**17.18**	1400A125	**39.15**
13/32	1	3-5/8	7"	1400E126	**16.66**	1400A126	**37.80**
27/64	1	3-7/8	7-1/4	1400E127	**17.79**	1400A127	**41.77**
7/16	1	3-7/8	7-1/4	1400E128	**17.10**	1400A128	**42.29**
29/64	1	4-1/8	7-1/2	1400E129	**19.79**	1400A129	**45.94**
15/32	1	4-1/8	7-1/2	1400E130	**20.71**	1400A130	**48.03**
31/64	2	4-3/8	8-1/4	1400E131	**23.58**	1400A131	**51.96**
1/2	2	4-3/8	8-1/4	1400E132	**21.18**	1400A132	**49.55**
33/64	2	4-5/8	8-1/2	1400E133	**25.67**	1400A133	**56.59**
17/32	2	4-5/8	8-1/2	1400E134	**25.14**	1400A134	**55.42**
35/64	2	4-7/8	8-3/4	1400E135	**26.97**	1400A135	**61.62**
9/16	2	4-7/8	8-3/4	1400E136	**25.67**	1400A136	**60.43**
37/64	2	4-7/8	8-3/4	1400E137	**29.06**	1400A137	**65.43**
19/32	2	4-7/8	8-3/4	1400E138	**28.71**	1400A138	**64.38**
39/64	2	4-7/8	8-3/4	1400E139	**29.23**	1400A139	**68.41**
5/8	2	4-7/8	8-3/4	1400E140	**28.28**	1400A140	**66.70**
41/64	2	5-1/8	9"	1400E141	**32.23**	1400A141	**75.41**
21/32	2	5-1/8	9"	1400E142	**31.23**	1400A142	**72.96**
43/64	2	5-3/8	9-1/4	1400E143	**34.67**	1400A143	**80.92**
11/16	2	5-3/8	9-1/4	1400E144	**32.19**	1400A144	**76.79**
45/64	2	5-5/8	9-1/2	1400E145	**36.02**	1400A145	**84.28**

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Taper Shank Drills

REGULAR SHANK | **118° POINT** | **SURFACE TREATED**



These drills are of general purpose design and afford maximum performance under varying conditions and in a wide range of materials. Furnished with American Standard taper shanks.

Packaging: All sizes are individually packaged.

HIGH SPEED STEEL | **QUALITY IMPORT SERIES 1400E** | **MADE IN USA SERIES 1400**

FRACTIONAL SIZES	MORSE TAPER	FLUTE LENGTH	OVERALL LENGTH	1400E EDP NUMBER	1400E LIST PRICE	1400 EDP NUMBER	1400 LIST PRICE
23/32	2	5-5/8	9-1/2	1400E146	**$36.02**	1400A146	**$81.40**
47/64	2	5-7/8	9-3/4	1400E147	**39.85**	1400A147	**89.52**
3/4	2	5-7/8	9-3/4	1400E148	**38.24**	1400A148	**89.52**
49/64	2	6"	9-7/8	1400E149	**46.02**	1400A149	**107.61**
25/32	2	6"	9-7/8	1400E150	**46.98**	1400A150	**107.61**
51/64	3	6-1/8	10-3/4	1400E151	**50.37**	1400A151	**111.58**
13/16	3	6-1/8	10-3/4	1400E152	**47.28**	1400A152	**110.74**
53/64	3	6-1/8	10-3/4	1400E153	**55.72**	1400A153	**122.92**
27/32	3	6-1/8	10-3/4	1400E154	**52.72**	1400A154	**118.99**
55/64	3	6-1/8	10-3/4	1400E155	**57.64**	1400A155	**127.18**
7/8	3	6-1/8	10-3/4	1400E156	**46.46**	1400A156	**122.92**
57/64	3	6-1/8	10-3/4	1400E157	**55.68**	1400A157	**129.99**
29/32	3	6-1/8	10-3/4	1400E158	**58.90**	1400A158	**129.99**
59/64	3	6-1/8	10-3/4	1400E159	**59.64**	1400A159	**131.60**
15/16	3	6-1/8	10-3/4	1400E160	**52.55**	1400A160	**123.44**
61/64	3	6-3/8	11"	1400E161	**57.77**	1400A161	**135.19**
31/32	3	6-3/8	11"	1400E162	**60.81**	1400A162	**134.25**
63/64	3	6-3/8	11"	1400E163	**64.73**	1400A163	**143.55**
1"	3	6-3/8	11"	1400E164	**58.94**	1400A164	**137.89**
1-1/64	3	6-1/2	11-1/8	1400E201	**71.95**	1400A201	**158.77**
1-1/32	3	6-1/2	11-1/8	1400E202	**68.03**	1400A202	**150.10**
1-3/64	3	6-5/8	11-1/4	1400E203	**75.60**	1400A203	**166.83**
1-1/16	3	6-5/8	11-1/4	1400E204	**67.90**	1400A204	**158.77**
1-5/64	4	6-7/8	12-1/2	1400E205	**87.30**	1400A205	**192.41**
1-3/32	4	6-7/8	12-1/2	1400E206	**84.00**	1400A206	**185.42**
1-7/64	4	7-1/8	12-3/4	1400E207	**90.65**	1400A207	**200.06**
1-1/8	4	7-1/8	12-3/4	1400E208	**83.17**	1400A208	**194.63**
1-9/64	4	7-1/4	12-7/8	1400E209	**96.05**	1400A209	**212.06**
1-5/32	4	7-1/4	12-7/8	1400E210	**91.39**	1400A210	**201.71**
1-11/64	4	7-3/8	13"	1400E211	**97.18**	1400A211	**214.40**
1-3/16	4	7-3/8	13"	1400E212	**90.65**	1400A212	**212.06**
1-13/64	4	7-1/2	13-1/8	1400E213	**103.97**	1400A213	**229.46**
1-7/32	4	7-1/2	13-1/8	1400E214	**102.40**	1400A214	**226.01**
1-15/64	4	7-7/8	13-1/2	1400E215	**111.66**	1400A215	**250.28**
1-1/4	4	7-7/8	13-1/2	1400E216	**102.01**	1400A216	**238.63**
1-17/64	4	8-1/2	14-1/8	1400E217	**130.76**	1400A217	**288.54**
1-9/32	4	8-1/2	14-1/8	1400E218	**129.67**	1400A218	**286.15**
1-19/64	4	8-5/8	14-1/4	1400E219	**139.20**	1400A219	**307.18**

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Taper Shank Drills

REGULAR SHANK | **118° POINT** | **SURFACE TREATED**



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Packaging: All sizes are individually packaged.

QUALITY IMPORT | **MADE IN USA**

HIGH SPEED STEEL | **SERIES 1400E** | **SERIES 1400**

FRACTIONAL SIZES	MORSE TAPER	FLUTE LENGTH	OVERALL LENGTH	1400E EDP NUMBER	1400E LIST PRICE	1400 EDP NUMBER	1400 LIST PRICE
1-5/16	4	8-5/8	14-1/4	1400E220	**$121.71**	1400A220	**$290.71**
1-21/64	4	8-3/4	14-3/8	1400E221	**143.90**	1400A221	**317.60**
1-11/32	4	8-3/4	14-3/8	1400E222	**139.20**	1400A222	**307.18**
1-23/64	4	8-7/8	14-1/2	1400E223	**147.03**	1400A223	**324.47**
1-3/8	4	8-7/8	14-1/2	1400E224	**130.63**	1400A224	**311.84**
1-25/64	4	9"	14-5/8	1400E225	**151.21**	1400A225	**333.68**
1-13/32	4	9"	14-5/8	1400E226	**151.21**	1400A226	**333.68**
1-27/64	4	9-1/8	14-3/4	1400E227	**156.47**	1400A227	**345.27**
1-7/16	4	9-1/8	14-3/4	1400E228	**140.03**	1400A228	**337.09**
1-29/64	4	9-1/4	14-7/8	1400E229	**164.52**	1400A229	**363.13**
1-15/32	4	9-1/4	14-7/8	1400E230	**162.91**	1400A230	**359.47**
1-31/64	4	9-3/8	15"	1400E231	**168.87**	1400A231	**372.61**
1-1/2	4	9-3/8	15"	1400E232	**150.81**	1400A232	**358.47**
1-33/64	5	9-3/8	16-3/8	1400E233	**187.70**	1400A233	**-----**
1-17/32	5	9-3/8	16-3/8	1400E234	**187.70**	1400A234	**414.25**
1-35/64	5	9-5/8	16-5/8	1400E235	**196.71**	1400A235	**-----**
1-9/16	5	9-5/8	16-5/8	1400E236	**187.27**	1400A236	**434.09**
1-37/64	5	9-7/8	16-7/8	1400E237	**212.45**	1400A237	**-----**
1-19/32	5	9-7/8	16-7/8	1400E238	**212.45**	1400A238	**468.88**
1-39/64	5	10"	17"	1400E239	**212.45**	1400A239	**-----**
1-5/8	5	10"	17"	1400E240	**206.06**	1400A240	**468.88**
1-41/64	5	10-1/8	17-1/8	1400E241	**228.46**	1400A241	**-----**
1-21/32	5	10-1/8	17-1/8	1400E242	**228.46**	1400A242	**504.19**
1-43/64	5	10-1/8	17-1/8	1400E243	**234.20**	1400A243	**-----**
1-11/16	5	10-1/8	17-1/8	1400E244	**223.02**	1400A244	**516.84**
1-45/64	5	10-1/8	17-1/8	1400E245	**245.78**	1400A245	**-----**
1-23/32	5	10-1/8	17-1/8	1400E246	**245.78**	1400A246	**542.36**
1-47/64	5	10-1/8	17-1/8	1400E247	**250.82**	1400A247	**-----**
1-3/4	5	10-1/8	17-1/8	1400E248	**238.86**	1400A248	**553.49**
1-25/32	5	10-1/8	17-1/8	1400E250	**260.57**	1400A250	**574.98**
1-13/16	5	10-1/8	17-1/8	1400E252	**254.61**	1400A252	**589.91**
1-27/32	5	10-1/8	17-1/8	1400E254	**279.14**	1400A254	**616.04**
1-7/8	5	10-3/8	17-3/8	1400E256	**266.44**	1400A256	**617.31**
1-29/32	5	10-3/8	17-3/8	1400E258	**291.89**	1400A258	**644.12**
1-15/16	5	10-3/8	17-3/8	1400E260	**300.93**	1400A260	**664.11**
1-31/32	5	10-3/8	17-3/8	1400E262	**307.50**	1400A262	**678.66**
2"	5	10-3/8	17-3/8	1400E264	**297.19**	1400A264	**689.75**

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Taper Shank Drills

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Packaging: All sizes are individually packaged.

QUALITY IMPORT | **MADE IN USA**

HIGH SPEED STEEL | **SERIES 1400E** | **SERIES 1400**

FRACTIONAL SIZES	MORSE TAPER	FLUTE LENGTH	OVERALL LENGTH	1400E EDP NUMBER	1400E LIST PRICE	1400 EDP NUMBER	1400 LIST PRICE
2-1/32	5	10-3/8	17-3/8	1400E302	**$328.21**	1400A302	**$724.31**
2-1/16	5	10-1/4	17-3/8	1400E304	**315.11**	1400A304	**729.91**
2-3/32	5	10-1/4	17-3/8	1400E306	**349.74**	1400A306	**772.20**
2-1/8	5	10-1/4	17-3/8	1400E308	**333.25**	1400A308	**772.20**
2-5/32	5	10-1/4	17-3/8	1400E310	**373.14**	1400A310	**823.53**
2-3/16	5	10-1/4	17-3/8	1400E312	**361.66**	1400A312	**837.91**
2-7/32	5	10-1/8	17-3/8	1400E314	**393.41**	1400A314	**868.28**
2-1/4	5	10-1/8	17-3/8	1400E316	**377.62**	1400A316	**874.84**
2-9/32	5	10-1/8	17-3/8	1400E318	**423.21**	-----	**-----**
2-5/16	5	10-1/8	17-3/8	1400E320	**423.21**	1400A320	**933.95**
2-11/32	5	10-1/8	17-3/8	1400E322	**403.03**	-----	**-----**
2-3/8	5	10-1/8	17-3/8	1400E324	**439.79**	1400A324	**970.54**
2-13/32	5	11-1/4	18-3/4	1400E326	**418.86**	-----	**-----**
2-7/16	5	11-1/4	18-3/4	1400E328	**529.00**	1400A328	**1,225.77**
2-1/2	5	11-1/4	18-3/4	1400E332	**529.00**	1400A332	**1,265.42**
2-9/16	5	11-7/8	19-1/2	1400E336	**546.14**	1400A336	**1,381.76**
2-19/32	5	11-7/8	19-1/2	1400E338	**596.39**	-----	**-----**
2-5/8	5	11-7/8	19-1/2	1400E340	**639.80**	1400A340	**1,482.12**
2-11/16	5	12-3/4	20-3/8	1400E344	**722.01**	1400A344	**1,593.45**
2-3/4	5	12-3/4	20-3/8	1400E348	**711.79**	1400A348	**1,649.23**
2-25/32	5	13-3/8	21-1/8	1400E350	**812.88**	-----	**-----**
2-13/16	5	13-3/8	21-1/8	1400E352	**774.26**	1400A352	**1,794.00**
2-27/32	5	13-3/8	21-1/8	1400E354	**867.75**	-----	**-----**
2-7/8	5	13-3/8	21-1/8	1400E356	**817.71**	1400A356	**1,894.43**
2-15/16	5	14"	21-3/4	1400E360	**860.95**	1400A360	**1,994.83**
3"	5	14"	21-3/4	1400E364	**899.36**	1400A364	**2,083.75**
3-1/16	6	14-5/8	24-1/2	1400E404	**1,054.74**	-----	**-----**
3-1/8	6	14-5/8	24-1/2	1400E408	**1,125.35**	1400A408	**2,607.55**
3-3/16	6	14-5/8	24-1/2	1400E412	**1,237.18**	-----	**-----**
3-1/4	6	15-1/2	25-1/2	1400E416	**1,284.08**	1400A416	**2,975.25**
3-5/16	6	15-1/2	258-1/2	1400E420	**1,399.92**	-----	**-----**
3-3/8	6	15-1/2	25-1/2	1400E424	**1,481.44**	-----	**-----**
3-7/16	6	15-1/2	25-1/2	1400E428	**1,599.15**	-----	**-----**
3-1/2	6	16-3/8	26-1/2	1400E432	**1,673.23**	-----	**-----**
3-5/8	6	16-3/8	26-1/2	1400E440	**1,958.02**	-----	**-----**
3-3/4	6	16-3/8	26-1/2	1400E448	**2,125.67**	-----	**-----**
3-7/8	6	16-3/8	26-1/2	1400E456	**2,472.50**	-----	**-----**
4"	6	17-1/2	27-1/2	1400E464	**2,672.90**	-----	**-----**

Taper Shank Tool Accessories

For adapting Morse taper shank tools to larger Morse taper holders.
Standard Sleeves - Toughened tang, ground externally & reamed internally.
Hardened Sleeves - Case hardened throughout & ground internally and externally.
Packaging: All Sleeves are individually packaged.

STANDARD SLEEVE SERIES 1410 — HARDENED SLEEVE SERIES 1420

REGULAR LENGTH

SLEEVE NUMBER	MORSE TAPER INSIDE	MORSE TAPER OUTSIDE	OVERALL LENGTH	STANDARD EDP NO	STANDARD LIST PRICE	HARDENED EDP NO	HARDENED LIST PRICE
12	1	2	3-5/8	141E012S	**$27.49**	142E012H	**$27.49**
13	1	3	3-7/8	141E013S	**33.36**	142E013H	**33.36**
14	1	4	4-7/8	141E014S	**46.98**	142E014H	**46.98**
15	1	5	6-1/8	141E015S	**78.21**	142E015H	**78.21**
23	2	3	4-3/8	141E023S	**33.36**	142E023H	**33.36**
24	2	4	5"	141E024S	**46.98**	142E024H	**46.98**
25	2	5	6-1/8	141E025S	**78.21**	142E025H	**78.21**
34	3	4	5-1/2	141E034S	**46.98**	142E034H	**46.98**
35	3	5	6-1/8	141E035S	**78.21**	142E035H	**78.21**
45	4	5	6-3/4	141E045S	**86.22**	142E045H	**86.22**
46	4	6	8-5/8	141E046S	**164.43**	142E046H	**164.43**
56	5	6	5-5/8	141E056S	**164.43**	142E056H	**164.43**



For adapting Morse taper shank tools to larger or smaller Morse taper holders. Can also be used to extend length of taper shank tools.

STANDARD SLEEVE SERIES 1430 — HARDENED SLEEVE SERIES 1440

EXTENSION LENGTH SLEEVES

SLEEVE NUMBER	MORSE TAPER INSIDE	MORSE TAPER OUTSIDE	OVERALL LENGTH	STANDARD EDP NO	STANDARD LIST PRICE	HARDENED EDP NO	HARDENED LIST PRICE
12	1	2	6-1/4	143E012S	**$39.93**	144E012H	**$39.93**
13	1	3	6-7/8	143E013S	**46.98**	144E013H	**46.98**
14	1	4	7-1/2	143E014S	**58.73**	144E014H	**58.73**
21	2	1	6-1/4	143E021S	**39.93**	144E021H	**39.93**
22	2	2	6-7/8	143E022S	**39.93**	144E022H	**39.93**
23	2	3	7-5/8	143E023S	**46.98**	144E023H	**46.98**
24	2	4	8-1/2	143E024S	**58.73**	144E024H	**58.73**
25	2	5	9-3/4	143E025S	**101.70**	144E025H	**101.70**
31	3	1	7-1/4	143E031S	**58.73**	144E031H	**58.73**
32	3	2	7-3/4	143E032S	**58.73**	144E032H	**58.73**
33	3	3	8-1/2	143E033S	**58.73**	144E033H	**58.73**
34	3	4	9-1/2	143E034S	**58.73**	144E034H	**58.73**
35	3	5	10-1/2	143E035S	**101.70**	144E035H	**101.70**
42	4	2	8-1/2	143E042S	**70.47**	144E042H	**70.47**
43	4	3	9-1/2	143E043S	**93.96**	144E043H	**93.96**
44	4	4	10-1/2	143E044S	**93.96**	144E044H	**93.96**
45	4	5	11-7/8	143E045S	**164.43**	144E045H	**164.43**
46	4	6	14"	143E046S	**234.90**	144E046H	**234.90**
53	5	3	10-1/2	143E053S	**164.43**	144E053H	**164.43**
54	5	4	11-7/8	143E054S	**164.43**	144E054H	**164.43**
55	5	5	13-1/4	143E055S	**169.13**	144E055H	**169.13**
56	5	6	15-3/8	143E056S	**274.83**	144E056H	**274.83**
65	6	5	15-3/8	143E065S	**411.08**	144E065H	**411.08**



For ejecting taper shank tools out of Morse taper sleeves and sockets. Fully drop forged.
Packaging: All Drifts are individually packaged.

DRILL DRIFTS (Knock-Out) — SERIES 1470

SIZE	FITS MORSE #	LENGTH	EDP #	LIST PRICE
1	#1	4-1/2"	147E001	**$5.66**
2	#2	5-1/4"	147E002	**5.87**
3	#3	6"	147E003	**7.05**
4	#4,#5 &# 6	7"	147E004	**9.40**
SET (1,2,3 & 4)	#1 thru #6	same as above	147E010	**25.27**



Technical

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	1.10	1.50	9.50	3.75	1.15	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. Recommenced 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 tow positive rake cutting edges extending the 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 flattering 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.

Drill Sets

HIGH SPEED STEEL · TiN COATED · COBALT · NITRO

DESCRIPTION	EDP NUMBER	LIST PRICE
13 Pc. DRILL SETS — 1/16 thru 1/4 by 64ths		
HSS – ECONOMY JOBBER DRILLS (IMPORT)	100E13	$20.00
HSS – QUALITY IMPORT JOBBER DRILLS	100SE13	24.09
HSS – REGULAR JOBBER DRILLS (USA)	200A13	31.43
HSS – REGULAR JOBBER DRILLS (USA)	200B13	31.43
HSS – FAST SPIRAL JOBBER DRILLS (USA)	200F13	62.54
HSS – SLOW SPIRAL JOBBER DRILLS (USA)	200S13	67.94
HSS – LEFT HAND JOBBER DRILLS (USA)	200LH13	101.83
HSS – LEFT HAND JOBBER DRILLS (IMP)	400LH13	67.70
HSS – SCREW MACHINE DRILLS (USA)	300A13	32.31
NITRO – SCREW MACHINE LENGTH (USA)	300N13	37.05
COBALT – SCREW MACHINE LENGTH (USA)	300C13	58.58
NITRO – MECHANIC LENGTH 3 FLATS (USA)	350N13	40.86
HSS – HEAVY DUTY DRILLS (IMPORT)	400HDE13	29.65
HSS – HEAVY DUTY DRILLS (USA)	400HD13	36.32
NITRO – JOBBERS LENGTH DRILL (USA)	400N13	39.73
COBALT – HEAVY DUTY DRILLS (IMPORT)	500E13	46.53
COBALT – HEAVY DUTY DRILLS (USA)	500A13	57.31
TiN COATED – JOBBER DRILLS (USA)	200T13	80.79
TiN COATED – 135° S P JOBBERS (USA)	400T13	94.96



15 Pc. DRILL SETS — 1/16 thru 1/2 by 32nds		
HSS – ECONOMY JOBBER DRILLS (IMPORT)	100E15	$44.15
HSS – QUALITY IMPORT JOBBER DRILLS	100SE15	58.05
HSS – REGULAR JOBBER DRILLS (USA)	200A15	80.68
HSS – REGULAR JOBBER DRILLS (USA)	200B15	80.68
HSS – FAST SPIRAL JOBBER DRILLS (USA)	200F15	168.30
HSS – SLOW SPIRAL JOBBER DRILLS (USA)	200S15	186.50
HSS – LEFT HAND JOBBER DRILLS (USA)	200LH15	252.43
HSS – LEFT HAND JOBBER DRILLS (IMP)	400LH15	155.91
NITRO – MECHANIC LENGTH 3 FLATS (USA)	350N15	108.69
HSS – HEAVY DUTY DRILLS (IMPORT)	400HDE15	76.32
HSS – HEAVY DUTY DRILLS (USA)	400HD15	97.91
NITRO – JOBBERS LENGTH DRILL (USA)	400N15	105.46
COBALT – HEAVY DUTY DRILLS (IMPORT)	500E15	122.38
COBALT – HEAVY DUTY DRILLS (USA)	500A15	163.61
TiN COATED – JOBBER DRILLS (USA)	200T15	220.60
TiN COATED – 135° S P JOBBERS (USA)	400T15	258.71



21 Pc. DRILL SETS — 1/16 thru 3/8 by 64ths		
HSS – ECONOMY JOBBER DRILLS (IMPORT)	100E21	$41.36
HSS – QUALITY IMPORT JOBBER DRILLS	100SE21	53.46
HSS – REGULAR JOBBER DRILLS (USA)	200A21	73.33
HSS – REGULAR JOBBER DRILLS (USA)	200B21	73.33
HSS – FAST SPIRAL JOBBER DRILLS (USA)	200F21	152.97
HSS – SLOW SPIRAL JOBBER DRILLS (USA)	200S21	167.87
HSS – LEFT HAND JOBBER DRILLS (USA)	200LH21	232.12
HSS – LEFT HAND JOBBER DRILLS (IMP))	400LH21	147.20
HSS – SCREW MACHINE DRILLS (USA)	300A21	74.68
NITRO – SCREW MACHINE LENGTH (USA)	300N21	87.30
COBALT – SCREW MACHINE LENGTH (USA)	300C21	143.96
NITRO – MECHANIC LENGTH 3 FLATS (USA)	350N21	98.60
HSS – HEAVY DUTY DRILLS (IMPORT)	400HDE21	69.35
HSS – HEAVY DUTY DRILLS (USA)	400HD21	88.16
NITRO – JOBBERS LENGTH DRILL (USA)	400N21	95.55
COBALT – HEAVY DUTY DRILLS (IMPORT)	500E21	111.71
COBALT – HEAVY DUTY DRILLS (USA)	500A21	146.30
TiN COATED – JOBBER DRILLS (USA)	200T21	210.96
TiN COATED – 135° S P JOBBERS (USA)	400T21	243.69



Drill Sets

HIGH SPEED STEEL · TiN COATED · COBALT · NITRO

DESCRIPTION	EDP NUMBER	LIST PRICE
19 Pc. MAINTENANCE DRILL SETS 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		
HSS – REGULAR JOBBER DRILLS (USA)	200A19	$88.09
HSS – REGULAR JOBBER DRILLS (USA)	200B19	102.01
HSS – HEAVY DUTY DRILLS (USA)	400A19	102.01
NITRO – JOBBERS LENGTH DRILL (USA)	400N19	112.67



21 Pc. DRILL SETS — 1/16 thru 1/4 by 64ths & 9/32 thru 1/2 by 32nds		
HSS – ECONOMY JOBBER DRILLS (IMPORT)	100E21V	$52.62
HSS – QUALITY IMPORT JOBBER DRILLS	100SE21V	68.39
HSS – REGULAR JOBBER DRILLS (USA)	200A21V	94.38
HSS – REGULAR JOBBER DRILLS (USA)	200B21V	94.38
HSS – FAST SPIRAL JOBBER DRILLS (USA)	200F21V	196.00
HSS – SLOW SPIRAL JOBBER DRILLS (USA)	200S21V	216.76
HSS – LEFT HAND JOBBER DRILLS (USA)	200LH21V	298.76
HSS – LEFT HAND JOBBER DRILLS (IMP)	400LH21V	188.10
NITRO – MECHANIC LENGTH 3 FLATS (USA)	350N21V	126.44
HSS – HEAVY DUTY DRILLS (IMPORT)	400HDE21V	89.26
HSS – HEAVY DUTY DRILLS (USA)	400HD21V	113.96
NITRO – JOBBERS LENGTH DRILL (USA)	400N21V	122.74
COBALT – HEAVY DUTY DRILLS (IMPORT)	500E21V	142.77
COBALT – HEAVY DUTY DRILLS (USA)	500A21V	188.85
TiN COATED – JOBBER DRILLS (USA)	200T21V	257.36
TiN COATED – 135° S P JOBBERS (USA)	400T21V	301.73



29 Pc. DRILL SETS — 1/16 thru 1/2 by 64ths		
HSS – ECONOMY JOBBER DRILLS (IMPORT)	100E29	$79.31
HSS – QUALITY IMPORT JOBBER DRILLS	100SE29	106.90
HSS – REGULAR JOBBER DRILLS (USA)	200A29	150.86
HSS – REGULAR JOBBER DRILLS (USA)	200B29	150.86
HSS – FAST SPIRAL JOBBER DRILLS (USA)	200F29	318.46
HSS – SLOW SPIRAL JOBBER DRILLS (USA)	200S29	354.66
HSS – LEFT HAND JOBBER DRILLS (USA)	200LH29	482.38
HSS – LEFT HAND JOBBER DRILLS (IMP)	400LH29	298.75
HSS – SCREW MACHINE DRILLS (USA)	300A29	148.52
NITRO – SCREW MACHINE LENGTH (USA)	300N29	183.26
COBALT – SCREW MACHINE LENGTH (USA)	300C29	297.87
NITRO – MECHANIC LENGTH 3 FLATS (USA)	350N29	203.09
HSS – HEAVY DUTY DRILLS (IMPORT)	400HDE29	141.97
HSS – HEAVY DUTY DRILLS (USA)	400HD29	183.26
NITRO – JOBBERS LENGTH DRILL (USA)	400N29	194.86
COBALT – HEAVY DUTY DRILLS (IMPORT)	500E29	232.03
COBALT – HEAVY DUTY DRILLS (USA)	500A29	312.73
TiN COATED – JOBBER DRILLS (USA)	200T29	422.72
TiN COATED – 135° S P JOBBERS (USA)	400T29	494.77



26 Pc. DRILL SETS — "A" thru "Z"		
HSS – ECONOMY JOBBER DRILLS (IMPORT)	100E26	$97.87
HSS – REGULAR JOBBER DRILLS (USA)	200A26	168.22
HSS – REGULAR JOBBER DRILLS (USA)	200B26	168.22
HSS – HEAVY DUTY DRILLS (USA)	400HD26	186.93
NITRO – JOBBERS LENGTH DRILL (USA)	400N26	235.85
COBALT – HEAVY DUTY DRILLS (USA)	500A26	323.42



Drill Sets

HIGH SPEED STEEL · TiN COATED · COBALT · NITRO

DESCRIPTION	EDP NUMBER	LIST PRICE
60 Pc. DRILL SET — #1 thru #60		
HSS – REGULAR JOBBER DRILLS (USA)	200A60	$124.17
HSS – REGULAR JOBBER DRILLS (USA)	200B60	124.17
HSS – HEAVY DUTY DRILLS (USA)	400HD60	139.06
NITRO – JOBBERS LENGTH DRILL (US)	400N60	150.34
COBALT – HEAVY DUTY DRILLS IMPORT	500E60	180.10
COBALT – HEAVY DUTY DRILLS (USA)	500A60	229.78
20 Pc. DRILL SET — #61 thru #80		
HSS – REGULAR JOBBER DRILLS (USA)	200A20	$45.68
115 Pc. DRILL SETS — 1/16 thru 1/2 by 64ths, #1 thru #60 & "A" thru "Z"		
HSS – REGULAR JOBBER DRILLS (USA)	200A0115	$426.93
HSS – REGULAR JOBBER DRILLS (USA)	200B0115	426.93
HSS – HEAVY DUTY DRILLS (USA)	400HD0115	489.18
NITRO – JOBBER LENGTH DRILLS (US)	400N0115	568.45
COBALT – HEAVY DUTY DRILLS (USA)	500A0115	849.61
METRIC DRILL SETS		
HSS – 1mm to 7mm by 0.5mm (IMPORT)	800E13	$32.63
HSS – 1mm to 7mm by 0.5mm (USA)	800A13	52.85
HSS – 1mm to 10mm by 0.5mm (IMP)	800E19	65.03
HSS – 1mm to 10mm by 0.5mm (USA)	800A19	111.14
HSS – 1mm to 13mm by 0.5mm (IMP)	800E25	97.22
HSS – 1mm to 13mm by 0.5mm (USA)	800A25	269.05
1/4" & 3/8" REDUCED SHANK DRILLS		
350N Series – 1/16 thru 1/2 by 32nds w/ 3/8 Sk	1045N15	$120.76
350N Series – 1/16 thru 1/2 by 64ths w/ 3/8 Sk	1045N29	227.58
400N Series – 1/16 thru 1/2 by 32nds w/ 1/4 Sk	1025N15	143.06
400N Series – 1/16 thru 1/2 by 64ths w/ 1/4 Sk	1025N29	269.35
400N Series – 1/16 thru 1/2 by 32nds w/ 3/8 Sk	1035N15	119.22
400N Series – 1/16 thru 1/2 by 64ths w/ 3/8 Sk	1035N29	222.14
1/2" S & D REDUCED SHANK DRILLS		
HSS – 9/16 to 1" by 8ths (IMPORT) 3 FLATS	1000E5	$135.13
HSS – 9/16 to 1" by 8ths (USA)	1000A5	238.73
HSS – 9/16 to 1" by 8ths (USA) 3 FLATS	1000F5	252.04
HSS – 9/16 to 1" by 8ths (IMPORT) 135° S P	1000EF5	202.81
NITRO – 9/16 to 1" by 8ths (USA) 118° S P	1000N5	274.66
COBALT – 9/16 to 1" by 8ths (IMP) 135 S P	1000EC5	309.18
COBALT – 9/16 to 1" by 8ths (USA)	1000C5	474.69
HSS – 9/16 to 1" by 16ths (IMPORT)	1000E8	188.21
HSS – 9/16 to 1" by 16ths (USA)	1000A8	358.49
HSS – 9/16 to 1" by 16ths (USA) 3 FLATS	1000F8	380.40
HSS – 9/16 to 1" by 16ths (IMPORT) 135° S P	1000EF8	299.02
NITRO – 9/16 to 1" by 16ths (USA) 118° S P	1000N8	417.30
COBALT – 9/16 to 1" by 16ths (IMP) 135° S P	1000EC8	474.05
COBALT – 9/16 to 1" by 16ths (USA)	1000C8	742.45
HSS – 1/2 to 1" by 64ths (IMPORT)	1000E32	614.41
HSS – 1/2 to 1" by 64hs (USA)	1000A32	1,281.55
HSS – 1/2 to 1" by 64hs (USA) 3 FLATS	1000F32	1,369.51
HSS – 1/2 to 1" by 64ths (IMP) 135° S P	1000EF32	1,045.69
NITRO – 1/2 to 1" by 64ths (USA)	1000N32	1,564.78
COBALT – 1/2 to 1" by 64ths (IMP) 135° S P	1000CE32	1,851.79
COBALT – 1/2 to 1" by 64ths (USA)	1000C32	2,849.07



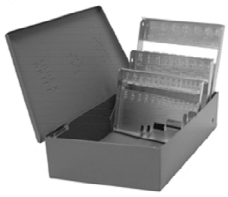






Drill Sets

DESCRIPTION	EDP NUMBER	LIST PRICE
DRILL INDEX CASES ONLY		
13 pc. CASE 1/16th thru 1/4 by 64ths	13IDX	$7.10
15 pc. CASE 1/16 thru 1/2 by 32nds	15IDX	12.10
21 pc. CASE 1/16 thru 3/8 by 64ths	21IDX	12.10
29 pc. CASE 1/16 thru 1/2 by 64ths	29IDX	14.70
60 pc. CASE #1 thru #60	60IDX	12.75



Drill Display Cases

COUNTER TOP DISPLAYS

540 Pc. FRACTIONAL SIZES DRILL DISPLAY

HSS–QUALITY IMPORT DRILLS	100SE	100SE540C	$1,332.78
HSS–JOBBER DRILLS (USA)	200A	200A540C	1,850.40
HSS–JOBBER DRILLS (USA)	200B	200B540C	1,850.40
HSS–JOBBER DRILLS (USA)	200F	200F540C	3,911.46
HSS–JOBBER DRILLS (USA)	200S	200S540C	4,300.98
HSS–JOBBER DRILLS (USA)	200LH	200LH540C	6,145.80
HSS–SCREW MACHINE DRILL (US)	300A	300A540C	1,856.46
NITRO – SCREW MACHINE DRILLS	300N	300N540C	2,238.84
COBALT–SCREW MACHINE DRILL	300C	300C540C	3,671.22
NITRO–MECHANICS LGTH DRILLS	350N	350N540C	2,501.16
HSS–HEAVY DUTY DRILLS (USA)	400A	400A540C	2,223.06
NITRO–NITRO DRILLS (USA)	400N	400N540C	2,431.74
COBALT–JOBBER DRILLS (USA)	500A	500A540C	3,741.24
TiN COATED–JOBBER DRILLS (US)	200T	200T540C	5,155.74
TiN COATED–JOBBER DRILLS (US)	400	400T540C	6,033.84

DISPLAY CONTENTS:

(24) 1/16	(24) 5/64	(24) 3/32	(24) 7/64	(60) 1/8
(24) 9/64	(24) 5/32	(24) 11/64	(48) 3/16	(24) 13/64
(24) 7/32	(24) 15/64	(60) 1/4	(12) 17/64	(12) 9/32
(12) 19/64	(12) 5/16	(6) 21/64	(6) 11/32	(6) 23/64
(12) 3/8	(6) 25/64	(6) 13/32	(6) 27/64	(12) 7/16
(6) 29/64	(6) 15/32	(6) 31/64	(6) 1/2	

JOBBER DRILL MERCHANDISER



- Clear cover allows maximum product visibility.
- May be locked to discourage pilferage.
- Two way storage drawer at bottom of display holds reserve stock; may be opened from front or back for easy dealer access.
- Display is constructed of durable, high impact materials and comes completely assembled and ready to use.
- May be used as a wall display.

Drill Dispensers

JOBBER LENGTH & SCREW MACHINE LENGTH DRILL DISPENSERS

FRACTIONAL SIZE DRILL DISPENSERS



JOBBERS LENGTH DRILLS 1/16" thru 1/2" by 64ths	270DX	$190.55
SCREW MACHINE LENGTH DRILLS 1/16" thru 1/2" by 64ths	370DX	202.25

WIRE SIZE DRILL DISPENSERS



JOBBERS LENGTH DRILLS #1 thru #60	720DX	$245.35
JOBBERS LENGTH DRILLS #61 thru #80	280SDX	258.40
SCREW MACHINE LENGTH DRILLS #1 thru #60	320DX	255.75

LETTER SIZE DRILL DISPENSERS

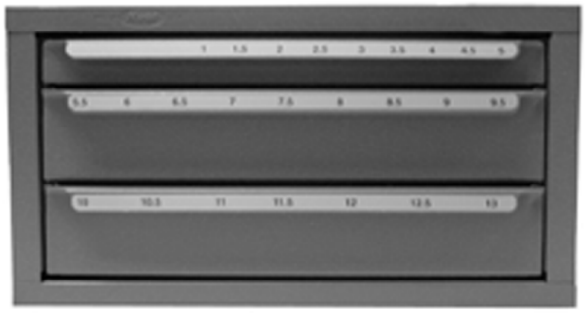
JOBBERS LENGTH DRILLS "A" thru "Z"	240DX	$190.55

MASTER DRILL DISPENSER



JOBBERS LENGTH DRILLS 1/16" thru 1/2", #1 thru #60 & "A" thru "Z"	115DX	$835.20

METRIC SIZE DRILL DISPENSER

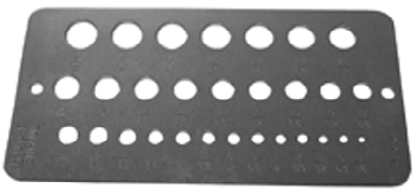


JOBBERS LENGTH DRILLS 1.0mm thru 13.0mm by 0.50mm	800DX	198.35
JOBBERS LENGTH DRILLS 0.35mm thru 2.5mm by 0.05, 2.6mm thru 10.0mm by 0.10mm & common sizes to 13.0mm	800MDX	835.20

MASTER CABINETS

REDUCED SHANK DRILLS 1/2" shank S&D 6 drawer master cabinet	1000DX	1,432.85
COMBINATION METRIC & US DRILLS Fractional & Metric 6 drawer master cab.	FMDX	1,432.85

DRILL GAUGES



FRAC. SIZES 1/16 to 1/2 by 64ths	29G0000	$6.75
1/2" to 1" by 64ths	32G0000	31.25
WIRE SIZES #1 thru #60	60G0000	6.75

TECHNICAL

MATERIAL	HARDNESS	DRILL STYLE	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 CAST	UP TO 150	Heavy Duty or NITRO	SPLIT POINT	135°	75-150	MEDIUM	DRY / AIR
IRON, MEDIUM CAST	150-250	Heavy Duty or NITRO	SPLIT POINT	135°	50-100	MEDIUM	DRY / AIR
IRON, HARD CAST	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°	560-70	MEDIUM	WATER SOLUBLE
STEEL, ALLOYED MED 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

FEED PER DRILL REVOLUTION

DRILL DIAMETER	LIGHT	MEDIUM	HEAVY
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 SMF and then increase to the maximum.

RPM = $\frac{\text{SFM} \times 3.82}{\text{TD}}$ = Revolutions Per Minute

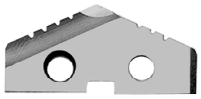
SFM = RPM x TD x .06 = Surface Feet Per Minute

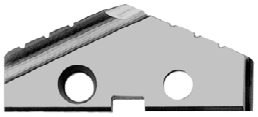
TD — Tool diameter in inches

Spade Drill Inserts

MADE IN USA **SUPER PARTICLE METAL COBALT** **130° POINT**

NITRO = Nitride Treatment
TITAN = TiN Coated
SUPER TITAN = TiCN Coated
ULTRA TITAN = TiAIN Coated





Super Cobalt Particle Metal out performs T-15, High Speed Steel and other standard blade insert materials.
CNC grinding ensures accurate web point thinning which minimizes end thurst, providing improved hole finish and consisstently straight holes.
Packaging: 7/16" thru 1/2", 10 per pack.

SERIES 506 — BLADE THICKNESS: 3/32"

Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
7/16	.4375	506N128	$60.36	506T128	$61.99	506ST128	$74.87	506UT128	$74.87
11.5 mm	.4528	506N0115	64.43	506T0115	66.88	506ST0115	79.93	506UT0115	79.93
29/64	.4531	506N129	60.36	506T129	61.99	506ST129	74.87	506UT129	74.87
15/32	.4688	506N130	60.36	506T130	61.99	506ST130	74.87	506UT130	74.87
12 mm	.4724	506N012	64.43	506T012	66.88	506ST012	79.93	506UT012	79.93
31/64	.4844	506N131	60.36	506T131	61.99	506ST131	74.87	506UT131	74.87
12.5 mm	.4921	506N0125	64.43	506T0125	66.88	506ST0125	79.93	506UT0125	79.93
1/2	.5000	506N132	60.36	506T132	61.99	506ST132	74.87	506UT132	74.87

SERIES 508 — BLADE THICKNESS: 1/8"

Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
13 mm	.5118	508N013	$72.59	508T013	$76.67	508ST013	$90.05	508UT013	$90.05
33/64	.5156	508N133	64.43	508T133	66.88	508ST133	79.93	508UT133	79.93
17/32	.5312	508N134	64.43	508T134	66.88	508ST134	79.93	508UT134	79.93
13.5 mm	.5315	508N0135	72.59	508T0135	76.67	508ST0135	90.05	508UT0135	90.05
35/64	.5469	508N135	64.43	508T135	66.88	508ST135	79.93	508UT135	79.93
14 mm	.5512	508N014	72.59	508T014	76.67	508ST014	90.05	508UT014	90.05
9/16	.5625	508N136	64.43	508T136	66.88	508ST136	79.93	508UT136	79.93
14.5 mm	.5709	508N0145	72.59	508T0145	76.67	508ST0145	90.05	508UT0145	90.05
37/64	.5781	508N137	64.43	508T137	66.88	508ST137	79.93	508UT137	79.93
15 mm	.5906	508N015	72.59	508T015	76.67	508ST015	90.05	508UT015	90.05
19/32	.5938	508N138	64.43	508T138	66.88	508ST138	79.93	508UT138	79.93
39/64	.6094	508N139	64.43	508T139	66.88	508ST139	79.93	508UT139	79.93
15.5 mm	.6102	508N0155	72.59	508T0155	76.67	508ST0155	90.05	508UT0155	90.05
5/8	.6250	508N140	64.43	508T140	66.88	508ST140	79.93	508UT140	79.93
16 mm	.6299	508N016	72.59	508T016	76.67	508ST016	90.05	508UT016	90.05
41/64	.6406	508N141	64.43	508T141	66.88	508ST141	79.93	508UT141	79.93
16.5 mm	.6496	508N0165	72.59	508T0165	76.67	508ST0165	90.05	508UT0165	90.05
21/32	.6562	508N142	64.43	508T142	66.88	508ST142	79.93	508UT142	79.93
17 mm	.6693	508N017	72.59	508T017	76.67	508ST017	90.05	508UT017	90.05
43/64	.6719	508N143	64.43	508T143	66.88	508ST143	79.93	508UT143	79.93
11/16	.6875	508N144	64.43	508T144	66.88	508ST144	79.93	508UT144	79.93
17.5 mm	.6890	508N0175	72.59	508T0175	76.67	508ST0175	90.05	508UT0175	90.05

Continued on next page

Spade Drill Inserts

MADE IN USA **SUPER PARTICLE METAL COBALT** **130° POINT**

SERIES 510 — BLADE THICKNESS: 5/32"

Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
45/64	.7031	510N145	**$72.59**	510T145	**$76.67**	510ST145	**$90.05**	510UT145	**$90.05**
18 mm	.7087	510N018	**84.01**	510T018	**87.27**	510ST018	**104.40**	510UT018	**104.40**
23/32	.7188	510N146	**72.59**	510T146	**76.67**	510ST146	**90.05**	510UT146	**90.05**
18.5 mm	.7283	510N0185	**84.01**	510T0185	**87.27**	510ST0185	**104.40**	510UT0185	**104.40**
47/64	.7344	510N147	**72.59**	510T147	**76.67**	510ST147	**90.05**	510UT147	**90.05**
19 mm	.7480	510N019	**84.01**	510T019	**87.27**	510ST019	**104.40**	510UT019	**104.40**
3/4	.7500	510N148	**72.59**	510T148	**76.67**	510ST148	**90.05**	510UT148	**90.05**
49/64	.7656	510N149	**72.59**	510T149	**76.67**	510ST149	**90.05**	510UT149	**90.05**
19.5 mm	.7677	510N0195	**84.01**	510T0195	**87.27**	510ST0195	**104.40**	510UT0195	**104.40**
25/32	.7812	510N150	**72.59**	510T150	**76.67**	510ST150	**90.05**	510UT150	**90.05**
20 mm	.7874	510N020	**84.01**	510T020	**87.27**	510ST020	**104.40**	510UT020	**104.40**
51/64	.7969	510N151	**72.59**	510T151	**76.67**	510ST151	**90.05**	510UT151	**90.05**
20.5 mm	.8071	510N0205	**84.01**	510T0205	**87.27**	510ST0205	**104.40**	510UT0205	**104.40**
13/16	.8125	510N152	**72.59**	510T152	**76.67**	510ST152	**90.05**	510UT152	**90.05**
21 mm	.8268	510N021	**84.01**	510T021	**87.27**	510ST021	**104.40**	510UT021	**104.40**
53/64	.8281	510N153	**72.59**	510T153	**76.67**	510ST153	**90.05**	510UT153	**90.05**
27/32	.8438	510N154	**72.59**	510T154	**76.67**	510ST154	**90.05**	510UT154	**90.05**
55/64	.8594	510N155	**72.59**	510T155	**76.67**	510ST155	**90.05**	510UT155	**90.05**
22 mm	.8661	510N022	**84.01**	510T022	**87.27**	510ST022	**104.40**	510UT022	**104.40**
7/8	.8750	510N156	**72.59**	510T156	**76.67**	510ST156	**90.05**	510UT156	**90.05**
57/64	.8906	510N157	**72.59**	510T157	**76.67**	510ST157	**90.05**	510UT157	**90.05**
23 mm	.9055	510N023	**84.01**	510T023	**87.27**	510ST023	**104.40**	510UT023	**104.40**
29/32	.9062	510N158	**72.59**	510T158	**76.67**	510ST158	**90.05**	510UT158	**90.05**
59/64	.9219	510N159	**72.59**	510T159	**76.67**	510ST159	**90.05**	510UT159	**90.05**
15/16	.9375	510N160	**72.59**	510T160	**76.67**	510ST160	**90.05**	510UT160	**90.05**
24 mm	.9449	510N024	**84.01**	510T024	**87.27**	510ST024	**104.40**	510UT024	**104.40**

SERIES 512 — BLADE THICKNESS: 3/16"

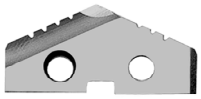
Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
61/64	.9531	512N161	**$84.01**	512T161	**$87.27**	512ST161	**$104.40**	512UT161	**$104.40**
31/32	.9688	512N162	**84.01**	512T162	**87.27**	512ST162	**104.40**	512UT162	**104.40**
63/64	.9844	512N163	**84.01**	512T163	**87.27**	512ST163	**104.40**	512UT163	**104.40**
1"	1.0000	512N164	**84.01**	512T164	**87.27**	512ST164	**104.40**	512UT164	**104.40**
26 mm	1.0236	512N026	**108.48**	512T026	**113.21**	512ST026	**132.95**	512UT026	**132.95**
1-1/32	1.0312	512N202	**84.01**	512T202	**87.27**	512ST202	**104.40**	512UT202	**104.40**
1-1/16	1.0625	512N204	**84.01**	512T204	**87.27**	512ST204	**104.40**	512UT204	**104.40**
27 mm	1.0630	512N027	**108.48**	512T027	**113.21**	512ST027	**132.95**	512UT027	**132.95**
1-3/32	1.0938	512N206	**84.01**	512T206	**87.27**	512ST206	**104.40**	512UT206	**104.40**
28 mm	1.1024	512N028	**108.48**	512T028	**113.21**	512ST028	**132.95**	512UT028	**132.95**
1-1/8	1.1250	512N208	**84.01**	512T208	**87.27**	512ST208	**104.40**	512UT208	**104.40**
29 mm	1.1417	512N029	**108.48**	512T029	**113.21**	512ST029	**132.95**	512UT029	**132.95**
1-5/32	1.1562	512N210	**84.01**	512T210	**87.27**	512ST210	**104.40**	512UT210	**104.40**
30 mm	1.1811	512N030	**108.48**	512T030	**113.21**	512ST030	**132.95**	512UT030	**132.95**
1-3/16	1.1875	512N212	**84.01**	512T212	**87.27**	512ST212	**104.40**	512UT212	**104.40**
1-7/32	1.2188	512N214	**84.01**	512T214	**87.27**	512ST214	**104.40**	512UT214	**104.40**
31 mm	1.2205	512N031	**108.48**	512T031	**113.21**	512ST031	**132.95**	512UT031	**132.95**
1-1/4	1.2500	512N216	**84.01**	512T216	**87.27**	512ST216	**104.40**	512UT216	**104.40**
32 mm	1.2598	512N032	**108.48**	512T032	**113.21**	512ST032	**132.95**	512UT032	**132.95**
1-9/32	1.2812	512N218	**84.01**	512T218	**87.27**	512ST218	**104.40**	512UT218	**104.40**
33 mm	1.2992	512N033	**108.48**	512T033	**113.21**	512ST033	**132.95**	512UT033	**132.95**
1-5/16	1.3125	512N220	**84.01**	512T220	**87.27**	512ST220	**104.40**	512UT220	**104.40**
34 mm	1.3386	512N034	**108.48**	512T034	**113.21**	512ST034	**132.95**	512UT034	**132.95**
1-11/32	1.3438	512N222	**84.01**	512T222	**87.27**	512ST222	**104.40**	512UT222	**104.40**
1-3/8	1.3750	512N224	**84.01**	512T224	**87.27**	512ST224	**104.40**	512UT224	**104.40**
35 mm	1.3780	512N035	**108.48**	512T035	**113.21**	512ST035	**132.95**	512UT035	**132.95**

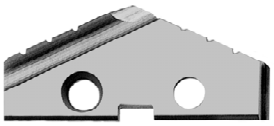
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Spade Drill Inserts

MADE IN USA **SUPER PARTICLE METAL COBALT** **130° POINT**

NITRO = Nitride Treatment
TITAN = TiN Coated
SUPER TITAN = TiCN Coated
ULTRA TITAN = TiAIN Coated





Super Cobalt Particle Metal out performs T-15, High Speed Steel and other standard blade insert materials.
CNC grinding ensures accurate web point thinning which minimizes end thurst, providing improved hole finish and consisstently straight holes.
Packaging: 7/16" thru 1/2", 10 per pack.

SERIES 516 — BLADE THICKNESS: 1/4"

Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
1-13/32	1.4062	516N226	**$108.48**	516T226	**$113.21**	516ST226	**$132.95**	516UT226	**$132.95**
36 mm	1.4173	516N036	**137.03**	516T036	**144.86**	516ST036	**166.39**	516UT036	**166.39**
1-7/16	1.4375	516N228	**108.48**	516T228	**113.21**	516ST228	**132.95**	516UT228	**132.95**
37 mm	1.567	516N037	**137.03**	516T037	**144.86**	516ST037	**166.39**	516UT037	**166.39**
1-15/32	1.4688	516N230	**108.48**	516T230	**113.21**	516ST230	**132.95**	516UT230	**132.95**
38 mm	1.4961	516N038	**137.03**	516T038	**144.86**	516ST038	**166.39**	516UT038	**166.39**
1-1/2	1.5000	516N232	**108.48**	516T232	**113.21**	516ST232	**132.95**	516UT232	**132.95**
1-17/32	1.5312	516N234	**108.48**	516T234	**113.21**	516ST234	**132.95**	516UT234	**132.95**
39 mm	1.5354	516N039	**137.03**	516T039	**144.86**	516ST039	**166.39**	516UT039	**166.39**
1-9/16	1.5625	516N236	**108.48**	516T236	**113.21**	516ST236	**132.95**	516UT236	**132.95**
40 mm	1.5748	516N040	**137.03**	516T040	**144.86**	516ST040	**166.39**	516UT040	**166.39**
1-19/32	1.5938	516N238	**108.48**	516T238	**113.21**	516ST238	**132.95**	516UT238	**132.95**
41 mm	1.6142	516N041	**137.03**	516T041	**144.86**	516ST041	**166.39**	516UT041	**166.39**
1-5/8	1.6250	516N240	**108.48**	516T240	**113.21**	516ST240	**132.95**	516UT240	**132.95**
42 mm	1.6535	516N042	**137.03**	516T042	**144.86**	516ST042	**166.39**	516UT042	**166.39**
1-21/32	1.6562	516N242	**108.48**	516T242	**113.21**	516ST242	**132.95**	516UT242	**132.95**
1-11/16	1.6875	516N244	**108.48**	516T244	**113.21**	516ST244	**132.95**	516UT244	**132.95**
43 mm	1.6929	516N043	**137.03**	516T043	**144.86**	516ST043	**166.39**	516UT043	**166.39**
1-23/32	1.7188	516N246	**108.48**	516T246	**113.21**	516ST246	**132.95**	516UT246	**132.95**
44 mm	1.7323	516N044	**137.03**	516T044	**144.86**	516ST044	**166.39**	516UT044	**166.39**
1-3/4	1.7500	516N248	**108.48**	516T248	**113.21**	516ST248	**132.95**	516UT248	**132.95**
45 mm	1.7717	516N045	**137.03**	516T045	**144.86**	516ST045	**166.39**	516UT045	**166.39**
1-25/32	1.7812	516N250	**108.48**	516T250	**113.21**	516ST250	**132.95**	516UT250	**132.95**
46 mm	1.8110	516N046	**137.03**	516T046	**144.86**	516ST046	**166.39**	516UT046	**166.39**
1-13/16	1.8125	516N252	**108.48**	516T252	**113.21**	516ST252	**132.95**	516UT252	**132.95**
1-27/32	1.8438	516N254	**108.48**	516T254	**113.21**	516ST254	**132.95**	516UT254	**132.95**
47 mm	1.8504	516N047	**137.03**	516T047	**144.86**	516ST047	**166.39**	516UT047	**166.39**
1-7/8	1.8750	516N256	**108.48**	516T256	**113.21**	516ST256	**132.95**	516UT256	**132.95**

SERIES 520 — BLADE THICKNESS: 5/16"

Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
48 mm	1.8898	520N048	**$218.59**	520T048	**$242.73**	520ST048	**$274.05**	520UT048	**$274.05**
1-29/32	1.9062	520N258	**137.03**	520T258	**144.86**	520ST258	**166.39**	520UT258	**166.39**
49 mm	1.9291	520N049	**218.59**	520T049	**242.73**	520ST049	**274.05**	520UT049	**274.05**
1-15/16	1.9375	520N260	**137.03**	520T260	**144.86**	520ST260	**166.39**	520UT260	**166.39**
50 mm	1.9685	520N050	**218.59**	520T050	**242.73**	520ST050	**274.05**	520UT050	**274.05**
1-31/32	1.9688	520N262	**137.03**	520T262	**144.86**	520ST262	**166.39**	520UT262	**166.39**
2"	2.0000	520N264	**137.03**	520T264	**242.73**	520ST264	**166.39**	520UT264	**166.39**
51 mm	2.0079	520N051	**218.59**	520T051	**242.73**	520ST051	**274.05**	520UT051	**274.05**
2-1/32	2.0312	520N302	**137.03**	520T302	**144.86**	520ST302	**166.39**	520UT302	**166.39**
52 mm	2.0472	520N052	**218.59**	520T052	**242.73**	520ST052	**274.05**	520UT052	**274.05**
2-1/16	2.0625	520N304	**137.03**	520T304	**144.86**	520ST304	**166.39**	520UT304	**166.39**
53 mm	2.0866	520N053	**218.59**	520T053	**242.73**	520ST053	**274.05**	520UT053	**274.05**
2-3/32	2.0938	520N306	**137.03**	520T306	**144.86**	520ST306	**166.39**	520UT306	**166.39**
2-1/8	2.1250	520N308	**137.03**	520T308	144.86	520ST308	**166.39**	520UT308	**166.39**

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Spade Drill Inserts

MADE IN USA **SUPER PARTICLE METAL COBALT** **130° POINT**

SERIES 520 — BLADE THICKNESS: 5/16"

Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
54 mm	2.1260	520N054	**$218.59**	520T054	**$242.73**	520ST054	**$274.05**	520UT054	**$274.05**
2-5/32	2.1562	520N310	**137.03**	520T310	**144.86**	520ST310	**166.39**	520UT310	**166.39**
55 mm	2.1654	520N055	**218.59**	520T055	**242.73**	520ST055	**274.05**	520UT055	**274.05**
2-3/16	2.1875	520N312	**137.03**	520T312	**144.86**	520ST312	**166.39**	520UT312	**166.39**
56 mm	2.2047	520N056	**218.59**	520T056	**242.73**	520ST056	**274.05**	520UT056	**274.05**
2-7/32	2.2188	520N314	**137.03**	520T314	**144.86**	520ST314	**166.39**	520UT314	**166.39**
57 mm	2.2441	520N057	**218.59**	520T057	**242.73**	520ST057	**274.05**	520UT057	**274.05**
2-1/4	2.2500	520N316	**137.03**	520T316	**144.86**	520ST316	**166.39**	520UT316	**166.39**
2-9/32	2.2812	520N318	**137.03**	520T318	**144.86**	520ST318	**166.39**	520UT318	**166.39**
58 mm	2.2835	520N058	**218.59**	520T058	**242.73**	520ST058	**274.05**	520UT058	**274.05**
2-5/16	2.3125	520N320	**137.03**	520T320	**144.86**	520ST320	**166.39**	520UT320	**166.39**
59 mm	2.3228	520N059	**218.59**	520T059	**242.73**	520ST059	**274.05**	520UT059	**274.05**
2-11/32	2.3438	520N322	**137.03**	520T322	**144.86**	520ST322	**166.39**	520UT322	**166.39**
60 mm	2.3622	520N060	**218.59**	520T060	**242.73**	520ST060	**274.05**	520UT060	**274.05**
2-3/8	2.3750	520N324	**137.03**	520T324	**144.86**	520ST324	**166.39**	520UT324	**166.39**
61 mm	2.4016	520N061	**218.59**	520T061	**242.73**	520ST061	**274.05**	520UT061	**274.05**
2-13/32	2.4062	520N326	**137.03**	520T326	**144.86**	520ST326	**166.39**	520UT326	**166.39**
2-7/16	2.4375	520N328	**137.03**	520T328	**144.86**	520ST328	**166.39**	520UT328	**166.39**
62 mm	2.4409	520N062	**218.59**	520T062	**242.73**	520ST062	**274.05**	520UT062	**274.05**
2-15/32	2.4688	520N330	**137.03**	520T330	**144.86**	520ST330	**166.39**	520UT330	**166.39**
63 mm	2.4803	520N063	**218.59**	520T063	**242.73**	520ST063	**274.05**	520UT063	**274.05**
2-1/2	2.5000	520N332	**137.03**	520T332	**144.86**	520ST332	**166.39**	520UT332	**166.39**
64 mm	2.5197	520N064	**218.59**	520T064	**242.73**	520ST064	**274.05**	520UT064	**274.05**
2-17/32	2.5312	520N324	**137.03**	520T324	**144.86**	520ST324	**166.39**	520UT324	**166.39**
65 mm	2.5591	520N065	**218.59**	520T065	**242.73**	520ST065	**274.05**	520UT065	**274.05**
2-9/16	2.5625	520N336	**137.03**	520T336	**144.86**	520ST336	**166.39**	520UT336	**166.39**

SERIES 528 — BLADE THICKNESS: 7/16"

Insert Size	Decimal Inches	Nitro EDP Number	Nitro List Price	Titan EDP Number	Titan List Price	Super Titan EDP Number	Super Titan List Price	Ultra Titan EDP Number	Ultra Titan List Price
2-19/32	2.5938	528N338	**$218.59**	528T338	**$242.73**	528ST338	**$274.05**	528UT338	**$274.05**
66 mm	2.5984	528N066	**275.36**	528T066	**305.70**	528ST066	**345.17**	528UT066	**345.17**
2-5//8	2.6250	528N340	**218.59**	528T340	**242.73**	528ST340	**274.05**	528UT340	**274.05**
2-21/32	2.6562	528N342	**218.59**	528T342	**242.73**	528ST342	**274.05**	528UT342	**274.05**
68 mm	2.6772	528N068	**275.36**	528T068	**305.70**	528ST068	**345.17**	528UT068	**345.17**
2-11/16	2.6875	528N344	**218.59**	528T344	**242.73**	528ST344	**274.05**	528UT344	**274.05**
2-23/32	2.7188	528N346	**218.59**	528T346	**242.73**	528ST346	**274.05**	528UT346	**274.05**
2-3/4	2.7500	528N348	**218.59**	528T348	**242.73**	528ST348	**274.05**	528UT348	**274.05**
70 mm	2.7559	528N070	**275.36**	528T070	**305.70**	528ST070	**345.17**	528UT070	**345.17**
2-25/32	2.7812	528N350	**218.59**	528T350	**242.73**	528ST350	**274.05**	528UT350	**274.05**
2-13/16	2.8125	528N352	**218.59**	528T352	**242.73**	528ST352	**274.05**	528UT352	**274.05**
72 mm	2.8346	528N072	**275.36**	528T072	**305.70**	528ST072	**345.17**	528UT072	**345.17**
2-27/32	2.8438	528N354	**218.59**	528T354	**242.73**	528ST354	**274.05**	528UT354	**274.05**
2-7/8	2.8750	528N356	**218.59**	528T356	**242.73**	528ST356	**274.05**	528UT356	**274.05**
2-29/32	2.9062	528N358	**218.59**	528T358	**242.73**	528ST358	**274.05**	528UT358	**274.05**
74 mm	2.9134	528N074	**275.36**	528T074	**305.70**	528ST074	**345.17**	528UT074	**345.17**
2-15/16	2.9375	528N360	**218.59**	528T360	**242.73**	528ST360	**274.05**	528UT360	**274.05**
2-31/32	2.9688	528N362	**218.59**	528T362	**242.73**	528ST362	**274.05**	528UT362	**274.05**
76 mm	2.9921	528N076	**275.36**	528T076	**305.70**	528ST076	**345.17**	528UT076	**345.17**
3"	3.0000	528N364	**218.59**	528T364	**242.73**	528ST364	**274.05**	528UT364	**274.05**

Spade Drill Insert Holders

MADE IN USA — 1/2" REDUCED SHANK HOLDERS



Packaging: All sizes are individually packaged.

STRAIGHT FLUTE — SHORT LENGTH

SERIES	DRILL INSERT RANGE	MAXIMUM DRILL DEPTH	FLUTE LENGTH	TOOL REFERENCE LENGTH	SHANK LENGTH	OVERALL LENGTH	PIPE TAP	EDP NUMBER	LIST PRICE
506A	7/16" to 1/2"	1-1/4	2-13/32	2-1/2	2-1/32	4-7/16	1/8	506A001	**$510.52**
508A	33/64 to 11/16	1-3/8	2-1/2	2-39/64	2-1/32	4-17/32	1/8	508A002	**510.52**
510A	45/64 to 15/16	2-5/8	4-7/32	4-23/64	2-9/32	6-1/2	1/8	510A003	**531.47**
512A	31/32 to 1-3/8	3-3/8	5-1/16	5-13/64	2-9/32	7-11/32	1/4	512A004	**598.40**



Packaging: All sizes are individually packaged.

HELICAL FLUTE — STANDARD LENGTH

SERIES	DRILL INSERT RANGE	MAXIMUM DRILL DEPTH	FLUTE LENGTH	TOOL REFERENCE LENGTH	SHANK LENGTH	OVERALL LENGTH	PIPE TAP	EDP NUMBER	LIST PRICE
506B	7/16" to 1/2"	2-3/8	3-17/32	3-5/8	2-1/32	5-9/16	1/8	506B001	**$573.29**
508B	33/64 to 11/16	2-1/2	3-5/8	3-47/64	2-1/32	5-21/32	1/8	508B002	**661.17**
510B	45/64 to 15/16	6-5/8	8-3/32	8-15/64	2-9/32	10-3/8	1/8	510B003	**661.17**
512B	31/32 to 1-3/8	7-3/8	9-1/16	9-13/64	2-9/32	11-11/32	1/4	512B004	**749.05**

STRAIGHT SHANK — FLANGED HOLDERS



Multi-port coolant inducer holders designed to accommodate coolant entry through the shank, and the side of the flange.
Packaging: All sizes are individually packaged.

HELICAL FLUTE — STANDARD LENGTH

SERIES	DRILL INSERT RANGE	MAXIMUM DRILL DEPTH	FLUTE LENGTH	TOOL Reference LENGTH	SHANK DIAMETER	SHANK LENGTH	OVERALL LENGTH	PIPE TAP	EDP NUMBER	LIST PRICE
506C	7/16" to 1/2"	1-1/4	2-13/32	2-1/2	3/4	2-1/32	4-7/16	1/8	506C001	**$392.71**
508C	33/64 to 11/16	1-3/8	2-1/2	2-39/64	3/4	2-1/32	4-17/32	1/8	508C002	**392.71**
510C	45/64 to 15/16	2-5/8	4-7/32	4-23/64	1"	2-9/32	6-1/2	1/8	510C003	**408.82**
512C	31/32 to 1-3/8	3-3/8	5-1/16	5-13/64	1-1/4	2-9/32	7-11/32	1/4	512C004	**460.31**
516C	1-13/32 to 1-7/8	4-3/4	6-13/16	7"	1-1/2	2-11/16	9-1/2	1/4	516C005	**527.91**
520C	1-29/32 to 2-9/16	5-1/8	7-1/16	7-1/4	1-1/2	2-11/16	9-3/4	1/4	520C006	**576.19**

Continued on next page

Spade Drill Insert Holders

MADE IN USA — STRAIGHT SHANK — FLANGED HOLDERS



Multi-port coolant inducer holders designed to accommodate coolant entry through the shank, and the side of the flange.
Packaging: All sizes are individually packaged.

HELICAL FLUTE — STANDARD LENGTH

SERIES	DRILL INSERT RANGE	MAXIMUM DRILL DEPTH	FLUTE LENGTH	TOOL Reference LENGTH	SHANK DIAMETER	SHANK LENGTH	OVERALL LENGTH	PIPE TAP	EDP NUMBER	LIST PRICE
506D	7/16" to 1/2"	2-3/8	3-17/32	3-5/8	3/4	2-1/32	5-9/16	1/8	506D001	**$440.99**
508D	33/64 to 11/16	2-1/2	3-5/8	3-47/64	3/4	2-1/32	5-21/32	1/8	508D002	**508.59**
510D	45/64 to 15/16	6-5/8	8-3/32	8-15/64	1"	2-9/32	10-3/8	1/8	510D003	**508.59**
512D	31/32 to 1-3/8	7-3/8	9-1/16	9-13/64	1-1/4	2-9/32	11-11/32	1/4	512D004	**576.19**
516D	1-13/32 to 1-7/8	8-1/4	10--5/16	10-1/2	1-1/2	2-11/16	13"	1/4	516D005	**730.70**
520D	1-29/32 to 2-9/16	9-1/8	11-1/16	11-1/4	1-1/2	2-11/16	13-3/4	1/4	520D006	**798.30**

TAPER SHANK HOLDERS



Multi-port coolant inducer holders designed to accommodate coolant entry through the shank, through the side by use of a coolant adapter. The holder arbor section is designed to accept the HiRev coolant gland for optimum drilling speeds.
Packaging: All sizes are individually packaged.

STRAIGHT FLUTE — SHORT LENGTH

SERIES	DRILL INSERT RANGE	MAXIMUM DRILL DEPTH	FLUTE LENGTH	TOOL Reference LENGTH	MORSE TAPER	OVERALL LENGTH	PIPE TAP	EDP NUMBER	LIST PRICE
506E	7/16" to 1/2"	1-1/4	2-1/32	3-15/32	#2	6-29/32	1/8	506E001	**$392.71**
508E	33/64 to 11/16	1-3/8	2-3/16	3-41/64	#2	7-1/16	1/8	508E002	**392.71**
510E	45/64 to 15/16	2-3/4	3-7/8	5-39/64	#3	9-11/16	1/8	510E003	**424.91**
512E	31/32 to 1-3/8	3-3/8	4-1/2	6-19/64	#4	11-1/8	1/4	512E004	**492.51**
516E	1-13/32 to 1-7/8	4-3/8	6"	8-1/8	#5	14-1/8	1/4	516E005	**544.02**
520E	1-29/32 to 2-9/16	5-1/8	6-1/2	8-5/8	#5	14-5/8	1/4	520E006	**627.71**
528E	2-19/32 to 3"	6-3/4	8-1/2	11-1/4	#5	17-1/8	3/8	528E007	**1,027.69**



Multi-port coolant inducer holders designed to accommodate coolant entry through the shank, through the side by use of a coolant adapter. The holder arbor section is designed to accept the HiRev coolant gland for optimum drilling speeds.
Packaging: All sizes are individually packaged.

HELICAL FLUTE — STANDARD LENGTH

SERIES	DRILL INSERT RANGE	MAXIMUM DRILL DEPTH	FLUTE LENGTH	TOOL Reference LENGTH	MORSE TAPER	OVERALL LENGTH	PIPE TAP	EDP NUMBER	LIST PRICE
506F	7/16" to 1/2"	2-3/8	3-5/32	4-19/32	#2	8-1/32	1/16	506F001	**$408.82**
508F	33/64 to 11/16	2-1/2	3-5/16	4-49/64	#2	8-3/16	1/16	508F002	**476.42**
510F	45/64 to 15/16	6-5/8	7-7/8	9-39/64	#3	13-1/2	1/8	510F003	**492.51**
512F	31/32 to 1-3/8	7-3/8	8-1/2	10-19/64	#4	15-1/8	1/8	512F004	**576.19**

HiRev Rotary Coolant Glands

MADE IN USA



Bronze coolant glands contain special inter-bearing rings, allowing drills to run at increased speeds. Enhanced inducer system permits higher penetration rates, reducing drilling cost and in most cases improving hole finish and size.
Packaging: All sizes are individually packaged.

COOLANT GLANDS

SERIES	INSIDE DIAMETER	OUTSIDE DIAMETER	WIDTH	OVERALL LENGTH	PIPE TAP	EDP NUMBER	LIST PRICE
506, 508 &510	.0937	1-3/8	1-1/4	2-1/4	3/8	506HRCG	**$603.92**
512	1.250	1-3/4	1-1/4	2-3/4	3/8	512HRCG	**622.84**
516, 520 & 528	2.250	3"	1-5/8	3-7/8	3/8	516HRCG	**919.01**

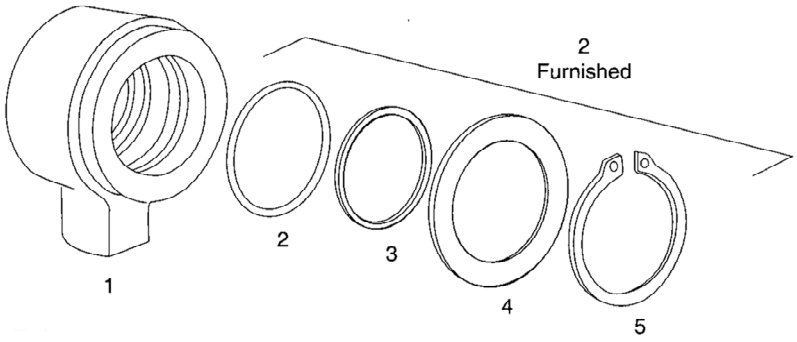
HiRev Rotary Coolant Gland Maintenance Kits

Bronze coolant glands contain special inter-bearing rings and "O" rings. Thrust washers and retainer snap rings secure the gland in place on the holder.
Packaging: All sizes are individually packaged.

SERIES	EDP NUMBER	LIST PRICE
506, 508 &510	506HGMK	**$115.59**
512	512HGMK	**115.59**
516, 520 & 528	516HGMK	**115.59**

EACH KIT CONTAINS:

2 - (2) "O" Rings
3 - (2) Seal Rings
4 - (2) Thrust Washers
5 - (2) Snap Rings



Spade Drill Holder Screws & Torx® Wrenches

SERIES	SCREW* SIZE	EDP NUMBER	LIST PRICE	WRENCH SIZE	EDP NUMBER	LIST PRICE
506	T7	506T07	**$6.49**	W07	506W07	**$8.81**
508	T8	508T08	**6.49**	W08	508W08	**8.81**
510	T9	510T09	**6.49**	W09	510W09	**8.81**
512	T15	512T15	**6.49**	W15	512W15	**8.81**
516, 520	T20	516T20	**6.49**	W20	516W20	**8.81**
528	T25	526T25	**6.49**	W25	526W25	**18.79**

***Special Screw Design - No Other Screws Recommended**

Spade Drill Speeds & Feeds

MATERIAL	HARDNESS (BHN)	SFM	FEED RATE (I. P. R.) 3/8 to 1/2	33/64 to 11/16	23/32 to 1"	1" to 1-1/4	1-1/4 to 2"	2" to 3"
FREE MACHINING STEEL 1118, 1215, 12L14, etc.	110-150	230	.007	.010	.013	.016	.020	.025
	150-250	210	.007	.010	.013	.016	.020	.025
	200-250	185	.006	.010	.013	.016	.020	.025
LOW CARBON STEEL 1010, 1040, 1025, 1522,1144, etc.	85-125	195	.006	.009	.012	.015	.020	.025
	125-175	185	.006	.009	.012	.015	.020	.025
	175-225	175	.005	.008	.010	.014	.018	.022
	225-275	160	.005	.008	.010	.014	.018	.022
MEDIUM CARBON STEEL 1030, 1040, 1050, 1527, 1140, 1151. etc.	125-175	185	.006	.009	.012	.015	.020	.025
	175-225	175	.005	.008	.010	.014	.018	.022
	225-275	160	.005	.008	.010	.014	.018	.022
	275-325	150	.004	.007	.009	.012	.016	.020
ALLOY STEEL 4140, 5140, 8640, etc.	125-175	175	.006	.008	.010	.014	.017	.020
	175-225	160	.005	.008	.010	.014	.017	.020
	225-275	150	.005	.007	.010	.014	.017	.020
	275-325	140	.004	.006	.009	.012	.015	.018
	325-375	125	.003	.006	.009	.012	.015	.018
HIGH STRENGTH ALLOY 4340, 4330V, 300M,etc	225-300	90	.005	.007	.009	.010	.014	.018
	300-350	70	.004	.007	.009	.010	.014	.018
	350-400	55	.003	.006	.008	.009	.012	.016
STRUCTURAL STEEL A36, A285, A516, etc.	100-150	160	.006	.010	.012	.014	.018	.022
	150-225	140	.005	.009	.010	.012	.016	.020
	250-350	115	.004	.008	.009	.010	.014	.017
HIGH TEMP. ALLOY HastelloyB, Inconel 600	140-220	35	.003	.007	.008	.010	.012	.015
	220-310	30	.003	.006	.007	.008	.010	.012
STAINLESS STEEL 310, 316, 330, 17-4ph	135-185	85	.006	.008	.009	.011	.014	.016
	185-275	70	.005	.007	.008	.010	.012	.014
TOOL STEEL H-12&21, A-4, O-2, S-3	150-200	90	.004	.006	.008	.010	.012	.015
	200-250	70	.004	.006	.008	.010	.012	.015
ALUMINUM	30	690	.008	.013	.016	.022	.030	.035
	160	345	.008	.013	.016	.022	.030	.035
CAST IRON	120-150	195	.007	.012	.016	.020	.024	.028
	150-200	175	.006	.011	.014	.018	.022	.026
	200-220	150	.006	.009	.012	.016	.018	.022
	220-260	125	.005	.007	.009	.012	.014	.017
	260-320	105	.004	.006	.007	.009	.011	.014



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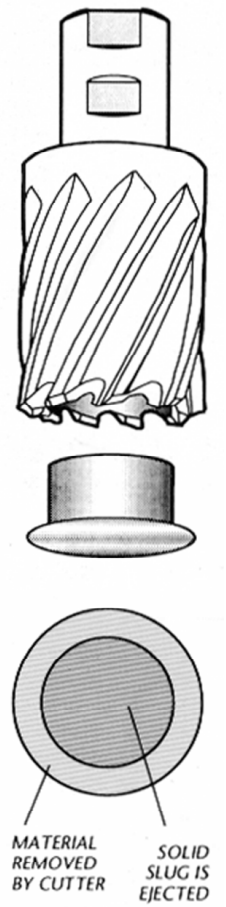
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MAGTRON

HOLE CUTTING TECHNOLOGY



MAGTRON
HOLE CUTTING TECHNOLOGY

Broaching or annular cutters are highly successful die to their proven ability to cut more accurate holes using less energy and giving longer tool life.

Because these cutters only remove metal at the periphery of the hole being cut, on average only 25% of the material in the hole is converted into 'chips', requiring much less power than conventional twist drills - the larger the drill diameter the greater the energy saving.

In addition to the time and energy saving, the user gains higher scrap value for solids rather than turnings - particularly with exotic materials.

The additional benefits provide by the multiple cutting edges of Magtron cutters include the faster feed rates that can be achieved because each cutting edge does less work, also giving the benefit of longer tool life, and unlike a twist drill, there is no 'dead' Centre of cutting action, giving more holes between sharpening.

Because the cutting edges are only at the periphery of broaching cutters, they operate in a much narrower range of surface speeds than those of twist drills, so permitting drilling close to the optimum surface FRM/MPM for the material being worked. A table showing suggested speeds for common materials is shown on the following page.

The opportunity to greatly increase the capacity of your existing machines is another benefit of broaching cutters. You get more work from the same horsepower!

The unique geometry of Magtron industrial cutters also helps to achieve faster feed, lower cutting resistance, greater accuracy and better finish.

Typically, up to 400% increase in capacity in terms of drill size or cutting speed can be achieved on a Ward Centre lathe using a Magtron cutter instead of a conventional twist drill.

Magtron industrial cutters are carefully made from M-2, M-35 and M-42 or high speed steel in our own work shops on state of the art CNC machines for consistent quality and accuracy.

MACHINE COMPATIBILITY

Magtron Industrial Cutters are available with shanks, arbors and accessories to fit all kinds and makes of machine tools.

DRILLS ◆ LATHES
MACHINING CENTRES
RADIAL ARM DRILLS
BORING MACHINES
MULTI-STATION DRILLS
CNC MACHINES, ETC.

Annular Cutters

HIGH SPEED STEEL **1" DEPTH OF CUT** **3/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

IMPORT

9100E SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	-----	$------
1/2	91E132	41.15
9/16	91E136	43.41
5/8	91E140	45.22
11/16	91E144	50.19
3/4	91E148	55.39
13/16	91E152	57.43
7/8	91E156	60.82
15/16	91E160	63.64
1"	91E164	67.60
1-1/16	91E204	73.25
1-1/8	91E208	77.32
1-3/16	91E212	78.00
1-1/4	91E216	81.39
1-5/16	91E220	86.48
1-3/8	91E224	111.92
1-7/16	91E228	124.12
1-1/2	91E232	132.26
1-9/16	91E236	147.52
1-5/8	91E240	157.70
1-11/16	-----	-----
1-3/4	91E248	178.39
1-13/16	-----	-----
1-7/8	91E256	208.00
1-15/16	91E260	221.57
2"	91E264	237.40
2-1/16	-----	-----
2-1/8	-----	-----
2-3/16	-----	-----
2-1/4	-----	-----

MADE IN ENGLAND **SHEFFIELD STEEL**

9100SE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	91SE128	$59.81
1/2	91SE132	60.57
9/16	91SE136	63.17
5/8	91SE140	65.63
11/16	91SE144	73.99
3/4	91SE148	75.09
13/16	91SE152	77.83
7/8	91SE156	87.08
15/16	91SE160	90.51
1"	91SE164	100.78
1-1/16	91SE204	100.92
1-1/8	91SE208	111.06
1-3/16	91SE212	114.48
1-1/4	91SE216	133.26
1-5/16	91SE220	165.73
1-3/8	91SE224	182.86
1-7/16	91SE228	197.04
1-1/2	91SE232	199.92
1-9/16	91SE236	213.62
1-5/8	91SE240	223.35
1-11/16	91SE244	243.56
1-3/4	91SE248	266.24
1-13/16	91SE252	272.47
1-7/8	91SE256	288.30
1-15/16	91SE260	304.26
2"	91SE264	334.75
2-1/16	91SE304	385.11
2-1/8	91SE308	385.11
2-3/16	91SE312	408.08
2-1/4	91SE316	427.76

Super High Performance

Nitro

9100N SERIES ENGLAND

FRAC SIZES	EDP NUMBERS	LIST PRICE
7/16	91N128	$77.00
1/2	91N132	77.00
9/16	91N136	80.26
5/8	91N140	83.52
11/16	91N144	93.96
3/4	91N148	95.27
13/16	91N152	98.85
7/8	91N156	110.60
15/16	91N160	115.17
1"	91N164	128.22
1-1/16	91N204	128.54
1-1/8	91N208	141.27
1-3/16	91N212	145.51
1-1/4	91N216	169.32
1-5/16	91N220	210.76
1-3/8	91N224	232.29
1-7/16	91N228	250.23
1-1/2	91N232	254.15
1-9/16	91N236	271.44
1-5/8	91N240	283.84
1-11/16	91N244	309.29
1-3/4	91N248	338.32
1-13/16	91N252	346.48
1-7/8	91N256	366.38
1-15/16	91N260	386.61
2"	91N264	425.43
2-1/16	91N304	489.05
2-1/8	91N308	510.26
2-3/16	91N312	571.39
2-1/4	91N316	575.64

EDP NUMBER	DESCRIPTION	LIST PRICE
91SE001	1" DEPTH OF CUT PILOT DRILL FOR 1/2" & LARGER SIZES	$18.84
91SE002	1" DEPTH OF CUT PILOT DRILL FOR 7/16" ONLY	18.84

ANNULAR CUTTERS FOR DRILLING STACKS OF STEEL AVAILABLE UPON REQUEST

Continued

Annular Cutters

HIGH SPEED STEEL 1" DEPTH OF CUT 1-1/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

IMPORT

9100E SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
2-5/16	-----	$-----
2-3/8	-----	-----
2-7/16	-----	-----
2-1/2	-----	-----
2-9/16	-----	-----
2-5/8	-----	-----
2-11/16	-----	-----
2-3/4	-----	-----
2-13/16	-----	-----
2-7/8	-----	-----
2-15/16	-----	-----
3"	-----	-----
3-1/16	-----	-----
3-1/8	-----	-----
3-3/16	-----	-----
3-1/4	-----	-----
3-5/16	-----	-----
3-3/8	-----	-----
3-7/16	-----	-----
3-1/2	-----	-----
3-9/16	-----	-----
3-5/8	-----	-----
3-11/16	-----	-----
3-3/4	-----	-----
3-13/16	-----	-----
3-7/8	-----	-----
3-15/16	-----	-----
4"	-----	-----

MADE IN ENGLAND SHEFFIELD STEEL

9100SE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
2-5/16	91SE320	$455.92
2-3/8	91SE324	464.37
2-7/16	91SE328	492.51
2-1/2	91SE332	520.66
2-9/16	91SE336	540.34
2-5/8	91SE340	532.83
2-11/16	91SE344	605.09
2-3/4	91SE348	619.14
2-13/16	91SE352	703.57
2-7/8	91SE356	717.74
2-15/16	91SE360	759.86
3"	91SE364	788.00
3-1/16	91SE404	810.24
3-1/8	91SE408	830.23
3-3/16	91SE412	844.29
3-1/4	91SE416	900.57
3-5/16	91SE420	928.72
3-3/8	91SE424	985.00
3-7/16	91SE428	1,013.15
3-1/2	91SE432	1,069.43
3-9/16	91SE436	1,097.57
3-5/8	91SE440	1,153.86
3-11/16	91SE444	1,182.00
3-3/4	91SE448	1,186.08
3-13/16	91SE452	1,186.08
3-7/8	91SE456	1,196.09
3-15/16	91SE460	1,210.15
4"	91SE464	1,210.05

Super High Performance

Nitro

9100N SERIES ENGLAND

FRAC SIZES	EDP NUMBERS	LIST PRICE
2-5/16	91N320	$601.13
2-3/8	91N324	617.98
2-7/16	91N328	646.07
2-1/2	91N332	674.16
2-9/16	91N336	POR
2-5/8	91N340	POR
2-11/16	91N344	POR
2-3/4	91N348	POR
2-13/16	91N352	POR
2-7/8	91N356	POR
2-15/16	91N360	POR
3"	91N364	POR
3-1/16	91N404	POR
3-1/8	91N408	POR
3-3/16	91N412	POR
3-1/4	91N416	POR
3-5/16	91N420	POR
3-3/8	91N424	POR
3-7/16	91N428	POR
3-1/2	91N432	POR
3-9/16	91N436	POR
3-5/8	91N440	POR
3-11/16	91N444	POR
3-3/4	91N448	POR
3-13/16	91N452	POR
3-7/8	91N456	POR
3-15/16	91N460	POR
4"	91N464	POR

EDP NUMBER	DESCRIPTION	LIST PRICE
91SE003	1" DEPTH OF CUT PILOT DRILL FOR 2-1/4" & LARGER SIZES	$28.16

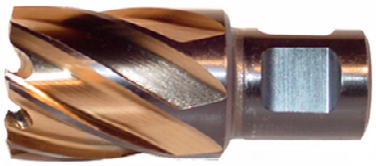
TiN COATED ANNULAR CUTTERS AVAILABLE UPON REQUEST

POR (Price On Request)

Annular Cutters

HIGH SPEED STEEL **2" DEPTH OF CUT** **3/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

IMPORT

9200E SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	-----	$------
1/2	92E132	56.52
9/16	92E136	61.04
5/8	92E140	66.02
11/16	92E144	70.09
3/4	92E148	74.61
13/16	92E152	80.49
7/8	92E156	87.05
15/16	92E160	91.57
1"	92E164	97.22
1-1/16	92E204	107.85
1-1/8	92E208	115.31
1-3/16	92E212	119.83
1-1/4	92E216	124.35
1-5/16	92E220	131.13
1-3/8	92E224	137.92
1-7/16	92E228	158.26
1-1/2	92E232	165.05
1-9/16	92E236	185.39
1-5/8	92E240	194.44
1-11/16	-----	-----
1-3/4	92E248	214.79
1-13/16	-----	-----
1-7/8	92E256	237.40
1-15/16	92E260	248.70
2"	92E264	260.00
2-1/16	-----	-----
2-1/8	-----	-----
2-3/16	-----	-----
2-1/4	-----	-----

MADE IN ENGLAND **SHEFFIELD STEEL**

9200SE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	92SE128	$85.44
1/2	92SE132	85.44
9/16	92SE136	88.18
5/8	92SE140	98.04
11/16	92SE144	101.26
3/4	92SE148	111.06
13/16	92SE152	113.59
7/8	92SE156	129.83
15/16	92SE160	134.08
1"	92SE164	146.89
1-1/16	92SE204	146.89
1-1/8	92SE208	167.44
1-3/16	92SE212	174.30
1-1/4	92SE216	191.42
1-5/16	92SE220	208.48
1-3/8	92SE224	217.05
1-7/16	92SE228	231.78
1-1/2	92SE232	239.25
1-9/16	92SE236	275.21
1-5/8	92SE240	284.94
1-11/16	92SE244	301.32
1-3/4	92SE248	344.34
1-13/16	92SE252	357.36
1-7/8	92SE256	394.91
1-15/16	92SE260	405.80
2"	92SE264	411.90
2-1/16	92SE304	470.95
2-1/8	92SE308	470.95
2-3/16	92SE312	472.80
2-1/4	92SE316	475.00

Super High Performance *Nitro*

9200N SERIES ENGLAND

FRAC SIZES	EDP NUMBERS	LIST PRICE
7/16	92N128	$114.07
1/2	92N132	114.07
9/16	92N136	117.84
5/8	92N140	130.86
11/16	92N144	134.97
3/4	92N148	148.33
13/16	92N152	151.76
7/8	92N156	173.34
15/16	92N160	178.82
1"	92N164	195.95
1-1/16	92N204	195.95
1-1/8	92N208	223.35
1-3/16	92N212	232.60
1-1/4	92N216	255.55
1-5/16	92N220	278.16
1-3/8	92N224	289.47
1-7/16	92N228	309.33
1-1/2	92N232	319.27
1-9/16	92N236	367.23
1-5/8	92N240	380.24
1-11/16	92N244	401.83
1-3/4	92N248	459.72
1-13/16	92N252	476.85
1-7/8	92N256	526.86
1-15/16	92N260	541.25
2"	92N264	549.47
2-1/16	92N304	628.26
2-1/8	92N308	641.41
2-3/16	92N312	737.81
2-1/4	92N316	763.16

EDP NUMBER	DESCRIPTION	LIST PRICE
92SE001	2" DEPTH OF CUT PILOT DRILL FOR 1/2" & LARGER SIZES	$28.16
92SE002	2" DEPTH OF CUT PILOT DRILL FOR 7/16" ONLY	28.16

ANNULAR CUTTERS FOR DRILLING STACKS OF STEEL AVAILABLE UPON REQUEST

Continued

Annular Cutters

HIGH SPEED STEEL | **2" DEPTH OF CUT** | **1-1/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

IMPORT

9200E SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
2-5/16	-----	-----
2-3/8	-----	-----
2-7/16	-----	-----
2-1/2	-----	-----
2-9/16	-----	-----
2-5/8	-----	-----
2-11/16	-----	-----
2-3/4	-----	-----
2-13/16	-----	-----
2-7/8	-----	-----
2-15/16	-----	-----
3"	-----	-----
3-1/16	-----	-----
3-1/8	-----	-----
3-3/16	-----	-----
3-1/4	-----	-----
3-5/16	-----	-----
3-3/8	-----	-----
3-7/16	-----	-----
3-1/2	-----	-----
3-9/16	-----	-----
3-5/8	-----	-----
3-11/16	-----	-----
3-3/4	-----	-----
3-13/16	-----	-----
3-7/8	-----	-----
3-15/16	-----	-----
4"	-----	-----

MADE IN ENGLAND **SHEFFIELD STEEL**

9200SE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
2-5/16	92SE320	$477.80
2-3/8	92SE324	486.89
2-7/16	92SE328	515.03
2-1/2	92SE332	548.80
2-9/16	92SE336	571.32
2-5/8	92SE340	591.00
2-11/16	92SE344	633.23
2-3/4	92SE348	647.29
2-13/16	92SE352	731.72
2-7/8	92SE356	745.80
2-15/16	92SE360	788.00
3"	92SE364	816.15
3-1/16	92SE404	830.23
3-1/8	92SE408	858.37
3-3/16	92SE412	872.43
3-1/4	92SE416	928.72
3-5/16	92SE420	956.86
3-3/8	92SE424	1,013.15
3-7/16	92SE428	1,041.29
3-1/2	92SE432	1,097.57
3-9/16	92SE436	1,125.72
3-5/8	92SE440	1,182.00
3-11/16	92SE444	1,182.00
3-3/4	92SE448	1,210.15
3-13/16	92SE452	1,210.15
3-7/8	92SE456	1,224.23
3-15/16	92SE460	1,238.29
4"	92SE464	1,238.29

Super High Performance

Nitro

9200N SERIES ENGLAND

FRAC SIZES	EDP NUMBERS	LIST PRICE
2-5/16	92N320	POR
2-3/8	92N324	POR
2-7/16	92N328	POR
2-1/2	92N332	POR
2-9/16	92N336	POR
2-5/8	92N340	POR
2-11/16	92N344	POR
2-3/4	92N348	POR
2-13/16	92N352	POR
2-7/8	92N356	POR
2-15/16	92N360	POR
3"	92N364	POR
3-1/16	92N404	POR
3-1/8	92N408	POR
3-3/16	92N412	POR
3-1/4	92N416	POR
3-5/16	92N420	POR
3-3/8	92N424	POR
3-7/16	92N428	POR
3-1/2	92N432	POR
3-9/16	92N436	POR
3-5/8	92N440	POR
3-11/16	92N444	POR
3-3/4	92N448	POR
3-13/16	92N452	POR
3-7/8	92N456	POR
3-15/16	92N460	POR
4"	92N464	POR

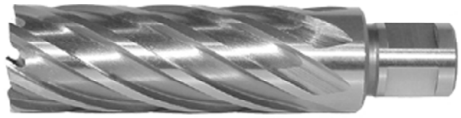
EDP NUMBER	DESCRIPTION	LIST PRICE
92SE003	2" DEPTH OF CUT PILOT DRILL FOR 2-1/4" & LARGER SIZES	$38.02

TiN COATED ANNULAR CUTTERS AVAILABLE UPON REQUEST

POR (Price On Request)

Annular Cutters

HIGH SPEED STEEL **3" DEPTH OF CUT** **3/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

IMPORT

9300E SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	-----	$------
1/2	-----	-----
9/16	-----	-----
5/8	-----	-----
11/16	-----	-----
3/4	-----	-----
13/16	-----	-----
7/8	-----	-----
15/16	-----	-----
1"	-----	-----
1-1/16	-----	-----
1-1/8	------	-----
1-3/16	-----	-----
1-1/4	-----	-----
1-5/16	-----	-----
1-3/8	-----	-----
1-7/16	-----	-----
1-1/2	-----	-----
1-9/16	-----	-----
1-5/8	-----	-----
1-11/16	-----	-----
1-3/4	-----	-----
1-13/16	-----	-----
1-7/8	-----	-----
1-15/16	-----	-----
2"	-----	-----
2-1/16	-----	-----
2-1/8	-----	-----
2-3/16	-----	-----
2-1/4	-----	-----

MADE IN ENGLAND **SHEFFIELD STEEL**

9300SE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	------	$------
1/2	-----	-----
9/16	-----	-----
5/8	-----	-----
11/16	-----	-----
3/4	93SE148	151.34
13/16	93SE152	154.84
7/8	93SE156	176.83
15/16	93SE160	182.72
1"	93SE164	200.06
1-1/16	93SE204	200.06
1-1/8	93SE208	227.46
1-3/16	93SE212	237.60
1-1/4	93SE216	260.76
1-5/16	93SE220	284.05
1-3/8	93SE224	295.77
1-7/16	93SE228	315.84
1-1/2	93SE232	326.05
1-9/16	93SE236	375.04
1-5/8	93SE240	388.26
1-11/16	93SE244	408.47
1-3/4	93SE248	469.17
1-13/16	93SE252	487.19
1-7/8	93SE256	543.10
1-15/16	93SE260	552.90
2"	93SE264	561.39
2-1/16	93SE304	641.76
2-1/8	93SE308	810.52
2-3/16	93SE312	855.57
2-1/4	93SE316	889.32

Super High Performance

Nitro

9300N SERIES ENGLAND

FRAC SIZES	EDP NUMBERS	LIST PRICE
7/16	------	$------
1/2	-----	-----
9/16	-----	-----
5/8	-----	-----
11/16	-----	-----
3/4	93N148	202.04
13/16	93N152	212.05
7/8	93N156	236.07
15/16	93N160	243.93
1"	93N164	267.08
1-1/16	93N204	267.08
1-1/8	93N208	303.66
1-3/16	93N212	317.20
1-1/4	93N216	348.11
1-5/16	93N220	349.21
1-3/8	93N224	394.85
1-7/16	93N228	421.65
1-1/2	93N232	435.28
1-9/16	93N236	500.68
1-5/8	93N240	518.33
1-11/16	93N244	545.31
1-3/4	93N248	626.34
1-13/16	93N252	650.40
1-7/8	93N256	725.04
1-15/16	93N260	738.12
2"	93N264	749.46
2-1/16	93N304	856.75
2-1/8	93N308	1,251.95
2-3/16	93N312	1,321.54
2-1/4	93N316	1,373.69

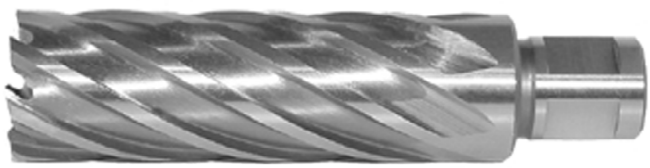
EDP NUMBER	DESCRIPTION	LIST PRICE
93SE001	3" DEPTH OF CUT PILOT DRILL FOR 1/2" & LARGER SIZES	$38.02

ANNULAR CUTTERS FOR DRILLING STACKS OF STEEL AVAILABLE UPON REQUEST

Continued

Annular Cutters

HIGH SPEED STEEL **3" DEPTH OF CUT** **1-1/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

IMPORT **MADE IN ENGLAND** **SHEFFIELD STEEL** **Super High Performance** *Nitro*

9300E SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
2-5/16	-----	$------
2-3/8	-----	-----
2-7/16	-----	-----
2-1/2	-----	-----
2-9/16	-----	-----
2-5/8	-----	-----
2-11/16	-----	-----
2-3/4	-----	-----
2-13/16	-----	-----
2-7/8	-----	-----
2-15/16	-----	-----
3"	------	-----
3-1/16	-----	-----
3-1/8	-----	-----
3-3/16	-----	-----
3-1/4	-----	-----
3-5/16	-----	-----
3-3/8	-----	-----
3-7/16	-----	-----
3-1/2	-----	-----
3-9/16	-----	-----
3-5/8	-----	-----
3-11/16	-----	-----
3-3/4	-----	-----
3-13/16	-----	-----
3-7/8	-----	-----
3-15/16	-----	-----
4"	-----	-----

9300SE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
2-5/16	93SE320	$945.58
2-3/8	93SE324	973.75
2-7/16	93SE328	1,030.03
2-1/2	93SE332	1,097.57
2-9/16	93SE336	1,142.60
2-5/8	93SE340	1,182.00
2-11/16	93SE344	1,266.43
2-3/4	93SE348	1,294.57
2-13/16	93SE352	1,463.43
2-7/8	93SE356	1,491.58
2-15/16	93SE360	1,576.00
3"	93SE364	1,632.29
3-1/16	93SE404	1,660.43
3-1/8	93SE408	1,716.72
3-3/16	93SE412	1,744.86
3-1/4	93SE416	1,857.43
3-5/16	93SE420	1,913.72
3-3/8	93SE424	2,026.29
3-7/16	93SE428	2,082.58
3-1/2	93SE432	2,195.15
3-9/16	93SE436	2,251.43
3-5/8	93SE440	2,364.01
3-11/16	93SE444	2,364.01
3-3/4	93SE448	2,420.29
3-13/16	93SE452	2,420.29
3-7/8	93SE456	2,448.44
3-15/16	93SE460	2,476.58
4"	93SE464	2,476.58

9300N SERIES ENGLAND

FRAC SIZES	EDP NUMBERS	LIST PRICE
2-5/16	93N320	POR
2-3/8	93N324	POR
2-7/16	93N328	POR
2-1/2	93N332	POR
2-9/16	93N336	POR
2-5/8	93N340	POR
2-11/16	93N344	POR
2-3/4	93N348	POR
2-13/16	93N352	POR
2-7/8	93N356	POR
2-15/16	93N360	POR
3"	93N364	POR
3-1/16	93N404	POR
3-1/8	93N408	POR
3-3/16	93N412	POR
3-1/4	93N416	POR
3-5/16	93N420	POR
3-3/8	93N424	POR
3-7/16	93N428	POR
3-1/2	93N432	POR
3-9/16	93N436	POR
3-5/8	93N440	POR
3-11/16	93N444	POR
3-3/4	93N448	POR
3-13/16	93N452	POR
3-7/8	93N456	POR
3-15/16	93N460	POR
4"	93N464	POR

EDP NUMBER	DESCRIPTION	LIST PRICE
93SE003	3" DEPTH OF CUT PILOT DRILL FOR 2-1/4" & LARGER SIZES	$38.02

TiN COATED ANNULAR CUTTERS AVAILABLE UPON REQUEST

POR (Price On Request)

Annular Cutters

HIGH SPEED STEEL — 4" DEPTH OF CUT

Cutters From 3/4" To 1-7/16" Have A 3/4" Shank — **Cutters From 1-1/2" To 4" Have A 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 removes 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.

Packaging: All sizes individually packaged.

MADE IN ENGLAND WITH SHEFFIELD STEEL

9400SE SERIES

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
7/16	------	$-----
1/2	-----	-----
9/16	-----	-----
5/8	-----	-----
11/16	-----	-----
3/4	94SE148	320.83
13/16	94SE152	337.72
7/8	94SE156	363.06
15/16	94SE160	384.16
1"	94SE164	392.59
1-1/16	94SE204	422.14
1-1/8	94SE208	439.03
1-3/16	94SE212	481.26
1-1/4	94SE216	548.80
1-5/16	94SE220	565.69
1-3/8	94SE224	637.44
1-7/16	94SE228	658.54
1-1/2	94SE232	683.89
1-9/16	94SE236	696.53
1-5/8	94SE240	768.32
1-11/16	94SE244	793.63
1-3/4	94SE248	844.29
1-13/16	94SE252	911.83
1-7/8	94SE256	945.60
1-15/16	94SE260	996.26
2"	94SE264	1,013.15
2-1/16	94SE304	1,131.35
2-1/8	94SE308	1,215.77
2-3/16	94SE312	1,283.32
2-1/4	94SE316	1,333.98

MADE IN ENGLAND WITH SHEFFIELD STEEL

9400SE SERIES

FRACTIONAL SIZES	EDP NUMBER	LIST PRICE
2-5/16	94SE320	$1,418.43
2-3/8	94SE324	1,460.63
2-7/16	94SE328	1,545.06
2-1/2	94SE332	1,646.38
2-9/16	94SE336	1,713.92
2-5/8	94SE340	1,773.00
2-11/16	94SE344	1,899.66
2-3/4	94SE348	1,941.86
2-13/16	94SE352	2,195.15
2-7/8	94SE356	2,237.38
2-15/16	94SE360	2,364.01
3"	94SE364	2,448.44
3-1/16	94SE404	2,490.66
3-1/8	94SE408	2,575.09
3-3/16	94SE412	2,617.29
3-1/4	94SE416	2,786.15
3-5/16	94SE420	2,870.58
3-3/8	94SE424	3,039.44
3-7/16	94SE428	3,123.87
3-1/2	94SE432	3,292.72
3-9/16	94SE436	3,377.15
3-5/8	94SE440	3,546.01
3-11/16	94SE444	3,546.01
3-3/4	94SE448	3,630.44
3-13/16	94SE452	3,630.44
3-7/8	94SE456	3,672.67
3-15/16	94SE460	3,714.87
4"	94SE464	3,714.87

EDP NUMBER	DESCRIPTION	LIST PRICE
94SE001	4" DEPTH OF CUT PILOT DRILL FOR 1/2" thru 1-7/16" SIZES	$38.02
94SE003	4" DEPTH OF CUT PILOT DRILL FOR 1-1/2" & LARGER SIZES	38.02

Annular Cutters

HIGH SPEED STEEL — METRIC — 3/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

25 MM LENGTH OF CUT ENGLAND

9100MM SERIES

METRIC SIZES	EDP NUMBER	LIST PRICE
13 mm	91mm1300	**$66.63**
14 mm	91mm1400	**69.49**
16 mm	91mm1600	**72.19**
17 mm	91mm1700	**81.39**
19 mm	91mm1900	**82.60**
21 mm	91mm2100	**85.61**
22 mm	91mm2200	**95.79**
24 mm	91mm2400	**99.56**
25 mm	91mm2500	**110.86**
27 mm	91mm2700	**111.01**
29 mm	91mm2900	**122.17**
30 mm	91mm3000	**125.93**
32 mm	91mm3200	**146.59**
33 mm	91mm3300	**182.30**
35 mm	91mm3500	**201.15**
37 mm	91mm3700	**216.74**
38 mm	91mm3800	**219.91**
40 mm	91mm4000	**234.98**
41 mm	91mm4100	**245.69**
42 mm	91mm4200	**267.92**
44 mm	91mm4400	**292.86**
46 mm	91mm4600	**299.72**
48 mm	91mm4800	**317.13**
49 mm	91mm4900	**334.69**
50 mm	91mm5000	**368.23**
52 mm	91mm5200	**423.62**

50 MM LENGTH OF CUT ENGLAND

9200MM SERIES

METRIC SIZES	EDP NUMBER	LIST PRICE
13 mm	92mm1300	**$93.98**
14 mm	92mm1400	**97.00**
16 mm	92mm1600	**107.84**
17 mm	92mm1700	**111.39**
19 mm	92mm1900	**122.17**
21 mm	92mm2100	**124.95**
22 mm	92mm2200	**142.81**
24 mm	92mm2400	**147.49**
25 mm	92mm2500	**161.58**
27 mm	92mm2700	**151.58**
29 mm	92mm2900	**184.18**
30 mm	92mm3000	**191.73**
32 mm	92mm3200	**210.56**
33 mm	92mm3300	**229.33**
35 mm	92mm3500	**238.76**
37 mm	92mm3700	**254.96**
38 mm	92mm3800	**263.18**
40 mm	92mm4000	**302.73**
41 mm	92mm4100	**313.43**
42 mm	92mm4200	**331.45**
44 mm	92mm4400	**378.77**
46 mm	92mm4600	**393.10**
48 mm	92mm4800	**434.40**
49 mm	92mm4900	**446.38**
50 mm	92mm5000	**453.09**
52 mm	92mm5200	**518.05**

EDP NUMBER	DESCRIPTION	LIST PRICE
91SE001	25 MM DEPTH OF CUT PILOT PINS	**$18.94**
92SE001	50 MM DEPTH OF CUT PILOT PINS	**28.16**

Cobalt Annular Cutters

SUPER-COBALT | **ENGLAND** | **3/4" DIAMETER 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 removes 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.

Packaging: All sizes individually packaged.

I" DEPTH OF CUT — 9100CE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	91CE128	$84.74
1/2	91CE132	84.74
9/16	91CE136	88.33
5/8	91CE140	91.92
11/16	91CE144	103.41
3/4	91CE148	104.85
13/16	91CE152	108.79
7/8	91CE156	121.72
15/16	91CE160	126.75
1"	91CE164	141.11
1-1/16	91CE204	141.11
1-1/8	91CE208	155.47
1-3/16	91CE212	160.14
1-1/4	91CE216	186.35
1-5/16	91CE220	231.95
1-3/8	91CE224	255.65
1-7/16	91CE228	275.39
1-1/2	91CE232	289.70
1-9/16	91CE236	298.73
1-5/8	91CE240	312.38
1-11/16	91CE244	340.39
1-3/4	91CE248	372.34
1-13/16	91CE252	381.32
1-7/8	91CE256	403.22
1-15/16	91CE260	425.48
2"	91CE264	468.21
2-1/16	91CE304	538.22
2-1/8	91CE308	561.57
2-3/16	91CE312	628.84
2-1/4	91CE316	636.82

2" DEPTH OF CUT — 9200CE SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
7/16	92CE128	$125.54
1/2	92CE132	125.54
9/16	92CE136	129.69
5/8	92CE140	144.02
11/16	92CE144	148.54
3/4	92CE148	163.24
13/16	92CE152	167.02
7/8	92CE156	190.77
15/16	92CE160	196.80
1"	92CE164	215.65
1-1/16	92CE204	215.65
1-1/8	92CE208	245.81
1-3/16	92CE212	255.99
1-1/4	92CE216	281.25
1-5/16	92CE220	306.13
1-3/8	92CE224	318.58
1-7/16	92CE228	340.43
1-1/2	92CE232	351.37
1-9/16	92CE236	404.15
1-5/8	92CE240	418.47
1-11/16	92CE244	442.23
1-3/4	92CE248	505.94
1-13/16	92CE252	524.80
1-7/8	92CE256	579.84
1-15/16	92CE260	595.67
2"	92CE264	604.72
2-1/16	92CE304	691.43
2-1/8	92CE308	705.90
1-3/16	92CE312	812.00
2-1/4	92CE316	839.90

3" DEPTH OF CUT — 9300CE SERIES USA

FRAC SIZES	EDP NUMBERS	LIST PRICE
7/16	-----	$------
1/2	93CE132	0.00
9/16	93CE136	0.00
5/8	93CE140	0.00
11/16	93CE144	0.00
3/4	93CE148	258.82
13/16	93CE152	271.74
7/8	93CE156	285.63
15/16	93CE160	309.21
1"	93CE164	339.89
1-1/16	93CE204	346.89
1-1/8	93CE208	404.06
1-3/16	93CE212	417.41
1-1/4	93CE216	433.56
1-5/16	93CE220	456.70
1-3/8	93CE224	501.46
1-7/16	93CE228	535.50
1-1/2	93CE232	552.81
1-9/16	93CE236	635.86
1-5/8	93CE240	658.28
1-11/16	93CE244	692.54
1-3/4	93CE248	795.45
1-13/16	93CE252	826.01
1-7/8	93CE256	920.80
1-15/16	93CE260	937.41
2"	93CE264	951.81
2-1/16	93CE304	1,088.07
2-1/8	93CE308	1,589.98
2-3/16	93CE312	1,678.36
2-1/4	93CE316	1,744.59

EDP NUMBER	DESCRIPTION	LIST PRICE
91SE001	1" DEPTH OF CUT PILOT DRILL FOR 1/2" & LARGER SIZES	$18.84
91SE002	1" DEPTH OF CUT PILOT DRILL FOR 7/16 ONLY	18.84
92SE001	2" DEPTH OF CUT PILOT DRILL FOR 1/2" & LARGER SIZES	28.16
92SE002	2" DEPTH OF CUT PILOT DRILL FOR 7/16 ONLY	28.16
93SE001	3" DEPTH OF CUT PILOT DRILL FOR 1/2" & LARGER SIZES	38.02

Annular Cutters

TUNGSTEN CARBIDE TIPPED — 3/4" DIAMETER SHANK



The ultimate in hole cutters, not only for difficult to machine metals but also for high volume drilling applications. Carbide normally endures longer than high speed steel cutters by 10x or more but care should be taken in choosing applications. Carbide does not work well on softer metals and may not be suitable for all machines since it is more sensitive to chocks and vibrations. But with a powerful magnetic drill which clamps securely to the material, carbide can be used on nearly all metals with vast improvements over HSS and Cobalt Alloy Steel.

Packaging: All sizes individually packaged.

1-3/8" LENGTH OF CUT — GERMANY

9100CT SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
11/16	91CT144	$155.30
3/4	91CT148	155.30
13/16	91CT152	162.52
7/8	91CT156	162.52
15/16	91CT160	162.52
1"	91CT164	169.74
1-1/16	91CT204	169.74
1-1/8	91CT208	169.74
1-3/16	91CT212	177.10
1-1/4	91CT216	177.10
1-5/16	91CT220	176.97
1-3/8	91CT224	176.97
1-7/16	-----	------
1-1/2	-----	------
1-9/16	-----	------
1-5/8	-----	------
1-11/16	-----	------
1-3/4	-----	------
1-13/16	-----	------
1-7/8	-----	------
1-15/16	-----	------
2"	-----	------

2" LENGTH OF CUT — GERMANY

9200CT SERIES

FRAC SIZES	EDP NUMBER	LIST PRICE
11/16	92CT144	$161.85
3/4	92CT148	161.85
13/16	92CT152	169.08
7/8	92CT156	169.08
15/16	92CT160	169.08
1"	92CT164	176.37
1-1/16	92CT204	176.37
1-1/8	92CT208	176.37
1-3/16	92CT212	183.59
1-1/4	92CT216	183.59
1-5/16	92CT220	183.59
1-3/8	92CT224	183.59
1-7/16	92CT228	191.21
1-1/2	92CT232	191.21
1-9/16	92CT236	191.21
1-5/8	92CT240	234.22
1-11/16	92CT244	234.22
1-3/4	92CT248	234.22
1-13/16	92CT252	314.48
1-7/8	92CT256	314.48
1-15/16	92CT260	314.48
2"	92CT264	314.48

EDP NUMBER	DESCRIPTION	LIST PRICE
91CT001	1-3/8" DEPTH OF CUT PILOT PINS	$19.73
92CT001	2" DEPTH OF CUT PILOT PINS	29.05

Annular Cutters

DISPLAYS AND SETS

DISPLAYS

32 Pc. FRACTIONAL SIZES DRILL DISPLAYS

HSS–1"OAL (91SE) & 2"OAL (92SE)	912SE32D	$2,482.77
NITRO–1"OAL (91N) & 2"OAL (92N)	912N32D	3,115.69
COBALT–1" (91CE) & 2"OAL (92CE)	912CE32D	3,388.70

DISPLAY CONTENTS 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



52 Pc. FRACTIONAL SIZES DRILL DISPLAYS

HSS–1"OAL (91SE) & 2"OAL (92SE)	912SE52D	$4,482.75
NITRO–1"OAL (91N) & 2"OAL (92N)	912N52D	5,748.59
COBALT–1" (91CE) & 2"OAL (92CE)	912CE52D	6,294.61

DISPLAY CONTENTS 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

72 Pc. FRACTIONAL SIZES DRILL DISPLAYS

HSS–1"OAL (91SE) & 2"OAL (92SE)	912SE72D	$6,460.98
NITRO–1"OAL (91N) & 2"OAL (92N)	912N72D	8,359.74
COBALT–1" (91CE) & 2"OAL (92CE)	912CE72D	9,178.77

DISPLAY CONTENTS 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



ANNULAR CUTTER SET

7 Pc. ANNULAR CUTTER SETS 1" OAL

HSS–1'OAL (9100SE)	91SE7S	$456.22
NITRO–1"OAL (9100N)	91N7S	577.03
COBALT–1" (9100CE)	91CE7S	634.05

DISPLAY CONTENTS EACH OF THE FOLLOWING:

9/16", 5/8", 11/16", 3/4", 13/16", 15/16" & 1 PIN



Annular Cutter

ACCESSORIES



MACHINING ACCESSORIES

EDP #	DESCRIPTION	PRICE
CH132	1/2" CHUCK AND KEY	$250.12
CH148	5/8" CHUCK AND KEY	178.35
MCA132	#3 MTS ARBORS FOR 1/2" CHUCK	188.15
MCA140	#3 MTS ARBORS FOR 5/8" CHUCK	188.15
MCA148	#3 MTS ARBORS FOR TAH3	188.15
QDC35	QUICK-HITCH FOR MB30 & MB35	307.33
QDC50	QUICK-HITCH FOR MBE40 & MBQ50	358.55

EDP #	DESCRIPTION	PRICE
QDC100	QUICK-HITCH FOR MT50 & ALL 100'S	$409.77
ABE100	1" EXTENDED REACH ARBOR	128.33
ABE200	2" EXTENDED REACH ARBOR	145.73
MA000	1/2" CHUCK TO ANNULAR ADAPTER	146.07
MCA002	#2 MTS COOLANT ARBOR	409.77
MCA003	#3 MTS COOLANT ARBOR	460.96

TAPPING ATTACHMENTS FOR THE MTAP30 MAGTAP MACHINE

EDP #	TAPPING ATTACHMENTS	PRICE
TAH1	#0 thru 1/4", NC & NF	$1,585.58
TAH2	#6 thru 1/2", NC & NF	2,309.85
TAH3	1/2" thru 1-1/8", NC & NF	4,220.37

EDP #	COLLET ADAPTER SETS	PRICE
CAS1	#0 thru 1/4", NC & NF	$322.22
CAS2	#6 thru 1/2", NC & NF	313.85
CAS3	1/2" thru 1-1/8", NC & NF	820.20

ANNULAR CUTTER REDUCED & MORSE TAPER SHANK HOLDERS

1/2" SHANK ADAPTERS w/ 3 FLATS

EDP #	ANNULAR CUTTER SIZES	PRICES
RSA001	7/16" thru 2-1/4" Dia. x 1" LOC	$182.70
RSA002	1/2" thru 2-1/4" Dia. x 2" LOC	208.80
RSA003	1/2" thru 2-1/4" Dia. x 3" LOC	261.00
RSA004	1/2" thru 2-1/4" Dia. x 4" LOC	293.63

3/4" SHANK ADAPTERS w/ 3 FLATS

EDP #	ANNULAR CUTTER SIZES	PRICES
RSA005	2-5/16" thru 4" Dia. x 1" LOC	$215.33
RSA006	2-5/16" thru 4" Dia. x 2" LOC	241.43
RSA007	2-5/16" thru 4" Dia. x 3" LOC	293.63
RSA008	2-5/16" thru 4" Dia. x 4" LOC	326.25

#2 MORSE TAPER SHANK ADAPTERS

EDP #	ANNULAR CUTTER SIZES	PRICES
MTA001	7/16" thru 2-1/4" Dia. x 1" & 2" LOC	$358.88
MTA002	1/2" thru 2-1/4" Dia. x 3" & 4" LOC	508.95

#3 MORSE TAPER SHANK ADAPTERS

EDP #	ANNULAR CUTTER SIZES	PRICES
MTA003	7/16" thru 2-1/4" Dia. x 1" & 2" LOC	$391.50
MTA004	1/2" thru 2-1/4" Dia. x 3" & 4" LOC	541.58

#3 MORSE TAPER SHANK ADAPTERS

EDP #	ANNULAR CUTTER SIZES	PRICES
MTA005	2-5/16" thru 4" Dia. x 1" & 2" LOC	$548.10
MTA006	2-5/16" thru 4" Dia. x 3" & 4" LOC	672.08

#4 MORSE TAPER SHANK ADAPTERS

EDP #	ANNULAR CUTTER SIZES	PRICES
MTA007	2-5/16" thru 4" Dia. x 1" & 2" LOC	$587.25
MTA008	2-5/16" thru 4" Dia. x 3" & 4" LOC	717.75

DRILL STAND ACCESSORIES

EDP #	DESCRIPTION	LIST PRICE
DSA100	SET OF MAGTRON ALLEN KEYS (8)	$19.10
DSA101	PIPE DRILLING ATTACHMENT	384.16
DSA105	SAFETY CHAIN	53.78
DSA106	CARRYING CASE (small)	225.37
DSA107	CARRYING CASE (large)	245.86
DSA109	DRIFT PIN (#3 Morse Taper)	38.42
DSA112	SAFETY GUARD (small)	192.08
DSA113	SAFETY GUARD (large)	220.25

Mag Drill Machines

ELECTRO-MAGNETIC DRILLING MACHINES

QUICKHITCH

MB30	MBQ35	MB35
3,034.00	**$2,415.00**	**$2,153.00**
		
◆ One of the most powerful mag base machines for its size. ◆ Reliable Hitachi motor allows drilling accurate holes up to 1-1/4" in diameter. ◆ Mag drill arbor is easily replaced with 1/2" chuck for twist drills. ◆ The operating handles can be moved to either side for ultimate accessibility. ◆ Comes complete with plastic carrying case, 1/2" chuck, safety guard, safety strap and cutting fluid.	◆ **New patented Quickhitch arbor, change cutters in less than 10 seconds!** ◆ Powerful new light weight motor unit ◆ Electronic controls with safety inter locks and audible warnings. ◆ Integral automatic lubrication system ◆ Comes complete with plastic carrying case, safety guard and safety strap.	◆ Powerful new light weight motor unit ◆ Small and compact ◆ Integral automatic lubrication system ◆ Electronic controls with safety inter locks and audible warnings. ◆ Outstanding performance ◆ Comes complete with plastic carrying case, safety guard and safety strap.
CUTTER CAPACITY..... 1-1/4" **TWIST DRILL CAPACITY 1-1/2"** **CHUCK CAPACITY ..... 1/2"** **'NO LOAD' SPEED..... 550 rpm** **POWER CONSUMPTION 720w** **CLAMPING FORCE..... 2000 PSI** **HEIGHT..... 12-3/4"** **WIDTH ..... 3-3/4"** **LENGTH ..... 9-1/4"** **WEIGHT..... 26.75 lbs** **STROKE ..... 6-1/4"**	**CUTTER CAPACITY..... 1-3/8"** **TWIST DRILL CAPACITY 1-1/2"** **CHUCK CAPACITY ..... 1/2"** **'NO LOAD' SPEED ..... 550 RPM** **POWER CONSUMPTION 1080w** **CLAMPING FORCE ..... 2000PSI** **HEIGHT..... 15-1/4"** **WIDTH..... 5-7/8"** **LENGTH..... 11"** **WEIGHT ..... 26.25 lbs** **STROKE ..... 6-1/4"**	**CUTTER CAPACITY ..... 1-3/8"** **TWIST DRILL CAPACIT' 1-1/2"** **CHUCK CAPACITY..... 1/2"** **'NO LOAD' SPEED..... 550 RPM** **POWER CONSUMPTION 1080w** **CLAMPING FORCE ..... 2000PSI** **HEIGHT ..... 15-1/4"** **WIDTH..... 5-7/8"** **LENGTH..... 11"** **WEIGHT ..... 26.25 lbs** **STROKE..... 6-1/4"**
INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.	**INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**	**INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**

Mag Drill Machines

ELECTRO-MAGNETIC DRILLING MACHINES

QUICKHITCH

MBE40 F/R	MBQ50	MT50
$3,590.00	**$3,600.00**	**$4,350.00**
		
◆ Forward and reverse ◆ Two speed gearbox ◆ Small compact unit ◆ Number 2 Morse taper holder ◆ Outstanding performance ◆ Comes complete with plastic carrying case, safety guard and safety strap.	**◆ New patented Quickhitch arbor, change cutters in less than 10 seconds!** ◆ Two speed gearbox ◆ Electronic controls with safety inter locks and audible warnings. ◆ Integral automatic lubrication system ◆ Comes complete with plastic carrying case, safety guard and safety strap.	**◆ Powerful 1600 watt motor** ◆ Two speed gearbox ◆ Variable speeds ◆ Torque control ◆ Safety cutout ◆ Number 3 Morse taper holder ◆ Comes complete with plastic carrying case, safety guard and safety strap.
CUTTER CAPACITY..... 1-3/4" **TWIST DRILL CAPACITY 1-1/2"** **CHUCK CAPACITY ..... 5/8"** **SPEED GEAR I ..... 250 rpm** **SPEED GEAR II ..... 450 rpm** **POWER CONSUMPTION 1100W** **CLAMPING FORCE..... 2000 PSI** **HEIGHT..... 16-1/4"** **WIDTH..... 4"** **LENGTH..... 11-1/4"** **WEIGHT..... 41 lbs** **VOLTAGE..... 110 v** **INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**	**CUTTER CAPACITY..... 2"** **TWIST DRILL CAPACITY 1-1/2"** **CHUCK CAPACITY..... 5/8"** **SPEEDS..... 280/500rpm** **POWER CONSUMPTION 1150w** **CLAMPING FORCE..... 2000 PSI** **HEIGHT..... 18"** **WIDTH..... 4-1/8"** **LENGTH..... 11-1/2"** **WEIGHT..... 49.5 lbs** **VOLTAGE..... 110 v** **INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**	**CUTTER CAPACITY ..... 2-1/2"** **TWIST DRILL CAPACITY 2"** **CHUCK CAPACITY..... #3 M T** **SPEED GEAR 1..... 70/275 rpm** **SPEED GEAR 2..... 100/540rmp** **POWER CONSUMPTION 1,600w** **CLAMPING FORCE..... 4000 PSI** **HEIGHT ..... 19-1/4"** **WIDTH ..... 5-3/8"** **LENGTH ..... 11-3/4"** **WEIGHT..... 56 lbs** **VOLTAGE..... 110 v** **INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**

Mag Drill Machines

ELECTRO-MAGNETIC DRILLING MACHINES

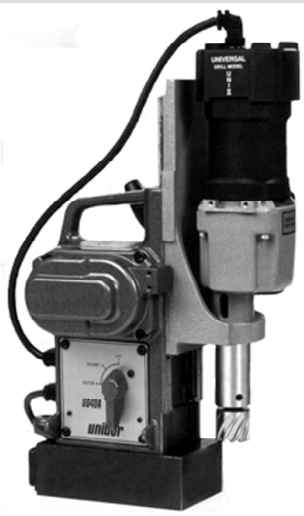
QUICKHITCH

MB100	MBQ100	MBSE100
$5,090.00	**$4,600.00**	**$5,122.00**
		
• 4 Speed Atlas Copco motor • Small compact unit • High torque • Outstanding performance • Supersafe electronic interlock controls • Comes complete with plastic carrying case, safety guard and safety strap.	• **New patented Quickhitch arbor, change cutters in less than 10 seconds!** • Two speed gearbox • Variable speeds • Slipping clutch • Integral automatic lubrication system • Electronic controls with safety inter locks and audible warnings.	• **SWIVEL BASE** • Two speed gearbox • Variable speeds • Slipping clutch • Overload cut-off for user safety • Integrated oil feed • Direct gearbox mounting for increased stability
CUTTER CAPACITY..... 4" **TWIST DRILL CAP..... #3 M T** **CHUCK CAPACITY..... 3/4"** **SPEEDS GEAR I..... 220/260 rpm** **SPEEDS GEAR II..... 350/420 rpm** **POWER CONSUMPTION 1100w** **CLAMPING FORCE..... 4,000 PSI** **HEIGHT..... 20"** **WIDTH ..... 5-1/4"** **LENGTH ..... 12-1/2"** **WEIGHT..... 55 lbs** **VOLTAGE..... 110v** **INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**	**CUTTER CAPACITY..... 4"** **TWIST DRILL CAP ..... #3 M T** **CHUCK CAPACITY ..... 3/4"** **SPEEDS GEAR I..... 40-130 rpm** **SPEEDS GEAR II..... 145-430 rpm** **POWER CONSUMPTION 1850w** **CLAMPING FORCE..... 4,000 PSI** **HEIGHT..... 20"** **WIDTH..... 5-1/4"** **LENGTH..... 14-3/4"** **WEIGHT ..... 57 lbs** **STROKE ..... 11"** **INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**	**CUTTER CAPACITY ..... 4"** **TWIST DRILL CAP..... #3 M T** **CHUCK CAPACITY..... 3/4"** **SPEEDS GEAR I ..... 40-130 rpm** **SPEEDS GEAR II ..... 145-430 rpm** **POWER CONSUMPTION 1850w** **CLAMPING FORCE ..... 4,000 PSI** **HEIGHT ..... 20"** **WIDTH ..... 5-1/4"** **LENGTH..... 14-3/4"** **WEIGHT ..... 57 lbs** **STROKE..... 11"** **INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**

Mag Drill Machines

ELECTRO-MAGNETIC DRILLING MACHINES

Forward/Reverse MAGTAP AUTOFEED

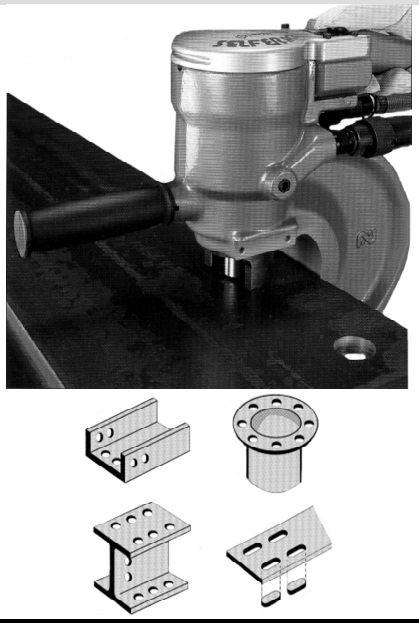
MBE100	MTAP30	UD40A
$5,122.00	**$5,385.00**	**$7,120.00**
		
◆ FORWARD & REVERSE ◆ Two speed gearbox ◆ Variable speeds ◆ Slipping clutch ◆ Overload cut-off for user safety ◆ Integrated oil feed ◆ Direct gearbox mounting for increased stability	**◆ TAPPING & DRILLING** (Tapping Attachment sold Separately) ◆ The MagTap features a special high torque, electronically controlled reversing motor unit and tapping adapter which permits the fast and accurate drilling and tapping of holes up to 1-1/4" diameter. ◆ Outstanding performance ◆ Comes complete with plastic carrying case, safety guard and safety strap.	**◆ AUTOFEED DRILLING SYSTEM** ◆ Electronic Load Sensing ◆ Depth limiting switches ◆ Slow start feed ◆ Automatic stop ◆ Auto Speed Control to suit cutter size and workpiece ◆ Comes complete with plastic carrying case, safety guard and safety strap.
CUTTER CAPACITY..... 4" **TWIST DRILL CAP..... #3 M T** **CHUCK CAPACITY..... 3/4"** **SPEEDS GEAR I..... 40-130 rpm** **SPEEDS GEAR II..... 145-430 rpm** **POWER CONSUMPTION 1850w** **CLAMPING FORCE..... 4,000 PSI** **HEIGHT..... 20"** **WIDTH ..... 5-1/4"** **LENGTH ..... 14-3/4"** **WEIGHT..... 57 lbs** **STROKE ..... 11"** **INCLUDES: Warranty, Carrying case, Allen keys, Safety strap & guard and Cutting oil.**	**CUTTER CAPACITY..... 4"** **TWIST DRILL CAP ..... #3 M T** **CHUCK CAPACITY ..... 3/4"** **TAPPING CAPACITY ... 1-1/4"** **COUNTERSINK CAP.... 4'** **MAX. SPINDLE PRES. . 2,500 PSI** **SPEEDS GEAR I..... 220/260 rpm** **SPEEDS GEAR II..... 350/420 rpm** **POWER CONSUMPTION 1150w** **CLAMPING FORCE..... 2000 PSI** **HEIGHT..... 18"** **WIDTH..... 4-1/8"** **LENGTH..... 11-1/2"** **WEIGHT ..... 49.5 lbs** **VOLTAGE..... 110V**	**CLAMPING FORCE (lbs)** **Drill Point Breakaway 910 PSI** **Center Lift..... 2000 PSI** **MOTOR ..... MAG 2** **HTZ..... 50/60** **WATTS..... 1100** **R. P. M. 430 - 770** **HEIGHT ..... 19-3/4"** **WIDTH..... 9"** **LENGTH..... 11-1/4"** **WEIGHT ..... 44 lbs.** **STROKE..... 6-1/2"** **CUTTER CAPACITY..... 1-9/16"** **TWIST DRILL CAPACITY 5/8"** **VOLTAGE 110v**

High Speed Steel Punch

PORTABLE DOUBLE ACTION HYDRAUTIC PUNCHER

PU11-1624

$22,258.50



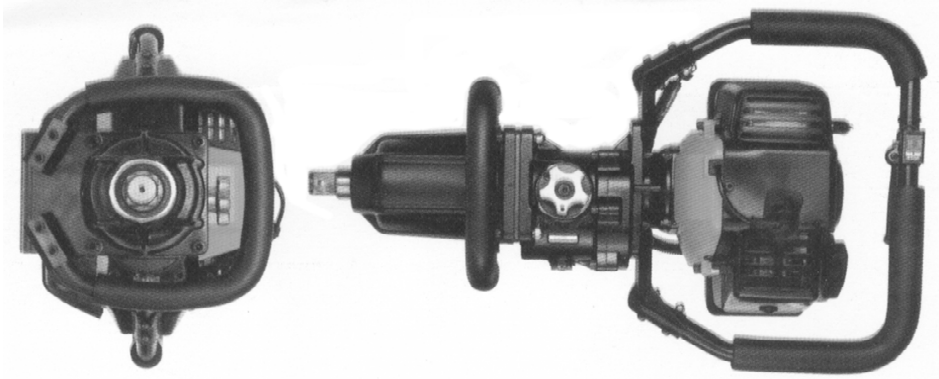
- **NEW DESIGN ADOPTED FOR PUNCHING STAINLESS STEEL**
  Anti-vebration construction adopted in puncher head makes punching of stainless steel possible.
- **AUTO-RETURN**
  Punching, returning and reset operations are fully automatic. Just press Start/Descend button and it completes punching, returns and resets automatically. To stop punching, press the Raise Button and the punch returns.
- **INCHING FUNCTION**
  While pressing the Start/Descend Button the punch will descend. While pressing the Raise Button the punch returns. If both buttons are released the punch will remain stationary at the desired height.

MAX. THROAT DEPTH.	4-3/4"
MAX. PUNCHING DIA. .	
Mild Steel A36.....	15/16"
Stainless Steel 304.....	15/16"
Can be modified to.....	1-1/16"
MAX. PUNCH THICKNES	
Mild Steel A36.....	5/8"
Stainless Steel 304.....	1/4"
HOLE MAKING TIME....	11.8 sec.
ALLOWABLE MAXIMUM	
PRESSURE.....	10,000 PSI
MAXIMUM OUTPUT.....	52 tons
RAM STROKE	1"
WEIGHT	56 lbs

IMPACT WRENCH

GIW50 — GASOLINE ENGINE IMPACT WRENCH — EDP # GEIW50

$9,550.00



ENGINE	Type: Two stroke Air Cooled Displacement: 45.5 cc Fuel Tank Capacity: 1 Liter Fuel Mixture Ratio: 25:1 (gasoline:2 cycle oil) Revolution (idling): 2700 rpm Revolution (loaded, impact): 7120 rpm Revolution (non loaded, max): 9880 rpm
IGNITION	Type: Electronic Spark Plug Type: NGH BPMR6A

Carburetor	Type: Diaphragm
IMPACT	Square Driver Size: 1" Fastening Torque Range: 406 - 760 ft. lbs. Free Speed: 1200 rpm
WEIGHT	Without Fuel: 39.57 lbs.
CAPACITY	Bolt Diameter: 1-1/4"

Annular Cutters

FEEDS & SPEEDS FOR MAGTRON CUTTERS

CUTTING SPEED IN FEET/MIN. (SFPM)

MATERIAL TO BE DRILLED		HSS CUTTER	NITRO CUTTER
Steel	Freecutting-Leaded	100	150
	Up To 180 Brinell	80 to 110	130
	A-36	80 to 110	130
	180 To 285 Brinell	45 to 70	80
	285 To 375 Brinell	30 to 45	55
	375 & Up Brinell	15 to 25	35
	Manganese (low)	15 to 20	25
	Stainless-Freecutting	30 to 60	70
	Stainless 304,316, 320 & Tougher	20 to 40	50
Inconel, Hastelloy		25 to 40	55
Inconel - X		20 to 25	35
Titanium		30 to 40	50
A-286		25 to 35	50

SPEED IN FEET/MIN. (SFPM)

MATERIAL TO BE DRILLED		HSS CUTTER	NITRO CUTTER
Aluminum		150	250
Brass	Ordinary	150	250
	Leaded	200	300
Bronze	Ordinary	100	200
	Hi-tensile	70	100
Cast Iron	Soft	100	150
	Medium	80	90
	Hard	50	70
	Chilled	25	35
Copper		100	200
Magnesium		Up to 300	400
Malleable Iron		70	80
Monel		40	50

OPERATING FEED*

CUTTER DIAMETER	FEED INS./REV.
7/16" to 9/16"	.002 to .006
5/8' to 3/4"	.003 to .007
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.

FEEDS & SPEEDS FOR MAGTRON CUTTERS

	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	15	**10**
20	175	153	136	122	111	102	94	87	82	76	68	61	56	51	47	44	38	34	31	**20**
30	262	229	204	183	167	153	141	131	122	115	102	92	83	76	71	65	57	51	46	**30**
40	349	306	272	245	222	204	188	175	163	153	136	122	111	102	94	87	76	68	61	**40**
50	437	382	339	306	278	255	235	218	204	191	170	153	140	127	118	109	95	85	76	**50**
60	524	458	407	367	333	306	282	353	245	229	204	183	167	153	141	131	115	102	92	**60**
70	611	535	475	428	389	357	329	306	285	267	238	214	194	178	165	153	134	119	107	**70**
80	700	611	543	489	444	408	376	350	326	306	272	244	222	204	188	175	153	136	122	**80**
90	786	688	611	550	500	458	426	393	367	344	306	275	250	229	212	196	172	153	138	**90**
100	873	764	679	611	556	509	470	436	408	382	340	306	278	255	235	218	191	170	153	**100**
120	1048	917	815	733	667	611	564	524	489	458	407	367	333	306	282	262	229	204	183	**120**
140	1222	1070	950	856	778	713	658	611	571	535	475	428	390	356	329	306	267	238	214	**140**
150	1310	1146	1018	917	833	764	705	655	611	573	509	458	417	382	353	327	286	255	229	**150**
160	1397	1222	1086	978	889	815	752	698	652	611	543	490	444	407	376	350	306	272	244	**160**
180	1572	1375	1222	1100	1000	917	846	786	734	688	611	550	500	458	423	393	344	306	275	**180**
200	1747	1528	1358	1222	1111	1020	940	874	815	764	680	611	556	510	470	437	382	340	306	**200**
220	1920	1681	1494	1345	1222	1121	1034	960	897	840	747	672	611	560	517	480	420	374	336	**220**
240	2096	1833	1630	1467	1333	1222	1128	1048	978	917	815	733	667	611	564	524	458	407	367	**240**
250	2183	1910	1697	1528	1389	1274	1175	1091	1020	955	850	764	694	637	588	546	477	424	382	**250**
260	2270	1986	1765	1590	1444	1325	1221	1135	1060	993	883	795	722	662	611	568	497	441	397	**260**
280	2445	2140	1900	1712	1556	1426	1316	1222	1140	1070	950	856	778	713	658	611	535	475	428	**280**
300	2620	2292	2037	1834	1667	1528	1410	1310	1222	1146	1020	917	833	764	705	655	573	510	458	**300**

CUTTING SPEEDS (SFPM)

SPEED AND FEED FORMULAS

SPEED OF CUTTER IN SURFACE FEET PER MINUTE (SFM)

SFP = D x .26 x RPM

REVOLUTIONS PER MINUTE (RPM)

RPM = SFM x 3.82 divided by Dia.

FEED IN INCHES PER MINUTE (IPM) OR (F)

F = f x T x RPM

Nitro
CUTTING FULIDS
Multi-purpose drill & tapping fluid

Introducing our
NEXT GENERATION of COOLANTS
Designed for Industry in the 21st Century

- Environmentally Responsible Technology
- Biodegradable
- Nontoxic
- Noncorrosive
- Nonhazardous
- No Harmful Fumes
- User Friendly
- Excellent Lubricating Qualities
- Effective Heat Removal from Cutting Tool and Adjacent Surfaces



NEXT GENERATION PRODUCTS are designed for machining applications of both ferrous and non-ferrous metals. This entire family of products provide superior cooling and lubricating properties to insure a quality finish and maximize tool life.

Providing Coolant/Cleaning Solutions for the Metal Working Industry.

The 21st Century Demands Environmentally Responsible Products

MADE IN THE USA!

CUTTING FLUIDS INDEX

ALL CUTTING FLUIDS ON PAGE 95

CUTTING FLUID MATERIAL DATA SHEET ON PAGE 96

Cutting Fluids

MULTI-PURPOSE DRILLING & TAPPING FLUID

ENVIRONMENTALLY SAFE BIODEGRADABLE NONHAZARDOUS



Nitro CUTTING FLUIDS

A high performance cutting fluid that produces tight tolerances, longer tool life and a better finish on all metals. Especially effective on hard to cut metals.

NCF - 4 **4 oz. Bottle** **$7.00**
NCF - 16 **16 oz. Bottle** **$12.85**
NCF - 32 **32 oz. Bottle** **$19.65**
NCF - 128 **1 gal. Bottle** **$55.00**



Nitro Arctic CUTTING FLUIDS

A high performance cutting fluid that produces tight tolerances, longer tool life and a better finish on all metals. Especially effective in low temperature (-32° F) drilling and tapping.

NACF - 4 **4 oz. Bottle** **$8.40**
NACF - 16 **16 oz. Bottle** **$15.40**
NACF - 32 **32 oz. Bottle** **$23.60**
NACF - 128 **1 gal. Bottle** **$66.00**

Nitro Cutting Fluid

MATERIAL SAFETY DATA SHEET

Section I — Identification

Nitro **Cutting Fluid** is a synthetic, water-based coolant and lubricant. Low foaming, bacteria and fungus resistant for ferrous and nonferrous metals.

Section II — Ingredients and Hazard Classification

Anionic and nonionic surfactants, corrosion inhibitor, and Triethanolamin. the specific percentages and components of this products are regarded to be a trade secret.

Section III — Physical/Chemical Characteristics

(as supplied in concentrate form)

Boiling Point:	N/A	**Vapor Pressure (mm Hg)**	(20° C.) H_2O
Solubility in water:	100%	**Specific Gravity:**	N/A
pH:	10% in water: 9.0 20°C	**Appearance and Odor:**	Light amber liquid
Viscosity:	(20° C.) 40 mPas		Mild odor
		Density:	(20° C.) 1.07 g/em3

Section IV — Fire and Explosion

Flash Point:	N/A	**Vapor Pressure (mm Hg)**	N/A
Flammable Limits:	N/A	**LEL:**	N/A
Extinguishing Media	N/A	**UEL:**	N/a
Unusual Fire &		**Special Fire Fighting Procedure**	None
Explosion Hazards:	None		

Section V — Reactivity Data

Stability:	Stable	**Hazardous Polymerization:**	Will not occur
Hazardous Decomposition		**Incompatibility:**	Strong Acids
Products:	None	**Conditions to Avoid:**	None

Section VI — Health Hazard Data

Signs & Symptoms of Exposure:

Skin: Brief contact may dry the skin.

Eyes: Liquid & mist may moderately irate the eyes.

Inhalation: Higher temperatures may cause irritation.

Ingestion: Symptoms may cause pain or discomfort in mouth

First Aid:

Skin: Flush affected area & wash with water.

Eyes: Flush immediately with large amounts of water.

Inhalation: Remove to fresh air.

Drink water. Seek Medical air if necessary.

Carcinogenicity:

NTP?	No	**LARC?**	No	**OSHA Regulated?**	No

Section VII — Precautions for Safe Handling and Use

Spill or Leak Procedures: Rinse affected area with water.

Waste Disposal Method: Dispose as a non-hazardous waste in accordance with local regulation.

Storage & Handling precautions: Store at room temperature in closed containers. Storage of 24 months

Other Precautions: Although the components have low hazard levels, avoid prolonged skin contact**.**

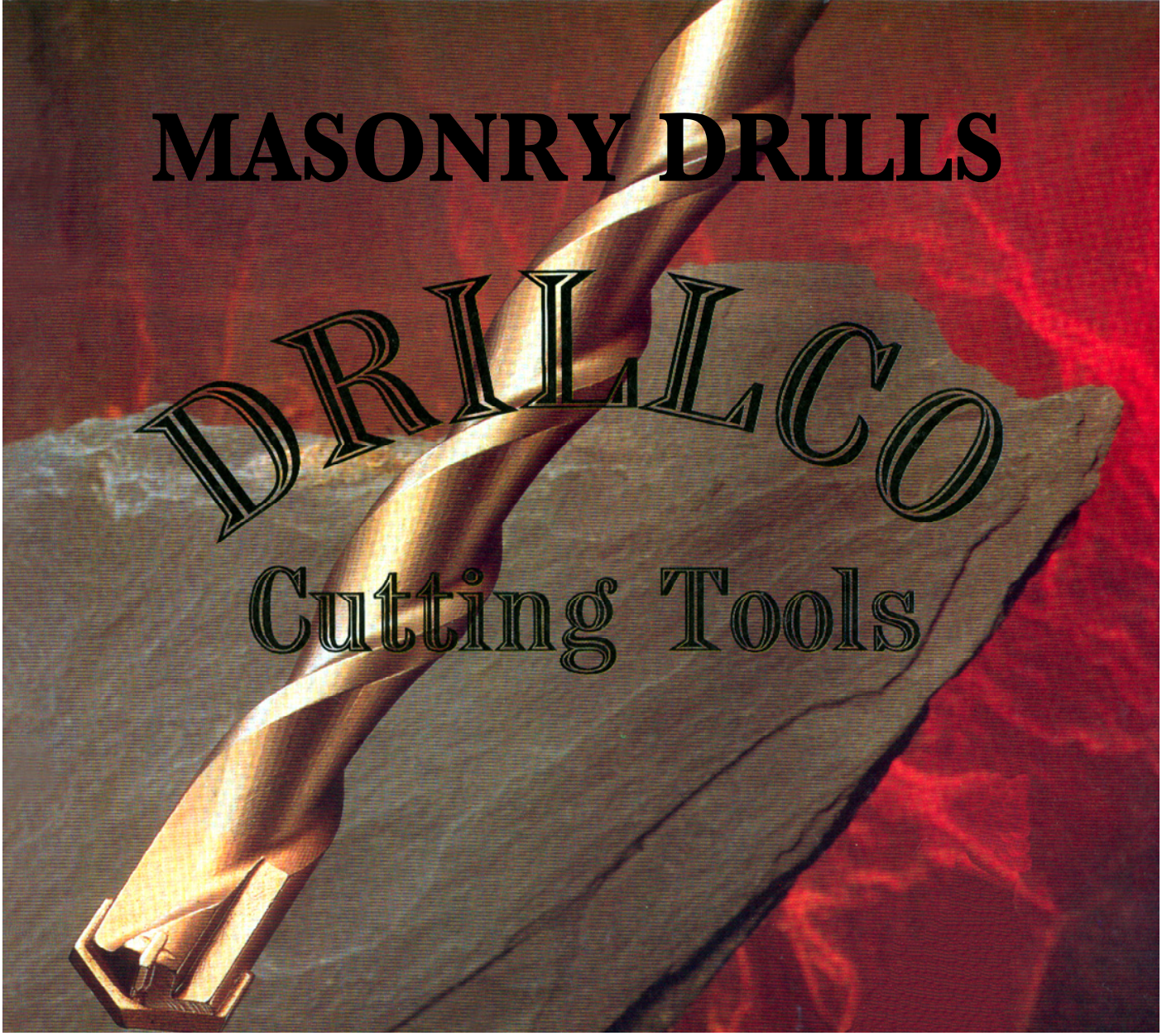
Section VIII — Control Measures

Respiratory Protection: Not Required

Ventilation: No special ventilation is required under ordinary use for its intended purposes.

Eye Protection: Use eye protection to prevent reasonable probability of eye contact.

Other Precautions: Although the components have low hazard levels, avoid prolonged skin contact**.**



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NITRO (1600N) 98

SLOW SPIRAL (1550) ..... 100 & 101

UNIVERSAL MULTI-PURPOSE (1810 113

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SDS - PLUS FRACTIONAL SIZES (1700) ..... 104 & 105

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REGULAR

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TAPCON DRILLS

TAPCONS (1800E) 118

WOOD DRILLS

PADDLE BITS 118

SHIP AUGER BITS 118

Masonry Drills

EUROPE — *Nitro* — HRVCB* POINT

PERFORMANCE LEVEL	
PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXXX
REINFORCED CONCRETE	XXXX
VIBRATED CONCRETE	XXXX
SUPER CONCRETE	XXXX
GRANITE	XXXX
MARBLE	XXXX
BRICK	XXXX
HARD CAST IRON	XXXX
FIBER GLASS	XXXX
POLYESTER REINFORCED PARTS	XXXX
GRAPHITE COMPOUNDS	XXXX
LAMINATES	XXXX
PHENOIC EPOXY PARTS	XXXX

CHARACTERISTICS

L-SHAPED TREATED MILLED BODY

PERCUSSION SHARPENED HIGH-RESISTANCE CARBIDE TIP

"CHOC" CARBIDE TIP

HIGH TEMPERATURE BRAZED REINFORCED HEADS



The *Nitro* Masonry drill is used to drill granite, marble, concrete, super concrete, polyester glass reinforced products and hard steels of all types

Packaging: All sizes are individually packaged.

SERIES 1600N — GOLD & SILVER

SIZE	SHANK SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	1/8	1-3/8	2-1/2	160N108	**$3.15**
5/32	5/32	1-1/2	3"	160N110	**3.25**
3/16	3/16	2"	3-1/2	160N112	**3.63**
7/32	7/32	2"	3-1/2	160N114	**3.63**
15/64	15/64	2-3/8	4"	160N115	**3.73**
1/4	1/4	2-3/8	4"	160N116	**3.93**
9/32	9/32	2-3/8	4"	160N118	**4.03**
5/16	5/16	3"	5"	160N120	**4.38**
11/32	11/32	3"	5"	160N122	**5.15**
3/8	3/8	3"	5"	160N124	**6.17**
7/16	7/16	3-1/2	6"	160N128	**7.63**
15/32	15/32	3-1/2	6"	160N130	**8.87**
1/2	1/2	3-1/2	6"	160N132	**9.80**
9/16	1/2	3-1/2	6"	160N136	**12.12**
19/32	1/2	3-1/2	6"	160N138	**13.45**
5/8	1/2	3-1/2	6"	160N140	**14.56**
23/32	1/2	3-1/2	6"	160N146	**18.33**
3/4	1/2	3-1/2	6"	160N148	**22.30**
25/32	1/2	3-1/2	6"	160N150	**23.21**
7/8	1/2	4"	6"	160N156	**26.30**
1"	1/2	4"	6"	160N164	**30.06**

Masonry Drills

FRANCE **FAST SPIRAL FLUTE** **ZINK PLATED**

PERFORMANCE LEVEL	
PLASTER	XXXX
SHEET ROCK	XXXX
SOFT STONE	XXX
HARD STONE	X
REINFORCED CONCRETE	
VIBRATED CONCRETE	X
SUPER CONCRETE	
GRANITE	
MARBLE	
BRICK	XXX
TILE	
CERAMICS	
GLASS	

CHARACTERISTICS

TUNGSTEN CARBIDE TIP

COPPER BRAZED CARBIDE TIP

POSITIVE RAKE TIP

FAST SPIRAL FLUTE FOR FAST POWDER REMOVAL



SINGLE PACK SERIES 1500A **BULK PACKAGE SERIES 1500B**

SIZE	SHANK SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE	PACKAGE QTY	EDP NUMBER	LIST PRICE
1/8	1/8	1-1/4	3"	150A1083	**$1.82**	12	150B1083	**$1.32**
3/16	3/16	1-1/2	3"	150A1123	**1.87**	12	150B1123	**1.44**
3/16	3/16	2"	4"	150A1124	**1.98**	12	150B1124	**1.58**
1/4	1/4	2"	4"	150A1164	**2.10**	12	150B1164	**1.82**
1/4	1/4	3-3/8	6"	150A1166	**3.26**	12	150B1166	**2.77**
1/4	1/4	6-5/8	12"	150A11612	**9.06**	12	150B11612	**6.81**
5/16	1/4	2"	5"	150A1205	**3.74**	12	150B1205	**2.53**
5/16	1/4	3-3/8	6"	150A1206	**4.02**	12	150B1206	**3.14**
5/16	1/4	6-5/8	12"	150A12012	**9.47**	12	150B12012	**7.13**
3/8	5/16	2"	4"	150A1244	**3.54**	12	150B1244	**3.01**
3/8	5/16	3-3/8	6"	150A1246	**4.50**	12	150B1246	**3.64**
3/8	5/16	6-5/8	12"	150A12412	**12.30**	12	150B12412	**9.24**
7/16	3/8	3-3/8	6"	150A1286	**4.79**	12	150B1286	**-----**
1/2	3/8	2"	4"	150A1324	**5.70**	12	150B1324	**5.31**
1/2	3/8	3-3/8	6"	150A1326	**6.27**	12	150B1326	**5.64**
1/2	3/8	6-5/8	12"	150A13212	**13.78**	12	150B13212	**10.34**
9/16	3/8	3-3/8	6"	150A1366	**7.13**	6	150B1366	**-----**
5/8	1/2	3-3/8	6"	150A1406	**9.47**	6	150B1406	**8.58**
5/8	1/2	6-5/8	12"	150A14012	**18.18**	6	150B14012	**15.64**
3/4	1/2	4"	6-1/2	150A1486	**16.23**	6	150B1486	**14.52**
3/4	1/2	6-5/8	12"	150A14812	**24.27**	6	150B14812	**18.92**

Masonry Drills

Slow Spiral

EUROPE | **TUNGSTEN CARBIDE** | **ZINK PLATED**

PERFORMANCE LEVEL	
PLASTER	XXXX
SHEET ROCK	XXXX
SOFT STONE	XXX
HARD STONE	X
REINFORCED CONCRETE	
VIBRATED CONCRETE	X
SUPER CONCRETE	
GRANITE	
MARBLE	
BRICK	XXX
TILE	
CERAMICS	
GLASS	

CHARACTERISTICS

SPIRAL FLUTED FOR FAST DUST REMOVAL

COPPER BLAZED CARBIDE TIP

POSITIVE RAKE TIP

WIDE FLUTE WITH REDUCED SHANK FOR LESS VIBRATION



	SINGLE PACK	BULK PACKAGE
	SERIES 1550A	SERIES 1550B

SIZE	SHANK SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE	PACKAGE QTY	EDP NUMBER	LIST PRICE
1/8	1/8	1-1/4	3"	155A1083	**$1.65**	25	155B1083	**$1.20**
1/8	1/8	3-3/8	6"	155A1086	**3.87**	25	155B1086	**3.52**
5/32	5/32	1-1/2	3"	155A1103	**2.65**	25	155B1103	**1.26**
3/16	3/16	1-1/2	3"	155A1123	**1.70**	25	155B1123	**1.31**
3/16	3/16	2"	4"	155A1124	**1.82**	25	155B1124	**1.44**
3/16	3/16	3-3/8	6"	155A1246	**2.96**	25	155B1246	**2.52**
7/32	7/32	2"	4"	155A1144	**1.88**	---	155B1144	**-----**
1/4	1/4	2"	4"	155A1164	**1.91**	25	155B1164	**1.65**
1/4	1/4	3-3/8	6"	155A1166	**2.96**	25	155B1166	**2.52**
1/4	1/4	6-5/8	12"	155A11612	**8.22**	25	155B11612	**6.18**
1/4	1/4	18-1/2	24"	155A11624	**17.49**	15	155B11624	**15.18**
9/32	9/32	2"	4"	155A1184	**3.44**	---	155B1184	**-----**
5/16	1/4	2"	5"	155A1205	**3.09**	25	155B1205	**2.09**
5/16	1/4	3-3/8	6"	155A1206	**3.65**	25	155B1206	**2.85**
5/16	1/4	6-5/8	12"	155A12012	**8.61**	25	155B12012	**6.48**
5/16	1/4	18-1/2	24"	155A12024	**16.27**	---	155B12024	**-----**
11/32	1/4	2-1/2	5"	155A1225	**3.05**	---	155B1225	**-----**
3/8	5/16	2"	4"	155A1244	**3.22**	25	155B1244	**2.74**
3/8	5/16	2-1/2	5"	155A1245	**3.39**	25	155B1245	**2.91**
3/8	5/16	3-3/8	6"	155A1246	**4.09**	25	155B1246	**3.31**
3/8	5/16	6-5/8	12"	155A12412	**11.08**	25	155B12412	**8.40**
3/8	5/16	18-1/2	24"	155A12424	**23.68**	15	155B12424	**17.80**

Continued on next page

Masonry Drills

Slow Spiral

EUROPE | **TUNGSTEN CARBIDE** | **ZINK PLATED**

				SINGLE PACKAGE SERIES 1550A		BULK PACKAGE SERIES 1550B	
SIZE	SHANK SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE	PACKAGE QTY	EDP NUMBER	LIST PRICE
7/16	3/8	2"	4"	155A1284	**$4.35**	---	155B1284	**$-----**
7/16	3/8	3-3/8	6"	155A1286	**4.74**	---	155B1286	**-----**
15/32	3/8	3-3/8	6"	155A1306	**5.00**	25	155B1306	**-----**
1/2	3/8	2"	4"	155A1324	**5.18**	25	155B1324	**4.83**
1/2	3/8	3-3/8	6"	155A1326A	**5.70**	25	155B1326A	**5.13**
1/2	3/8	6-5/8	12"	155A13212A	**12.53**	25	155B13212A	**9.40**
1/2	3/8	18-1/2	24"	155A13224A	**23.06**	15	155B13224A	**19.92**
9/16	3/8	3-3/8	6"	155A1366A	**6.48**	---	155B1366A	**-----**
5/8	3/8	3-3/8	6"	155A1406A	**8.61**	15	155B1406A	**7.80**
5/8	1/2	3-3/8	6"	155A1406B	**8.61**	.15	155B1406B	**7.80**
5/8	3/8	6-5/8	12"	155A14012A	**16.53**	15	155B14012A	**14.22**
5/8	1/2	6-5/8	12"	155A14012B	**16.53**	15	155B14012B	**14.22**
5/8	1/2	18-1/2	24"	155A14024B	**21.18**	---	155B14024B	**-----**
11/16	1/2	3-3/8	6"	155A1446B	**15.18**	---	155B1446B	**-----**
3/4	1/2	4"	6-1/2	155A1486B	**14.75**	15	155B1486B	**13.20**
3/4	1/2	6-5/8	12"	155A14812B	**22.07**	15	155B14812B	**17.20**
3/4	1/2	18-1/2	24"	155A14824B	**38.71**	---	155B14824B	**-----**
7/8	1/2	4"	6-1/2	155A1566B	**16.31**	15	155B1566B	**15.49**
7/8	1/2	6-5/8	12"	155A15612B	**25.45**	15	155B15612B	**24.14**
7/8	1/2	18-1/2	24"	155A15624B	**42.67**	---	155B15624B	**-----**
1"	1/2	4"	6-1/2	155A1646B	**28.19**	10	155B1646B	**26.88**
1"	1/2	6-5/8	12"	155A16412B	**34.80**	10	155B16412B	**32.97**
1-1/4	1/2	4"	6-1/2	155A2166B	**58.90**	10	155B2166B	**57.59**
1-1/4	1/2	6-5/8	12"	155A21612B	**69.82**	10	155B21612B	**68.51**

Masonry Drills

Rotary Percussion & Rotary Hammer Drilling

EUROPE | **TUNGSTEN CARBIDE** | **HRVCB* POINT**

PERFORMANCE LEVEL

PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXX
REINFORCED CONCRETE	
VIBRATED CONCRETE	XX
SUPER CONCRETE	X
GRANITE	XX
MARBLE	X
BRICK	XXXX
TILE	
CERAMICS	
GLASS	

CHARACTERISTICS

PERCUSSION CARBIDE TIP WITH POSITIVE RAKE

SPIRAL FLUTE FOR FAST DUST REMOVAL

REDUCED SHANK FOR LESS VIBRATION

BLACK BODY WITH GOLD TIP



SINGLE PACK SERIES 1600A | **BULK PACKAGE SERIES 1600B**

SIZE	SHANK SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE	BULK QUANTITY	EDP NUMBER	LIST PRICE
1/8	1/8	1-1/2	3"	160A1083	**$2.04**	25	160B1083	**$1.63**
5/32	5/32	1-1/2	3"	160A1103	**2.10**	25	160B1103	**1.68**
3/16	3/16	2"	4"	160A1124	**2.13**	25	160B1124	**1.70**
3/16	3/16	3-1/2	6"	160A1126	**3.52**	25	160B1126	**2.82**
3/16	3/16	4-3/4	8"	160A1128	**5.88**	25	160B1128	**4.70**
7/32	7/32	2"	4"	160A1144	**2.39**	---	---------	**-----**
15/64	15/64	4-3/4	8"	160A1158	**7.73**	---	--------	**-----**
1/4	1/4	2"	4"	160A1164	**2.39**	25	160B1164	**1.91**
1/4	1/4	3-1/2	6"	160A1166	**3.52**	25	160B1166	**2.82**
1/4	1/4	4-3/4	8"	160A1168	**5.54**	25	160B1168	**4.43**
1/4	1/4	6-5/8	12"	160A11612	**8.41**	25	160B11612	**6.73**
1/4	1/4	10"	16"	160A11616	**13.38**	---	--------	**-----**
1/4	1/4	18-1/2	24"	160A11624	**19.81**	---	--------	**-----**
9/32	9/32	2"	4"	160A1184	**3.14**	---	--------	**-----**
5/16	1/4	2-1/2	5"	160A1205	**3.22**	---	---------	**-----**
5/16	1/4	3-1/2	6"	160A1206	**4.61**	25	160B1206	**3.69**
5/16	1/4	4-3/4	8"	160A1208	**7.49**	---	--------	**-----**
5/16	1/4	6-5/8	12"	160A12012	**8.41**	25	160B12012	**6.73**
5/16	1/4	10"	16"	160A12016	**14.42**	---	--------	**-----**
5/16	1/4	18-1/2	24"	160A12024	**21.22**	---	--------	**-----**
11/32	1/4	2-1/2	5"	160A1225	**4.20**	---	--------	**-----**
3/8	5/16	2-1/2	5"	160A1245	**4.31**	25	160B1245	**3.45**
3/8	5/16	3-1/2	6"	160A1246A	**5.39**	---	--------	**-----**
3/8	5/16	4-3/4	8"	160A1248A	**8.05**	25	160B1248A	**6.44**
3/8	5/16	6-5/8	12"	160A12412A	**10.92**	25	160B12412A	**8.74**
3/8	5/16	10"	16"	160A12416A	**16.90**	---	--------	**-----**
3/8	5/16	18-1/2	24"	160A12424A	**22.09**	---	--------	**-----**

*High Resistance Vacuum Copper Brazed

Continued on next page

Masonry Drills

Rotary Percussion & Rotary Hammer Drilling

EUROPE | **TUNGSTEN CARBIDE** | **HRVCB* POINT**

						SINGLE PACK SERIES 1600A		BULK PACKAGE SERIES 1600B
SIZE	**SHANK SIZE**	**FLUTE LENGTH**	**OVERALL LENGTH**	**EDP NUMBER**	**LIST PRICE**	**BULK QUANTITY**	**EDP NUMBER**	**LIST PRICE**
7/16	3/8	3-1/2"	6"	160A1286A	**$6.26**	---	--------	**$-----**
15/32	3/8	4-3/4	8"	160A1308A	**10.88**	---	--------	**-----**
15/32	3/8	10"	16"	160A13016A	**19.55**	---	--------	**-----**
15/32	3/8	18-1/2	24"	160A13024A	**22.46**	---	--------	**-----**
1/2	3/8	3-1/2	6"	160A1326A	**6.87**	25	160B1326A	**5.50**
1/2	3/8	4-3/4	8"	160A1328A	**11.83**	25	160B1328A	**9.46**
1/2	3/8	6-5/8	12"	160A13212A	**14.44**	25	160B13212A	**11.55**
1/2	3/8	10"	16"	160A13216A	**21.52**	---	--------	**-----**
1/2	3/8	18-1/2	24"	160A13224A	**25.58**	---	--------	**-----**
9/16	3/8	3-1/2	6"	160A1366A	**7.45**	---	--------	**-----**
9/16	3/8	4-3/4	8"	160A1368A	**13.79**	---	--------	**-----**
9/16	3/8	10"	16"	160A13616A	**21.51**	---	--------	**-----**
9/16	3/8	18-1/2	24"	160A13624A	**28.88**	---	--------	**-----**
19/32	1/2	3-1/2	6"	160A1386B	**11.47**	---	--------	**-----**
5/8	1/2	3-1/2	6"	160A1406B	**10.35**	15	160B1406B	**8.26**
5/8	1/2	4-3/4	8"	160A1408	**16.31**	15	160B1408	**13.05**
5/8	1/2	6-5/8	12"	160A14012B	**19.84**	15	160B14012B	**15.87**
5/8	1/2	10"	16"	160A14016B	**26.06**	---	--------	**-----**
5/8	1/2	18-1/2	24"	160A14024B	**31.09**	---	--------	**-----**
23/32	1/2	3-1/2	6"	160A1466B	**17.61**	---	--------	**-----**
3/4	1/2	4"	6-1/2	160A1486B	**21.05**	15	160B1486B	**16.84**
3/4	1/2	6-5/8	12"	160A14812B	**27.67**	15	160B14812B	**22.14**
3/4	1/2	10"	16"	160A14816B	**36.88**	---	--------	**-----**
3/4	1/2	18-1/2	24"	160A14824B	**40.79**	---	--------	**-----**
25/32	1/2	3-1/2	6"	160A1506B	**22.50**	---	--------	**-----**
25/32	1/2	10"	16"	160A15016B	**39.85**	---	--------	**-----**
25/32	1/2	18-1/2	24"	160A15024B	**45.17**	---	--------	**-----**
7/8	1/2	4"	6-1/2	160A1566B	**24.95**	15	160B1566B	**19.96**
7/8	1/2	6-5/8	12"	160A15612B	**36.80**	15	160B15612B	**29.44**
7/8	1/2	10"	16"	160A15616B	**48.92**	---	--------	**-----**
7/8	1/2	18-1/2	24"	160A15624B	**56.28**	---	--------	**-----**
1"	1/2	4"	6-1/2	160A1646B	**28.70**	10	160B1646B	**22.96**
1"	1/2	6-5/8	12"	160A16412B	**47.50**	10	160B16412B	**38.00**
1"	1/2	10"	16"	160A16416B	**68.13**	---	--------	**-----**
1"	1/2	18-1/2	24"	160A16424B	**83.29**	---	--------	**-----**

***High Resistance Vacuum Copper Brazed**

Masonry Drills

SDS — PLUS Hammer Drills

EUROPE | **CHROME VANADIM STEEL** | **HRVCB* 160° POINT**

PERFORMANCE LEVEL

PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXX
REINFORCED CONCRETE	XX
VIBRATED CONCRETE	XXXX
SUPER CONCRETE	XXX
GRANITE	XXX
MARBLE	XXX
BRICK	XXXX
TILE	X
CERAMICS	X
GLASS	



CHARACTERISTICS

NEW 21th CENTURY FLUTE DESIGN

SELF - CENTERING TIP

MAXIMIZED CHIP BREAKUP

HIGH RESISTANCE REINFORCED CARBIDE TIP

GROUND BODY THERMALLY TREATED FOR LONGER LIFE



SINGLE PACK SERIES 1700A | **BULK PACKAGE SERIES 1700B**

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE	PACKAGE QTY	EDP NUMBER	LIST PRICE
5/32	2"	4"	170A1104	**$10.48**	25	170B1104	**$9.51**
5/32	4"	6"	170A1106	**12.53**	25	170B1106	**11.14**
3/16	2"	4"	170A1124	**8.27**	25	170B1124	**7.45**
3/16	4"	6"	170A1126	**9.87**	25	170B1126	**8.96**
3/16	6"	8"	170A1128	**12.40**	25	170B1128	**11.40**
3/16	10"	12"	170A11212	**21.01**	15	170B11212	**18.92**
7/32	2"	4"	170A1144	**8.27**	25	170B1144	**7.45**
7/32	4"	6"	170A1146	**11.14**	25	170B1146	**10.01**
7/32	6"	8"	170A1148	**14.36**	25	170B1148	**12.79**
7/32	14"	16"	170A11416	**37.15**	10	170B11416	**27.27**
1/4	2"	4"	170A1164	**7.87**	25	170B1164	**7.09**
1/4	4"	6"	170A1166	**8.70**	25	170B1166	**7.18**
1/4	6"	8"	170A1168	**13.83**	25	170B1168	**13.35**
1/4	10"	12"	170A11612	**21.45**	15	170B11612	**20.40**
1/4	16"	18"	170A11618	**33.84**	10	170B11618	**24.68**
9/32	2"	4"	170A1184	**9.44**	25	170B1184	**8.53**
9/32	4"	6"	170A1186	**10.44**	25	170B1186	**9.48**
5/16	2"	4"	170A1204	**9.44**	25	170B1204	**7.84**
5/16	4"	6"	170A1206	**10.44**	25	170B1206	**9.92**
5/16	6"	8"	170A1208	**12.05**	25	170B1208	**10.92**
5/16	10"	12"	170A12012	**25.88**	15	170B12012	**23.29**

*High Resistance Vacuum Copper Brazed

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Masonry Drills

SDS — PLUS Hammer Drills

EUROPE | **CHROME VANADIM STEEL** | **HRVCB* 160° POINT**

			SINGLE PACK SERIES 1700A		BULK PACKAGE SERIES 1700B	
SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE	PACKAGE QTY	EDP NUMBER	LIST PRICE
3/8	4"	6"	170A1246	**$10.61**	25	170B1246	**$9.57**
3/8	6"	8"	170A1248	**16.79**	25	170B1248	**15.09**
3/8	10"	12"	170A12412	**21.71**	15	170B12412	**20.12**
3/8	14"	16"	170A12416	**30.32**	15	170B12416	**26.03**
3/8	16"	18"	170A12418	**34.76**	10	170B12418	**30.32**
3/8	22"	24"	170A12424	**47.55**	5	170B12424	**39.79**
7/16	4"	6"	170A1286	**16.62**	15	170B1286	**13.14**
7/16	10"	12"	170A12812	**27.73**	10	170B12812	**26.45**
15/32	4"	6"	170A1306	**15.66**	--	--------	**-----**
12 mm	100 mm	160 mm	170A12160	**15.66**	--	--------	**-----**
1/2	4"	6"	170A1326	**15.66**	15	170B1326	**14.87**
1/2	6"	8"	170A1328	**23.23**	15	170B1328	**20.66**
1/2	10"	12"	170A13212	**32.63**	15	170B13212	**31.15**
1/2	14"	16"	170A13216	**34.84**	10	170B13216	**32.89**
1/2	16"	18"	170A13218	**36.63**	10	170B13218	**34.47**
1/2	22"	24"	170A13224	**55.08**	--	--------	**-----**
9/16	4"	6"	170A1366	**22.79**	15	170B1366	**19.40**
9/16	10"	12"	170A13612	**36.02**	10	170B13612	**34.07**
9/16	16"	18"	170A13618	**43.54**	--	--------	**-----**
5/8	4"	6"	170A1406	**24.58**	15	170B1406	**23.19**
5/8	6"	8"	170A1408	**26.06**	15	170B1408	**23.79**
5/8	10"	12"	170A14012	**38.80**	10	170B14012	**32.81**
5/8	16"	18"	170A14018	**49.50**	--	-------	**-----**
5/8	22"	24"	170A14024	**70.91**	--	--------	**-----**
11/16	4"	6"	170A1446	**40.98**	15	170B1446	**34.41**
11/16	6"	8"	170A1448	**45.81**	10	170B1448	**40.06**
3/4	4"	6"	170A1486	**38.11**	15	170B1486	**29.80**
3/4	6"	8"	170A1488	**42.37**	15	170B1488	**40.24**
3/4	10"	12"	170A14812	**50.81**	--	--------	**-----**
3/4	14"	16"	170A14816	**59.81**	--	--------	**-----**
3/4	16"	18"	170A14818	**61.77**	--	--------	**-----**
27/32	4"	6"	170A1546	**62.55**	--	--------	**-----**
7/8	8"	10"	170A15610	**71.73**	--	--------	**-----**
7/8	10"	12"	170A15612	**73.17**	--	--------	**-----**
7/8	16"	18"	170A15618	**87.65**	--	--------	**-----**
1"	10"	12"	170A16412	**95.35**	--	--------	**-----**
1"	16"	18	170A16418	**110.37**	--	--------	**-----**

*High Resistance Vacuum Copper Brazed

Continued on next page

Masonry Drills

SDS — PLUS Hammer Drills

EUROPE | **CHROME VANADIM STEEL** | **HRVCB* 160° POINT**

PERFORMANCE LEVEL

PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXX
REINFORCED CONCRETE	XX
VIBRATED CONCRETE	XXXX
SUPER CONCRETE	XXX
GRANITE	XXX
MARBLE	XXX
BRICK	XXXX
TILE	X
CERAMICS	X
GLASS	



CHARACTERISTICS

NEW 21th CENTURY FLUTE DESIGN

SELF - CENTERING TIP

MAXIMIZED CHIP BREAKUP

HIGH RESISTANCE REINFORCED CARBIDE TIP

GROUND BODY THERMALLY TREATED FOR LONGER LIFE



BULK PACKAGE

SERIES 1700A

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
5 mm	50 mm	110 mm	170A05110	**$9.66**
5 mm	100 mm	160 mm	170A05160	**11.83**
6 mm	50 mm	110 mm	170A06110	**9.66**
6 mm	100 mm	160 mm	170A06160	**11.83**
8 mm	50 mm	110 mm	170A08110	**11.53**
8 mm	100 mm	160 mm	170A08160	**12.96**
10 mm	100 mm	160 mm	170A10160	**12.09**
10 mm	150 mm	210 mm	170A10210	**16.71**
12 mm	100 mm	160 mm	170A12160	**15.66**
12 mm	250 mm	310 mm	170A12310	**31.71**
14 mm	100 mm	160 mm	170A14160	**22.79**
14 mm	250 mm	310 mm	170A14310	**36.02**
15 mm	150 mm	210 mm	170A15210	**27.80**
16 mm	150 mm	210 mm	170A16210	**27.80**
16 mm	250 mm	310 mm	170A16310	**38.28**
18 mm	150 mm	210 mm	170A18210	**47.42**
18 mm	250 mm	310 mm	170A18310	**55.29**
20 mm	250 mm	310 mm	170A20310	**55.29**
22mm	250 mm	310 mm	170A22310	**73.21**
24 mm	250 mm	310 mm	170A24310	**90.80**
25 mm	250 mm	310 mm	170A25310	**95.40**

*High Resistance Vacuum Copper Brazed

Masonry Drills

SDS — MAX Hammer Drills

EUROPE	CHROME VANADIM STEEL	HRVCB* 160° POINT

PERFORMANCE LEVEL	
PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXX
REINFORCED CONCRETE	XX
VIBRATED CONCRETE	XXXX
SUPER CONCRETE	XXX
GRANITE	XXX
MARBLE	XXX
BRICK	XXXX
TILE	X
CERAMICS	X
GLASS	

CHARACTERISTICS

TREATED MILLED BODY

"CHOC" CARBIDE TIP

REINFORCED HEAD

HIGH TEMPERATURE BRAZING

WIDE FLUTE

BLACK OXIDE



SINGLE PACKAGE

SERIES 1730

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/2	8"	13"	173F13213	$77.34
1/2	16"	21"	173F13221	95.92
9/16	8"	13"	173F13613	90.26
9/16	16"	21"	173F13621	116.80
5/8	8"	13"	173F14013	95.94
5/8	16"	21"	173F14021	112.04
5/8	31"	36"	173F14036	166.34
3/4	8"	13"	173F14813	102.05
3/4	16"	21"	173F14821	120.79
3/4	31"	36"	173F14836	172.35
7/8	8"	13"	173F15613	105.81
7/8	16"	21"	173F15621	126.53
1"	8"	13"	173F16413	115.43
1"	16"	21"	173F16421	137.87
1"	31"	36"	173F16436	211.85
1-1/8	8"	13"	173F20813	141.76
1-1/8	16"	21"	173F20821	150.45
1-1/4	10"	15"	173F21615	161.68
1-1/4	18"	23"	173F21623	169.20
1-1/4	31"	36"	173F21636	255.59
1-3/8	18"	23"	173F22423	219.24
1-1/2	18"	23"	173F23223	253.12

*High Resistance Vacuum Copper Brazed

Masonry Drills

Spline Shank Single Tip

EUROPE | **CHROME VANADIUM STEEL** | **HRVCB* POINT**

PERFORMANCE LEVEL	
PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXX
REINFORCED CONCRETE	XX
VIBRATED CONCRETE	XXX
SUPER CONCRETE	XXX
GRANITE	XXX
MARBLE	XXX
BRICK	XXXX
TILE	X
CERAMICS	X
GLASS	

CHARACTERISTICS

L-SHAPE FLUTE FOR FAST DUST REMOVAL TO PREVENT WARE AND OVERHEATING

HIGH RESISTANCE REINFORCED CARBIDE TIP

THERMAL TREATMENT FOR LONGER DRILL LIFE



SERIES 1820 | **INDIVIDUALLY PACKAGED**

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
3/8	3"	8"	182F1248	$58.07
3/8	7"	12"	182F12412	60.90
3/8	11"	16"	182F12416	74.17
7/16	8"	13"	182F12813	63.29
1/2	5"	10"	182F13210	59.16
1/2	8"	13"	182F13213	67.43
1/2	11"	16"	182F13216	73.08
1/2	18"	23"	182F13223	91.13
1/2	22"	27"	182F13227	116.36
1/2	31"	36"	182F13236	130.72
9/16	8"	13"	182F13613	76.34
5/8	6"	11"	182F14011	82.65
5/8	8"	13"	182F14013	91.13
5/8	11"	16"	182F14016	97.88
5/8	18"	23"	182F14023	91.57
5/8	22"	27"	182F14027	136.37
5/8	31"	36"	182F14036	153.29
3/4	7"	12"	182F14812	95.05
3/4	11"	16"	182F14816	103.31
3/4	18"	23"	182F14823	125.28
3/4	31"	36"	182F14838	154.95

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
7/8	11"	16"	182F15616	$117.45
7/8	18"	23"	182F15623	139.42
1"	11"	16"	182F16416	129.50
1"	18"	21"	182F16421	137.90
1"	31"	36"	182F16436	190.10
1-1/8	11"	16"	182F20816	144.68
1-1/8	18"	21"	182F20821	150.47
1-1/4	11"	16"	182F21616	161.69
1-1/4	18"	23"	182F21623	168.78
1-1/4	31"	36"	182F21636	255.61
1-3/8	11"	16"	182F22416	187.27
1-3/8	18"	21"	182F22421	205.54
1-1/2	18"	23"	182F23223	220.76
1-3/4	19"	24"	182F24824	445.35
2"	19"	24"	182F26424	570.37

*High Resistance Vacuum Copper Brazed

Masonry Drills

BOOSTER — Spline Drive Shank

EUROPE | **CHROME VANADIUM STEEL** | **HRVCB* POINT**

PERFORMANCE LEVEL	
PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXXX
REINFORCED CONCRETE	XXX
VIBRATED CONCRETE	XXXX
SUPER CONCRETE	XXXX
GRANITE	XXX
MARBLE	XXX
BRICK	XXXX
TILE	
CERAMICS	
GLASS	



CHARACTERISTICS

TREATED MILLED BODY

"BOOSTER" HEAD
3 CARBIDE TIPS WITH
6 CUTTINGS EDGES

COMFORTABLE TO USE

HIGH TEMPERATURE BRAZING

SANDBLASTED FINISH



SDS BOOSTER MAX HEAD — The head has six cutting edges which make it highly efficient. The six cutting edges perfectly guide the drill bit which makes the drilling effort more progressive and increases the penetration speed. The BOOSTER MAX head reduces vibration therefor increases the comfort of drilling.

Packaging: All sizes are individually packaged.

SERIES 1830

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
5/8	6"	11"	183F14011	$109.22
5/8	11"	16"	183F14016	123.01
5/8	18"	23"	183F14023	143.78
5/8	22"	27"	183F14027	196.97
5/8	31"	36"	183F14036	220.54
3/4	7"	12"	183F14812	119.21
3/4	11"	16"	183F14816	125.84
3/4	18"	23"	183F14823	151.55
3/4	31"	36"	183F14836	228.78
7/8	11"	16"	183F15616	136.72
7/8	18"	23"	183F15623	156.87
1"	11"	16"	183F16416	139.45
1"	18"	21"	183F16421	161.26
1"	31"	36"	183F16436	276.95
1-1/8	11"	16"	183F20816	181.70
1-1/8	18"	21"	183F20821	196.30
1-1/4	11"	16"	183F21616	202.82
1-1/4	18"	23"	183F21623	220.51
1-1/4	31"	36"	183F21636	354.59
1-3/8	18"	21"	183F22421	239.30
1-1/2	18"	23"	183F23223	296.05

*High Resistance Vacuum Copper Brazed

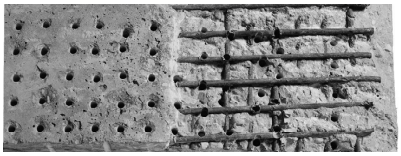
Masonry Drills

BOOSTER SDS — PLUS (Rebar Eater)

EUROPE | **CHROME VANADIUM STEEL** | **HRVCB* POINT**

PERFORMANCE LEVEL	
PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXXX
REINFORCED CONCRETE	XXXX
VIBRATED CONCRETE	XXXX
SUPER CONCRETE	XXXX
GRANITE	XXX
MARBLE	XXX
BRICK	XXXX
TILE	X
CERAMICS	X
GLASS	X





CHARACTERISTICS

ONE PIECE CARBIDE TIP

SELF CENTERING – 3 CUTTING EDGES

SELF – SHARPENING CARBIDE TIP

GROUND BODY THERMALLY TREATED FOR LONGER LIFE



BOOSTER SDS – PLUS (Rebar Eater) Is a completely new technological design by Diager. It has a powerful action and its productivity is FIVE TIMES that of the standard type SDS masonry drill. The BOOSTER PLUS has the same aggressiveness and the same effectiveness on any material. It drills concrete, vibrated concrete, marble & granite flawlessly and has NO FEAR OF REBAR. Its attributes leave current standards in its wake and makes it an essential tool for years to come.
Packaging: All sizes are individually packaged.

SERIES 1720

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/4	2"	4"	172F1164	$23.02
1/4	4"	6"	172F1166	23.57
1/4	6"	8"	172F1168	25.21
9/32	2"	4"	172F1184	23.57
9/32	4"	6"	172F1186	24.66
5/16	2"	4"	172F1204	23.57
5/16	4"	6"	172F1206	24.66
5/16	6"	8"	172F1208	25.76
5/16	10"	12"	172F12012	32.89
3/8	2"	4"	172F1244	26.86
3/8	4"	6"	172F1246	26.31
3/8	6"	8"	172F1248	28.50
3/8	10"	12"	172F12412	38.37
15/32	4"	6"	172F1306	29.60
1/2	4"	6"	172F1326	38.09
1/2	6"	8"	172F1328	42.26
1/2	10"	12"	172F13212	50.97
9/16	4"	6"	172F1366	41.15
9/16	6"	8"	172F1368	45.55
9/16	10"	12"	172F13612	54.05
5/8	6"	8"	172F1408	49.20
5/8	10"	12"	172F14012	50.98
3/4	6"	8"	172F1488	52.30
3/4	10"	12"	172F14812	54.19

*High Resistance Vacuum Copper Brazed

Masonry Drills
BOOSTER SDS — MAX SHANK

EUROPE	CHROME VANADIUM STEEL	HRVCB* POINT

PERFORMANCE LEVEL	
PLASTER	XXXX
SOFT STONE	XXXX
HARD STONE	XXXX
REINFORCED CONCRETE	XXX
VIBRATED CONCRETE	XXXX
SUPER CONCRETE	XXXX
GRANITE	XXX
MARBLE	XXX
BRICK	XXXX
TILE	
CERAMICS	
GLASS	



CHARACTERISTICS

TREATED MILLED BODY

"BOOSTER" HEAD
3 CARBIDE TIPS WITH
6 CUTTINGS EDGES

COMFORTABLE TO USE

HIGH TEMPERATURE BRAZING

SANDBLASTED FINISH



SDS BOOSTER MAX HEAD — The head has six cutting edges which make it highly efficient. The six cutting edges perfectly guide the drill bit which makes the drilling effort more progressive and increases the penetration speed. The BOOSTER MAX head reduces vibration therefor increases the comfort of drilling.

Packaging: All sizes are individually packaged.

SERIES 1740

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
5/8	8"	13"	174F14013	$112.22
5/8	16"	21"	174F14021	131.04
5/8	31"	36"	174F14036	220.54
3/4	8"	13"	174F14813	119.36
3/4	16"	21"	174F04821	141.28
3/4	31"	36"	174F04836	228.78
7/8	8"	13"	174F15613	123.75
7/8	16"	21"	174F15621	147.99
1"	8"	13"	174F16413	135.00
1"	16"	21"	174F16421	161.26
1"	31"	36"	174F16436	276.95
1-1/8	8"	13"	174F20813	165.80
1-1/8	16"	21"	174F20821	196.30
1-1/4	10"	15	174F21615	202.75
1-1/4	17-1/2"	23"	174F21623	220.51
1-1/4	31"	36"	174F21636	354.59
1-3/8	17-1/2"	23"	174F22423	251.89
1-1/2	17-1/2"	23"	174F23223	296.05

Masonry Drills

TAPCON® SCREW TYPE ANCHOR BITS



Tapcon® type screw anchor bits meet or exceed all specifications established by the manufactures of screw type masonry anchors. Recommend for use with Tapcon® anchors or other screw type anchors requiring 5/32" or 3/16" tip diameters.

	SINGLE PACK	BULK PACKAGE
EUROPE	SERIES 1800A	SERIES 1800B

SIZE	SCREW SIZE	OVERALL LENGTH	EDP NUMBER	LIST PRICE	PACKAGE QUANTITY	EDP NUMBER	LIST PRICE
5/32	12	3-1/2	180A1103	**$3.78**	50	180B1103	**$3.08**
5/32	12	4-1/2	180A1104	**3.90**	50	180B1104	**3.14**
5/32	12	5-1/2	180A1105	**4.52**	50	180B1105	**3.80**
3/16	14	3-1/2	180A1123	**3.83**	50	180B1123	**3.08**
3/16	14	4-1/2	180A1124	**4.04**	50	180B1124	**3.14**
3/16	14	5-1/2	180A1125	**4.52**	50	180B1125	**3.80**
3/16	14	6-1/2	180A1126	**5.52**	50	180B1126	**4.60**
3/16	14	7-1/2	180A1127	**6.79**	50	180B1127	**5.67**

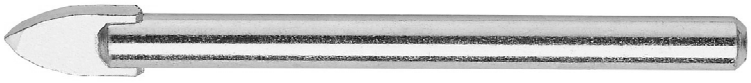
TAPCON® SDS - HEX TYPE SCREW ANCHOR DRILLS



EUROPE	SERIES 1750	SINGLY PACKAGED

SIZE	SCREW SIZE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
5/32	2"	5"	175F1105	**$15.21**
5/32	4"	7"	175F1107	**15.42**
3/16	2"	5"	175F1125	**15.35**
3/16	4"	7"	175F1127	**15.55**

Glass Drills



FOR DRILLING GLASS, TILING AND CERAMICS. LIQUID COOLANT RECOMMENDED, WATER PREFERABLY.

EUROPE	SERIES 1840	SINGLY PACKAGED

SIZE	SCREW SIZE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	2-1/2"	12	184F108	**$9.61**
3/16	2-1/2"	12	184F112	**11.10**
1/4	2-1/2"	12	184F116	**13.17**
5/16	2-3/4"	12	184F120	**13.70**
3/8	3-1/8"	12	184F124	**21.89**
1/2	3-1/8"	12	184F132	**25.38**

Masonry Drills
UNIVERSAL MULTI - PURPOSE

DRILLS THROUGH STEEL DOORS & WINDOWS INTO CONCRETE

PERFORMANCE LEVEL	
PLASTER	XXX
SOFT STONE	XXX
HARD STONE	XX
REINFORCED CONCRETE	XXX
VIBRATED CONCRETE	XXX
SUPER CONCRETE	XX
GRANITE	XXX
MARBLE	XXX
BRICK	XX
CERAMIC	XX
CAST IRON	XXXX
STEEL	XXXX
HIGH STRENGTH STEEL	XXXX

CHARACTERISTICS

DIAMOND POSITIVE SHARPENED CARBIDE TIP

GROUND BODY THERMALLY TREATED FOR LONGER LIFE

BLACK FLUTE - GOLD BODY

NOT FOR ROTA - HAMMER DRILLING



Packaging: All sizes are individually packaged.

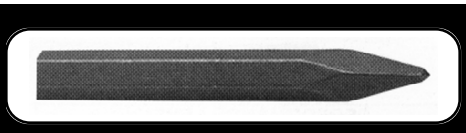
EUROPE — SERIES 1810

SIZE	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	1-3/8"	2-1/2"	181F1082	**$5.04**
5/32	1-1/2"	3"	181F1103	**5.23**
3/16	2"	3-1/2"	181F1123	**5.84**
1/4	1-3/8"	4"	181F1164	**6.43**
5/16	3"	5"	181F1205	**7.02**
3/8	3"	5"	181F1245	**9.85**
1/2	3"	6"	181F1326	**19.41**
5/8	3"	6"	181F1406	**23.29**

Hammer Drill Tools

EUROPE **CHISELS** **SINGLY PACKAGED**

POINTED CHISELS — SERIES 1850



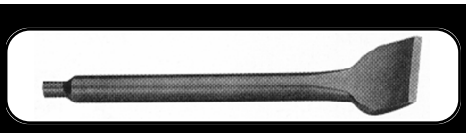
DESCRIPTION	SHANK TYPE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
(BULL) POINTED CHISEL	SDS - PLUS	10"	185FCB05	$27.67
(BULL) POINTED CHISEL	SDS - MAX	11"	185FCB06	36.50
(BULL) POINTED CHISEL	SDS - MAX	15-3/4"	185FCB07	43.77
(BULL) POINTED CHISEL	SDS - MAX	23-1/2"	185FCB08	59.79
(MOIL) POINTED CHISEL	SPLINE SHANK	12"	185FCM09	43.77
(MOIL) POINTED CHISEL	SPLINE SHANK	15-3/4"	185FCM10	47.95
(MOIL) POINTED CHISEL	3/4" HEX	15-3/4"	185FCM02	37.72
(MOIL) POINTED CHISEL	3/4" HEX	23-1/2"	185FCM03	61.30
(MOIL) POINTED CHISEL	3/4" HEX x 21/32	15-3/4"	185FCM04	58.10
(MOIL) POINTED CHISEL	1-1/8" HEX	15-3/4"	185FCM01	85.54

FLAT & SCALING CHISELS — SERIES 1850



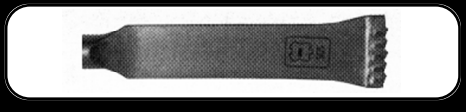
DESCRIPTION	SHANK TYPE	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
FLAT CHISEL	SDS - PLUS	13/16"	8"	185FCF11	$27.86
SCALING CHISEL	SDS - PLUS	1-9/16"	8"	185FCS12	41.93
FLAT CHISEL	SDS - MAX	15/16"	11"	185FCF13	36.01
FLAT CHISEL	SDS - MAX	15/16"	15-3/4"	185FCF14	44.26
SCALING CHISEL	SDS - MAX	2"	14-3/8"	185FCS15	83.47
SCALING CHISEL	SDS - MAX	3-3/16"	12"	185FCS16	92.59
SCALING CHISEL	SDS - MAX	4-5/8"	14"	185FCS17	161.50
FLAT CHISEL	SPLINE SHANK	15/16"	12"	185FCF18	44.75
FLAT CHISEL	SPLINE SHANK	15/16"	16"	185FCF19	48.34
SCALING CHISEL	SPLINE SHANK	2"	16"	185FCS20	97.64
SCALING CHISEL	SPLINE SHANK	3-3/16"	12"	185FCS21	108.61
FLAT CHISEL	3/4" HEX x 21/32	15/16"	14-3/4"	185FCF22	57.95
SCALING CHISEL	3/4" HEX x 21/32	3-3/16"	15-1/2"	185FCS23	111.81

TILE CHISEL — SERIES 1850



DESCRIPTION	SHANK TYPE	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
SCALING CHISEL	SDS - PLUS	1-9/16"	8"	185FCT23	$47.47
SCALING CHISEL	SDS - MAX	1-31/32"	12"	185FCT24	109.97

TOOTHED (CARBIDE TIP) — SERIES 1850



DESCRIPTION	SHANK TYPE	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
SLOTTING CHISEL	SDS - MAX	1-9/16	11"	185FCS25	$254.98

Continued on next page

Hammer Drill Tools

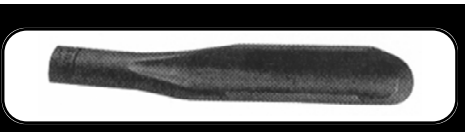
EUROPE **CHISELS** **SINGLY PACKAGED**

MORTAR CHISELS — SERIES 1850



DESCRIPTION	SHANK TYPE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
MORTAR / SEAM	SDS - MAX	25/64	185FCM26	**$124.04**

GOUGING CHISEL — SERIES 1850



DESCRIPTION	SHANK TYPE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
SPOON CHISEL	SDS - PLUS	3-31/64	185FCG27	**$52.51**
SPOON CHISEL	SDS - MAX	12"	185FCG28	**88.52**

BUSHING TOOL — SERIES 1850



DESCRIPTION	SHANK TYPE	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
BUSH HAMMER HEAD	SDS - MAX			185FCB29	**$65.81**

Accessories

ADAPTERS & SCRIBERS

ADAPTERS — SERIES 1860



DESCRIPTION	SHANK TYPE	LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
SDS - PLUS ADAPTER	SDS - MAX	8-5/16"	8"	186FA01	**$288.32**
CHUCK ADAPTER (NON STOP)	SDS - PLUS	1-31/32"	2"	186FA02	**75.36**
CHUCK ADAPTER (STOP)	SDS - PLUS	2-3/8"	2-1/2"	186FA03	**78.79**

SCRIBER — SERIES 1860

DESCRIPTION	SHANK TYPE	LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
SCRIBER (CARBIDE TIPPED)	HEXAGONAL			186FA04	**$13.41**

DIAGER DISPLAY

$7,325.00 **EDP # MAS1850G**

FAST SPIRAL SERIES 1500
- 5 ea. 1/8 x 3" #150A1083
- 5 ea. 3/16 x 3" #150A1123
- 5 ea. 1/4 x 4" #150A1164
- 5 ea. 1/4 x 6" #150A1166
- 5 ea. 5/16 x 5" #150A1205
- 5 ea. 5/16 x 6" #150A1206
- 5 ea. 3/8 x 4" #150A1244
- 5 ea. 3/8 x 6" #150A1246
- 5 ea. 1/2 x 4" #150A1324
- 5 ea. 1/2 x 6" #150A1326A

SLOW SPIRAL SERIES 1550
- 5 ea. 1/8 x 3" #155A1083
- 5 ea. 3/16 x 3" #155A1123
- 5 ea. 3/16 x 4" #155A1124
- 5 ea. 3/16 X 6" #155A1126
- 5 ea. 1/4 x 4" #155A1164
- 5 ea. 1/4 x 6" #155A1166
- 3 ea. 1/4 x 12" #155A11612
- 5 ea. 5/16 x 5" #155A1205
- 5 ea. 5/16 x 6" #155A1206
- 3 ea. 5/16 x 12" #155A12012
- 5 ea. 3/8 x 5" #155A1245A
- 5 ea. 3/8 x 6" #155A1246A
- 3 ea. 1/2 x 4" #155A1324
- 5 ea. 1/2 x 6" #155A1326A
- 3 ea. 1/2 x 12" #155A13212A
- 3 ea. 5/8 x 6" #155A1406A
- 3 ea. 3/4 x 6" #155A1486B
- 3 ea. 3/4 x 12" #155A14812B
- 3 ea. 7/8 x 12 #155A15612B
- 3 ea. 1" x 12" #155A16412B

SDS - PLUS SERIES 1700
- 5 ea. 3/16 x 4" #170A1124
- 5 ea. 3/16 x 6" #170A1126
- 5 ea. 1/4 x 4" #170A1164
- 5 ea. 1/4 x 6" #170A1166
- 5 ea. 1/4 x 8" #170A1168
- 3 ea. 1/4 x 12" #170A11612
- 3 ea. 9/32 x 4" #170A1184
- 5 ea. 9/32 x 6" #170A1186
- 5 ea. 5/16 x 4" #170A1204
- 5 ea. 5/16 x 6" #170A1206
- 5 ea. 3/8 x 6" #170A1246
- 3 ea. 3/8 x 8" #170A1248
- 3 ea. 3/8 x 12" #170A12412
- 3 ea. 1/2 x 6" #170A1326
- 3 ea. 1/2 x 8" #170A1328
- 3 ea. 1/2 x 12" #170A13212
- 3 ea. 5/8 x 6" #170A1406
- 3 ea. 5/8 x 8" #170A1408
- 3 ea. 3/4 x 6" #170A1486
- 3 ea. 3/4 x 8" #170A1488

SDS - MAX SERIES 1730
- 1 ea. 1/2 x 13" #173F13213
- 1 ea. 5/8 x 13" #173F14013
- 1 ea. 3/4 x 13" #173F14813
- 1 ea. 7/8 x 13" #173F15613
- 1 ea. 1" x 13" #173F16413
- 1 ea. 1-1/8 x 21" #173F20821
- 1 ea. 1-1/4 x 23" #173F21623

SDS - BOOSTER PLUS SR. 1720
- 5 ea. 1/4 x 4" #172F1164
- 5 ea. 1/4 x 6" #172F1166
- 5 ea. 5/16 x 4" #172F1204
- 5 ea. 5/16 x 6" #172F1206
- 5 ea. 3/8 x 4" #172F1244
- 5 ea. 3/8 x 6" #172F1246
- 3 ea. 15/32 x 6" #172F1306

SDS - BOOSTER MAX SR. 1740
- 1 ea. 5/8 x 13" #174F14013
- 1 ea. 3/4 x 13" #174F14813
- 1 ea. 7/8 x 13" #174F15613
- 1 ea. 1" x 13" #174F16413
- 1 ea. 1-1/8 x 13" #174F20813
- 1 ea. 1-1/4 x 15" #174F21615

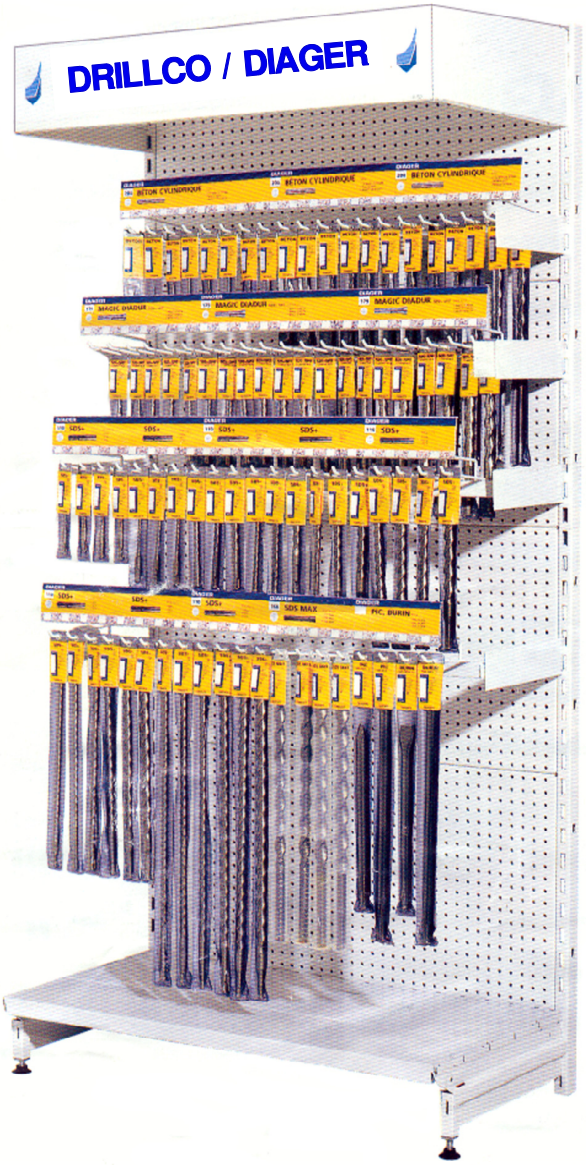
SPLINE SERIES 1820
- 1 ea. 3/8 x 8" #182F1248
- 1 ea. 1/2 x 10" #182F13210
- 1 ea. 5/8 x 11" #182F14011
- 1 ea. 3/4 x 12" #182F14812
- 1 ea. 7/8 x 16" #182F15616
- 1 ea. 1" x 16" #182F16416
- 1 ea. 1-1/8 x 16" #182F20816
- 1 ea. 1-1/4 x 16 #182F21616

SPLINE BOOSTER SR. 1830
- 1 ea. 5/8 x 11" #183F14011
- 1 ea. 3/4 x 16" #183F14816
- 1 ea. 7/8 x 16" #183F15616
- 1 ea. 1" x 16" #183F16416
- 1 ea. 1-1/8 x 16" #183F20816
- 1 ea. 1-1/4 x 16" #183F21616

MULT - PURPOSE SR. 1810
- 5 ea. 5/32 x 3" #181F1103
- 5 ea. 3/16 x 3-1/2" #181F1123
- 5 ea. 1/4 x 4" #181F1164
- 5 ea. 5/16 x 5" #181F1205
- 5 ea. 3/8 x 5" #181F1245

GLASS - TILE DRILLS SR 1840
- 5 ea. 1/8 x 2-1/2" #184F112
- 5 ea. 3/16 x 2-1/2" #184F112
- 5 ea. 1/4 x 2-1/2" #184F116
- 5 ea. 5/16 x 2-3/4" #184F120
- 5 ea. 3/8 x 3-1/8" #184F124

POINTED & FLAT CHISELS
- 2 ea. 10" OAL #185FCB05
- 2 ea. 11" OAL #185FCB06
- 2 ea. 12" OAL #185FCM09
- 2 ea. 8" OAL #185FCF11
- 2 ea. 11" OAL #185FCF13
- 2 ea. 12" OAL #185FCF18



Masonry Drills

IMPORT - ECONOMY



SLOW SPIRAL MASONRY DRILLS

Packaging: All sizes are individually packaged.

SERIES 1550E

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/8	1-1/2	3"	155E1084	$0.78
3/16	2-1/2	4"	155E1124	0.91
3/16	4"	6"	155E1126	1.44
1/4	2-1/2	4"	155E1164	0.91
1/4	4"	6"	155E1166	1.57
1/4	10"	13"	155E11613	3.83
1/4	14"	18"	155E11618	6.66
5/16	2-1/2	4"	155E1204	1.26
5/16	4"	6"	155E1206	2.04
5/16	10"	13"	155E12013	3.96
3/8	2-1/2	4"	155E1244	1.65
3/8	4"	6"	155E1246A	2.18
3/8	10"	13"	155E12413A	5.26
3/8	14"	18"	155E12418A	7.48
7/16	2-1/2	4"	155E1284	2.31
7/16	4"	6"	155E1286A	2.48
7/16	10"	13"	155E12813A	5.39
1/2	2-1/2	4"	155E1324	2.57
1/2	4"	6"	155E1326A	2.78
1/2	10"	13"	155E13213A	5.83
1/2	14"	18"	155E13218A	9.00
9/16	4"	6"	155E1366A	3.09
9/16	10"	13"	155E13613A	6.13
5/8	4"	6"	155E1406B	3.96
5/8	10"	13"	155E14013B	7.74
5/8	14"	18"	155E14018B	10.57
11/16	4"	6"	155E1446B	7.00
3/4	4"	6"	155E1486B	8.18
3/4	10"	13"	155E14813B	11.53
3/4	14"	18"	155E14818B	13.88
7/8	4"	6"	155E1566B	8.61
7/8	10"	13"	155E15613B	14.09
7/8	14"	18"	155E15618B	17.18
1"	4"	6"	155E1646B	10.48
1"	10"	13"	155E16413B	19.05
1"	14"	18"	155E16418B	22.45
1-1/4	14"	18"	155E21618B	32.02
1-1/2	14"	18"	155E23218B	43.94

TUNGSTEN CARBIDE TIPPED



SDS—PLUS ROTARY HAMMER

Packaging: All sizes are individually packaged.

SERIES 1700E

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
3/16	1-3/4	4-1/2	170E1124	$7.48
3/16	3-3/4	6-1/2	170E1126	8.53
1/4	1-3/4	4-1/2	170E1164	7.48
1/4	3-3/4	6-1/4	170E1166	8.53
1/4	6"	9"	170E1169	12.40
5/16	3-3/4	6-1/4	170E1206	10.09
5/16	6"	9"	170E1209	14.05
3/8	3-3/4	6-1/4	170E1246	10.44
3/8	6"	9"	170E1249	13.92
3/8	9"	12-1/2	170E12412	19.79
3/8	14"	18-1/2	170E12418	21.88
7/16	3-3/4	6-1/4	170E1286	13.27
7/16	9"	12"	170E12812	25.62
7/16	14"	18-1/2	170E12818	34.89
1/2	3-3/4	6-1/2	170E1326	14.14
1/2	6"	9"	170E1329	22.10
1/2	9"	12-1/2	170E13212	24.19
1/2	14"	18-1/2	170E13218	36.37
9/16	3-3/4	6-1/2	170E1366	14.79
9/16	9"	12-1/2	170E13612	25.06
9/16	14"	18-1/2	170E13618	37.67
5/8	3-3/4	6-1/4	170E1406	18.79
5/8	6"	9"	170E1409	22.62
5/8	9"	12-1/2	170E14012	25.84
5/8	14"	18-1/2	170E14018	38.89
3/4	5-1/2	8"	170E1488	21.66
3/4	9"	12-1/2	170E14812	26.71
3/4	12"	18-1/2	170E14818	40.93
7/8	6"	9"	170E1569	28.36
7/8	14"	18-1/2	170E15618	44.41
1"	6"	9"	170E1649	33.67
1"	9"	12-1/2	170E16412	37.67
1"	14"	18-1/2	170E16418	49.72

Masonry Drills

IMPORT **CARBIDE TIPPED** **BLACK OXIDE FINISH**



TAPCON® SCREW TYPE MASONRY ANCHOR BITS

Packaging: All sizes are individually packaged.

SERIES 1800E

FRACTIONAL SIZES	SCREW SIZE	OVERALL LENGTH	EDP NUMBER	LIST PRICE
5/32	12	3-1/2	180E1103	**$1.85**
5/32	12	4-1/2	180E1104	**2.00**
5/32	12	5-1/2	180E1105	**2.59**
3/16	14	3-1/2	180E1123	**2.00**
3/16	14	4-1/2	180E1124	**2.14**
3/16	14	5-1/2	180E1125	**2.74**

Wood Drills



SHIP AUGER BITS

Packaging: All sizes are individually packaged.

SERIES 1900E **7-1/2" O A L**

FRAC SIZES	EDP NO.	LIST PRICE
1/4	19E116A	**$16.79**
3/8	19E124A	**16.79**
7/16	19E128A	**16.79**
1/2	19E132A	**18.49**
9/16	19E136A	**18.49**

FRAC SIZES	EDP NO.	LIST PRICE
5/8	19E140A	**$20.84**
11/16	19E144A	**20.84**
3/4	19E148A	**23.14**
7/8	19E156A	**27.18**
1"	19E164A	**30.02**

SERIES 1900E **18" O A L**

FRAC SIZES	EDP NO.	LIST PRICE
3/8	19E124B	**$21.58**
7/16	19E128B	**25.49**
1/2	19E132B	**25.49**
9/16	19E136B	**28.93**
5/8	19E140B	**28.93**

FRAC SIZES	EDP NO.	LIST PRICE
11/16	19E144B	**$30.02**
3/4	19E148B	**30.02**
7/8	19E156B	**37.02**
1"	19E164B	**43.08**
1-1/8	19E208B	**51.59**
1-1/4	19E216B	**60.33**



PADDLE BITS

Packaging: All sizes are individually packaged.

IMPORT **SERIES 1950E** **6" O A L**

FRAC SIZES	EDP NO.	LIST PRICE
1/4	195E116	**$4.87**
5/16	195E120	**4.87**
3/8	195E124	**4.87**
1/2	195E132	**4.87**

FRAC SIZES	EDP NO.	LIST PRICE
9/16	195E136	**$4.87**
5/8	195E140	**4.87**
11/16	195E144	**4.87**
3/4	195E148	**4.87**

FRAC SIZES	EDP NO.	LIST PRICE
7/8	195E156	**$4.87**
15/16	195E160	**5.00**
1"	195E164	**5.18**
1-1/8	195E208	**5.66**

FRAC SIZES	EDP NO.	LIST PRICE
1-1/4	195E216	**$6.35**
1-3/8	195E224	**7.13**
1-1/2	195E232	**7.87**
----	-----	**----**

BENTLEY TAP & DIE

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Hand Taps

MACHINE SCREW SIZES HIGH SPEED M-7 STEEL GROUND THREAD

COATING TiN AVAILABLE



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.
Packaging: #0 thru #12, 12 per box.

MADE IN USA SERIES 2000 TAPER, PLUG & BOTTOM

TAP SIZES	NC	NF	PITCH DIA LIMITS	NO OF FLUTES	LENGTH OF THREAD	OVER ALL LENGTH	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
							TAPER	PLUG	BOTT			
0	**--**	**80**	H1	2	5/16	1-5/8	20A000FT	20A000FP	20A000FB	**$16.97**	20A000FS	**$50.91**
1	**64**	**--**	H1	2	3/8	1-11/16	20A001CT	20A001CP	20A001CB	**16.40**	20A001CS	**49.20**
1	**--**	**72**	H1	2	3/8	1-11/16	20A001FT	20A001FP	20A001FB	**16.40**	20A001FS	**49.20**
2	**56**	**--**	H2	3	7/16	1-3/4	20A002CT	20A002CP	20A002CB	**16.44**	20A002CS	**49.32**
2	**--**	**64**	H2	3	7/16	1-3/4	20A002FT	20A002FP	20A002FB	**16.44**	20A002FS	**49.32**
3	**48**	**--**	H2	3	1/2	1-13/16	20A003CT	20A003CP	20A003CB	**11.48**	20A003CS	**34.44**
3	**--**	**56**	H2	3	1/2	1-13/16	20A003FT	20A003FP	20A003FB	**11.48**	20A003FS	**34.44**
4	**40**	**--**	H2	3	9/16	1-7/8	20A004CT	20A004CP	20A004CB	**11.48**	20A004CS	**34.44**
4	**--**	**48**	H2	3	9/16	1-7/8	20A004FT	20A004FP	20A004FB	**11.48**	20A004FS	**34.44**
4	**--**	**36**	H2	3	9/16	1-7/8	20A004ST	20A004SP	20A004SB	**11.48**	20A004SS	**34.44**
5	**40**	**--**	H2	3	5/8	1-15/16	20A005CT	20A005CP	20A005CB	**8.57**	20A005CS	**25.71**
5	**--**	**44**	H2	3	5/8	1-15/16	20A005FT	20A005FP	20A005FB	**8.57**	20A005FS	**27.71**
6	**32**	**--**	H3	3	11/16	2"	20A006CT	20A006CP	20A006CB	**8.09**	20A006CS	**24.27**
6	**--**	**40**	H2	3	11/16	2"	20A006FT	20A006FP	20A006FB	**8.09**	20A006FS	**24.27**
8	**32**	**--**	H3	4	3/4	2-1/8	20A008CT	20A008CP	20A008CB	**8.09**	20A008CS	**24.27**
8	**--**	**36**	H2	4	3/4	2-1/8	20A008FT	20A008FP	20A008FB	**8.09**	20A008FS	**24.27**
10	**24**	**--**	H3	4	7/8	2-3/8	20A010CT	20A010CP	20A010CB	**8.09**	20A010CS	**24.27**
10	**--**	**32**	H3	4	7/8	2-3/8	20A010FT	20A010FP	20A010FB	**8.09**	20A010FS	**24.27**
12	**24**	**--**	H3	4	15/16	2-3/8	20A012CT	20A012CP	20A012CB	**8.66**	20A012CS	**25.98**
12	**--**	**28**	H3	4	15/16	2-3/8	20A012FT	20A012FP	20A012FB	**8.66**	20A012FS	**25.98**

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

Hand Taps

MACHINE SCREW SIZES HIGH SPEED M-2 STEEL GROUND THREAD



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: #0 thru #12, 12 per box.

IMPORT SERIES 2000E TAPER, PLUG & BOTTOM

TAP SIZES	NC	NF	PITCH DIA LIMITS	NO OF FLUTES	LENGTH OF THREAD	OVER-ALL LENGTH	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
							TAPER	PLUG	BOTT			
0	**--**	**80**	H1	2	5/16	1-5/8	20E000FT	20E000FP	20E000FB	**$13.05**	20E000FS	**$39.15**
1	**64**	**--**	H1	2	3/8	1-11/16	20E001CT	20E001CP	20E001CB	**12.75**	20E001CS	**38.25**
1	**--**	**72**	H1	2	3/8	1-11/16	20E001FT	20E001FP	20E001FB	**12.75**	20E001FS	**38.25**
2	**56**	**--**	H2	3	7/16	1-3/4	20E002CT	20E002CP	20E002CB	**10.44**	20E002CS	**31.32**
2	**--**	**64**	H2	3	7/16	1-3/4	20E002FT	20E002FP	20E002FB	**10.44**	20E002FS	**31.32**
3	**48**	**--**	H2	3	1/2	1-13/16	20E003CT	20E003CP	20E003CB	**8.31**	20E003CS	**24.93**
3	**--**	**56**	H2	3	1/2	1-13/16	20E003FT	20E003FP	20E003FB	**8.31**	20E003FS	**24.93**
4	**40**	**--**	H2	3	9/16	1-7/8	20E004CT	20E004CP	20E004CB	**5.87**	20E004CS	**17.61**
4	**--**	**48**	H2	3	9/16	1-7/8	20E004FT	20E004FP	20E004FB	**6.53**	20E004FS	**19.59**
4	**--**	**36**	H2	3	9/16	1-7/8	20E004ST	20E004SP	20E004SB	**6.53**	20E004SS	**19.59**
5	**40**	**--**	H2	3	5/8	1-15/16	20E005CT	20E005CP	20E005CB	**6.09**	20E005CS	**18.27**
5	**--**	**44**	H2	3	5/8	1-15/16	20E005FT	20E005FP	20E005FB	**6.53**	20E005FS	**19.59**
6	**32**	**--**	H3	3	11/16	2"	20E006CT	20E006CP	20E006CB	**4.57**	20E006CS	**13.71**
6	**--**	**40**	H2	3	11/16	2"	20E006FT	20E006FP	20E006FB	**4.79**	20E006FS	**14.37**
8	**32**	**--**	H3	4	3/4	2-1/8	20E008CT	20E008CP	20E008CB	**4.79**	20E008CS	**14.37**
8	**--**	**36**	H2	4	3/4	2-1/8	20E008FT	20E008FP	20E008FB	**4.79**	20E008FS	**14.37**
10	**24**	**--**	H3	4	7/8	2-3/8	20E010CT	20E010CP	20E010CB	**4.79**	20E010CS	**14.37**
10	**--**	**32**	H3	4	7/8	2-3/8	20E010FT	20E010FP	20E010FB	**4.79**	20E010FS	**14.37**
12	**24**	**--**	H3	4	15/16	2-3/8	20E012CT	20E012CP	20E012CB	**5.22**	20E012CS	**15.66**
12	**--**	**28**	H3	4	15/16	2-3/8	20E012FT	20E012FP	20E012FB	**5.22**	20E012FS	**15.66**

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

Hand Taps

FRACTIONAL SIZES **HIGH SPEED M-7 STEEL** **GROUND THREAD**

COATING TiN AVAILABLE



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box. 1-1/8" & up individually packaged.

MADE IN USA **SERIES 2000** **TAPER, PLUG & BOTTOM**

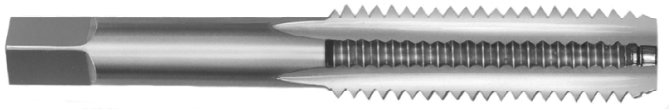
TAP SIZES	NC	NF	PITCH DIA LIMITS	NO OF FLUTES	LENGTH OF THREAD	OVER ALL LENGTH	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
							TAPER	PLUG	BOTT			
1/4	20	-	H3	4	1"	2-1/2	20A116CT	20A116CP	20A116CB	$7.83	20A116CS	$23.49
1/4	-	28	H3	4	1"	2-1/2	20A116FT	20A116FP	20A116FB	7.83	20A116FS	23.49
5/16	18	-	H3	4	1-1/8	2-23/32	20A120CT	20A120CP	20A120CB	9.22	20A120CS	27.66
5/16	-	24	H3	4	1-1/8	2-23/32	20A120FT	20A120FP	20A120FB	9.22	20A120FS	27.66
3/8	16	-	H3	4	1-1/4	2-15/16	20A124CT	20A124CP	20A124CB	9.87	20A124CS	29.61
3/8	-	24	H3	4	1-1/4	2-15/16	20A124FT	20A124FP	20A124FB	9.87	20A124FS	29.61
7/16	14	-	H3	4	1-7/16	3-5/32	20A128CT	20A128CP	20A128CB	19.92	20A128CS	59.76
7/16	-	20	H3	4	1-1/16	3-5/32	20A128FT	20A128FP	20A128FB	19.92	20A128FS	59.76
1/2	13	-	H3	4	1-21/32	3-3/8	20A132CT	20A132CP	20A132CB	19.53	20A132CS	58.59
1/2	-	20	H3	4	1-21/32	3-3/8	20A132FT	20A132FP	20A132FB	19.53	20A132FS	58.59
9/16	12	-	H3	4	1-21/32	3-19/32	20A136CT	20A136CP	20A136CB	35.10	20A136CS	105.30
9/16	-	18	H3	4	1-21/32	3-19/32	20A136FT	20A136FP	20A136FB	35.10	20A136FS	105.30
5/8	11	-	H3	4	1-13/16	3-13/16	20A140CT	20A140CP	20A140CB	37.67	20A140CS	113.01
5/8	-	18	H3	4	1-13/16	3-13/16	20A140FT	20A140FP	20A140FB	37.67	20A140FS	113.01
11/16	11	-	H3	4	1-13/16	4-1/32	20A144CT	20A144CP	20A144CB	67.29	20A144CS	201.87
11/16	-	16	H3	4	1-13/16	4-1/32	20A144FT	20A144FP	20A144FB	67.29	20A144FS	201.87
3/4	10	-	H3	4	2"	4-1/4	20A148CT	20A148CP	20A148CB	50.85	20A148CS	152.55
3/4	-	16	H3	4	2"	4-1/4	20A148FT	20A148FP	20A148FB	50.85	20A148FS	152.55
7/8	9	-	H4	4	2-7/32	4-11/16	20A156CT	20A156CP	20A156CB	75.30	20A156CS	225.90
7/8	-	14	H4	4	2-7/32	4-11/16	20A156FT	20A156FP	20A156FB	75.30	20A156FS	225.90
1"	8	-	H4	4	2-1/2	5-1/8	20A164CT	20A164CP	20A164CB	100.62	20A164CS	301.86
1"	-	12	H4	4	2-1/2	5-1/8	20A164FT	20A164FP	20A164FB	100.62	20A164FS	301.86
1"	-	14	H4	4	2-1/2	5-1/8	20A164ST	20A164SP	20A164SB	100.62	20A164SS	301.86
1-1/8	7	-	H4	4	2-9/16	5-7/16	20A208CT	20A208CP	20A208CB	134.68	20A208CS	404.04
1-1/8	-	12	H4	4	2-9/16	5-7/16	20A208FT	20A208FP	20A208FB	134.68	20A208FS	404.04
1-1/4	7	-	H4	4	2-9/16	5-3/4	20A216CT	20A216CP	20A216CB	174.04	20A216CS	522.12
1-1/4	-	12	H4	6	2-9/16	5-3/4	20A216FT	20A216FP	20A216FB	174.04	20A216FS	522.12
1-3/8	6	-	H4	4	3"	6-1/16	20A224CT	20A224CP	20A224CB	219.76	20A224CS	659.28
1-3/8	-	12	H4	6	3"	6-1/16	20A224FT	20A224FP	20A224FB	219.76	20A224FS	659.28
1-1/2	6	-	H4	4	3"	6-3/8	20A232CT	20A232CP	20A232CB	258.26	20A232CS	774.78
1-1/2	-	12	H4	6	3"	6-3/8	20A232FT	20A232FP	20A232FB	258.29	20A232FS	774.78

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

Hand Taps

FRACTIONAL SIZES HIGH SPEED M-2 STEEL GROUND THREAD



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box. 1-1/8" & up individually packaged.

IMPORT SERIES 2000E TAPER, PLUG & BOTTOM

TAP SIZES	NC	NF	PITCH DIA LIMITS	NO OF FLUTES	LENGTH OF THREAD	OVER ALL LENGTH	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
							TAPER	PLUG	BOTT			
1/4	20	-	H3	4	1"	2-1/2	20E116CT	20E116CP	20E116CB	$5.00	20E116CS	$15.00
1/4	-	28	H3	4	1"	2-1/2	20E116FT	20E116FP	20E116FB	5.00	20E116FS	15.00
5/16	18	-	H3	4	1-1/8	2-23/32	20E120CT	20E120CP	20E120CB	6.31	20E120CS	18.93
5/16	-	24	H3	4	1-1/8	2-23/32	20E120FT	20E120FP	20E120FB	6.31	20E120FS	18.93
3/8	16	-	H3	4	1-1/4	2-15/16	20E124CT	20E124CP	20E124CB	7.18	20E124CS	21.54
3/8	-	24	H3	4	1-1/4	2-15/16	20E124FT	20E124FP	20E124FB	7.18	20E124FS	21.54
7/16	14	-	H3	4	1-7/16	3-5/32	20E128CT	20E128CP	20E128CB	11.75	20E128CS	35.25
7/16	-	20	H3	4	1-1/16	3-5/32	20E128FT	20E128FP	20E128FB	11.75	20E128FS	35.25
1/2	13	-	H3	4	1-21/32	3-3/8	20E132CT	20E132CP	20E132CB	13.05	20E132CS	39.15
1/2	-	20	H3	4	1-21/32	3-3/8	20E132FT	20E132FP	20E132FB	13.05	20E132FS	39.15
9/16	12	-	H3	4	1-21/32	3-19/32	20E136CT	20E136CP	20E136CB	20.88	20E136CS	62.64
9/16	-	18	H3	4	1-21/32	3-19/32	20E136FT	20E136FP	20E136FB	20.88	20E136FS	62.64
5/8	11	-	H3	4	1-13/16	3-13/16	20E140CT	20E140CP	20E140CB	26.10	20E140CS	78.30
5/8	-	18	H3	4	1-13/16	3-13/16	20E140FT	20E140FP	20E140FB	26.10	20E140FS	78.30
11/16	11	-	H3	4	1-13/16	4-1/32	20E144CT	20E144CP	20E144CB	31.10	20E144CS	93.30
11/16	-	16	H3	4	1-13/16	4-1/32	20E144FT	20E144FP	20E144FB	31.10	20E144FS	93.30
3/4	10	-	H3	4	2"	4-1/4	20E148CT	20E148CP	20E148CB	34.80	20E148CS	104.40
3/4	-	16	H3	4	2"	4-1/4	20E148FT	20E148FP	20E148FB	34.80	20E148FS	104.40
7/8	9	-	H4	4	2-7/32	4-11/16	20E156CT	20E156CP	20E156CB	48.50	20E156CS	145.50
7/8	-	14	H4	4	2-7/32	4-11/16	20E156FT	20E156FP	20E156FB	48.50	20E156FS	145.50
1"	8	-	H4	4	2-1/2	5-1/8	20E164CT	20E164CP	20E164CB	65.25	20E164CS	195.75
1"	-	12	H4	4	2-1/2	5-1/8	20E164FT	20E164FP	20E164FB	66.34	20E164FS	199.02
1"	-	14	H4	4	2-1/2	5-1/8	20E164ST	20E164SP	20E164SB	66.34	20E164SS	199.02
1-1/8	7	-	H4	4	2-9/16	5-7/16	20E208CT	20E208CP	20E208CB	103.23	20E208CS	309.69
1-1/8	-	12	H4	4	2-9/16	5-7/16	20E208FT	20E208FP	20E208FB	109.62	20E208FS	328.86
1-1/4	7	-	H4	4	2-9/16	5-3/4	20E216CT	20E216CP	20E216CB	135.20	20E216CS	405.60
1-1/4	-	12	H4	6	2-9/16	5-3/4	20E216FT	20E216FP	20E216FB	137.94	20E216FS	413.82
1-3/8	6	-	H4	4	3"	6-1/16	20E224CT	20E224CP	20E224CB	170.82	20E224CS	512.46
1-3/8	-	12	H4	6	3"	6-1/16	20E224FT	20E224FP	20E224FB	171.84	20E224FS	515.52
1-1/2	6	-	H4	4	3"	6-3/8	20E232CT	20E232CP	20E232CB	196.40	20E232CS	589.20
1-1/2	-	12	H4	6	3"	6-3/8	20E232FT	20E232FP	20E232FB	200.06	20E232FS	600.18

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

Spiral Pointed Taps

MACHINE & FRAC SIZES HIGH SPEED M-7 STEEL GROUND THREAD

COATING TiN AVAILABLE



The angular flutes at the front end of these taps propel the chips ahead of the tap. This also reduces loading and clogging in the flutes. This feature plus the excellent shearing action of the flute make spiral pointed taps ideal for production tapping thru holes. They are called "GUN TAPS" because they shoot the chips ahead of the tap.

Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box.

MADE IN USA SERIES 2100 PLUG CHAMFER

TAP SIZES	NATIONAL COURSE	NATIONAL FINE	PITCH DIAMETER LIMITS	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	EDP NUMBERS PLUG	LIST PRICE EACH
0	--	80	H1	2	5/16	1-5/8	21A000FP	**$20.88**
1	64	--	H1	2	3/8	1-11/16	21A001CP	**16.79**
1	--	72	H1	2	3/8	1-11/16	21A001FP	**16.79**
2	56	--	H2	2	7/16	1-3/4	21A002CP	**16.83**
2	--	64	H2	2	7/16	1-3/4	21A002FP	**16.83**
3	48	--	H2	2	1/2	1-13/16	21A003CP	**12.27**
3	--	56	H2	2	1/2	1-13/16	21A003FP	**12.27**
4	40	--	H2	2	9/16	1-7/8	21A004CP	**12.27**
4	--	48	H2	2	9/16	1-7/8	21A004FP	**12.27**
4	--	36	H2	2	9/16	1-7/8	21A004SP	**12.27**
5	40	--	H2	2	5/8	1-15/16	21A005CP	**12.27**
5	--	44	H2	2	5/8	1-15/16	21A005FP	**12.27**
6	32	--	H3	2	11/16	2"	21A006CP	**9.66**
6	--	40	H2	2	11/16	2"	21A006FP	**9.66**
8	32	--	H3	2	3/4	2-1/8	21A008CP	**9.66**
8	--	36	H2	2	3/4	2-1/8	21A008FP	**9.66**
10	24	--	H3	2	7/8	2-3/8	21A010CP	**9.92**
10	--	32	H3	2	7/8	2-3/8	21A010FP	**9.92**
12	24	--	H3	2	15/16	2-3/8	21A012CP	**9.92**
12	--	28	H3	2	15/16	2-3/8	21A012FP	**9.92**
1/4	20	--	H3	2	1"	2-1/2	21A116CP	**8.48**
1/4	--	28	H3	2	1"	2-1/2	21A116FP	**8.48**
5/16	18	--	H3	2	1-1/8	2-23/32	21A120CP	**9.74**
5/16	--	24	H3	2	1-1/8	2-23/32	21A120FP	**9.74**
3/8	16	--	H3	3	1-1/4	2-15/16	21A124CP	**10.57**
3/8	--	24	H3	3	1-1/4	2-15/16	21A124FP	**10.57**
7/16	14	--	H3	3	1-7/16	3-5/32	21A128CP	**20.88**
7/16	--	20	H3	3	1-7/16	3-5/32	21A128FP	**20.88**
1/2	13	--	H3	3	1-21/32	3-3/8	21A132CP	**20.31**
1/2	--	20	H3	3	1-21/32	3-3/8	21A132FP	**20.31**
9/16	12	--	H3	3	1-21/32	3-19/32	21A136CP	**36.15**
9/16	--	18	H3	3	1-21/32	3-19/32	21A136FP	**36.15**
5/8	11	--	H3	3	1-13/16	3-13/16	21A140CP	**38.98**
5/8	--	18	H3	3	1-13/16	3-13/16	21A140FP	**38.98**
3/4	10	--	H3	3	2"	4-1/4	21A148CP	**52.29**
3/4	--	16	H3	3	2"	4-1/4	21A148FP	**52.29**
7/8	9	--	H4	3	2-7/32	4-11/16	21A156CP	**82.48**
7/8	--	14	H4	3	2-7/32	4-11/16	21A156FP	**82.48**
1"	8	--	H4	3	2-1/2	5-1/8	21A164CP	**103.10**
1"	--	12	H4	3	2-1/2	5-1/8	21A164FP	**103.10**
1"	--	14	H4	3	2-1/2	5-1/8	21A164SP	**103.10**

Spiral Pointed Taps

MACHINE & FRAC SIZES HIGH SPEED M-2 STEEL GROUND THREAD



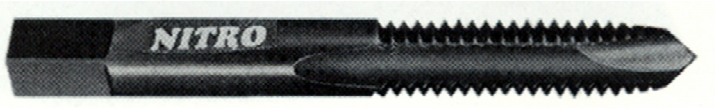
The angular flutes at the front end of these taps propel the chips ahead of the tap. This also reduces loading and clogging in the flutes. This feature plus the excellent shearing action of the flute make spiral pointed taps ideal for production tapping thru holes. They are called "GUN TAPS" because they shoot the chips ahead of the tap.
Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box.

IMPORT SERIES 2100E PLUG CHAMFER

TAP SIZES	NATIONAL COURSE	NATIONAL FINE	PITCH DIAMETER LIMITS	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	EDP NUMBERS PLUG	LIST PRICE EACH
0	--	80	H1	2	5/16	1-5/8	21E000FP	**$15.62**
1	64	--	H1	2	3/8	1-11/16	21E001CP	**14.05**
1	--	72	H1	2	3/8	1-11/16	21E001FP	**14.05**
2	56	--	H2	2	7/16	1-3/4	21E002CP	**11.88**
2	--	64	H2	2	7/16	1-3/4	21E002FP	**11.88**
3	48	--	H2	2	1/2	1-13/16	21E003CP	**9.61**
3	--	56	H2	2	1/2	1-13/16	21E003FP	**9.61**
4	40	--	H2	2	9/16	1-7/8	21E004CP	**7.18**
4	--	48	H2	2	9/16	1-7/8	21E004FP	**7.80**
4	--	36	H2	2	9/16	1-7/8	21E004SP	**7.67**
5	40	--	H2	2	5/8	1-15/16	21E005CP	**7.18**
5	--	44	H2	2	5/8	1-15/16	21E005FP	**7.34**
6	32	--	H3	2	11/16	2"	21E006CP	**6.05**
6	--	40	H2	2	11/16	2"	21E006FP	**6.23**
8	32	--	H3	2	3/4	2-1/8	21E008CP	**6.05**
8	--	36	H2	2	3/4	2-1/8	21E008FP	**6.23**
10	24	--	H3	2	7/8	2-3/8	21E010CP	**6.22**
10	--	32	H3	2	7/8	2-3/8	21E010FP	**6.22**
12	24	--	H3	2	15/16	2-3/8	21E012CP	**6.87**
12	--	28	H3	2	15/16	2-3/8	21E012FP	**6.87**
1/4	20	--	H3	2	1"	2-1/2	21E116CP	**6.22**
1/4	--	28	H3	2	1"	2-1/2	21E116FP	**6.22**
5/16	18	--	H3	2	1-1/8	2-23/32	21E120CP	**6.66**
5/16	--	24	H3	2	1-1/8	2-23/32	21E120FP	**6.66**
3/8	16	--	H3	3	1-1/4	2-15/16	21E124CP	**8.05**
3/8	--	24	H3	3	1-1/4	2-15/16	21E124FP	**8.05**
7/16	14	--	H3	3	1-7/16	3-5/32	21E128CP	**13.49**
7/16	--	20	H3	3	1-7/16	3-5/32	21E128FP	**13.49**
1/2	13	--	H3	3	1-21/32	3-3/8	21E132CP	**13.75**
1/2	--	20	H3	3	1-21/32	3-3/8	21E132FP	**13.75**
9/16	12	--	H3	3	1-21/32	3-19/32	21E136CP	**24.66**
9/16	--	18	H3	3	1-21/32	3-19/32	21E136FP	**24.66**
5/8	11	--	H3	3	1-13/16	3-13/16	21E140CP	**28.45**
5/8	--	18	H3	3	1-13/16	3-13/16	21E140FP	**28.45**
3/4	10	--	H3	3	2"	4-1/4	21E148CP	**40.19**
3/4	--	16	H3	3	2"	4-1/4	21E148FP	**40.19**
7/8	9	--	H4	3	2-7/32	4-11/16	21E156CP	**57.55**
7/8	--	14	H4	3	2-7/32	4-11/16	21E156FP	**57.55**
1"	8	--	H4	3	2-1/2	5-1/8	21E164CP	**76.64**
1"	--	12	H4	3	2-1/2	5-1/8	21E164FP	**76.64**
1"	--	14	H4	3	2-1/2	5-1/8	21E164SP	**76.64**

Nitro Hand Taps

MACHINE SCREW SIZES HIGH SPEED M-7N STEEL GROUND THREAD



See page 01 for Technical information on *Nitro* Taps.

Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: #0 thru #12, 12 per box.

MADE IN USA SERIES 2000N TAPER, PLUG & BOTTOM

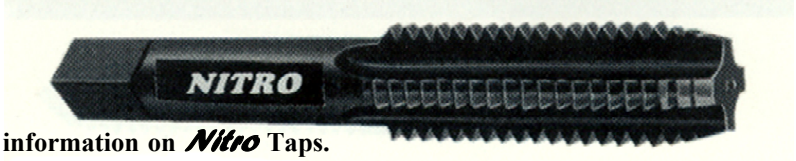
TAP SIZES	NC	NF	PITCH DIA LIMITS	NO OF FLUTES	LENGTH OF THREAD	OVER ALL LENGTH	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
							TAPER	PLUG	BOTT			
0	**--**	**80**	H1	2	5/16	1-5/8	20N000FT	20N000FP	20N000FB	**$20.01**	20N000FS	**$60.03**
1	**64**	**--**	H1	2	3/8	1-11/16	20N001CT	20N001CP	20N001CB	**18.88**	20N001CS	**56.64**
1	**--**	**72**	H1	2	3/8	1-11/16	20N001FT	20N001FP	20N001FB	**18.88**	20N001FS	**56.64**
2	**56**	**--**	H2	3	7/16	1-3/4	20N002CT	20N002CP	20N002CB	**18.92**	20N002CS	**56.76**
2	**--**	**64**	H2	3	7/16	1-3/4	20N002FT	20N002FP	20N002FB	**18.92**	20N002FS	**56.76**
3	**48**	**--**	H2	3	1/2	1-13/16	20N003CT	20N003CP	20N003CB	**13.22**	20N003CS	**39.66**
3	**--**	**56**	H2	3	1/2	1-13/16	20N003FT	20N003FP	20N003FB	**13.22**	20N003FS	**39.66**
4	**40**	**--**	H2	3	9/16	1-7/8	20N004CT	20N004CP	20N004CB	**13.22**	20N004CS	**39.66**
4	**--**	**48**	H2	3	9/16	1-7/8	20N004FT	20N004FP	20N004FB	**13.22**	20N004FS	**39.66**
4	**--**	**36**	H2	3	9/16	1-7/8	20N004ST	20N004SP	20N004SB	**13.22**	20N004SS	**39.66**
5	**40**	**--**	H2	3	5/8	1-15/16	20N005CT	20N005CP	20N005CB	**9.87**	20N005CS	**29.61**
5	**--**	**44**	H2	3	5/8	1-15/16	20N005FT	20N005FP	20N005FB	**9.87**	20N005FS	**29.61**
6	**32**	**--**	H3	3	11/16	2"	20N006CT	20N006CP	20N006CB	**9.31**	20N006CS	**27.93**
6	**--**	**40**	H2	3	11/16	2"	20N006FT	20N006FP	20N006FB	**9.31**	20N006FS	**27.93**
8	**32**	**--**	H3	4	3/4	2-1/8	20N008CT	20N008CP	20N008CB	**9.31**	20N008CS	**27.93**
8	**--**	**36**	H2	4	3/4	2-1/8	20N008FT	20N008FP	20N008FB	**9.31**	20N008FS	**27.93**
10	**24**	**--**	H3	4	7/8	2-3/8	20N010CT	20N010CP	20N010CB	**9.31**	20N010CS	**27.93**
10	**--**	**32**	H3	4	7/8	2-3/8	20N010FT	20N010FP	20N010FB	**9.31**	20N010FS	**27.93**
12	**24**	**--**	H3	4	15/16	2-3/8	20N012CT	20N012CP	20N012CB	**9.96**	20N012CS	**29.88**
12	**--**	**28**	H3	4	15/16	2-3/8	20N012FT	20N012FP	20N012FB	**9.96**	20N012FS	**29.88**

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

Nitro Hand Taps

FRACTIONAL SIZES — HIGH SPEED M-7N STEEL — GROUND THREAD



See page 01 for Technical information on *Nitro* Taps.

Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box. 1-1/8" & up individually packaged.

MADE IN USA — SERIES 2000N — TAPER, PLUG & BOTTOM

TAP SIZES	NC	NF	PITCH DIA LIMITS	No OF FLUTES	LENGTH OF THREAD	OVER ALL LENGTH	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
							TAPER	PLUG	BOTT			
1/4	20	-	H3	4	1"	2-1/2	20N116CT	20N116CP	20N116CB	**$9.00**	20N116CS	**$27.00**
1/4	-	28	H3	4	1"	2-1/2	20N116FT	20N116FP	20N116FB	**9.00**	20N116FS	**27.00**
5/16	18	-	H3	4	1-1/8	2-23/32	20N120CT	20N120CP	20N120CB	**10.61**	20N120CS	**31.83**
5/16	-	24	H3	4	1-1/8	2-23/32	20N120FT	20N120FP	20N120FB	**10.61**	20N120FS	**31.83**
3/8	16	-	H3	4	1-1/4	2-15/16	20N124CT	20N124CP	20N124CB	**11.35**	20N124CS	**34.05**
3/8	-	24	H3	4	1-1/4	2-15/16	20N124FT	20N124FP	20N124FB	**11.35**	20N124FS	**34.05**
7/16	14	-	H3	4	1-7/16	3-5/32	20N128CT	20N128CP	20N128CB	**22.92**	20N128CS	**68.76**
7/16	-	20	H3	4	1-1/16	3-5/32	20N128FT	20N128FP	20N128FB	**22.92**	20N128FS	**68.76**
1/2	13	-	H3	4	1-21/32	3-3/8	20N132CT	20N132CP	20N132CB	**22.45**	20N132CS	**67.35**
1/2	-	20	H3	4	1-21/32	3-3/8	20N132FT	20N132FP	20N132FB	**22.45**	20N132FS	**67.35**
9/16	12	-	H3	4	1-21/32	3-19/32	20N136CT	20N136CP	20N136CB	**40.37**	20N136CS	**121.11**
9/16	-	18	H3	4	1-21/32	3-19/32	20N136FT	20N136FP	20N136FB	**40.37**	20N136FS	**121.11**
5/8	11	-	H3	4	1-13/16	3-13/16	20N140CT	20N140CP	20N140CB	**43.33**	20N140CS	**129.99**
5/8	-	18	H3	4	1-13/16	3-13/16	20N140FT	20N140FP	20N140FB	**43.33**	20N140FS	**129.99**
11/16	11	-	H3	4	1-13/16	4-1/32	20N144CT	20N144CP	20N144CB	**77.39**	20N144CS	**232.17**
11/16	-	16	H3	4	1-13/16	4-1/32	20N144FT	20N144FP	20N144FB	**77.39**	20N144FS	**232.17**
3/4	10	-	H3	4	2"	4-1/4	20N148CT	20N148CP	20N148CB	**58.46**	20N148CS	**175.38**
3/4	-	16	H3	4	2"	4-1/4	20N148FT	20N148FP	20N148FB	**58.46**	20N148FS	**175.38**
7/8	9	-	H4	4	2-7/32	4-11/16	20N156CT	20N156CP	20N156CB	**86.61**	20N156CS	**259.83**
7/8	-	14	H4	4	2-7/32	4-11/16	20N156FT	20N156FP	20N156FB	**86.61**	20N156FS	**259.83**
1"	8	-	H4	4	2-1/2	5-1/8	20N164CT	20N164CP	20N164CB	**115.71**	20N164CS	**347.13**
1"	-	12	H4	4	2-1/2	5-1/8	20N164FT	20N164FP	20N164FB	**115.71**	20N164FS	**347.13**
1"	-	14	H4	4	2-1/2	5-1/8	20N164ST	20N164SP	20N164SB	**115.71**	20N164SS	**347.13**
1-1/8	7	-	H4	4	2-9/16	5-7/16	20N208CT	20N208CP	20N208CB	**154.86**	20N208CS	**464.58**
1-1/8	-	12	H4	4	2-9/16	5-7/16	20N208FT	20N208FP	20N208FB	**154.86**	20N208FS	**464.58**
1-1/4	7	-	H4	4	2-9/16	5-3/4	20N216CT	20N216CP	20N216CB	**200.14**	20N216CS	**600.42**
1-1/4	-	12	H4	6	2-9/16	5-3/4	20N216FT	20N216FP	20N216FB	**200.14**	20N216FS	**600.42**
1-3/8	6	-	H4	4	3"	6-1/16	20N224CT	20N224CP	20N224CB	**252.74**	20N224CS	**758.22**
1-3/8	-	12	H4	6	3"	6-1/16	20N224FT	20N224FP	20N224FB	**252.74**	20N224FS	**758.22**
1-1/2	6	-	H4	4	3"	6-3/8	20N232CT	20N232CP	20N232CB	**297.02**	20N232CS	**891.06**
1-1/2	-	12	H4	6	3"	6-3/8	20N232FT	20N232FP	20N232FB	**297.02**	20N232FS	**891.06**

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

Nitro Spiral Pointed Tap

FRACTIONAL SIZES **HIGH SPEED M-7 STEEL** **GROUND THREAD**



See page 01 for Technical information on *Nitro* Taps.

Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.
Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box.

MADE IN USA **SERIES 2100N** **PLUG CHAMFER**

TAP SIZES	NATIONAL COURSE	NATIONAL FINE	PITCH DIAMETER LIMITS	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	EDP NUMBERS PLUG	LIST PRICE EACH
0	--	80	H1	2	5/16	1-5/8	21N000FP	**$24.01**
1	64	--	H1	2	3/8	1-11/16	21N001CP	**19.31**
1	--	72	H1	2	3/8	1-11/16	21N001FP	**19.31**
2	56	--	H2	2	7/16	1-3/4	21N002CP	**19.36**
2	--	64	H2	2	7/16	1-3/4	21N002FP	**19.36**
3	48	--	H2	2	1/2	1-13/16	21N003CP	**14.09**
3	--	56	H2	2	1/2	1-13/16	21N003FP	**14.09**
4	40	--	H2	2	9/16	1-7/8	21N004CP	**14.09**
4	--	48	H2	2	9/16	1-7/8	21N004FP	**14.09**
4	--	36	H2	2	9/16	1-7/8	21N004SP	**14.09**
5	40	--	H2	2	5/8	1-15/16	21N005CP	**14.09**
5	--	44	H2	2	5/8	1-15/16	21N005FP	**14.09**
6	32	--	H3	2	11/16	2"	21N006CP	**11.09**
6	--	40	H2	2	11/16	2"	21N006FP	**11.09**
8	32	--	H3	2	3/4	2-1/8	21N008CP	**11.09**
8	--	36	H2	2	3/4	2-1/8	21N008FP	**11.09**
10	24	--	H3	2	7/8	2-3/8	21N010CP	**11.40**
10	--	32	H3	2	7/8	2-3/8	21N010FP	**11.40**
12	24	--	H3	2	15/16	2-3/8	21N012CP	**11.40**
12	--	28	H3	2	15/16	2-3/8	21N012FP	**11.40**
1/4	20	--	H3	2	1"	2-1/2	21N116CP	**9.74**
1/4	--	28	H3	2	1"	2-1/2	21N116FP	**9.74**
5/16	18	--	H3	2	1-1/8	2-23/32	21N120CP	**11.22**
5/16	--	24	H3	2	1-1/8	2-23/32	21N120FP	**11.22**
3/8	16	--	H3	3	1-1/4	2-15/16	21N124CP	**12.14**
3/8	--	24	H3	3	1-1/4	2-15/16	21N124FP	**12.14**
7/16	14	--	H3	3	1-7/16	3-5/32	21N128CP	**24.01**
7/16	--	20	H3	3	1-7/16	3-5/32	21N128FP	**24.01**
1/2	13	--	H3	3	1-21/32	3-3/8	21N132CP	**23.36**
1/2	--	20	H3	3	1-21/32	3-3/8	21N132FP	**23.36**
9/16	12	--	H3	3	1-21/32	3-19/32	21N136CP	**41.59**
9/16	--	18	H3	3	1-21/32	3-19/32	21N136FP	**41.59**
5/8	11	--	H3	3	1-13/16	3-13/16	21N140CP	**44.81**
5/8	--	18	H3	3	1-13/16	3-13/16	21N140FP	**44.81**
3/4	10	--	H3	3	2"	4-1/4	21N148CP	**60.12**
3/4	--	16	H3	3	2"	4-1/4	21N148FP	**60.12**
7/8	9	--	H4	3	2-7/32	4-11/16	21N156CP	**94.83**
7/8	--	14	H4	3	2-7/32	4-11/16	21N156FP	**94.83**
1"	8	--	H4	3	2-1/2	5-1/8	21N164CP	**118.58**
1"	--	12	H4	3	2-1/2	5-1/8	21N164FP	**118.58**
1"	--	14	H4	3	2-1/2	5-1/8	21N164SP	**118.58**

Super High Performance Taps

MADE IN USA **PREMIUM HIGH SPEED STEEL** **GROUND THREAD**





Specially designed for threading Stainless Steel, Work Hardened grades and Precipitation Hardened grades. DrillCo's Super High Performance Taps are engineered to produce optimum tool life and superior thread quality in both commonly machined, as well as exotic materials.

Packaging: All sizes individually packaged.

SPIRAL POINT SERIES 2100PS

TAP SIZES	PITCH DIA LIMITS	Length of Threads	OAL	EDP NUMBER	LIST PRICE EACH
4-40	3	.335	1-7/8	21PS004C	**$30.28**
4-48	2	.335	1-7/8	21PS004F	**30.28**
6-32	5	.413	2"	21PS006C	**25.30**
8-32	5	.453	2-1/8	21PS008C	**25.30**
10-24	5	.531	2-3/8	21PS010C	**25.30**
10-32	5	.531	2-3/8	21PS010F	**25.30**
1/4-20	5	.591	2-1/2	21PS116C	**27.98**
1/4-28	4	.591	2-1/2	21PS116F	**27.98**
5/16-18	5	.669	2-23/32	21PS120C	**31.42**
5/16-24	4	.669	2-23/32	21PS120F	**31.42**
3/8-16	5	.748	2-15/16	21PS124C	**35.64**
3/8-24	4	.748	2-15/16	21PS124F	**35.64**
7/16-14	5	.866	3-5/32	21PS128C	**46.01**
7/16-20	5	.866	3-5/32	21PS128F	**46.01**
1/2-13	5	.984	3-3/8	21PS132C	**51.95**
1/2-20	5	.984	3-3/8	21PS132F	**51.95**
9/16-12	5	.984	3-19/32	21PS136C	**79.16**
9/16-18	5	..984	3-19/32	21PS136F	**79.16**
5/8-11	5	1.083	3-13/16	21PS140C	**94.19**
5/8-18	5	1.083	3-13/16	21PS140F	**94.19**
3/4-10	5	1.201	4-1/4	21PS148C	**148.07**
3/4-16	5	1.201	4-1/4	21PS148F	**148.07**
7/8-9	6	1.339	4-11/16	21PS156C	**196.05**
7/8-14	6	1.339	4-11/16	21PS156F	**196.05**
1"-8	6	1.496	5-1/8	21PS164C	**257.90**
1"-12	6	1.496	5-1/8	21PS164F	**257.90**

SPIRAL FLUTE SERIES 2000PF

TAP SIZES	PITCH DIA LIMITS	Length of Threads	OAL	EDP NUMBER	LIST PRICE EACH
4-40	3	.236	1-7/8	20PF004C	**$43.13**
4-48	2	.236	1-7/8	20PF004F	**43.13**
6-32	5	.276	2"	20PF006C	**34.32**
8-32	5	.276	2-1/8	20PF008C	**34.32**
10-24	5	.354	2-3/8	20PF010C	**35.10**
10-32	5	.354	2-3/8	20PF010F	**35.10**
1/4-20	5	.433	2-1/2	20PF116C	**38.76**
1/4-28	4	.354	2-1/2	20PF116F	**38.76**
5/16-18	5	.472	2-23/32	20PF120C	**43.13**
5/16-24	4	.394	2-23/32	20PF120F	**43.13**
3/8-16	5	.551	2-15/16	20PF124C	**48.02**
3/8-24	4	.394	2-15/16	20PF124F	**48.02**
7/16-14	5	.591	3-5/32	20PF128C	**70.08**
7/16-20	5	.472	3-5/32	20PF128F	**70.08**
1/2-13	5	.630	3-3/8	20PF132C	**85.41**
1/2-20	5	.472	3-3/8	20PF132F	**85.41**
9/16-12	5	.709	3-19/32	20PF136C	**129.59**
9/16-18	5	.512	3-19/32	20PF136F	**129.59**
5/8-11	5	.748	3-13/16	20PF140C	**142.25**
5/8-18	5	.512	3-13/16	20PF140F	**142.25**
3/4-10	5	.827	4-1/4	20PF148C	**183.87**
3/4-16	5	.591	4-1/4	20PF148F	**183.87**
7/8-9	6	.827	4-11/16	20PF156C	**272.61**
7/8-14	6	.709	4-11/16	20PF156F	**272.61**
1"-8	6	.984	5-1/8	20PF164C	**357.83**
1"-12	6	.709	5-1/8	20PF164F	**357.83**

"Metric" Hand Taps

METRIC SIZES **HIGH SPEED M-7 STEEL** **GROUND THREAD**



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: 1.6mm thru 6.3mm, 12 per box. 7mm thru 12mm, 6 per box. 14mm thru 27mm, 3 per box. 30mm & up individually packaged.

MADE IN USA **SERIES 2800** **TAPER, PLUG & BOTTOM**

TAP SIZE (MM)	PITCH DIAMETER (MM)	NO OF FL	D LTS	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
				TAPER	PLUG	BOTT			
1.6mm	0.35mm	2	D 3	28A016AT	28A016AP	28A016AB	**$20.49**	28A016AS	**$61.47**
1.8mm	0.35mm	2	D 3	28A018AT	28A018AP	28A018AB	**20.49**	28A018AS	**61.47**
2.0mm	0.40mm	3	D 3	28A020AT	28A020AP	28A020AB	**17.42**	28A120AS	**52.27**
2.2mm	0.45mm	3	D 3	28A022AT	28A022AP	28A022AB	**17.42**	28A022AS	**52.27**
2.5mm	0.45mm	3	D 3	28A025AT	28A025AP	28A025AB	**17.42**	28A025AS	**52.27**
3.0mm	0.50mm	3	D 3	28A030AT	28A030AP	28A030AB	**11.09**	28A030AS	**33.28**
3.5mm	0.60mm	3	D 4	28A035AT	28A035AP	28A035AB	**11.09**	28A035AS	**33.28**
4.0mm	0.70mm	4	D 4	28A040AT	28A040AP	28A040AB	**8.81**	28A040AS	**26.43**
4.5mm	0.75mm	4	D 4	28A045AT	28A045AP	28A045AB	**8.81**	28A045AS	**26.43**
5.0mm	0.80mm	4	D 4	28A050AT	28A050AP	28A050AB	**8.81**	28A050AS	**26.43**
6.0mm	1.00mm	4	D 5	28A060AT	28A060AP	28A060AB	**9.59**	28A060AS	**28.78**
6.3mm	1.00mm	4	D 5	28A063AT	28A063AP	28A063AB	**9.59**	28A063AS	**28.78**
7.0mm	1.00mm	4	D 5	28A070AT	28A070AP	28A070AB	**11.35**	28A070AS	**34.06**
8.0mm	1.25mm	4	D 5	28A080AT	28A080AP	28A080AB	**11.35**	28A080AS	**34.06**
8.0mm	1.00mm	4	D 5	28A080BT	28A080BP	28A080BB	**11.35**	28A080BS	**34.06**
10mm	1.50mm	4	D 6	28A100AT	28A100AP	28A100AB	**13.18**	28A100AS	**39.54**
10mm	1.25mm	4	D 5	28A100BT	28A100BP	28A100BB	**13.18**	28A100BS	**39.54**
12mm	1.75mm	4	D 6	28A120AT	28A120AP	28A120AB	**24.01**	28A120AS	**72.04**
12mm	1.25mm	4	D 5	28A120CT	28A120CP	28A120CB	**24.01**	28A120CS	**72.04**
14mm	2.00mm	4	D 7	28A140AT	28A140AP	28A140AB	**36.15**	28A140AS	**108.45**
14mm	1.50mm	4	D 6	28A140BT	28A140BP	28A140BB	**36.15**	28A140BS	**108.45**
16mm	2.00mm	4	D 7	28A160AT	28A160AP	28A160AB	**44.04**	28A160AS	**132.12**
16mm	1.50mm	4	D 6	28A160BT	28A160BP	28A160BB	**44.04**	28A160BS	**132.12**
18mm	2.50mm	4	D 7	28A180AT	28A180AP	28A180AB	**60.88**	28A180AS	**182.64**
18mm	1.50mm	4	D 6	28A180DT	28A180DP	28A180DB	**60.88**	28A180DS	**182.64**
18mm	2.00mm	4	D 6	28A180CT	28A180CP	28A180CB	**60.88**	28A180CS	**182.64**
20mm	2.50mm	4	D 7	28A200AT	28A200AP	28A200AB	**76.47**	28A200AS	**229.42**
20mm	1.50mm	4	D 6	28A200BT	28A200BP	28A200BB	**76.47**	28A200BS	**229.42**
22mm	2.50mm	4	D 7	28A220AT	28A220AP	28A220AB	**84.30**	28A220AS	**252.90**
22mm	1.50mm	4	D 6	28A220BT	28A220BP	28A220BB	**84.30**	28A220BS	**252.90**
24mm	3.00mm	4	D 8	28A240AT	28A240AP	28A240AB	**107.47**	28A240AS	**322.40**
24mm	2.00mm	4	D 7	28A240BT	28A240BP	28A240BB	**107.47**	28A240BS	**322.40**
27mm	3.00mm	4	D 8	28A270AT	28A270AP	28A270AB	**160.38**	28A270AS	**481.16**
27mm	2.00mm	4	D 7	28A270BT	28A270BP	28A270BB	**160.38**	28A270BS	**481.16**
30mm	3.50mm	4	D 9	28A300AT	28A300AP	28A300AB	**237.38**	28A300AS	**712.14**
30mm	2.00mm	4	D 7	28A300BT	28A300BP	28A300BB	**237.38**	28A300BS	**712.14**
33mm	3.50mm	4	D 9	28A330AT	28A330AP	28A330AB	**263.28**	28A330AS	**789.86**
33mm	2.00mm	4	D 7	28A330BT	28A330BP	28A330BB	**263.28**	28A330BS	**789.86**
36mm	4.00mm	4	D 9	28A360AT	28A360AP	28A360AB	**304.98**	28A360AS	**914.94**
36mm	3.00mm	4	D 8	28A360BT	28A360BP	28A360BB	**304.98**	28A360BS	**914.94**
39mm	4.00mm	6	D 9	28A390AT	28A390AP	28A390AB	**376.04**	28A390AS	**1,128.12**
39mm	3.00mm	6	D 8	28A390BT	28A390BP	28A390BB	**376.04**	28A390BS	**1,128.12**

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

"Metric" Spiral Pointed Taps

METRIC SIZES **HIGH SPEED M-7 STEEL** **GROUND THREAD**



The angular flutes at the front end of these taps propel the chips ahead of the tap. This also reduces loading and clogging in the flutes. This feature plus the excellent shearing action of the flute make spiral pointed taps ideal for production tapping thru holes. They are called "GUN TAPS" because they shoot the chips ahead of the tap.

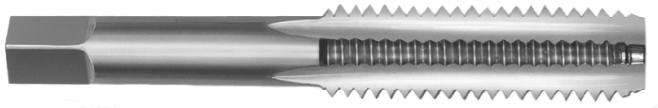
Packaging: 1.6mm thru 6.3mm, 12 per box. 7mm thru 12mm, 6 per box. 14mm thru 20mm, 3 per box.

MADE IN USA **SERIES 2850** **PLUG CHAMFER**

METRIC TAP SIZES	PITCH DIAMETER (mm)	NUMBER OF FLUTES	PITCH DIAMETER LIMITS	EDP NUMBER	LIST PRICE
1.6mm	0.35mm	2	D 3	285A016A	**$23.49**
1.8mm	0.35mm	2	D 3	285A018A	**23.49**
2.0mm	0.40mm	2	D 3	285A020A	**19.97**
2.2mm	0.45mm	2	D 3	285A022A	**19.97**
2.5mm	0.45mm	2	D 3	285A025A	**19.97**
3.0mm	0.50mm	2	D 3	285A030A	**13.12**
3.5mm	0.60mm	2	D 4	285A035A	**12.13**
4.0mm	0.70mm	2	D 4	285A040A	**10.64**
4.5mm	0.75mm	2	D 4	285A045A	**10.64**
5.0mm	0.80mm	2	D 4	285A050A	**10.64**
6.0mm	1.00mm	2	D 5	285A060A	**11.16**
6.3mm	1.00mm	2	D 5	285A063A	**11.16**
7.0mm	1.00mm	2	D 5	285A070A	**12.59**
8.0mm	1.25mm	2	D 5	285A080A	**12.59**
8.0mm	1.00mm	2	D 5	285A080B	**12.59**
10mm	1.50mm	3	D 6	285A100A	**14.55**
10mm	1.25mm	3	D 5	285A100B	**14.55**
12mm	1.75mm	3	D 6	285A120A	**26.43**
12mm	1.25mm	3	D 5	285A120C	**26.43**
14mm	2.00mm	3	D 7	285A140A	**43.20**
14mm	1.50mm	3	D 6	285A140B	**43.20**
16mm	2.00mm	3	D 7	285A160A	**51.22**
16mm	1.50mm	3	D 6	285A160B	**51.22**
18mm	2.50mm	4	D 7	285A180A	**75.82**
20mm	2.50mm	4	D 7	285A200A	**75.82**
20mm	1.50mm	4	D 6	285A200B	**75.82**

"Metric" Hand Taps

METRIC SIZES | **HIGH SPEED M-2 STEEL** | **GROUND THREAD**



"Hand" Taps are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style - Generates the thread to the bottom.

Packaging: 1.6mm thru 6.3mm, 12 per box. 7mm thru 12mm, 6 per box. 14mm, 3 per box.

IMPORT | **SERIES 2800E** | **TAPER, PLUG & BOTTOM**

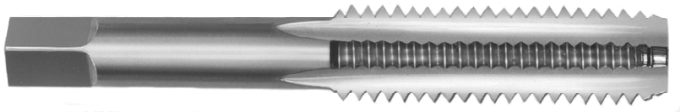
TAP SIZE (MM)	PITCH DIAMETER (MM)	NUMBER OF FLUTES	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
			TAPER	PLUG	BOTT			
1.5mm	0.35mm	2	28E015AT	28E015AP	28E015AB	**$24.38**	28E015AS	**$73.14**
1.6mm	0.35mm	2	28E016AT	28E016AP	28E016AB	**19.01**	28E016AS	**57.04**
1.8mm	0.35mm	2	28E018AT	28E018AP	28E018AB	**19.01**	28E018AS	**57.04**
2.0mm	0.40mm	3	28E020AT	28E020AP	28E020AB	**17.18**	28E120AS	**51.56**
2.0mm	0.45mm	3	28E020BT	28E020BP	28E020BB	**17.18**	28E020BS	**51.66**
2.2mm	0.45mm	3	28E022AT	28E022AP	28E022AB	**11.53**	28E022AS	**34.58**
2.3mm	0.40mm	3	28E023AT	28E023AP	28E023AB	**11.53**	28E023AS	**34.58**
2.5mm	0.45mm	3	28E025AT	28E025AP	28E025AB	**11.53**	28E025AS	**34.58**
2.6mm	0.45mm	3	28E026AT	28E026AP	28E026AB	**11.53**	28E026AS	**34.58**
3.0mm	0.50mm	3	28E030AT	28E030AP	28E030AB	**8.92**	28E030AS	**26.76**
3.0mm	0.60mm	3	28E030BT	28E030BP	28E030BB	**8.92**	28E030BS	**26.76**
3.5mm	0.60mm	3	28E035AT	28E035AP	28E035AB	**8.92**	28E035AS	**26.76**
4.0mm	0.70mm	4	28E040AT	28E040AP	28E040AB	**7.26**	28E040AS	**21.78**
4.0mm	0.50mm	4	28E040BT	28E040BP	28E040BB	**8.53**	28E040BS	**25.58**
4.5mm	0.75mm	4	28E045AT	28E045AP	28E045AB	**8.92**	28E045AS	**26.76**
5.0mm	0.80mm	4	28E050AT	28E050AP	28E050AB	**7.26**	28E050AS	**21.78**
5.0mm	0.90mm	4	28E050BT	28E050BP	28E050BB	**7.70**	28E050BS	**23.10**
5.0mm	0.50mm	4	28E050CT	28E050CP	28E050CB	**7.70**	28E050CS	**23.10**
5.5mm	0.90mm	4	28E055AT	28E055AP	28E055AB	**7.70**	28E055AS	**23.10**
6.0mm	1.00mm	4	28E060AT	28E060AP	28E060AB	**7.70**	28E060AS	**23.10**
6.0mm	0.75mm	4	28E060BT	28E060BP	28E060BB	**8.00**	28E060BS	**24.00**
6.3mm	1.00mm	4	28E063AT	28E063AP	28E063AB	**8.00**	28E063AS	**24.00**
7.0mm	1.00mm	4	28E070AT	28E070AP	28E070AB	**8.40**	28E070AS	**25.20**
8.0mm	1.25mm	4	28E080AT	28E080AP	28E080AB	**8.40**	28E080AS	**25.20**
8.0mm	1.00mm	4	28E080BT	28E080BP	28E080BB	**8.92**	28E080BS	**26.76**
9.0mm	1.00mm	4	28E090BT	28E090BP	28E090BB	**8.92**	28E090BS	**26.76**
10mm	1.50mm	4	28E100AT	28E100AP	28E100AB	**15.79**	28E100AS	**47.37**
10mm	1.25mm	4	28E100BT	28E100BP	28E100BB	**15.79**	28E100BS	**47.37**
10mm	1.00mm	4	28E100CT	28E100CP	28E100CB	**15.79**	28E100CS	**47.37**
11mm	1.50mm	4	28E110AT	28E110AP	28E110AB	**15.79**	28E110AS	**47.37**
12mm	1.75mm	4	28E120AT	28E120AP	28E120AB	**19.01**	28E120AS	**57.00**
12mm	1.50mm	4	28E120BT	28E120BP	28E120BB	**21.01**	28E120BS	**63.00**
12mm	1.25mm	4	28E120CT	28E120CP	28E120CB	**21.01**	28E120CS	**63.00**
14mm	2.00mm	4	28E140AT	28E140AP	28E140AB	**28.19**	28E140AS	**84.56**
14mm	1.50mm	4	28E140BT	28E140BP	28E140BB	**28.19**	28E140BS	**84.56**
14mm	1.25mm	4	28E140CT	28E140CP	28E140CB	**28.19**	28E140CS	**84.56**

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

"Metric" Hand Taps

METRIC SIZES | HIGH SPEED M-2 STEEL | GROUND THREAD



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: 16mm thru 27mm, 3 per box. 30mm & up individually packaged.

IMPORT | SERIES 2800E | TAPER, PLUG & BOTTOM

TAP SIZE (MM)	PITCH DIAMETER (MM)	NUMBER OF FLUTES	EDP NUMBERS			LIST PRICE EACH	EDP NUMBER SETS	LIST PRICE SETS
			TAPER	PLUG	BOTT			
16mm	2.00mm	4	28E160AT	28E160AP	28E160AB	**$33.93**	28E160AS	**$101.79**
16mm	1.50mm	4	28E160BT	28E160BP	28E160BB	**33.93**	28E160BS	**101.78**
18mm	2.50mm	4	28E180AT	28E180AP	28E180AB	**45.59**	28E180AS	**136.77**
18mm	2.00mm	4	28E180BT	28E180BP	28E180BB	**45.59**	28E180BS	**136.7**
18mm	1.00mm	4	28E180CT	28E180CP	28E180CB	**45.59**	28E180CS	**136.77**
18mm	1.50mm	4	28E180DT	28E180DP	28E180DB	**45.59**	28E180DS	**136.77**
20mm	2.50mm	4	28E200AT	28E200AP	28E200AB	**61.94**	28E200AS	**185.82**
20mm	1.50mm	4	28E200BT	28E200BP	28E200BB	**61.94**	28E200BS	**185.82**
20mm	1.00mm	4	28E200CT	28E200CP	28E200CB	**61.94**	28E200CS	**185.82**
20mm	2.00mm	4	28E200DT	28E200DP	28E200DB	**61.94**	28E200DS	**185.82**
22mm	2.50mm	4	28E220AT	28E220AP	28E220AB	**63.47**	28E220AS	**190.21**
22mm	1.50mm	4	28E220BT	28E220BP	28E220BB	**63.47**	28E220BS	**190.21**
24mm	3.00mm	4	28E240AT	28E240AP	28E240AB	**86.65**	28E240AS	**259.95**
24mm	2.00mm	4	28E240BT	28E240BP	28E240BB	**86.65**	28E240BS	**259.95**
24mm	1.50mm	4	28E240CT	28E240CP	28E240CB	**86.65**	28E240CS	**259.95**
27mm	3.00mm	4	28E270AT	28E270AP	28E270AB	**136.98**	28E270AS	**410.94**
27mm	2.00mm	4	28E270BT	28E270BP	28E270BB	**136.98**	28E270BS	**410.94**
30mm	3.50mm	4	28E300AT	28E300AP	28E300AB	**140.16**	28E300AS	**420.48**
30mm	2.00mm	4	28E300BT	28E300BP	28E300BB	**143.29**	28E300BS	**429.87**
30mm	1.50mm	4	28E300CT	28E300CP	28E300CB	**143.29**	28E300CS	**429.87**
32mm	2.00mm	4	28E320AT	28E320AP	28E320AB	**154.56**	28E320AS	**463.68**
33mm	3.50mm	4	28E330AT	28E330AP	28E330AB	**194.58**	28E330AS	**583.74**
33mm	2.00mm	4	28E330BT	28E330BP	28E330BB	**211.50**	28E330BS	**634.50**
36mm	4.00mm	4	28E360AT	28E360AP	28E360AB	**239.99**	28E360AS	**719.97**
36mm	3.00mm	4	28E360BT	28E360BP	28E360BB	**239.99**	28E360BS	**719.97**
39mm	4.00mm	6	28E390AT	28E390AP	28E390AB	**261.30**	28E390AS	**783.90**
39mm	3.00mm	6	28E390BT	28E390BP	28E390BB	**261.30**	28E390BS	**783.90**
42mm	4.50mm	6	28E420AT	28E420AP	28E420AB	**273.66**	28E420AS	**820.98**
42mm	1.50mm	6	28E420BT	28E420BP	28E420BB	**273.66**	28E420BS	**820.98**
45mm	4.50mm	6	28E450AT	28E450AP	28E450AB	**273.66**	28E450AS	**820.98**
45mm	1.50mm	6	28E450BT	28E450BP	28E450BB	**273.66**	28E450BS	**820.98**
48mm	5.00mm	6	28E480AT	28E480AP	28E480AB	**284.88**	28E480AS	**854.64**
48mm	1.50mm	6	28E480BT	28E480BP	28E480BB	**284.88**	28E480BS	**854.64**
52mm	5.00mm	6	28E520AT	28E520AP	28E520AB	**361.75**	28E520AS	**1,085.25**
52mm	1.50mm	6	28E520BT	28E520BP	28E520BB	**361.75**	28E520BS	**1,085.25**

Please specify Taper, Plug or Bottoming

Tap Set = (Taper, Plug & Bottoming)

"Left Hand" Taps

MACHINE & FRAC SIZES HIGH SPEED M-7 STEEL GROUND THREAD



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Packaging: 6 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box. 1-1/8" & up individually packaged.

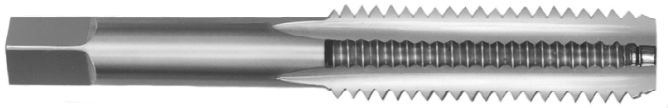
MADE IN USA SERIES 2300 TAPER, PLUG & BOTTOM

TAP SIZES	NC	NF	PITCH DIAMETER LIMITS	NUMBER OF FLUTES	OVERALL LENGTH	EDP NUMBERS			LIST PRICE EACH
						TAPER	PLUG	BOTTOM	
6	32	--	H3	4	2"	23A006CT	23A006CP	23A006CB	**$13.38**
8	32	--	H3	4	2-1/8	23A008CT	23A008CP	23A008CB	**14.49**
10	24	--	H3	4	2-3/8	23A010CT	23A010CP	23A010CB	**14.49**
10	--	32	H3	4	2-3/8	23A010FT	23A010FP	23A010FB	**14.49**
1/4	20	--	H3	4	2-1/2	23A116CT	23A116CP	23A116CB	**13.70**
1/4	--	28	H3	4	2-1/2	23A116FT	23A116FP	23A116FB	**13.70**
5/16	18	--	H3	4	2-23/32	23A120CT	23A120CP	23A120CB	**15.31**
5/16	--	24	H3	4	2-23/32	23A120FT	23A120FP	23A120FB	**15.31**
3/8	16	--	H3	4	2-5/16	23A124CT	23A124CP	23A124CB	**19.84**
3/8	--	24	H3	4	2-5/16	23A124FT	23A124FP	23A124FB	**19.84**
7/16	14	--	H3	4	3-5/32	23A128CT	23A128CP	23A128CB	**28.84**
7/16	--	20	H3	4	3-5/32	23A128FT	23A128FP	23A128FB	**28.84**
1/2	13	--	H3	4	3-3/8	23A132CT	23A132CP	23A132CB	**33.67**
1/2	--	20	H3	4	3-3/8	23A132FT	23A132FP	23A132FB	**33.67**
9/16	12	--	H3	4	3-19/32	23A136CT	23A136CP	23A136CB	**50.20**
9/16	--	18	H3	4	3-19/32	23A136FT	23A136FP	23A136FB	**50.20**
5/8	11	--	H3	4	3-3/16	23A140CT	23A140CP	23A140CB	**63.51**
5/8	--	18	H3	4	3-3/16	23A140FT	23A140FP	23A140FB	**63.51**
3/4	10	--	H3	4	4-1/4	23A148CT	23A148CP	23A148CB	**83.48**
3/4	--	16	H3	4	4-1/4	23A148FT	23A148FP	23A148FB	**83.48**
7/8	9	--	H4	4	4-11/16	23A156CT	23A156CP	23A156CB	**115.23**
7/8	--	14	H4	4	4-11/16	23A156FT	23A156FP	23A156FB	**115.23**
1"	8	--	H4	4	5-1/8	23A164CT	23A164CP	23A164CB	**125.74**
1"	--	12	H4	4	5-1/8	23A164FT	23A164FP	23A164FB	**125.74**
1"	--	14	H4	4	5-1/8	23A164ST	23A164SP	23A164SB	**125.74**
1-1/8	7	--	H4	4	5-7/16	23A208CT	23A208CP	23A208CB	**317.05**
1-1/8	--	12	H4	4	5-7/16	23A208FT	23A208FP	23A280FB	**317.05**
1-1/4	7	--	H4	4	5-3/4	23A216CT	23A216CP	23A216CB	**400.24**
1-1/4	--	12	H4	6	5-3/4	23A216FT	23A216FP	23A216FB	**400.24**
1-3/8	6	--	H4	4	6"	23A224CT	23A224CP	23A224CB	**498.51**
1-3/8	--	12	H4	6	6"	23A224FT	23A224FP	23A224FB	**498.51**
1-1/2	6	--	H4	4	6-1/4	23A232CT	23A232CP	23A232CB	**580.53**
1-1/2	--	12	H4	6	6-1/4	23A232FT	23A232FP	23A232FB	**580.53**

Please specify Taper, Plug or Bottoming

"Left Hand" Taps

MACHINE & FRAC SIZES HIGH SPEED M-2 STEEL GROUND THREAD



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box. 1-1/8" & up individually packaged.

IMPORT SERIES 2300E TAPER, PLUG & BOTTOM

TAP SIZES	NC	NF	PITCH DIAMETER LIMITS	NUMBER OF FLUTES	OVERALL LENGTH	EDP NUMBERS			LIST PRICE EACH
						TAPER	PLUG	BOTTOM	
1/4	20	--	H3	4	2-1/2	23E116CT	23E116CP	23E116CB	**$9.48**
1/4	--	28	H3	4	2-1/2	23E116FT	23E116FP	23E116FB	**9.48**
5/16	18	--	H3	4	2-23/32	23E120CT	23E120CP	23E120CB	**10.57**
5/16	--	24	H3	4	2-23/32	23E120FT	23E120FP	23E120FB	**10.57**
3/8	16	--	H3	4	2-5/16	23E124CT	23E124CP	23E124CB	**13.70**
3/8	--	24	H3	4	2-5/16	23E124FT	23E124FP	23E124FB	**13.70**
7/16	14	--	H3	4	3-5/32	23E128CT	23E128CP	23E128CB	**19.92**
7/16	--	20	H3	4	3-5/32	23E128FT	23E128FP	23E128FB	**19.92**
1/2	13	--	H3	4	3-3/8	23E132CT	23E132CP	23E132CB	**23.23**
1/2	--	20	H3	4	3-3/8	23E132FT	23E132FP	23E132FB	**23.23**
9/16	12	--	H3	4	3-19/32	23E136CT	23E136CP	23E136CB	**28.32**
9/16	--	18	H3	4	3-19/32	23E136FT	23E136FP	23E136FB	**28.32**
5/8	11	--	H3	4	3-3/16	23E140CT	23E140CP	23E140CB	**34.32**
5/8	--	18	H3	4	3-3/16	23E140FT	23E140FP	23E140FB	**34.32**
3/4	10	--	H3	4	4-1/4	23E148CT	23E148CP	23E148CB	**46.15**
3/4	--	16	H3	4	4-1/4	23E148FT	23E148FP	23E148FB	**46.15**
7/8	9	--	H4	4	4-11/16	23E156CT	23E156CP	23E156CB	**61.68**
7/8	--	14	H4	4	4-11/16	23E156FT	23E156FP	23E156FB	**61.68**
1"	8	--	H4	4	5-1/8	23E164CT	23E164CP	23E164CB	**83.04**
1"	--	12	H4	4	5-1/8	23E164FT	23E164FP	23E164FB	**83.04**
1"	--	14	H4	4	5-1/8	23E164ST	23E164SP	23E164SB	**83.04**
1-1/8	7	--	H4	4	5-7/16	23E208CT	23E208CP	23E208CB	**101.96**
1-1/8	--	12	H4	4	5-7/16	23E208FT	23E208FP	23E280FB	**101.96**
1-1/4	7	--	H4	4	5-3/4	23E216CT	23E216CP	23E216CB	**130.37**
1-1/4	--	12	H4	6	5-3/4	23E216FT	23E216FP	23E216FB	**130.37**
1-3/8	6	--	H4	4	6"	23E224CT	23E224CP	23E224CB	**162.55**
1-3/8	--	12	H4	6	6"	23E224FT	23E224FP	23E224FB	**162.55**
1-1/2	6	--	H4	4	6-1/4	23E232CT	23E232CP	23E232CB	**200.60**
1-1/2	--	12	H4	6	6-1/4	23E232FT	23E232FP	23E232FB	**200.60**
1-3/4	8	--	H4	6	7"	23E248NT	23E248NP	23E248NB	**246.65**

Please specify Taper, Plug or Bottoming

8 Pitch Taps

FRACTIONAL SIZES HIGH SPEED M-7 STEEL GROUND THREAD



Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: All sizes individually packaged.

MADE IN USA SERIES 2500 TAPER, PLUG & BOTTOM

TAP SIZES	NC	PITCH DIAMETER LIMITS	NUMBER OF FLUTES	EDP NUMBERS			LIST PRICE EACH
				TAPER	PLUG	BOTTOM	
1-1/8-8	NS	H5	4	25A208T	25A208P	25A208B	$134.68
1-1/4-8	NS	H5	4	25A216T	25A216P	25A216B	147.04
1-3/8-8	NS	H5	4	25A224T	25A224P	25A224B	219.76
1-1/2-8	NS	H5	4	25A232T	25A232P	25A232B	269.35
1-5/8-8	NS	H6	6	25A240T	25A240P	25A240B	401.07
1-3/4-8	NS	H6	6	25A248T	25A248P	25A248B	447.79
1-7/8-8	NS	H6	6	25A256T	25A256P	25A256B	538.31
2"-8	NS	H6	6	25A264T	25A264P	25A264B	562.80
2-1/8-8	NS	H6	6	25A308T	25A308P	25A308B	660.68
2-1/4-8	NS	H6	6	25A316T	25A316P	25A316B	731.63
2-3/8-8	NS	H6	6	25A324T	25A324P	25A324B	895.58
2-1/2-8	NS	H6	6	25A332T	25A332P	25A332B	1,005.94
2-5/8-8	NS	H8	6	25A340T	25A340P	25A340B	1,129.74
2-3/4-8	NS	H8	6	25A348T	25A348P	25A348B	1,212.21
2-7/8-8	NS	H8	6	25A356T	25A356P	25A356B	1,322.49
3"-8	NS	H8	6	25A364T	25A364P	25A364B	1,460.38
3-1/4-8	NS	H8	6	25A416T	25A416P	25A416B	2,727.71
3-1/2-8	NS	H8	6	25A432T	25A432P	25A432B	3,037.34
3-3/4-8	NS	H8	6	25A448T	25A448P	25A448B	3,692.19
4"-8	NS	H8	8	25A464T	25A464P	25A464B	4,133.07

IMPORT 8 PITCH TAPS SERIES 2500E

1-1/8-8	NS	H5	4	25E208T	25E208P	25E208B	$93.48
1-1/4-8	NS	H5	4	25E216T	25E216P	25E216B	118.62
1-3/8-8	NS	H5	4	25E224T	25E224P	25E224B	149.16
1-1/2-8	NS	H5	4	25E232T	25E232P	25E232B	187.62
1-5/8-8	NS	H6	6	25E240T	25E240P	25E240B	210.45
1-3/4-8	NS	H6	6	25E248T	25E248P	25E248B	229.98
1-7/8-8	NS	H6	6	25E256T	25E256P	25E256B	277.18
2"-8	NS	H6	6	25E264T	25E264P	25E264B	295.97
2-1/8-8	NS	H6	6	25E308T	25E308P	25E308B	361.75
2-1/4-8	NS	H6	6	25E316T	25E316P	25E316B	408.73
2-3/8-8	NS	H6	6	25E324T	25E324P	25E324B	371.14
2-1/2-8	NS	H6	6	25E332T	25E332P	25E332B	486.24
2-5/8-8	NS	H8	6	25E340T	25E340P	25E340B	643.63
2-3/4-8	NS	H8	6	25E348T	25E348P	25E348B	624.83
2-7/8-8	NS	H8	6	25E356T	25E356P	25E356B	772.82
3"-8	NS	H8	6	25E364T	25E364P	25E364B	711.75
3-1/4-8	NS	H8	6	25E416T	25E416P	25E416B	1,019.47
3-1/2-8	NS	H8	6	25E432T	25E432P	25E432B	1,059.40
3-3/4-8	NS	H8	6	25E448T	25E448P	25E448B	1,296.65
4"-8	NS	H8	8	25E464T	25E464P	25E464B	1,388.26

Please specify Taper, Plug or Bottoming

(STI) Screw Thread Insert Taps

MADE IN USA **HIGH SPEED M-7 STEEL** **GROUND THREAD**



Oversize taps which will produce threads that will accommodate a helical screw thread insert

MACHINE & FRAC SIZES **SERIES 2020** **PLUG & BOTTOM**

TAP SIZES	NO OF FLUTES	EDP NUMBERS		LIST PRICE EACH
		PLUG	BOTTOM	
4-40	3	202A004CP	202A004CB	$17.75
6-32	3	202A006CP	202A006CB	18.40
8-32	3	202A008CP	202A008CB	18.40
10-24	3	202A010CP	202A010CB	18.40
10-32	3	202A010FP	202A010FB	18.40

TAP SIZES	NO OF FLUTES	EDP NUMBERS		LIST PRICE EACH
		PLUG	BOTTOM	
1/4-20	3	202A116CP	202A116CB	$20.81
1/4-28	3	202A116FP	202A116FB	20.81
5/16-18	4	202A120CP	202A120CB	21.34
5/16-24	4	202A120FP	202A120FB	21.34
3/8-16	4	202A124CP	202A124CB	26.49
3/8-24	4	202A124FP	202A124FB	26.49
1/2-13	4	202A132CP	202A132CB	39.41
1/2-20	4	202A132FP	202A132FB	39.41

Oversize Hand Taps

MACHINE & FRAC SIZES **HIGH SPEED M-7 STEEL** **GROUND THREAD**



.003 OVERSIZE H-7 **SERIES 2003**

TAP SIZES	NO OF FL	EDP # PLUG	EDP # BOTTOM	LIST PRICE
4-32	3	203A004CP	203A004CB	$23.49
8-32	3	203A008CP	203A008CB	23.49
10-24	4	203A010CP	203A010CB	23.49
10-32	4	203A010FP	203A010FB	23.49

.005 OVERSIZE H-11 **SERIES 2005**

TAP SIZES	NO OF FL	EDP # PLUG	EDP # BOTTOM	LIST PRICE
1/4-20	4	205A116CP	205A116CB	$9.59
5/16-18	4	205A120CP	205A120CB	11.35
3/8-16	4	205A124CP	205A124CB	13.18
7/16-14	4	205A128CP	205A128CB	19.90
1/2-13	4	205A132CP	205A132CB	24.01
5/8-11	4	205A140CP	205A140CB	44.04

Oversize Spiral Pointed Taps

MACHINE & FRAC SIZES **HIGH SPEED M-2 STEEL** **GROUND THREAD**



.003 OVERSIZE H-7 **SERIES 2103**

TAP SIZES	NO OF FL	EDP # PLUG	EDP # BOTTOM	LIST PRICE
4-32	2	213A004CP	213A004CB	$26.75
8-32	2	213A008CP	213A008CB	26.75
10-24	2	213A010CP	213A010CB	26.75
10-32	2	213A010FP	213A010FB	26.75

.005 OVERSIZE H-11 **SERIES 2105**

TAP SIZES	NO OF FL	EDP # PLUG	EDP # BOTTOM	LIST PRICE
1/4-20	2	215A116CP	215A116CB	$11.16
5/16-18	2	215A120CP	215A120CB	12.59
3/8-16	3	215A124CP	215A124CB	14.55
7/16-14	3	215A128CP	215A128CB	22.51
1/2-13	3	215A132CP	215A132CB	26.43
5/8-11	3	215A140CP	215A140CB	51.29

52° Spiral Fluted Hand Taps

HIGH HELIX **HIGH SPEED M-7 STEEL** **GROUND THREAD**

COATING TiN AVAILABLE



Designed especially for precision tapping of the modern difficult to machine materials. Fast Spiral flutes provide new efficiency in chip removal and eliminates broken taps caused by clogged flutes particularly in ductile and stringy materials. These taps have continuous fast spiral fluted to lift and discharge chips from deep blind holes.
Packaging: 3-48 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 5/8" thru 3/4", 3 per box.

MADE IN USA **SERIES 2000F** **PLUG & BOTT CHAMFER**

TAP SIZE	NC	NF	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	EDP NUMBERS PLUG	EDP NUMBERS BOTTOM	LIST PRICE EACH
3	48	--	2	1/2	1-13/16	20F003CP	20F003CB	**$21.47**
3	--	56	2	1/2	1-13/16	20F003FP	20F003FB	**21.47**
4	40	--	2	9/16	1-7/8	20F004CP	20F004CB	**17.94**
4	---	48	2	9/16	1-7/8	20F004FP	20F004FB	**17.94**
5	40	--	2	5/8	1-15/16	20F005CP	20F005CB	**17.94**
5	--	44	2	5/8	1-15/16	20F005FP	20F005FB	**17.94**
6	32	--	2	11/16	2"	20F006CP	20F006CB	**17.94**
6	--	40	2	11/16	2"	20F006FP	20F006FB	**14.36**
8	32-	--	3	3/4	2-1/8	20F008CP	20F008CB	**14.36**
8	--	36	3	3/4	2-1/8	20F008FP	20F008FB	**14.36**
10	24	--	3	7/8	2-3/8	20F010CP	20F010CB	**14.75**
10	--	32	3	7/8	2-3/8	20F010FP	20F010FB	**14.75**
12	24	--	3	1"	2-1/2	20F012CP	20F012CB	**14.75**
12	--	28	3	1"	2-1/2	20F012FP	20F012FB	**14.75**
1/4	20	--	3	1"	2-1/2	20F116CP	20F116CB	**15.40**
1/4	--	28	3	1"	2-1/2	20F116FP	20F116FB	**15.40**
5/16	18	--	3	11/8	2-23/32	20F120CP	20F120CB	**17.36**
5/16	--	24	3	1-1/8	2-23/32	20F120FP	20F120FB	**17.36**
3/8	16	--	3	2-15/16	2-15/16	20F124CP	20F124CB	**20.23**
3/8	--	24	3	2-15/16	2-15/16	20F124FP	20F124FB	**20.23**
7/16	14	--	3	1-7/16	3-5/32	20F128CP	20F128CB	**30.47**
7/16	--	20	3	1-7/16	3-5/32	20F128FP	20F128FB	**30.47**
1/2	13	--	3	1-21/32	3-3/8	20F132CP	20F132CB	**36.80**
1/2	--	20	3	1-21/32	3-3/8	20F132FP	20F132FB	**36.80**
5/8	11	--	4	1-13/16	3-13/16	20F140CP	20F140CB	**56.51**
3/4	10	--	4	2-1/16	4-3/16	20F148CP	20F148CB	**99.90**

Pulley Taps

MADE IN USA **HIGH SPEED M-7 STEEL** **GROUND THREAD**



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 hand tap.
Packaging: All sizes individually packaged.

FRACTIONAL SIZES **SERIES 2400** **PLUG CHAMFER**

SIZE	6" OAL EDP NO.	6" OAL PRICE	8" OAL EDP NO.	8" OAL PRICE	10" OAL EDP NO.	10" OAL PRICE	12" OAL EDP NO.	12" OAL PRICE
1/4-20	24A116C6	$60.68	24A116C8	$60.68	-----	-----	-----	-----
5/16-18	24A120C6	62.84	24A120C8	62.84	-----	-----	------	-----
3/8-16	24A124C6	67.24	24A124C8	67.24	24A124C10	$67.24	-----	-----
7/16-14	24A128C6	72.43	24A128C8	72.43	-----	-----	-----	-----
1/2-13	24A132C6	73.73	24A132C8	73.73	24A132C10	73.73	24A132C12	$73.73
5/8-11	24A140C6	146.23	24A140C8	146.23	24A140C10	146.23	24A140C12	146.23
3/4-10	-----	-----	-----	-----	24A148C10	175.98	24A148C12	175.98

Extension Taps

6" OVERALL LENGTH **HIGH SPEED M-7 STEEL** **GROUND THREAD**



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 hand tap.
Packaging: All sizes individually packaged.

HAND TAP **SERIES 2060**

TAP SIZES	NO OF FL	EDP NUMBERS PLUG	EDP NUMBERS BOTTOM	LIST PRICE EACH
6-32	3	206A006CP	206A006CB	$74.71
8-32	3	206A008CP	206A008CB	64.99
10-24	3	206A010CP	206A010CB	67.53
10-32	3	206A010FP	206A010FB	67.53
1/4-20	3	206A116CP	206A116CB	64.79
1/4-20*	3	206A116SP	206A116SB	64.79
1/4-28	3	206A116FP	206A116FB	64.79
5/16-18	3	206A120CP	206A120CB	65.84
5/16-18*	3	206A120SP	206A120SB	65.84
5/16-24	3	206A120FP	206A120FB	65.84
3/8-16	3	206A124CP	206A124CB	68.90
3/8-16*	3	206A124SP	206A124SB	68.90
3/8-24	3	206A124FP	206A124FB	68.90
7/16-14	3	206A128CP	206A128CB	72.69
7/16-20	3	206A128FP	206A128FB	72.69
1/2-13	3	206A132CP	206A132CP	90.96
1/2-20	3	206A132FP	206A132FB	90.96

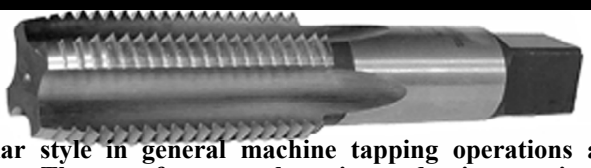
SPIRAL POINT **SERIES 2160**

TAP SIZES	NO OF FL	EDP NUMBERS PLUG	EDP NUMBERS BOTTOM	LIST PRICE EACH
6-32	3	216A006CP	216A006CB	$80.64
8-32	3	216A008CP	216A008CB	68.19
10-24	3	216A010CP	216A010CB	71.45
10-32	3	216A010FP	216A010FB	71.45
1/4-20	3	216A116CP	216A116CB	68.19
1/4-20*	3	216A116LP	216A116SB	68.19
1/4-28	3	216A116FP	216A116FB	68.19
5/16-18	3	216A120CP	216A120CB	70.27
5/16-18*	3	216A120LP	216A120SB	70.27
5/16-24	3	216A120FP	216A120FB	70.27
3/8-16	3	216A124CP	216A124CB	79.08
3/8-16*	3	216A124LP	216A124SB	79.08
3/8-24	3	216A124FP	216A124FB	79.08
7/16-14	3	216A128CP	216A128CB	81.04
7/16-20	3	216A128FP	216A128FB	81.04
1/2-13	3	216A132CP	216A132CB	98.79
1/2-20	3	216A132FP	216A132FB	98.79

*** SMALL SHANK**

"Special Thread" Taps

MADE IN USA **HIGH SPEED M-7 STEEL** **GROUND THREAD**



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: All taps are individually packaged.

FRACTIONAL SIZES — SERIES 2200 — TAPER, PLUG & BOTTOM

TAP SIZES	Threads PER INCH	EDP NUMBERS TAPER	PLUG	BOTTOM	LIST PRICE EACH
#00	90	22A000T90	22A000P90	22A000B90	24 HOUR DELIVERY CALL FOR PRICE
#00	90	22A000T96	22A000P96	22A000B96	
#4	32	22A004T32	22A004P32	22A004B32	
#6	48	22A006T48	22A006P48	22A006B48	
#8	24	22A008T24	22A008P24	22A008B24	
#8	40	22A008T40	22A008P40	22A008B40	
#10	28	22A010T28	22A010P28	22A010B28	
#10	30	22A010T30	22A010P30	22A010B30	
#10	36	22A010T36	22A010P36	22A010B36	
#10	40	22A010T40	22A010P40	22A010B40	
#10	48	22A010T48	22A010P48	22A010B48	
#10	56	22A010T56	22A010P56	22A010B56	
#10	64	22A010T64	22A010P64	22A010B64	
#12	32	22A012T32	22A012P32	22A012B32	
#12	36	22A012T36	22A012P36	22A012B36	
#14	20	22A014T20	22A014P20	22A014B20	
#14	24	22A014T24	22A014P24	22A014B24	
5/32	32	22A110T32	22A110P32	22A110B32	
3/16	24	22A112T24	22A112P24	22A112B24	
3/16	32	22A112T32	22A112P32	22A112B32	
7/32	32	22A114T32	22A114P32	22A114B32	
1/4	24	22A116T24	22A116P24	22A116B24	
1/4	27	22A116T27	22A116P27	22A116B27	
1/4	28	22A116T28	22A116P28	22A116B28	
1/4	32	22A116T32	22A116P32	22A116B32	
1/4	36	22A116T36	22A116P36	22A116B36	
1/4	40	22A116T40	22A116P40	22A116B40	
1/4	48	22A116T48	22A116P48	22A116B48	
1/4	56	22A116T56	22A116P56	22A116B56	
1/4	80	22A116T80	22A116P80	22A116B80	
9/32	32	22A118T32	22A118P32	22A118B32	
5/16	18	22A120T18	22A120P18	22A120B18	
5/16	20	22A120T20	22A120P20	22A120B20	
5/16	22	22A120T22	22A120P22	22A120B22	
5/16	24	22A120T24	22A120P24	22A120B24	
5/16	27	22A120T27	22A120P27	22A120B27	
5/16	28	22A120T28	22A120P28	22A120B28	
5/16	32	22A120T32	22A120P32	22A120B32	
5/16	40	22A120T40	22A120P40	22A120B40	
11/32	32	22A122T32	22A122P32	22A122B32	

TAP SIZES	Threads PER INCH	EDP NUMBERS TAPER	PLUG	BOTTOM	LIST PRICE EACH
3/8	18	22A124T18	22A124P18	22A124B18	24 HOUR DELIVERY CALL FOR PRICE
3/8	20	22A124T20	22A124P20	22A124B20	
3/8	27	22A124T27	22A124P27	22A124B27	
3/8	28	22A124T28	22A124P28	22A124B28	
3/8	32	22A124T32	22A124P32	22A124B32	
3/8	40	22A124T40	22A124P40	22A124B40	
3/8	48	22A124T48	22A124P48	22A124B48	
13/32	32	22A126T32	22A126P32	22A126B32	
7/16	14	22A128T14	22A128P14	22A128B14	
7/16	16	22A128T16	22A128P16	22A128B16	
7/16	18	22A128T18	22A128P18	22A128B18	
7/16	24	22A128T24	22A128P24	22A128B24	
7/16	27	22A128T27	22A128P27	22A128B27	
7/16	28	22A128T28	22A128P28	22A128B28	
7/16	32	22A128T32	22A128P32	22A128B32	
7/16	40	22A128T40	22A128P40	22A128B40	
15/32	32	22A130T32	22A130P32	22A130B32	
1/2	12	22A132T12	22A132P12	22A132B12	
1/2	14	22A132T14	22A132P14	22A132B14	
1/2	16	22A132T16	22A132P16	22A132B16	
1/2	18	22A132T18	22A132P18	22A132B18	
1/2	24	22A132T24	22A132P24	22A132B24	
1/2	27	22A162T27	22A132P27	22A132B27	
1/2	28	22A132T28	22A132P28	22A132B28	
1/2	32	22A132T32	22A132P32	22A132B32	
1/2	40	22A132T40	22A132P40	22A132B40	
33/64	13	22A133T13	22A133P13	22A133B13	
9/16	16	22A136T16	22A136P16	22A136B16	
9/16	20	22A136T20	22A136P20	22A136B20	
9/16	24	22A136T24	22A136P24	22A136B24	
9/16	27	22A136T27	22A136P27	22A136B27	
9/16	32	22A136T32	22A136P32	22A136B32	
5/8	10	22A140T10	22A140P10	22A140B10	
5/8	11	22A140T11	22A140P11	22A140B11	
5/8	12	22A140T12	22A140P12	22A140B12	
5/8	16	22A140T16	22A140P16	22A140B16	
5/8	20	22A140T20	22A140P20	22A140B20	
5/8	24	22A140T24	22A140P24	22A140B24	
5/8	27	22A140T27	22A140P27	22A140B27	
5/8	28	22A140T28	22A140P28	22A140B28	
5/8	32	22A140T32	22A140P32	22A140B32	

Please specify Taper, Plug or Bottoming

Continued On Nexr Page

TAP SIZES	NC	EDP NUMBERS			LIST PRICE
		TAPER	PLUG	BOTTOM	
11/16	11	22A144T11	22A144P11	22A144B11	
11/16	16	22A144T16	22A144P16	22A144B16	
11/16	18	22A144T18	22A144P18	22A144B18	
11/16	20	22A144T20	22A144P20	22A144B20	
11/16	24	22A144T24	22A144P24	22A144B24	
11/16	28	22A144T28	22A144P28	22A144B28	
11/16	32	22A144T32	22A144P32	22A144B32	
3/4	12	22A148T12	22A148P12	22A148B12	
3/4	14	22A148T14	22A148P14	22A148B14	
3/4	18	22A148T18	22A148P18	22A148B18	
3/4	20	22A148T20	22A148P20	22A148B20	
3/4	24	22A148T24	22A148P24	22A148B24	
3/4	27	22A148T27	22A148P27	22A148B27	
3/4	32	22A148T32	22A148P32	22A148B32	
3/4	40	22A148T40	22A148P40	22A148B40	
13/16	10	22A152T10	22A152P10	22A152B10	
13/16	12	22A152T12	22A152P12	22A152B12	
13/16	16	22A152T16	22A152P16	22A152B16	
13/16	18	22A152T18	22A152P18	22A152B18	
13/16	20	22A152T20	22A152P20	22A152B20	
13/16	24	22A152T24	22A152P24	22A152B24	
7/8	10	22A156T10	22A156P10	22A156B10	
7/8	12	22A156T12	22A156P12	22A156B12	
7/8	16	22A156T16	22A156P16	22A156B16	
7/8	18	22A156T18	22A156P18	22A156B18	
7/8	20	22A156T20	22A156P20	22A156B20	
7/8	24	22A156T24	22A156P24	22A156B24	
7/8	27	22A156T27	22A156P27	22A156B27	
7/8	32	22A156T32	22A156P32	22A156B32	
15/16	12	22A160T12	22A160P12	22A160B12	
15/16	14	22A160T14	22A160P14	22A160B14	
15/16	16	22A160T16	22A160P16	22A160B16	
15/16	18	22A160T18	22A160P18	22A160B18	
15/16	20	22A160T20	22A160P20	22A160B20	
15/16	32	22A160T32	22A160P32	22A160B32	
1"	10	22A164T10	22A164P10	22A164B10	
1"	11	22A164T11	22A164P11	22A164B11	
1"	14	22A164T14	22A164P14	22A164B14	
1"	16	22A164T16	22A164P16	22A164B16	
1"	18	22A164T18	22A164P18	22A164B18	
1"	20	22A164T20	22A164P20	22A164B20	
1"	24	22A164T24	22A164P24	22A164B24	
1"	27	22A164T27	22A164P27	22A164B27	
1"	32	22A164T32	22A164P32	22A164B32	
1-1/16	12	22A204T12	22A204P12	22A204B12	
1-1/16	14	22A204T14	22A204P14	22A204B14	
1-1/16	16	22A204T16	22A204P16	22A204B16	
1-1/16	18	22A204T18	22A204P18	22A204B18	
1-1/16	20	22A204T20	22A204P20	22A204B20	
1-1/16	24	22A204T24	22A204P24	22A204B24	
1-1/8	10	22A208T10	22A208P10	22A208B10	
1-1/8	14	22A208T14	22A208P14	22A208B14	
1-1/8	16	22A208T16	22A208P16	22A208B16	
1-1/8	18	22A208T18	22A208P18	22A208B18	
1-1/8	20	22A208T20	22A208P20	22A208B20	
1-1/8	24	22A208T24	22A208P24	22A208B24	
1-1/8	28	22A208T28	22A208P28	22A208B28	
1-1/8	32	22A208T32	22A208P32	22A208B32	
1-3/16	12	22A212T12	22A212P12	22A212B12	
1-3/16	14	22A212T14	22A212P14	22A212B14	
1-3/16	16	22A212T16	22A212P16	22A212B16	
1-3/16	18	22A212T18	22A212P18	22A212B18	
1-1/16	20	22A212T20	22A212P20	22A212B20	
1-1/4	10	22A216T10	22A216P10	22A216B10	
1-1/4	14	22A216T14	22A216P14	22A216B14	
1-1/4	16	22A216T16	22A216P16	22A216B16	
1-1/4	18	22A216T18	22A216P18	22A216B18	

24 HOUR DELIVERY CALL FOR PRICE

TAP SIZES	NC	EDP NUMBERS			LIST PRICE
		TAPER	PLUG	BOTTOM	
1-1/4	20	22A216T20	22A216P20	22A216B20	
1-1/4	24	22A216T24	22A216P24	22A216B24	
1-1/4	32	22A216T32	22A216P32	22A216B32	
1-5/16	12	22A220T12	22A220P12	22A220B12	
1-5/16	14	22A220T14	22A220P14	22A220B14	
1-5/16	16	22A220T16	22A220P16	22A220B16	
1-5/16	18	22A220T18	22A220P18	22A220B18	
1-5/16	20	22A220T20	22A220P20	22A220B20	
1-3/8	10	22A224T10	22A224P10	22A224B10	
1-3/8	16	22A224T16	22A224P16	22A224B16	
1-3/8	18	22A224T18	22A224P18	22A224B18	
1-3/8	20	22A224T20	22A224P20	22A224B20	
1-7/16	18	22A228T18	22A228P18	22A228B18	
1-1/2	10	22A232T10	22A232P10	22A232B10	
1-1/2	16	22A232T16	22A232P16	22A232B16	
1-1/2	18	22A232T18	22A232P18	22A232B18	
1-1/2	20	22A232T20	22A232P20	22A232B20	
1-1/2	24	22A232T24	22A232P24	22A232B24	
1-9/16	16	22A236T16	22A236P16	22A236B16	
1-9/16	18	22A236T18	22A236P18	22A236B18	
1-5/8	5-1/2	22A240T55	22A240P55	22A240B55	
1-5/8	12	22A240T12	22A240P12	22A240B12	
1-5/8	16	22A240T16	22A240P16	22A240B16	
1-5/8	18	22A240T18	22A240P18	22A240B18	
1-3/4	5	22A248T05	22A248P05	22A248B05	
1-3/4	10	22A248T10	22A248P10	22A248B10	
1-3/4	12	22A248T12	22A248P12	22A248B12	
1-3/4	16	22A248T16	22A248P16	22A248B16	
1-3/4	18	22A248T18	22A248P18	22A248B18	
1-7/8	5	22A256T05	22A256P05	22A256B05	
1-7/8	12	22A256T12	22A256P12	22A256B12	
1-7/8	16	22A256T16	22A256P16	22A256B16	
2"	4-1/2	22A264T45	22A264P45	22A264B45	
2"	12	22A264T12	22A264P12	22A264B12	
2"	16	22A264T16	22A264P16	22A264B16	
2"	20	22A264T20	22A264P20	22A264B20	
2-1/8	12	22A308T12	22A308P12	22A308B12	
2-1/8	16	22A308T16	22A308P16	22A308B16	
2-1/4	4-1/2	22A316T45	22A316P45	22A316B45	
2-1/4	12	22A316T12	22A316P12	22A316B12	
2-1/4	16	22A316T16	22A316P16	22A316B16	
2-3/8	12	22A324T12	22A324P12	22A324B12	
2-3/8	16	22A324T16	22A324P16	22A324B16	
2-1/2	4	22A332T04	22A332P04	22A332B04	
2-1/2	12	22A332T12	22A332P12	22A332B12	
2-1/2	16	22A332T16	22A332P16	22A332B16	
2-3/4	12	22A348T12	22A348P12	22A348B12	
3"	4	22A364T04	22A364P04	22A364B04	
3"	12	22A364T12	22A364P12	22A364B12	
3"	16	22A364T16	22A364P16	22A364B16	
3-1/8	12	22A408T12	22A408P12	22A408B12	
3-1/4	12	22A416T12	22A416P12	22A416B12	
3-1/2	4	22A432T04	22A432P04	22A432B04	
3-1/2	12	22A432T12	22A432P12	22A432B12	
3-3/4	4	22A448T04	22A448P04	22A448B04	
3-3/4	12	22A448T12	22A448P12	22A448B12	
4"	4	22A464T04	22A464P04	22A464B04	
4"	12	22A464T12	22A464P12	22A464B12	

24 HOUR DELIVERY CALL FOR PRICE

Please specify Taper, Plug or Bottoming

8 PITCH TAPS ON PAGE 78

"Special Thread" Taps

FRACTIONAL SIZES HIGH SPEED M-2 STEEL GROUND THREAD



"Hand Taps" are the most popular style in general machine tapping operations and are appropriate for the vast majority of materials and conditions. They are for general use in production tapping or hand operations. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

Packaging: All taps are individually packaged.

IMPORT SERIES 2200E TAPER, PLUG & BOTTOM

TAP SIZES	Threads PER INCH	EDP NUMBERS			LIST PRICE EACH
		TAPER	PLUG	BOTTOM	
1/4	24	22E116T24	22E116P24	22E116B24	$7.06
1/4	32	22E116T32	22E116P32	22E116B32	7.06
1/4	36	22E116T36	22E116P36	22E116B36	7.06
1/4	40	22E116T40	22E116P40	22E116B40	7.06
9/32	32	22E118T32	22E118P32	22E118B32	8.63
9/32	40	22E118T40	22E118P40	22E118B40	8.63
5/16	20	22E120T20	22E120P20	22E120B20	8.63
5/16	22	22E120T22	22E120P22	22E120B22	8.63
5/16	32	22E120T32	22E120P32	22E120B32	8.63
5/16	36	22E120T36	22E120P36	22E120B36	8.63
5/16	40	22E120T40	22E120P40	22E120B40	8.63
11/32	32	22E122T32	22E122P32	22E122B32	9.94
3/8	14	22E124T14	22E124P14	22E124B14	9.94
3/8	18	22E124T18	22E124P18	22E124B18	9.94
3/8	20	22E124T20	22E124P20	22E124B20	9.94
3/8	32	22E124T32	22E124P32	22E124B32	9.94
7/16	24	22E128T24	22E128P24	22E128B24	15.82
7/16	27	22E128T27	22E128P27	22E128B27	15.82
15/32	32	22E130T32	22E130P32	22E130B32	17.78
1/2	12	22E132T12	22E132P12	22E132B12	17.78
1/2	14	22E132T14	22E132P14	22E132B14	17.78
1/2	16	22E132T16	22E132P16	22E132B16	17.78
1/2	18	22E132T18	22E132P18	22E132B18	17.78
1/2	24	22E132T24	22E132P24	22E132B24	17.78
1/2	28	22E132T28	22E132P28	22E132B28	17.78
1/2	32	22E132T32	22E132P32	22E132B32	17.78
1/2	40	22E132T40	22E132P40	22E132B40	17.78
9/16	16	22E136T16	22E136P16	22E136B16	21.58
9/16	20	22E136T20	22E136P20	22E136B20	21.58
9/16	24	22E136T24	22E136P24	22E136B24	21.58
9/16	27	22E136T27	22E136P27	22E136B27	21.58
9/16	28	22E136T28	22E136P28	22E136B28	21.58
9/16	30	22E136T30	22E136P30	22E136B30	21.58
9/16	32	22E136T32	22E136P32	22E136B32	21.58
9/16	40	22E136T40	22E136P40	22E136B40	21.58
5/8	12	22E140T12	22E140P12	22E140B12	26.41
5/8	14	22E140T14	22E140P14	22E140B14	26.41
5/8	16	22E140T16	22E140P16	22E140B16	26.41
5/8	20	22E140T20	22E140P20	22E140B20	26.41
5/8	24	22E140T24	22E140P24	22E140B24	26.41
5/8	26	22E140T26	22E140P26	22E140B26	26.41
5/8	27	22E140T27	22E140P27	22E140B27	26.41
5/8	28	22E140T28	22E140P28	22E140B28	26.41
5/8	32	22E140T32	22E140P32	22E140B32	26.41
5/8	36	22E140T36	22E140P36	22E140B36	26.41
5/8	40	22E140T40	22E140P40	22E140B40	26.41

TAP SIZES	Threads PER INCH	EDP NUMBERS			LIST PRICE EACH
		TAPER	PLUG	BOTTOM	
11/16	12	22E144T12	22E144P12	22E144B12	$29.15
11/16	18	22E144T18	22E144P18	22E144B18	29.15
11/16	20	22E144T20	22E144P20	22E144B20	29.15
11/16	24	22E144T24	22E144P24	22E144B24	29.15
11/16	27	22E144T27	22E144P27	22E144B27	29.15
3/4	12	22E148T12	22E148P12	22E148B12	37.27
3/4	14	22E148T14	22E148P14	22E148B14	37.27
3/4	18	22E148T18	22E148P18	22E148B18	37.27
3/4	20	22E148T20	22E148P20	22E148B20	37.27
3/4	24	22E148T24	22E148P24	22E148B24	37.27
3/4	26	22E148T26	22E148P26	22E148B26	37.27
3/4	27	22E148T27	22E148P27	22E148B27	37.27
3/4	28	22E148T28	22E148P28	22E148B28	37.27
3/4	32	22E148T32	22E148P32	22E148B32	37.27
3/4	36	22E148T36	22E148P36	22E148B36	37.27
13/16	12	22E152T12	22E152P12	22E152B12	47.20
13/16	14	22E152T14	22E152P14	22E152B14	47.20
13/16	16	22E152T16	22E152P16	22E152B16	47.20
13/16	18	22E152T18	22E152P18	22E152B18	47.20
13/16	20	22E152T20	22E152P20	22E152B20	47.20
13/16	24	22E152T24	22E152P24	22E152B24	47.20
13/16	28	22E152T28	22E152P28	22E152B28	52.57
13/16	32	22E152T32	22E152P32	22E152B32	52.57
13/16	36	22E152T36	22E152P36	22E152B36	52.57
7/8	16	22E156T16	22E156P16	22E156B16	51.39
7/8	18	22E156T18	22E156P18	22E156B18	51.39
7/8	20	22E156T20	22E156P20	22E156B20	51.39
7/8	24	22E156T24	22E156P24	22E156B24	51.39
7/8	27	22E156T27	22E156P27	22E156B27	51.39
7/8	32	22E156T32	22E156P32	22E156B32	51.39
7/8	40	22E156T40	22E156P40	22E156B40	51.39
15/16	12	22E160T12	22E160P12	22E160B12	58.73
15/16	16	22E160T16	22E160P16	22E160B16	58.73
15/16	18	22E160T18	22E160P18	22E160B18	58.73
15/16	20	22E160T20	22E160P20	22E160B20	58.73
15/16	24	22E160T24	22E160P24	22E160B24	58.73
15/16	27	22E160T27	22E160P27	22E160B27	58.73
15/16	32	22E160T32	22E160P32	22E160B32	58.73
1"	10	22E164T10	22E164P10	22E164B10	62.77
1"	16	22E164T16	22E164P16	22E164B16	62.77
1"	18	22E164T18	22E164P18	22E164B18	62.77
1"	20	22E164T20	22E164P20	22E164B20	62.77
1"	24	22E164T24	22E164P24	22E164B24	62.77
1"	26	22E164T26	22E164P26	22E164B26	62.77
1"	27	22E164T27	22E164P27	22E164B27	62.77
1"	28	22E164T28	22E164P28	22E164B28	62.77
1"	32	22E164T32	22E164P32	22E164B32	62.77
1"	36	22E164T36	22E164P36	22E164B36	62.77
1"	40	22E164T40	22E164P40	22E164B40	62.77

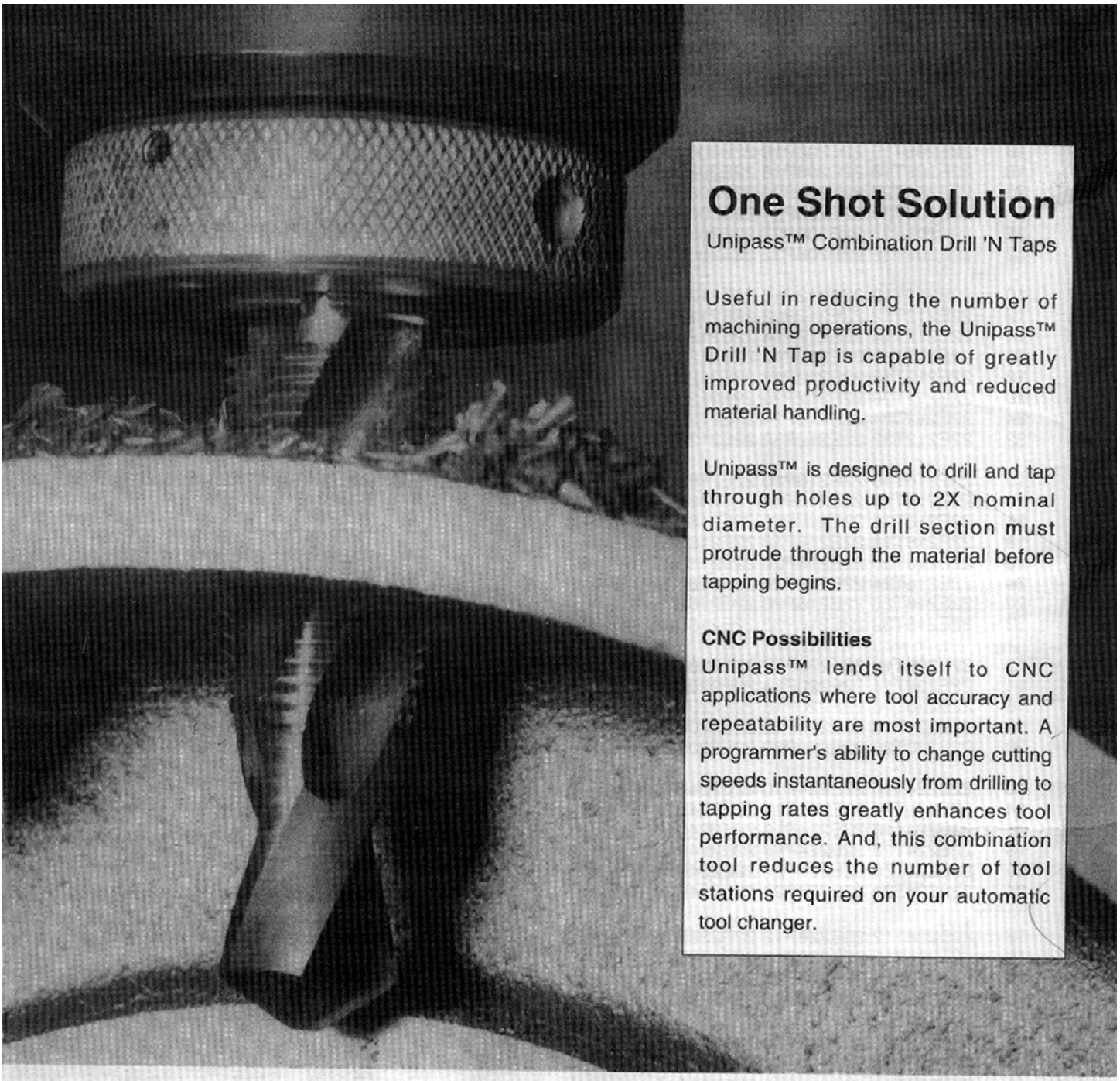
Please specify Taper, Plug or Bottoming

Continued On Next Page

TAP SIZES	NC	EDP NUMBERS			LIST PRICE
		TAPER	PLUG	BOTTOM	
1-1/16	10	22E204T10	22E204P10	22E204B10	93.49
1-1/16	12	22E204T12	22E204P12	22E204B12	93.49
1-1/16	14	22E204T14	22E204P14	22E204B14	106.64
1-1/16	16	22E204T16	22E204P16	22E204B16	106.64
1-1/16	18	22E204T18	22E204P18	22E204B18	106.64
1-1/16	20	22E204T20	22E204P20	22E204B20	106.64
1-1/16	24	22E204T24	22E204P24	22E204B24	106.64
1-1/16	32	22E204T32	22E204P32	22E204B32	106.64
1-1/8	10	22E208T10	22E208P10	22E208B10	106.64
1-1/8	16	22E208T16	22E208P16	22E208B16	106.64
1-1/8	18	22E208T18	22E208P18	22E208B18	106.64
1-1/8	20	22E208T20	22E208P20	22E208B20	106.64
1-1/8	24	22E208T24	22E208P24	22E208B24	106.64
1-1/8	28	22E208T27	22E208P27	22E208B27	106.64
1-1/8	32	22E208T32	22E208P32	22E208B32	106.64
1-3/16	10	22E212T10	22E212P10	22E212B10	138.59
1-3/16	12	22E212T12	22E212P12	22E212B12	118.62
1-3/16	14	22E212T14	22E212P14	22E212B14	135.54
1-3/16	16	22E212T16	22E212P16	22E212B16	135.54
1-3/16	18	22E212T18	22E212P18	22E212B18	135.54
1-3/16	20	22E212T20	22E212P20	22E212B20	135.54
1-3/16	24	22E212T24	22E212P24	22E212B24	135.54
1-1/16	32	22E212T32	22E212P32	22E212B32	135.54
1-1/4	10	22E216T10	22E216P10	22E216B10	138.58
1-1/4	14	22E216T14	22E216P14	22E216B14	135.54
1-1/4	16	22E216T16	22E216P16	22E216B16	135.54
1-1/4	18	22E216T18	22E216P18	22E216B18	135.54
1-1/4	20	22E216T20	22E216P20	22E216B20	135.54
1-1/4	24	22E216T24	22E216P24	22E216B24	135.54
1-1/4	26	22E216T26	22E216P26	22E216B26	135.54
1-1/4	32	22E216T32	22E216P32	22E216B32	135.54
1-5/16	12	22E220T12	22E220P12	22E220B12	149.16
1-5/16	14	22E220T14	22E220P14	22E220B14	171.48
1-5/16	16	22E220T16	22E220P16	22E220B16	171.48
1-5/16	18	22E220T18	22E220P18	22E220B18	171.48
1-5/16	20	22E220T20	22E220P20	22E220B20	171.48
1-3/8	10	22E224T10	22E224P10	22E224B10	172.18
1-3/8	14	22E224T14	22E224P14	22E224B14	171.48
1-3/8	16	22E224T16	22E224P16	22E224B16	171.48
1-3/8	18	22E224T18	22E224P18	22E224B18	171.48
1-3/8	20	22E224T20	22E224P20	22E224B20	171.48
1-3/8	24	22E224T24	22E224P24	22E224B24	171.48
1-7/16	12	22E228T12	22E228P12	22E228B12	210.00
1-7/16	16	22E228T16	22E228P16	22E228B16	210.00
1-7/16	18	22E228T18	22E228P18	22E228B18	210.00
1-7/16	20	22E228T20	22E228P20	22E228B20	210.00
1-1/2	10	22E232T10	22E232P10	22E232B10	213.99
1-1/2	14	22E232T14	22E232P14	22E232B14	211.68
1-1/2	16	22E232T16	22E232P16	22E232B16	211.68
1-1/2	18	22E232T18	22E232P18	22E232B18	211.68
1-1/2	20	22E232T20	22E232P20	22E232B20	211.68
1-1/2	24	22E232T24	22E232P24	22E232B24	211.68
1-1/2	32	22E232T32	22E232P32	22E232B32	211.68
1-9/16	12	22E236T12	22E236P12	22E236B12	225.97
1-9/16	16	22E236T16	22E236P16	22E236B16	225.97
1-9/16	18	22E236T18	22E236P18	22E236B18	225.97
1-9/16	20	22E236T20	22E236P20	22E236B20	225.97
1-5/8	5-1/2	22E240T55	22E240P55	22E240B55	197.54
1-5/8	10	22E240T10	22E240P10	22E240B10	243.12
1-5/8	12	22E240T12	22E240P12	22E240B12	163.26
1-5/8	16	22E240T16	22E240P16	22E240B16	238.42
1-5/8	18	22E240T18	22E240P18	22E240B18	238.42
1-5/8	20	22E240T20	22E240P20	22E240B20	

TAP SIZES	NC	EDP NUMBERS			LIST PRICE
		TAPER	PLUG	BOTTOM	
1-11/16	12	22E244T12	22E244P12	22E244B12	238.42
1-11/16	16	22E244T16	22E244P16	22E244B16	238.42
1-11/16	18	22E244T18	22E244P18	22E244B18	238.42
1-11/16	20	22E244T20	22E244P20	22E244B20	238.42
1-3/4	5	22E248T05	22E248P05	22E248B05	229.97
1-3/4	6	22E248T06	22E248P06	22E248B06	261.91
1-3/4	10	22E248T10	22E248P10	22E248B10	266.61
1-3/4	12	22E248T12	22E248P12	22E248B12	181.34
1-3/4	14	22E248T14	22E248P14	22E248B14	261.91
1-3/4	16	22E248T16	22E248P16	22E248B16	261.91
1-3/4	18	22E248T18	22E248P18	22E248B18	261.91
1-3/4	20	22E248T20	22E248P20	22E248B20	204.83
1-3/4	24	22E248T24	22E248P24	22E248B24	204.83
1-13/16	16	22E252T16	22E252P16	22E252B16	261.91
1-7/8	5	22E256T05	22E256P05	22E256B05	313.59
1-7/8	10	22E256T10	22E256P10	22E256B10	317.12
1-7/8	12	22E256T12	22E256P12	22E256B12	200.37
1-7/8	16	22E256T16	22E256P16	22E256B16	226.44
1-7/8	18	22E256T18	22E256P18	22E256B18	226.44
1-7/8	20	22E256T20	22E256P20	22E256B20	226.44
1-15/16	12	22E260T12	22E260P12	22E260B12	256.04
1-15/16	16	22E260T16	22E260P16	22E260B16	256.04
1-15/16	18	22E260T18	22E260P18	22E260B18	256.04
2"	4-1/2	22E264T45	22E264P45	22E264B45	295.97
2"	6	22E264T06	22E264P06	22E264B06	295.97
2"	10	22E264T10	22E264P10	22E264B10	339.43
2"	12	22E264T12	22E264P12	22E264B12	217.52
2"	14	22E264T14	22E264P14	22E264B14	246.65
2"	16	22E264T16	22E264P16	22E264B16	246.65
2"	18	22E264T18	22E264P18	22E264B18	246.65
2"	20	22E264T20	22E264P20	22E264B20	246.65
2-1/16	12	22E304T12	22E304P12	22E304B12	287.75
2-1/8	12	22E308T12	22E308P12	22E308B12	300.67
2-1/4	4-1/2	22E316T45	22E316P45	22E316B45	408.73
2-1/4	12	22E316T12	22E316P12	22E316B12	313.59
2-1/4	14	22E316T14	22E316P14	22E316B14	361.75
2-1/4	16	22E316T16	22E316P16	22E316B16	361.75
2-1/4	18	22E316T18	22E316P18	22E316B18	361.75
2-5/16	12	22E320T12	22E320P12	22E320B12	530.51
2-5/16	14	22E320T14	22E320P14	22E320B14	530.51
2-3/8	12	22E324T12	22E324P12	22E324B12	371.14
2-3/8	16	22E324T16	22E324P16	22E324B16	371.14
2-3/8	18	22E324T18	22E324P18	22E324B18	371.14
2-1/2	4	22E332T04	22E332P04	22E332B04	486.24
2-1/2	12	22E332T12	22E332P12	22E332B12	382.29
2-1/2	16	22E332T16	22E332P16	22E332B16	460.60
2-5/8	12	22E340T12	22E340P12	22E340B12	530.21
2-5/8	16	22E340T16	22E340P16	22E340B16	530.21
2-3/4	12	22E348T12	22E348P12	22E348B12	451.01
2-3/4	16	22E348T16	22E348P16	22E348B16	716.45
2-7/8	12	22E356T12	22E356P12	22E356B12	772.82
3"	4	22E364T04	22E364P04	22E364B04	711.75
3"	12	22E364T12	22E364P12	22E364B12	516.78
3"	16	22E364T16	22E364P16	22E364B16	819.80
3"	18	22E364T18	22E364P18	22E364B18	819.80
3-1/8	12	22E408T12	22E408P12	22E408B12	1,019.47
3-1/4	12	22E416T12	22E416P12	22E416B12	1,019.47
3-3/8	12	22E424T12	22E424P12	22E424B12	1,059.40
3-1/2	4	22E432T04	22E432P04	22E432B04	1,059.40
3-1/2	12	22E432T12	22E432P12	22E432B12	749.33
3-3/4	12	22E448T12	22E448P12	22E448B12	1,296.65
4"	12	22E464T12	22E464P12	22E464B12	920.81

Special Unipass™ Drill 'N Taps



One Shot Solution

Unipass™ Combination Drill 'N Taps

Useful in reducing the number of machining operations, the Unipass™ Drill 'N Tap is capable of greatly improved productivity and reduced material handling.

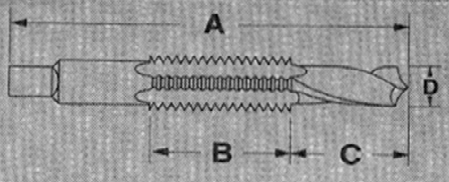
Unipass™ is designed to drill and tap through holes up to 2X nominal diameter. The drill section must protrude through the material before tapping begins.

CNC Possibilities

Unipass™ lends itself to CNC applications where tool accuracy and repeatability are most important. A programmer's ability to change cutting speeds instantaneously from drilling to tapping rates greatly enhances tool performance. And, this combination tool reduces the number of tool stations required on your automatic tool changer.

How to Order Special Unipass™ Drill 'N Taps

Although DrillCo Cutting Tools has a complete size range of standard Unipass™ tools in UNC, UNF, metric and pipe, there are many situations requiring special variations. If you have a special requirement, provide the following information:



A-Overall Length
B-Thread Length
C-Drill Length
D-Drill Diameter
(indicate straight or spiral flute)

Combined Tap and Drill

MADE IN USA **HIGH SPEED M-7 STEEL** **GROUND THREAD**

COATING TiN AVAILABLE



Performing two operations with a single tool will usually reduce the manufacturing cost of a part. These Combined Tap and Drills are designed for this purpose. The drill section produces a hole correctly sized for approximately 75% thread. They can be used on multi-spindle or hand held drill operations. The 118° helical point eliminates the need for a center punch or center drilling.
Packaging: 4-40 thru 1/4-28, 12 per box. 5/16-18 thru 1/2-20, 6 per box.

MACHINE & FRACTIONAL SIZES — SERIES 2050

TAP DIMENSIONS			DRILL DIMENSIONS			OVERALL LENGTH	EDP NUMBERS	LIST PRICE
TAP SIZE	THREADS PER INCH	THREAD LENGTH	DRILL SIZE DECIMAL	DRILL SIZE	FLUTE LENGTH			
4	40	9/16	.0890	43	1/4	1-7/8	205A004C	**$32.49**
4	48	9/16	.0930	---	1/4	1-7/8	205A004F	**35.10**
5	40	5/8	.1015	38	9/32	1-15/16	205A005C	**32.49**
5	44	5/8	.1040	37	9/32	1-15/16	205A005F	**35.10**
6	32	11/16	.1095	---	5/16	2"	205A006C	**32.49**
6	40	11/16	.1150	---	5/16	2"	205A006F	**35.10**
8	32	3/4	.1360	29	3/8	2-1/8	205A008C	**32.49**
8	36	3/4	.1385	---	3/8	2-1/8	205A008F	**32.49**
10	24	7/8	.1520	24	13/32	2-3/8	205A010C	**32.49**
10	32	7/8	.1610	20	13/32	2-3/8	205A010F	**32.49**
12	24	7/8	.1770	16	15/32	2-3/8	205A012C	**32.49**
12	28	7/8	.1835	---	15/32	2-3/8	205A012F	**35.10**
1/4	20	15/16	.2010	7	17/32	2-1/2	205A116C	**32.49**
1/4	28	15/16	.2175	---	17/32	2-1/2	205A116F	**32.49**
5/16	18	1-1/8	.2570	F	11/16	3"	205A120C	**45.24**
5/16	24	1-1/8	.2720	I	11/16	3"	205A120F	**45.24**
3/8	16	1-1/4	.3125	5/16	13/16	3-1/2	205A124C	**54.81**
3/8	24	1-1/4	.3345	---	13/16	3-1/2	205A124F	**54.81**
7/16	14	1-7/16	.3680	---	1"	3-7/8	205A128C	**69.56**
7/16	20	1-7/16	.3890	---	1"	3-7/8	205A128F	**69.56**
1/2	13	1-21/32	.4250	---	1-1/8	4-1/4	205A132C	**78.56**
1/2	20	1-21/32	.4510	---	1-1/8	4-1/4	205A132F	**78.56**



Packaging: 1/16-27 & 1/8-27, 12 per box. 1/4-18, 6 per box. 3/8-18, 3 per box. 1/2-14 thru 1"-11-1/2, individually packaged.

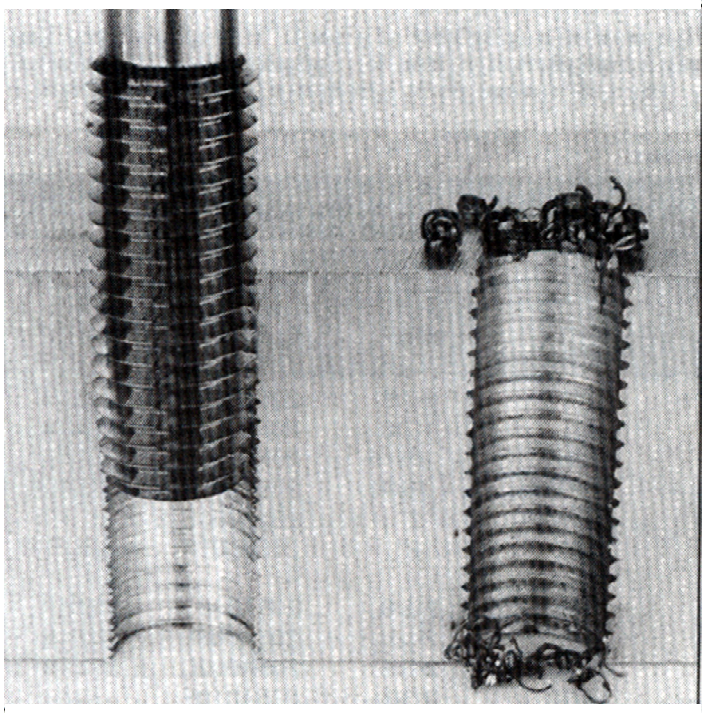
TAPER PIPE SIZES — SERIES 2960

TAP DIMENSIONS		DRILL DIMENSIONS		OVERALL LENGTH	EDP NUMBERS	LIST PRICE
TAP SIZE	THREAD LENGTH	DRILL SIZE	FLUTE LENGTH			
1/16-27	11/16	1/4	1/2	2-1/2	296A104	**$140.29**
1/8-27	3/4	R	3/4	2-13/16	296A108	**150.73**
1/4-18	1-1/16	7/16	7/8	3-5/16	296A116	**156.95**
3/8-18	1-1/16	37/64	15/16	3-1/2	296A124	**237.51**
1/2-14	1-3/8	45/64	1"	4-1/8	296A132	**299.85**
3/4-14	1-3/8	59/64	1-1/8	4-3/8	296A148	**299.85**
1"-11-1/2	1-3/4	1-5/32	1-1/4	5"	296A164	**505.69**

Sur—Form Thread Forming Taps

HERE'S THE *Sur—Form* DIFFERENCE

COLD–FORMING VS CUTTING



Sur–Form cold forming taps do not cut threads like conventional taps. They displace metal without removing it, whereas conventional cutting taps actually remove the metal in the form of chips

The above aluminum alloy test block was tapped with a ***Sur–Form*** on the left and a coonventional tap on the right. Because ***Sur–Form*** taps produce no chips, you avoid the problem of metal chip disposal.

THE *Sur–Form* CHOICE IS A SIMPLE ONE. After extensive research, it was detected, that materials such as aluminum, brass, copper, low carbon steels, zinc and 302, 303 stainless steel are well-suited for tapping with a cold-forming tool.

Cold forming **ELIMINATES THE PROBLEM OF CHIP DISPOSAL.** Thus many blind hole applications can be solved with a cold-forming tap.

Sur–Form taps produce **BETTER THREADS** because they, 1) produce no chips that cause over-loading and oversized threads; 2) eliminates the problem of tearing threads; 3) improve flank finish due to the cold-forming process.

Sur–Form taps **LAST UP TO FIVE TIMES LONGER** than conventional taps. No flutes means increased thread strength and less tap breakage.

LUBRICATION GROOVES enable air to escape and the coolant to penetrate the work area.

In most cases, **SPEED CAN BE INCREASED** by 200% with a ***Sur–Form*** tap compared to a conventional one.

Sur–Form TAP DRILL SIZES

TAP SIZE	T.P.I. NC / NF	75% THREAD THEOR. HOLE SIZE	75% THREAD NEAREST DRILL SIZE	75% THREAD DECIMAL EQUIV.	65% THREAD THEOR. HOLE SIZE	65% THREAD NEAREST DRILL SIZE	65% THREAD DECIMAL EQUIV.	55% THREAD THEOR. HOLE SIZE	55% THREAD NEAREST DRILL SIZE	55% THREAD DECIMAL EQUIV.
0	* / *	*	*	*	*	*	*	*	*	*
	80	.0536	1.35mm	.0531	.0545	54	.0550	.0553	54	.0550
1	64	.0650	1.65mm	.0650	.0661	1.65mm	.0650	.0672	51	.0670
	72	.0659	1.65mm	.0650	.0669	1.7mm	.0669	.0678	51	.0670
2	56	.0769	1.95mm	.0768	.0781	5/64	.0781	.0793	2mm	.0787
	64	.0780	5/64	.0781	.0791	2mm	.0787	.0802	2.05mm	.0807
3	48	.0884	2.25mm	.0886	.0898	43	.0890	.0912	2.3mm	.0906
	56	.0899	43	.0890	.0911	2.3mm	.0906	.0923	2.35mm	.0925
4	40	.0992	39	.0995	.1009	39	.0995	.1026	2.6mm	.1024
	48	.1014	38	.1015	.1028	2.6mm	.1024	.1042	28	.1045
5	40	.1122	34	.1100	.1139	33	.1130	.1156	32	.1160
	44	.1134	33	.1130	.1150	2.9mm	.1142	.1165	32	.1160
6	32	.1221	3.10mm	.1220	.1242	1/8	.1250	.1263	3.2mm	.1260
	40	.1252	1/8	.1250	.1269	3.2mm	.1260	.1288	30	.1285
8	32	.1481	3.75mm	.1476	.1502	3.8mm	.1496	.1523	24	.1520
	36	.1498	25	.1495	.1517	24	.1520	.1536	3.9mm	.1535
10	24	.1687	4.3mm	.1693	.1716	11/64	.1719	.1744	17	.1730
	32	.1741	4.4mm	.1732	.1762	16	.1770	.1783	15	.1800

TAP SIZE	T.P.I. NC / NF	75% THREAD THEOR. HOLE SIZE	75% THREAD NEAREST DRILL SIZE	75% THREAD DECIMAL EQUIV.	65% THREAD THEOR. HOLE SIZE	65% THREAD NEAREST DRILL SIZE	65% THREAD DECIMAL EQUIV.	55% THREAD THEOR. HOLE SIZE	55% THREAD NEAREST DRILL SIZE	55% THREAD DECIMAL EQUIV.
12	24	.1947	10	.1935	.1976	5mm	.1968	.2004	5.1mm	.2008
	28	.1978	5mm	.1968	.2002	8	.1990	.2026	13/64	.2031
1/4	20	.2245	5.7mm	.2244	.2279	1	.2280	.2313	5.9mm	.2323
	28	.2318	5.8mm	.2323	.2342	A	.2340	.2366	6mm	.2362
5/16	18	.2842	7.2mm	.2835	.2879	7.3mm	.2874	.2917	7.4mm	.2913
	24	.2912	7.4mm	.2913	.2941	M	.2950	.2969	19/64	.2969
3/8	16	.3431	8.7mm	.3425	.3474	S	.3480	.3516	8.9mm	.3504
	24	.3537	9mm	.3543	.3566	9mm	.3543	.3594	23/64	.3594
7/16	14	.4011	X	.3970	.4059	Y	.4040	.4108	13/32	.4062
	20	.4120	Z	.4130	.4154	10.5mm	.4134	.4188	*	*
1/2	13	.4608	*	*	.4660	*	*	.4712	15/32	.4688
	20	.4745	12mm	.4724	.4779	*	*	.4813	*	*
9/16	12	.5200	33/64	.5156	.5257	*	*	.5313	17/32	.5312
	18	.5342	13.5mm	.5315	.5379	*	*	.5417	*	*
5/8	11	.5786	37/64	.5781	.5848	*	*	.5910	15mm	.5906
	18	.5967	19/32	.5938	.6004	*	*	.6042	*	*
3/4	10	.6990	*	*	.7058	45/64	.7031	.7126	*	*
	16	.7181	23/32	.7188	.7224	*	*	.7266	*	*

Sur—Form Thread Forming Taps

MACHINE & FRACTIONAL HIGH SPEED M-7 STEEL GROUND THREAD



Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 5/8", 3 per box. 3/4" individually packaged.

MADE IN USA SERIES 2090 PLUG & BOTT CHAMFER

TAP SIZE	NC	NF	UNC UNF	CLASS of FIT	EDP NO PLUG	EDP N0 BOTTOM	LIST PRICE
0	--	80	UNF	2B-3G	209A000FP	209A000FB	**$29.62**
1	64	--	UNC	2B-3G	209A001CP	209A001CB	**29.62**
1	--	72	UNF	2B-3G	209A001FP	209A001FB	**29.62**
2	56	--	UNC	2B-3G	209A002CP	209A002CB	**29.43**
2	--	64	UNF	2B-3G	209A002FP	209A002FB	**29.43**
3	48	--	UNC	2B-3G	209A003CP	209A003CB	**29.43**
3	--	56	UNF	2B-3G	209A003FP	209A003FB	**29.43**
4	40	--	UNC	2B-3G	209A004CP	209A004CB	**26.95**
4	--	48	UNF	2B-3G	209A004FP	209A004FB	**26.95**
5	40	--	UNC	2B-3G	209A005CP	209A005CB	**26.95**
5	--	44	UNF	2B-3G	209A005FP	209A005FB	**26.95**
6	32	--	UNC	2B-3G	209A006CP	209A006CB	**21.99**
6	32	--	UNC	Pre-Plate	209A006CPP	209A006CPB	**21.99**
6	--	40	UNF	2B-3G	209A006FP	209A006FB	**21.99**
8	32	--	UNC	2B-3G	209A008CP	209A008CB	**21.99**
8	32	--	UNC	Pre-Plate	209A008CPP	209A008CPB	**21.99**
8	--	36	UNF	2B-3G	209A008FP	209A008FB	**21.99**
10	24	--	UNC	2B-3G	209A010CP	209A010CB	**21.99**
10	24	--	UNC	Pre-Plate	209A010CPP	209A010CPB	**21.99**
10	--	32	UNF	2B-3G	209A010FP	209A010FB	**21.99**
10	--	32	UNF	Pre-Plate	209A010FPP	209A010FPB	**21.99**
12	24	--	UNC	2B-3G	209A012CP	209A012CB	**23.29**
12	--	28	UNF	2B-3B	209A012FP	209A012FB	**23.29**
1/4	20	--	UNC	2B-3G	209A116CP	209A116CB	**22.45**
1/4	20	--	UNC	Pre-Plate	209A116CPP	209A116CPB	**22.45**
1/4	--	28	UNF	2B-3G	209A116FP	209A116FB	**22.45**
1/4	--	28	UNF	Pre-Plate	209A116FPP	209A116FPB	**22.45**
5/16	18	--	UNC	2B-3G	209A120CP	209A120CB	**25.97**
5/16	18	--	UNC	Pre-Plate	209A120CPP	209A120CPB	**25.97**
5/16	--	24	UNF	2B-3G	209A120FP	209A120FB	**25.97**
5/16	--	24	UNF	Pre-Plate	209A120FPP	209A120FPB	**25.97**
3/8	16	--	UNC	2B-3G	209A124CP	209A124CB	**29.43**
3/8	16	--	UNC	Pre-Plate	209A124CPP	209A124CPB	**29.43**
3/8	--	24	UNF	2B-3G	209A124FP	209A124FB	**29.43**
3/8	--	24	UNF	Pre-Plate	209A124FPP	209A124FPB	**29.43**
7/16	14	--	UNC	2B-3G	209A128CP	209A128CB	**43.46**
7/16	--	20	UNF	2B-3G	209A128FP	209A128FB	**43.46**
1/2	13	--	UNC	2B-3G	209A132CP	209A132CB	**50.70**
1/2	--	20	UNF	2B-3G	209A132FP	209A132FB	**50.70**
5/8	11	--	UNC	2B-3G	209A140CP	209A140CB	**72.49**
5/8	11	--	UNF	Pre-Plate	209A140CPP	209A140CPB	**72.49**
5/8	--	18	UNF	2B-3G	209A140FP	209A140FB	**72.49**
5/8	--	18	UNF	Pre-Plate	209A140FPP	209A140FPB	**72.49**
3/4	10	--	UNC	2B-3G	209A148CP	209A148CB	**101.72**
3/4	10	--	UNC	Pre-Plate	209A148CPP	209A148CPB	**101.72**
3/4	--	16	UNF	2B-3G	209A148FP	209A148FB	**101.72**
3/4	--	16	UNF	Pre-Plate	209A148FPP	209A148FPB	**101.72**

Formula for Special *Sur–Form* Tap Drill Size

Basic Major Diameter Minus X = Drill Size

$X = \frac{.510}{TPI}$ for 75% Thread

$X = \frac{.476}{TPI}$ for 70% Thread

$X = \frac{.446}{TPI}$ for 65% Thread

$X = \frac{.408}{TPI}$ for 60% Thread

$X = \frac{.374}{TPI}$ for 55% Thread

Example:
(Using 75% formula for 10-32)

$$\frac{.510}{32\ (pitch)} = \frac{X}{.0159}$$

(#10 = .190)
so
.190 - .0159 = **.174** (drill size

Taper Pipe Taps

USA & IMPORT HIGH SPEED STEEL GROUND THREAD



The nominal size of a Taper Pipe Tap is that of the pipe fitting to be tapped, not the actual size of the tap. The thread tapers 3/4 of an inch per foot. 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 are used for hand and machine tapping of straight pipe threads.

Packaging: All sizes individually packaged.

TAPER PIPE (NPT) IMPORT SERIES 2900E USA SERIES 2900

SIZE	THREADS PER INCH	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	IMPORT EDP NUMBERS	IMPORT LIST PRICE	USA EDP NUMBERS	USA LIST PRICE
1/16	27	4	11/16	2-1/8	290E104	**$20.20**	290A104	**$32.49**
1/8	27	4	3/4	2-1/8	290E108	**20.20**	290A108	**32.49**
1/4	18	4	1-1/16	2-7/16	290E116	**22.67**	290A116	**35.84**
3/8	18	4	1-1/16	2-9/16	290E124	**29.36**	290A124	**43.07**
1/2	14	4	1-3/8	3-1/8	290E132	**46.86**	290A132	**67.73**
3/4	14	5	1-3/8	3-1/4	290E148	**73.05**	290A148	**96.57**
1''	11-1/2	5	1-3/4	3-3/4	290E164	**110.17**	290A164	**146.42**
1-1/4	11-1/2	5	1-3/4	4"	290E216	**155.97**	290A216	**206.52**
1-1/2	11-1/2	7	1-3/4	4-1/4	290E232	**213.05**	290A232	**277.77**
2''	11-1/2	7	1-3/4	4-1/2	290E264	**286.58**	290A264	**377.93**
2-1/2	8	8	2-9/16	5-1/2	290E332	**697.52**	290A332	**672.08**
3''	8	8	2-5/8	6"	290E364	**988.10**	290A364	**1,194.08**
3-1/2	8	8	2-11/16	6-1/2	290E432	**1,192.99**	290A432	**1,344.15**
4''	8	8	2-3/4	6-3/4	290E464	**1,627.99**	290A464	**2,022.75**

ALSO AVALIABLE IN NPTF & ANPT



Packaging: All sizes individually packaged.

INTERRUPTED THREAD (NPT) IMPORT SERIES 2930E USA SERIES 2930

SIZE	THREADS PER INCH	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	2930E EDP NUMBERS	LIST PRICE	2930 EDP NUMBERS	LIST PRICE
1/16	27	5	11/16	2-1/8	293E104	**$26.54**	-----	**$------**
1/8	27	5	3/4	2-1/8	293E108	**30.45**	293A108	**45.41**
1/4	18	5	1-1/16	2-7/16	293E116	**32.63**	293A116	**48.48**
3/8	18	5	1-1/16	2-9/16	293E124	**43.72**	293A124	**58.86**
1/2	14	5	1-3/8	3-1/8	293E132	**71.78**	293A132	**90.18**
3/4	14	5	1-3/8	3-1/4	293E148	**101.14**	293A148	**117.58**
1''	11-1/2	5	1-3/4	3-3/4	293E164	**156.17**	293A164	**193.60**
1-1/4	11-1/2	5	1-3/4	4"	293E216	**217.94**	293A216	**275.09**
1-1/2	11-1/2	7	1-3/4	4-1/2	293E232	**295.15**	293A232	**370.23**
2''	11-1/2	7	1-3/4	4-1/2	293E264	**398.03**	293A264	**497.73**

ALSO AVALIABLE IN NPTF & ANPT



Packaging: All sizes individually packaged.

STRAIGHT PIPE (NPS) IMPORT SERIES 2950E USA SERIES 2950

SIZE	THREADS PER INCH	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	EDP NUMBERS	LIST PRICE	EDP NUMBERS	LIST PRICE
1/8	**27**	4	3/4	2-1/8	295E108	**$20.20**	295A108	**$32.49**
1/4	**18**	4	1-1/16	2-7/16	295E116	**22.67**	295A116	**35.82**
3/8	**18**	4	1-1/16	2-9/16	295E124	**33.71**	295A124	**43.07**
1/2	**14**	4	1-3/8	3-1/8	295E132	**52.20**	295A132	**67.73**
3/4	**14**	5	1-3/8	3-1/4	295E148	**74.82**	295A148	**96.57**
1"	**11-1/2**	5	1-3/4	3-3/4	295E164	**114.54**	295A164	**146.42**

ALSO AVALIABLE IN NPSF

30° Spiral Fluted Taper Pipe Tap

USA **HIGH SPEED M-7 STEEL** **GROUND THREAD**



30° SPIRAL FLUTED TAPER PIPE TAPS unique design in the flutes eliminate feeding problems. They are extremely effective when used in applications that produce long stringy chips. The action of the spiral flute lifts the chips from the hole being tapped, keeping the cutting surface and tap cooler; Therefore the 30° Spiral Fluted Pipe Tap will tap harder material at faster feed rates.

Packaging: All sizes individually packaged.

TAPER PIPE 30° SPIRAL FLUTED (NPT) SERIES 2980

SIZE	THREADS PER INCH	NUMBER OF FLUTES	LENGTH OF THREAD	OVERALL LENGTH	USA EDP NUMBERS	LIST PRICE
1/8	27	4	3/4	2-1/8	**298A108**	**$56.05**
1/4	18	4	1-1/16	2-7/16	**298A116**	**56.05**
3/8	18	4	1-1/16	2-9/16	**298A124**	**59.90**
1/2	14	4	1-3/8	3-1/8	**298A132**	**92.79**
3/4	14	5	1-3/8	3-1/4	**298A148**	**132.33**
1"	11-1/2	5	1-3/4	3-3/4	**298A164**	**202.01**
1-1/4	11-1/2	5	1-3/4	4"	**298A216**	**286.06**
1-1/2	11-1/2	7	1-3/4	4-1/4	**298A232**	**385.76**
2"	11-1/2	7	1-3/4	4-1/2	**298A264**	**548.36**

Screw Extractors

IMPORT **HIGH CARBON STEEL** **LEFT HAND SPIRAL**



These Screw Extractors are most useful in removing broken screws, bolts or other threaded items without damage to the threaded hole. A hole is first drilled into the broken part and the extractor is then inserted. By twisting to the left, the extractor will grip into the wall of the hole and the broken part can be backed out without damaging threads.

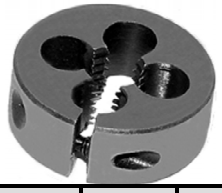
Packaging: All sizes individually packaged.

HELICAL FLUTE IMPORT SERIES 9000E

EXTRACTOR SIZES	CAPACITY INCHES		CAP MM	DRILL SIZE TO USE	EDP NUMBERS	LIST PRICE
	SCREW & BOLT SIZES	PIPE SIZES	SCREW & BOLT SIZES			
#1	3/16 to 1/4	-----	2.5 to 6.0	5/64	9000E001	**$2.44**
#2	1/4 to 5/16	-----	6.0 to 8.0	7/64	9000E002	**2.96**
#3	5/16 to 7/16	-----	8.0 to 12.0	5/32	9000E003	**3.75**
#4	7/16 to 9/16	-----	12.0 to 14.0	1/4	9000E004	**3.96**
#5	9/16 to 3/4	1/8 to 1/4	14.0 to 20.0	17/64	9000E005	**4.27**
#6	3/4 to 1"	3/8	20.0 to 24.0	13/32	9000E006	**11.10**
#7	1" to 1-3/8	1/2	24.0 to 35.0	17/32	9000E007	**17.27**
#8	1-3/8 tp 1-3/4	3/4	35.0 to 44.0	13/16	9000E008	**26.23**
#9	1-3/4 to 2-1/8	1"	44.0 to 54.0	1-1/16	9000E009	**47.46**

Adjustable Round Split Dies

IMPORT **HIGH SPEED M-2 STEEL** **SCREW ADJUSTING**



Packaging: All sizes individually packaged.

SIZE	13/16 EDP NUMBER	13/16" PRICE	1" EDP NUMBER	1" O.D. PRICE	1-1/2 EDP NUMBER	1-1/2" PRICE	2" EDP NUMBER	2" O.D. PRICE	2-1/2 EDP NUMBER	2-1/2" PRICE	3" EDP NUMBER	3" O.D. PRICE
MACHINE SCREW & FRACTIONAL SIZES											**SERIES 3000E**	
0-80	30E000FA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
1-64	30E001CA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
1-72	30E001FA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
2-56	30E002CA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
2-64	30E002FA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
3-48	30E003CA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
3-56	30E003FA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
4-40	30E004CA	**13.40**	30E004CB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
4-48	30E004FA	**13.40**	30E004FB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
5-40	30E005CA	**13.40**	30E005CB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
5-44	30E005FA	**13.40**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
6-32	30E006CA	**13.40**	30E006CB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
6-40	30E006FA	**13.40**	30E006FB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
8-32	30E008CA	**13.40**	30E008CB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
8-36	30E008FA	**13.40**	30E008FB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
10-24	30E010CA	**13.40**	30E010CB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
10-32	30E010FA	**13.40**	30E010FB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
12-24	30E012CA	**13.40**	30E012CB	**16.18**	---	**---**	---	**---**	--	**---**	---	**---**
12-28	30E012FA	**13.40**	30E012FB	**16.18**	---	**---**	---	**---**	---	**---**	---	**---**
1/4-20	30E116CA	**13.40**	30E116CB	**16.18**	30E116CC	**25.93**	30E116CD	**45.33**	---	**---**	---	**---**
1/4-28	30E116FA	**13.40**	30E116FB	**16.18**	30E116FC	**25.93**	30E116FD	**45.33**	---	**---**	---	**---**
5/16-18	30E120CA	**13.40**	30E120CB	**16.18**	30E120CC	**25.93**	30E120CD	**45.33**	---	**---**	---	**---**
5/16-24	30E120FA	**13.40**	30E120FB	**16.18**	30E120FC	**25.93**	30E120FD	**45.33**	---	**---**	---	**---**
3/8-16	---	**---**	30E124CB	**16.18**	30E124CC	**25.93**	30E124CD	**45.33**	---	**---**	---	**---**
3/8-24	---	**---**	30E124FB	**16.18**	30E124FC	**25.93**	30E124FD	**45.33**	---	**---**	---	**---**
7/16-14	---	**---**	30E128CB	**16.18**	30E128CC	**25.93**	30E128CD	**45.33**	---	**---**	---	**---**
7/16-20	---	**---**	30E128FB	**16.18**	30E128FC	**25.93**	30E128FD	**45.33**	---	**---**	---	**---**
1/2-13	---	**---**	30E132CB	**16.18**	30E132CC	**25.93**	30E132CD	**45.33**	---	**---**	---	**---**
1/2-20	---	**---**	30E132FB	**16.18**	30E132FC	**25.93**	30E132FD	**45.33**	---	**---**	---	**---**
9/16-12	---	**---**	---	**---**	30E136CC	**25.93**	30E136CD	**45.33**	---	**---**	---	**---**
9/16-18	---	**---**	---	**---**	30E136FC	**25.93**	30E136FD	**45.33**	---	**---**	---	**---**
5/8-11	---	**---**	---	**---**	30E140CC	**25.93**	30E140CD	**45.33**	---	**---**	---	**---**
5/8-18	---	**---**	---	**---**	30E140FC	**25.93**	30E140FD	**45.33**	---	**---**	---	**---**
3/4-10	---	**---**	---	**---**	30E148CC	**25.93**	30E148CD	**45.33**	---	**---**	---	**---**
3/4-16	---	**---**	---	**---**	30E148FC	**25.93**	30E148FD	**45.33**	---	**---**	---	**---**
7/8-9	---	**---**	---	**---**	---	**---**	30E156CD	**45.33**	---	**---**	---	**---**
7/8-14	---	**---**	---	**---**	---	**---**	30E156FD	**45.33**	---	**---**	---	**---**
1"-8	---	**---**	---	**---**	---	**---**	30E164CD	**45.33**	---	**---**	30E164CF	**147.03**
1"-12	---	**---**	---	**---**	---	**---**	30E164FD	**45.33**	---	**---**	30E164FF	**147.03**
1"-14	---	**---**	---	**---**	---	**---**	30E164SD	**45.33**	---	**---**	30E164SF	**147.03**
1-1/8-7	---	**---**	---	**---**	---	**---**	---	**---**	30E208CE	**88.13**	30E208CF	**147.03**
1-1/8-12	---	**---**	---	**---**	---	**---**	---	**---**	30E208FE	**88.13**	30E208FF	**147.03**
1-1/4-7	---	**---**	---	**---**	---	**---**	---	**---**	30E216CE	**88.13**	30E216CF	**147.03**
1-1/4-12	---	**---**	---	**---**	---	**---**	---	**---**	30E216FE	**88.13**	30E216FF	**147.03**
1-3/8-6	---	**---**	---	**---**	---	**---**	---	**---**	30E224CE	**88.13**	30E224CF	**147.03**
1-3/8-12	---	**---**	---	**---**	---	**---**	---	**---**	30E224FE	**88.13**	30E224FF	**147.03**
1-1/2-6	---	**---**	---	**---**	---	**---**	---	**---**	30E232CE	**88.13**	30E232CF	**147.03**
1-1/2-12	---	**---**	---	**---**	---	**---**	---	**---**	30E232FE	**88.13**	30E232FF	**147.03**
1-5/8 (5-1/2)	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E240CF	**147.03**
1-5/8-12	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E240FF	**147.03**
1-3/4-5	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E248CF	**147.03**
1-3/4-12	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E248FF	**147.03**
1-7/8-5	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E256CF	**147.03**
1-7/8-12	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E256FF	**147.03**
2" (4-1/2)	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E264CF	**147.03**
2"-12	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	30E264FF	**147.03**

Round Adj. Dies from 2-1/8" thru 3-1/2" available.

Continued on next page

SIZE	13/16 EDP NUMBER	13/16" PRICE	1" EDP NUMBER	1" O.D. PRICE	1-1/2 EDP NUMBER	1-1/2" PRICE	2" EDP NUMBER	2" O.D. PRICE	2-1/2 EDP NUMBER	2-1/2" PRICE	3" EDP NUMBER	3" O.D. PRICE
METRIC SIZES												
1mm x 0.25	31E010AA	**25.58**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
1.6mmx0.35	31E016AA	**25.58**	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**
2.0mmx0.40	31E020AA	**25.58**	31E020AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
2.2mmx0.45	---	**---**	31E022AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
2.3mm x 0.4	---	**---**	31E023AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
2.5mmx0.45	31E025AA	**25.58**	31E025AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
2.6mmx0.45	---	**---**	31E026AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
3mm x 0.50	---	**---**	31E030AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
3.5mm x 0.5	---	**---**	31E035AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
3.5mm x 0.6	---	**---**	31E035BB	**26.80**	---	**---**	---	**---**	---	**---**		
											---	**---**
4mm x 0.50	31E040AA	**21.45**	31E040AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
4mm x 0.70	31E040BA	**21.45**	31E040BB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
4.5mm x 0.5	---	**---**	31E045AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
4.5mmx0.75	---	**---**	31E045BB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
5mm x 0.50	---	**---**	31E050AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
5mm x 0.80	31E050BA	**21.45**	31E050BB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
5mm x 1.00	---	**---**	31E050CB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
6mm x 0.50	---	**---**	31E060AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
6mm x 0.75	---	**---**	31E060BB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
6mm x 1.00	---	**---**	31E060CB	**26.80**	---	**---**	---	**---**	---	**---**		
											---	**---**
7mm x 0.75	---	**---**	31E070AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
7mm x 1.00	---	**---**	31E070BB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
8mm x 0.75	---	**---**	31E080AB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
8mm x 1.00	---	**---**	31E080BB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
8mm x 1.25	---	**---**	31E080CB	**26.80**	---	**---**	---	**---**	---	**---**	---	**---**
9mm x 1.00	---	**---**	---	**---**	31E090AC	**42.67**	---	**---**	---	**---**	---	**---**
9mm x 1.25	---	**---**	31E090BB	**26.80**	31E090BC	**42.67**	---	**---**	---	**---**	---	**---**
10mmx0.75	---	**---**	31E100AB	**26.80**	31E100AC	**42.67**	---	**---**	---	**---**	---	**---**
10mm x 1.0	---	**---**	31E100BB	**26.80**	31E100BC	**42.67**	---	**---**	---	**---**	---	**---**
10mmx1.25	---	**---**	31E100CB	**26.80**	31E100CC	**42.67**	---	**---**	---	**---**		
10mm x 1.5	---	**---**	31E100DB	**26.80**	31E100DC	**42.67**	---	**---**	---	**---**	---	**---**
											---	**---**
11mm x 1.0	---	**---**	---	**---**	31E110AC	**42.67**	---	**---**	---	**---**	---	**---**
11mm x 1.5	---	**---**	31E110BB	**26.80**	31E110BC	**42.67**	---	**---**	---	**---**	---	**---**
12mm x 1.0	---	**---**	31E120AB	**26.80**	31E120AC	**42.67**	---	**---**	---	**---**	---	**---**
12mmx1.25	---	**---**	---	**---**	31E120BC	**42.67**	---	**---**	---	**---**	---	**---**
12mm x 1.5	---	**---**	---	**---**	31E120CC	**42.67**	---	**---**	---	**---**	---	**---**
12mmx1.75	---	**---**	---	**---**	31E120DC	**42.67**	---	**---**	---	**---**	---	**---**
14mm x 1.0	---	**---**	---	**---**	31E140AC	**42.67**	---	**---**	---	**---**	---	
14mmx1.25	---	**---**	---	**---**	31E140BC	**42.67**	---	**---**	---	**---**	---	**---**
14mm x 1.5	---	**---**	---	**---**	31E140CC	**42.67**	---	**---**	---	**---**	---	**---**
14mm x 2.0	---	**---**	---	**---**	31E140DC	**42.67**	---	**---**	---	**---**	---	**---**

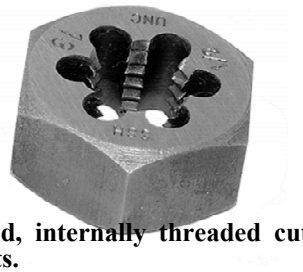
15mm x 1.5	---	**---**	---	**---**	31E150AC	**42.67**	---	**---**	---	**---**	---	
16mm x 1.0	---	**---**	---	**---**	31E160AC	**42.67**	---	**---**	---	**---**	---	**---**
16mm x 1.5	---	**---**	---	**---**	31E160BC	**42.67**	---	**---**	---	**---**	---	**---**
16mm x 2.0	---	**---**	---	**---**	31E160CC	**42.67**	---	**---**	---	**---**	---	**---**
17mm x 1.5	---	**---**	---	**---**	31E170AC	**42.67**	---	**---**	---	**---**	---	**---**
18mm x 1.0	---	**---**	---	**---**	31E180AC	**42.67**	---	**---**	---	**---**	---	**---**
18mm x 1.5	---	**---**	---	**---**	31E180BC	**42.67**	---	**---**	---	**---**	---	**---**
18mm x 2.0	---	**---**	---	**---**	31E180CC	**42.67**	---	**---**	---	**---**	---	**---**
18mm x 2.5	---	**---**	---	**---**	31E180DC	**42.67**	31E180DD	**74.17**	---	**---**	---	**---**

20mm x 1.0	---	**---**	---	**---**	31E200AC	**42.67**	31E200AD	**74.17**	---	**---**	---	
20mm x 1.5	---	**---**	---	**---**	31E200BC	**42.67**	31E200BD	**74.17**	---	**---**	---	**---**
20mm x 2.0	---	**---**	---	**---**	---	**--**	31E200CD	**74.17**	---	**---**	---	**---**
20mm x 2.5	---	**---**	---	**---**	---	**---**	31E200DD	**74.17**	---	**---**	---	**---**
22mm x 1.0	---	**---**	---	**---**	---	**---**	31E220AD	**74.17**	---	**---**	---	**---**
22mm x 1.5	---	**---**	---	**---**	---	**---**	31E220BD	**74.17**	---	**---**	---	**---**
22mm x 2.0	---	**---**	---	**---**	---	**---**	31E220CD	**74.17**	---	**---**	---	**---**
22mm x 2.5	---	**---**	---	**---**	---	**---**	31E220DD	**74.17**	---	**---**	---	**---**
24mm x 1.5	---	**---**	---	**---**	---	**---**	31E240AD	**74.17**	---	**---**	---	**---**
24mm x 2.0	---	**---**	---	**---**	---	**---**	31E240BD	**74.17**	---	**---**	---	**---**
24mm x 3.0	---	**---**	---	**---**	---	**---**	31E240CD	**74.17**	---	**---**	---	**---**
26mm x 1.5	---	**---**	---	**---**	---	**---**	31E260AD	**74.17**	---	**---**	---	**---**
27mm x 2.0	---	**---**	---	**---**	---	**---**	31E270AD	**74.17**	---	**---**	---	**---**
27mm x 3.0	---	**---**	---	**---**	---	**---**	31E270BD	**74.17**	---	**---**	---	**---**
28mm x 1.5	---	**---**	---	**---**	---	**---**	31E280AD	**74.17**	---	**---**	---	**---**
30mm x 1.5	---	**---**	---	**---**	---	**---**	31E300AD	**74.17**	---	**---**	---	**---**
30mm x 2.0	---	**---**	---	**---**	---	**---**	31E300BD	**74.17**	---	**---**	---	**---**
33mm x 2.0	---	**---**	---	**---**	---	**---**	---	**---**	31E330AE	**113.84**	---	**---**
39mm x 3.5	---	**---**	---	**---**	---	**---**	31E390AD	**74.17**	---	**---**	---	**---**
45mm x 4.5	---	**---**	---	**---**	---	**---**	---	**---**	---	**---**	31E450AF	**149.07**

Round Adj. Dies in other metric sizes available.

Hexagon Threading Dies

IMPORT **HIGH SPEED M-2 STEEL** **HEAVY DUTY**



HEXAGON THREADING DIES are multiedged, internally threaded cutting tools used for cutting external threads. Hexagon Dies are same size as standard Hex Nuts.

Packaging: All sizes individually packaged.

MACHINE & FRACTIONAL SIZES — SERIES 3300E

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
4	40	19/32	33E004C	**$24.45**
6	32	19/32	33E006C	**24.45**
8	32	19/32	33E008C	**24.45**
10	24	19/32	33E010C	**24.45**
10	32	19/32	33E010F	**24.45**
12	24	19/32	33E012C	**24.45**
1/4	20	19/32	33E116C	**24.45**
1/4	28	19/32	33E116F	**24.45**
5/16	18.	11/16	33E120C	**27.49**
5/16	24	11/16	33E120F	**27.49**
3/8	16	25/32	33E124C	**30.54**
3/8	24	25/32	33E124F	**30.54**
7/16	14	7/8	33E128C	**32.97**
7/16	20	7/8	33E128F	**32.97**

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
1/2	13	1-1/16	33E132C	**$41.50**
1/2	20	1-1/16	33E132F	**41.50**
9/16	12	1-1/16	33E136C	**50.11**
9/16	18	1-1/16	33E136F	**50.11**
5/8	11	1-1/4	33E140C	**54.98**
5/8	18	1-1/4	33E140F	**54.98**
3/4	10	1-7/16	33E148C	**61.07**
3/4	16	1-7/16	33E148F	**61.07**
7/8	9	1-5/8	33E156C	**73.25**
7/8	14	1-5/8	33E156F	**73.25**
1"	8	1-13/16	33E164C	**85.43**
1"	12	1-13/16	33E164F	**85.43**
1"	14	1-13/16	33E164S	**85.43**

Adjustable Round Split Pipe Dies

Packaging: All sizes individually packaged.

IMPORT HSS PIPE THREAD SERIES 3050E

SIZE	1" EDP NUMBER	1" O.D. PRICE	1-1/2" EDP NUMBER	1-1/2" O.D. PRICE	2" EDP NUMBER	2" O.D. PRICE	2-1/2" EDP NUMBER	2-1/2" O.D. PRICE	3" EDP NUMBER	3" O.D. PRICE
1/16 - 24	305E104B	**$25.06**	---	**---**	---	**---**	---	**---**	---	**---**
1/8 - 27	305E108B	**25.06**	305E108C	**$40.37**	---	**---**	---	**---**	---	**---**
1/4 - 18	---	**---**	305E116C	**40.37**	305E116D	**$70.99**	---	**---**	---	**---**
3/8 - 16	---	**---**	---	**---**	305E124D	**70.99**	---	**---**	---	**---**
1/2 - 14	---	**---**	---	**---**	305E132D	**70.99**	---	**---**	---	**---**
3/4 - 14	---	**---**	---	**---**	305E148D	**70.99**	---	**---**	---	**---**
1" - 11-1/2	---	**---**	---	**---**	---	**---**	305E164E`	**$100.22**		**---**
1-1/4-11-1/2	---	**---**	---	**---**	---	**---**	---	**---**	305E216F	**$164.65**
1-1/2-11-1/2	---	**---**	---	**---**	---	**---**	---	**---**	305E232F	**164.65**
2" - 11-1/2	---	**---**	---	**---**	---	**---**	---	**---**	305E264F	**394.98**

Hexagon Rethreading Dies

IMPORT **HIGH CARBON STEEL** **CUT THREAD**



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.
Packaging: All sizes individually packaged.

MACHINE & FRACTIONAL SIZES — SERIES 3350E

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
4	40	19/32	335E004C	**$10.18**
4	48	19/32	335E004F	**10.18**
5	40	19/32	335E005C	**10.18**
5	44	19/32	335E005F	**10.18**
6	32	19/32	335E006C	**10.18**
6	40	19/32	335E006F	**10.18**
8	32	19/32	335E008C	**10.18**
8	36	19/32	335E008F	**10.18**
10	24	19/32	335E010C	**10.18**
10	32	19/32	335E010F	**10.18**
12	24	19/32	335E012C	**10.18**
12	28	19/32	335E012F	**10.18**
1/4	20	19/32	335E116C	**9.17**
1/4	28	19/32	335E116F	**9.17**
5/16	18.	11/16	335E120C	**10.27**
5/16	24	11/16	335E120F	**10.27**
3/8	16	25/32	335E124C	**10.58**
3/8	24	25/32	335E124F	**10.58**
7/16	14	7/8	335E128C	**13.05**
7/16	20	7/8	335E128F	**13.05**
1/2	13	1-1/16	335E132C	**14.14**
1/2	20	1-1/16	335E132F	**14.14**
9/16	12	1-1/16	335E136C	**15.27**
9/16	18	1-1/16	335E136F	**15.27**
5/8	11	1-1/4	335E140C	**17.75**
5/8	18	1-1/4	335E140F	**17.75**
11/16	11	1-7/16	335E144C	**23.27**
11/16	16	1-7/16	335E144F	**23.27**
3/4	10	1-7/16	335E148C	**23.27**
3/4	16	1-7/16	335E148F	**23.27**
7/8	9	1-5/8	335E156C	**26.10**
7/8	14	1-5/8	335E156F	**26.10**
1"	8	1-13/16	335E164C	**32.93**
1"	12	1-13/16	335E164F	**32.93**
1"	14	1-13/16	335E164S	**32.93**

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
1-1/8	7	2"	335E208C	**$46.37**
1-1/8	12	2"	335E208F	**46.37**
1-1/4	7	2-3/16	335E216C	**53.81**
1-1/4	12	2-3/16	335E216F	**53.81**
1-3/8	6	2-3/8	335E224C	**61.12**
1-3/8	12	2-3/8	335E224F	**61.12**
1-1/2	6	2-9/16	335E232C	**68.43**
1-1/2	12	2-9/16	335E232F	**68.43**
1-5/8	5-1/2	3-1/8	335E240C	**148.16**
1-5/8	12	3-1/8	335E240F	**148.16**
1-3/4	5	3-1/8	335E248C	**184.79**
1-3/4	12	3-1/8	335E248F	**184.79**
1-7/8	5	3-1/8	335E256C	**218.46**
1-7/8	12	3-1/8	335E256F	**218.46**
2"	4-1/2	3-1/2	335E264C	**232.73**
2"	12	3-1/2	335E264F	**232.73**
2-1/4	4-1/2	3-1/2	335E316C	**258.83**
2-1/4	12	3-1/2	335E316F	**258.83**
2-1/2	4	4-1/2	335E332C	**322.99**
2-1/2	12	4-1/2	335E332F	**322.99**
2-3/4	4	4-1/2	335E348C	**367.18**
2-3/4	12	4-1/2	335E348F	**367.18**
3"	4	5"	335E364C	**513.30**
3"	12	5"	335E364F	**513.30**
3-1/4	4	5"	335E416C	**529.96**
3-1/4	12	5"	335E416F	**529.96**
3-1/2	4	5"	335E432C	**619.18**
3-1/2	12	5"	335E432F	**619.18**
3-3/4	4	6"	335E448C	**724.28**
3-3/4	12	6"	335E448F	**724.28**
4"	4	6"	335E464C	**774.30**
4"	12	6"	335E464F	**774.30**

8 Pitch Hex Rethreading Dies

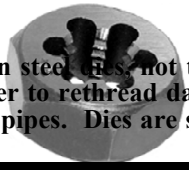
IMPORT **HIGH CARBON STEEL** **SERIES 3350E**

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
1-1/8	8	2"	335E208N	**$52.37**
1-1/4	8	2-3/16	335E216N	**60.90**
1-3/8	8	2-3/8	335E224N	**66.56**
1-1/2	8	2-9/16	335E232N	**81.82**
1-5/8	8	3-12/8	335E240N	**148.16**
1-3/4	8	3-1/8	335E248N	**173.04**
1-7/8	8	3-1/8	335E256N	**188.57**
2"	8	3-1/2	335E264N	**206.32**
2-1/4	8	3-1/2	335E316N	**244.08**
2-3/8	8	3-1/2	335E324N	**261.78**

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
2-1/2	8	4-1/2	335E332N	**$283.97**
2-5/8	8	4-1/2	335E340N	**303.93**
2-3/4	8	4-1/2	335E348N	**321.68**
2-7/8	8	4-1/2	335E356N	**399.33**
3"	8	5"	335E364N	**465.89**
3-1/4	8	5"	335E416N	**529.96**
3-1/2	8	5"	335E432N	**619.88**
3-3/4	8	6"	335E448N	**687.74**
4"	8	6"	335E464N	**709.92**

Hexagon Rethreading Dies

IMPORT **HIGH CARBON STEEL** **CUT THREAD**



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.
Packaging: All sizes individually packaged.

METRIC SIZES

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
3mm	0.50	19/32	336E030A	**$14.57**
3mm	0.60	19/32	336E030B	**14.57**
3.5mm	0.60	19/32	336E035A	**14.57**
4mm	0.70	19/32	336E040A	**14.57**
4mm	0.75	19/32	336E040B	**14.57**
4.5mm	0.75	19/32	336E045A	**14.57**
5mm	0.80	19/32	336E050A	**14.57**
5mm	0.90	19/32	336E050B	**14.57**
6mm	0.75	19/32	336E060A	**14.57**
6mm	1.00	19/32	336E060B	**14.57**
6.3mm	1.00	19/32	336E063A	**14.57**
7mm	1.00	11/16	336E070A	**15.23**
8mm	1.00	11/16	336E080A	**15.23**
8mm	1.25	11/16	336E080B	**15.23**
9mm	1.00	25/32	336E090A	**16.75**
9mm	125	25/32	336E090B	**16.75**
10mm	1.25	7/8	336E100A	**21.97**
10mm	1.50	7/8	336E100B	**21.97**
11mm	1.50	7/8	336E110A	**23.49**
12mm	1.25	1-1/16	336E120A	**25.23**
12mm	1.50	1-1/16	336E120B	**25.23**
12mm	1.75	1-1/16	336E120C	**25.23**
14mm	1.50	1-1/16	336E140A	**26.97**
14mm	2.00	1-1/16	336E140B	**26.97**
16mm	1.50	1-1/4	336E160A	**30.87**
16mm	2.00	1-1/4	336E160B	**30.67**
18mm	1.50	1-7/16	336E180A	**36.98**
18mm	2.00	1-7/16	336E180C	**36.98**

SERIES 3360E

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
18mm	2.50	1-7/16	336E180B	**$36.98**
20mm	1.50	1-5/8	336E200A	**42.85**
20mm	2.50	1-5/8	336E200B	**42.85**
22mm	1.50	1-5/8	336E220A	**45.02**
22mm	2.50	1-5/8	336E220B	**45.02**
24mm	2.00	1-13/16	336E240A	**48.50**
24mm	3.00	1-13/16	336E240B	**48.50**
26mm	1.50	2"	336E260A	**50.45**
27mm	2.00	2"	336E270A	**53.94**
27mm	3.00	2"	336E270B	**53.94**
28mm	1.50	2"	336E280A	**55.75**
30mm	2.00	2-3/16	336E300A	**64.16**
30mm	3.50	2-3/16	336E300B	**64.16**
33mm	2.00	2-3/8	336E330A	**82.43**
33mm	3.50	2-3/8	336E330B	**82.43**
36mm	3.00	2-9/16	336E360A	**96.35**
36mm	4.00	2-9/16	336E360B	**96.35**
39mm	3.00	3-1/8	336E390A	**104.84**
39mm	4.00	3-1/8	336E390B	**104.84**
40mm	1.50	3-1/8	336E400A	**125.06**
42mm	1.50	3-1/8	336E420A	**139.85**
42mm	4.50	3-1/8	336E420B	**139.85**
45mm	1.50	3-1/4	336E450A	**174.93**
45mm	4.50	3-1/4	336E450B	**174.93**
48mm	1.50	3-1/4	336E480A	**206.97**
48mm	5.00	3-1/4	336E480B	**206.97**
52mm	1.50	3-1/2	336E520A	**268.70**
52mm	5.00	3-1/2	336E520B	**268.70**

PIPE DIES (NPT)

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
1/8	27	25/32	338E108	**$13.66**
1/4	18	1-1/16	338E116	**17.92**
3/8	18	1-1/4	338E124	**26.54**
1/2	14	1-5/8	338E132	**32.36**
3/4	14	1-13/16	338E148	**49.16**

SERIES 3380E

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
1"	11-1/2	2-3/16	338E164	**$78.30**
1-1/4	11-1/2	3-1/8	338E216	**126.32**
1-1/2	11-1/2	3-1/8	338E232	**195.75**
2"	11-1/2	4"	338E264	**375.00**
2-1/2	8	4-1/2	338E332	**POR**

LEFT HAND FRACTIONAL SIZES

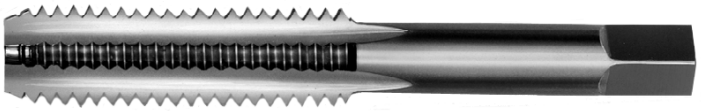
TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
1/4	20	19/32	337E116C	**$16.31**
1/4	28	19/32	337E116F	**16.31**
5/16	18	11/16	337E120C	**18.05**
5/16	24	11/16	337E120F	**18.05**
3/8	16	25/32	337E124C	**20.44**
3/8	24	25/32	337E124F	**20.44**
7/16	14	7/8	337E128C	**21.32**
7/16	20	7/8	337E128F	**21.32**
1/2	13	1-1/16	337E132C	**26.10**
1/2	20	1-1/16	337E132F	**26.10**
9/16	12	1-1/16	337E136C	**31.76**
9/16	18	1-1/16	337E136F	**31.76**
5/8	11	1-1/4	337E140C	**34.15**
5/8	18	1-1/4	337E140F	**34.15**
3/4	10	1-7/16	337E148C	**38.93**

SERIES 3370E

TAP SIZES	THREADS PER INCH	WIDTH A/F	EDP NUMBERS	LIST PRICE
3/4	16	1-7/16	337E148F	**$38.93**
7/8	9	1-5/8	337E156C	**53.94**
7/8	14	1-5/8	337E156F	**53.94**
1"	8	1-13/16	337E164C	**55.46**
1"	12	1-13/16	337E164F	**55.46**
1-1/8	7	2"	337E208C	**83.74**
1-1/8	12	2"	337E208F	**83.74**
1-1/4	7	2-3/16	337E216C	**93.09**
1-1/4	12	2-3/16	337E216F	**93.09**
1-3/8	6	2-3/8	337E224C	**107.23**
1-3/8	12	2-3/8	337E224F	**107.23**
1-1/2	6	2-9/16	337E232C	**138.98**
1-1/2	12	2-9/16	337E232F	**138.98**
1-3/4	5	3-1/2	337E248C	**217.07**
2"	4-1/2	3-1/2	337E264C	**351.26**

Carbon Hand Taps

MACHINE & FRAC SIZES HIGH CARBON STEEL CUT THREAD



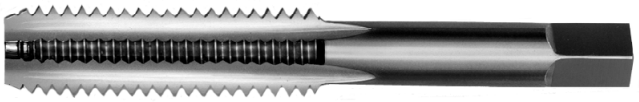
Carbon Steel Hand Taps are used to rethread damaged or jammed threads or thread mild steels. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.
Packaging: 0 thru 1/4", 12 per box. 5/16" thru 1/2", 6 per box. 9/16" thru 1", 3 per box. 1-1/8" & up individually packaged.

IMPORT SERIES 2000C TAPER, PLUG & BOTTOM

TAP SIZES	NC	NF	PITCH DIA LIMITS	NUMBER OF FLUTES	LENGTH OF THREAD	OVERAll LENGTH	EDP NUMBERS			LIST PRICE EACH
							TAPER	PLUG	BOTT	
0	--	80	H1	2	5/16	1-5/8	20C000FT	20C000FP	20C000FB	**$5.74**
1	64	--	H1	2	3/8	1-11/16	20C001CT	20C001CP	20C001CB	**5.39**
1	--	72	H1	2	3/8	1-11/16	20C001FT	20C001FP	20C001FB	**5.39**
2	56	--	H2	3	7/16	1-3/4	20C002CT	20C002CP	20C002CB	**5.09**
2	--	64	H2	3	7/16	1-3/4	20C002FT	20C002FP	20C002FB	**5.09**
3	48	--	H2	3	1/2	1-13/16	20C003CT	20C003CP	20C003CB	**3.70**
3	--	56	H2	3	1/2	1-13/16	20C003FT	20C003FP	20C003FB	**3.70**
4	40	--	H2	3	9/16	1-7/8	20C004CT	20C004CP	20C004CB	**3.70**
4	--	48	H2	3	9/16	1-7/8	20C004FT	20C004FP	20C004FB	**3.70**
4	--	36	H2	3	9/16	1-7/8	20C004AT	20C004AP	20C004AB	**3.70**
5	40	--	H2	3	5/8	1-15/16	20C005CT	20C005CP	20C005CB	**3.09**
5	--	44	H2	3	5/8	1-15/16	20C005FT	20C005FP	20C005FB	**3.09**
6	32	--	H3	3	11/16	2"	20C006CT	20C006CP	20C006CB	**3.09**
6	--	40	H2	3	11/16	2"	20C006FT	20C006FP	20C006FB	**3.09**
8	32	--	H3	4	3/4	2-1/8	20C008CT	20C008CP	20C008CB	**3.09**
8	--	36	H2	4	3/4	2-1/8	20C008FT	20C008FP	20C008FB	**3.09**
10	24	--	H3	4	7/8	2-3/8	20C010CT	20C010CP	20C010CB	**3.39**
10	--	32	H3	4	7/8	2-3/8	20C010FT	20C010FP	20C010FB	**3.39**
12	24	--	H3	4	15/16	2-3/8	20C012CT	20C012CP	20C012CB	**3.87**
12	--	28	H3	4	15/16	2-3/8	20C012FT	20C012FP	20C012FB	**3.87**
1/4	20	--	H3	4	1"	2-1/2	20C116CT	20C116CP	20C116CB	**3.09**
1/4	--	28	H3	4	1"	2-1/2	20C116FT	20C116FP	20C116FB	**3.09**
5/16	18	--	H3	4	1-1/8	2-23/32	20C120CT	20C120CP	20C120CB	**3.78**
5/16	--	24	H3	4	1-1/8	2-23/32	20C120FT	20C120FP	20C120FB	**3.78**
3/8	16	--	H3	4	1-1/4	2-15/16	20C124CT	20C124CP	20C124CB	**4.22**
3/8	--	24	H3	4	1-1/4	2-15/16	20C124FT	20C124FP	20C124FB	**4.22**
7/16	14	--	H3	4	1-7/16	3-5/32	20C128CT	20C128CP	20C128CB	**5.57**
7/16	--	20	H3	4	1-7/16	3-5/32	20C128FT	20C128FP	20C128FB	**5.57**
1/2	13	--	H3	4	1-21/32	3-3/8	20C132CT	20C132CP	20C132CB	**6.35**
1/2	--	20	H3	4	1-21/32	3-3/8	20C132FT	20C132FP	20C132FB	**6.35**
9/16	12	--	H3	4	1-21/32	3-19/32	20C136CT	20C136CP	20C136CB	**8.66**
9/16	--	18	H3	4	1-21/32	3-19/32	20C136FT	20C136FP	20C136FB	**8.66**
5/8	11	--	H3	4	1-13/16	3-13/16	20C140CT	20C140CP	20C140CB	**9.57**
5/8	--	18	H3	4	1-13/16	3-13/16	20C140FT	20C140FP	20C140FB	**9.57**
3/4	10	--	H3	4	2"	4-1/4	20C148CT	20C148CP	20C148CB	**13.66**
3/4	--	16	H3	4	2"	4-1/4	20C148FT	20C148FP	20C148FB	**13.66**
7/8	9	--	H4	4	2-7/32	4-11/16	20C156CT	20C156CP	20C156CB	**19.14**
7/8	--	14	H4	4	2-7/32	4-11/16	20C156FT	20C156FP	20C156FB	**19.14**
1"	8	--	H4	4	2-1/2	5-1/8	20C164CT	20C164CP	20C164CB	**23.79**
1"	--	12	H4	4	2-1/2	5-1/8	20C164FT	20C164FP	20C164FB	**23.79**
1-1/8	7	--	H4	4	2-9/16	5-7/16	20C208CT	20C208CP	20C208CB	**47.55**
1-1/8	--	12	H4	4	2-9/16	5-7/16	20C208FT	20C208FP	20C208FB	**47.55**
1-1/4	7	--	H4	4	2-9/16	5-3/4	20C216CT	20C216CP	20C216CB	**54.72**
1-1/4	--	12	H4	6	2-9/16	5-3/4	20C216FT	20C216FP	20C216FB	**54.72**
1-3/8	6	--	H4	4	3"	6-1/16	20C224CT	20C224CP	20C224CB	**63.03**
1-3/8	--	12	H4	6	3"	6-1/16	20C224FT	20C224FP	20C224FB	**63.03**
1-1/2	6	--	H4	4	3"	6-3/8	20C232CT	20C232CP	20C232CB	**74.30**
1-1/2	--	12	H4	6	3"	6-3/8	20C232FT	20C232FP	20C232FB	**74.30**

Carbon Hand Taps

METRIC SIZES **HIGH CARBON STEEL** **CUT THREAD**



Carbon Steel Hand Taps are used to rethread damaged or jammed threads or thread mild steels. Taper, Plug and Bottoming styles provide great versatility in tough materials, blind and thru holes. Taper Style - Starts the thread square with the workpiece. Plug Style-Generally used in thru holes. Bottoming Style-Generates the thread to the bottom.

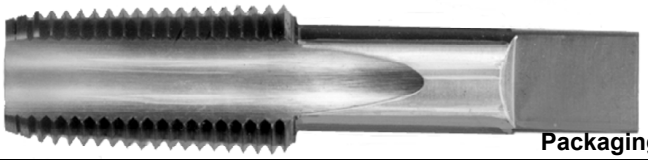
Packaging: 4mm thru 6mm, 12 per box. 8mm thru 12mm, 6 per box & 13mm up individually packaged.

IMPORT **SERIES 2000C** **TAPER, PLUG & BOTTOM**

TAP SIZES	NC	NF	PITCH DIA. LIMITS	No OF FLUTES	LENGTH OF THREAD	OVERAll LENGTH	EDP NUMBERS			LIST PRICE EACH
							TAPER	PLUG	BOTT	
4mm	0.7	--	H1	2	5/16	1-5/8	20C040AT	20C040AP	20C040AB	**$3.39**
5mm	0.8	--	H1	2	3/8	1-11/16	20C050AT	20C050AP	20C050AB	**3.44**
6mm	1.0	--	H1	2	3/8	1-11/16	20C060AT	20C060AP	20C060AB	**3.52**
8mm	--	1.0	H2	3	7/16	1-3/4	20C080AT	20C080AP	20C080AB	**4.22**
8mm	1.25	--	H2	3	7/16	1-3/4	20C080BT	20C080BP	20C080BB	**4.22**
10mm		1.0	H2	3	1/2	1-13/16	20C100AT	20C100AP	20C100AB	**5.92**
10mm		1.25	H2	3	1/2	1-7/8	20C100BT	20C100BP	20C100BB	**5.92**
10mm	1.50	--	H2	3	9/16	1-7/8	20C100CT	20C100CP	20C100CB	**5.92**
12mm	--	1.5	H2	3	9/16	1-7/8	20C120AT	20C120AP	20C120AB	**7.00**
12mm	1.75		H2	3	9/16	1-7/8	20C120BT	20C120BP	20C120BB	**7.00**
13mm		1.25	H2	3	5/8	1-15/16	20C130AT	20C130AP	20C130AB	**9.00**
14mm	2.0		H2	3	5/8	1-15/16	20C140AT	20C140AP	20C140AB	**9.00**
16mm	2.0	--	H3	3	11/16	2"	20C160AT	20C160AP	20C160AB	**10.18**

Carbon Taper Pipe Taps

FRACTIONAL SIZES **HIGH CARBON STEEL** **CUT THREAD**



Packaging: All sizes individually packaged.

IMPORT **SERIES 2700E** **(NPT)**

TAP SIZE	THREADS PER INCH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/16	**27**	2-1/8	2700E104	**$10.05**
1/8	**27**	2-1/8	2700E108	**5.87**
1/4	**18**	2-7/16	2700E116	**7.18**
3/8	**18**	2-9/16	2700E124	**8.96**
1/2	**14**	3-1/8	2700E132	**12.09**
3/4	**14**	3-1/4	2700E148	**19.53**
1"	**11-1/2**	3-3/4	2700E164	**38.85**

TAP SIZES	THREADS PER INCH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1-1/4	**11-1/2**	4"	2700E216	**$61.55**
1-1/2	**11-1/2**	4-1/4	2700E232	**84.30**
2"	**11-1/2**	4-1/2	2700E264	**123.71**
2-1/2	**8"**	5-1/2	2700E332	
3"	**8"**	6"	2700E364	

Tap Displays



90 Pc. FRACTIONAL SIZES TAP DISPLAYS

HAND TAPS SERIES 2000A USA	2000A90D	$1,281.66
NITRO HAND TAPS SERIES 2000N USA	2000N90D	1,460.91

DISPLAY CONTENTS 3 EACH OF THE FOLLOWING:

1/4-20 (T,P,B), 1/4-28 (T,P,B), 5/16-18 (T,P,B), 5/16-24 (T,P,B), 3/8-16 (T,P,B) 3/8-24 (T,P,B), 7/16-14 (T,P,B), 7/16-20 (T,P,B), 1/2-13 (T,P,B), 1/2-20 (T,P,B)

30 and 60 piece displays are available. Please ask your sales representative or the DrillCo staff at 800 851-3821.

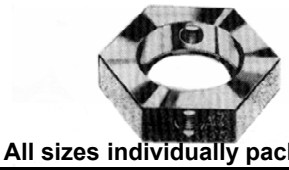
Tap and Die Accessories



Packaging: All sizes individually packaged.

T-HANDLE TAP WRENCHES

TAP CAPACITY	EDP NUMBERS	LIST PRICE
#0 to 3/16"	2000TW1	$11.31
#0 to 1/4"	2000TW2	12.40
#10 to 3/8"	2000TW3	15.23
#12 to 1/2"	2000TW4	17.31



Packaging: All sizes individually packaged.

HEXAGON DIE ADAPTORS

ROUND DIE SIZE	HEXAGON DIE A/F	EDP NUMBERS	LIST PRICE
1"	1-1/2"	3000HA2	$11.10
1-1/2"	2"	3000HA3	13.36
2"	2-1/2	3000HA4	16.40



Packaging: All sizes individually packaged.

ADJUSTABLE TAP & REAMER WRENCHES

CAPACITY					LENGTH INCHES	EDP NUMBERS	LIST PRICE
TOOL #	HAND TAP	PIPE TAP	PIPE TAP	REAMER			
#0	1/64" to 1/4"	#0 thru #14	-----	1/8" to 21/64"	7"	2000AW0	$11.09
#5	5/32" to 1/2"	#7 thru #14	1/8"	11/64" to 7/16"	11"	2000AW5	17.08
#6	5/32" to 3/4"	#7 thru #14	1/8" thru 1/4	11/16" to 41/64"	15"	2000AW6	24.14
#7	1/4" to 1-1/8"	-----	1/8" thru 3/4"	9/32" to 29/32"	19"	2000AW7	46.76
#7-1/2	1/2" to 1-3/8"	-----	1/8" thru 1"	3/8" to 1-5/32"	31"	2000AW7A	81.56
#8	3/4" to 1-5/8"	-----	3/8" thru 1-1/4	37/64 to 1-11/32	40"	2000AW8	129.85



Packaging: All sizes individually packaged.

DIE STOCK (3 Screw Type)

ROUND DIE SIZE	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
13/16	13/16	3000DS1	$11.44
1"	1"	3000DS2	12.79
1-1/2"	1-1/2"	3000DS3	18.27
2"	2"	3000DS4	25.14
2-1/2"	2-1/2"	3000DS5	49.33
3"	3"	3000DS6	72.04



Packaging: All sizes individually packaged.

FLOATING DIE HOLDER

ROUND DIE SIZE	SHANK DIAMETER	BODY DIAMETER	EDP NUMBER	LIST PRICE
13/16"	1/2	1-1/2	3000FD1	$41.33
1"	1/2	1-1/2	3000FD2	41.33
1-1/2"	3/4	2	3000FD3	54.49
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Drill & Tap Sets

18 Pc. UNC TAP AND DRILL SETS

HSS–DRILLS (200) & TAPS (2000)	200C2018	$149.73
NITRO–DRILLS (400N) & TAPS (2000N)	400NC2018	180.61
INDEX ONLY	18CDX	16.31

TAPS – #6-32, #8-32, #10-24, #10-32, 1/4-20, 5/16-18, 3/8-16, 7/16-14 & 1/2-13
DRILLS – #36, #29, #25, #21, #7, "F", 5/16, "U" & 27/64



18 Pc. UNF TAP AND DRILL SETS

HSS–DRILLS (200) & TAPS (2000)	200F2018	$156.73
NITRO–DRILLS (400N) & TAPS (2000N)	400NF2018	188.70
INDEX ONLY	18FDX	16.31

TAPS – #6-40, #8-36, #10-24, #10-32, 1/4-28, 5/16-24, 3/8-24, 7/16-20 & 1/2-20
DRILLS – #33, #29, #25, #21, #3, "I", "Q", 25/64 & 29/64

19 Pc. TAP SET

HSS–HAND TAPS (2000)	2000A19	$232.90
NITRO–HAND TAPS (2000N)	2000N19	265.61
HSS–SPIRAL POINTED TAPS (2100)	2100A19	259.61
NITRO–SPIRAL POINTED TAPS (2100N)	2100N19	292.45
INDEX ONLY	19TDX	19.58

TAPS – #0-80, #1-64, #1-72, #2-56, #2-64, #3-48, #3-56, #4-40, #4-48, #5-40, #5-44, #6-32, #6-40, #8-32, #8-36, #10-24, #10-32, #12-24 & #12-28



10 Pc. TAP SET

HSS–HAND TAPS (2000)	2000A10	$158.25
NITRO–HAND TAPS (2000N)	2000N10	179.13
HSS–SPIRAL POINT TAPS (2100)	2100A10	165.26
NITRO–SPIRAL POINT TAPS (2100N)	2100N10	187.09
INDES ONLY	10TDX	19.58

TAPS – 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

TAP DISPENSERS (EMPTY)

FRACTIONAL SIZES	2000FDX	$165.34
DISPENSER SIZES: 1/4-20 thru 1"-14		
MACHINE SCREW SIZES	2000SDX	$204.49
DISPENSER SIZES: #2-56 thru #12-28		
METRIC SIZES	2800DX	$165.34
DISPENSER SIZES: 3mm thru 24mm		
MASTER TAP DISPENSER	2000MDX	$1,011.38

DISPENSER SIZES:
NC & NF TAPS from 1/4" to 1-1/2", #2 thru #13 & 2.5mm thru 30mm



Tap and Die Sets

20 Pc. TAP and DIE SETS (USA TAPS)

HSS–Tap & Round Adjustable Die Set (NC)	2000RC20	$477.93
HSS–Tap & Hexagon Die Set (NC)	2000HC20	671.70
HSS–Tap & Round Adjustable Die Set (NF)	2000RF20	483.86
HSS–Tap & Hexagon Die Set (NF)	2000HF20	677.63

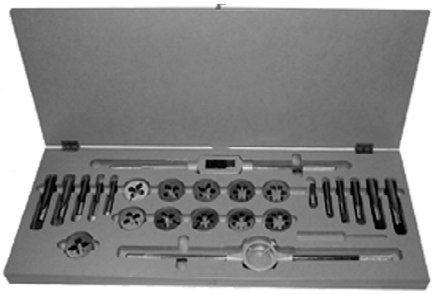
TAP & DIES–1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4
INCLUDES–1-1/2" Round Die Stock, #7 to 1/2" Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench & 1 Screw Driver



38 Pc. TAP and DIE SETS (USA TAPS)

HSS–Tap & Round Adjustable Die Set	2000R38	$716.72
HSS–Tap & Hexagon Die Set	2000H38	888.14

TAP & 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
INCLUDES– 1" Round Die Stock, #1/4 to 1" Adjustable Tap Wrench, #0" to 3/8" T-Handle Tap Wrench and 1 Screw Driver.



25 Pc. TAP and DIE SETS (USA Taps)

HSS–Tap & Round Adjustable Die Set	2000R25	$1,387.34
HSS–Tap & Hexagon Die Set	2000H25	1,519.97

TAP & 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
INCLUDES–2" Round Die Stock, 1/4" to 1" Adjustable Tap Wrench & 1 Screw Driver.



63 Pc. TAP and DIE SETS (USA TAPS)

HSS–Tap & Round Adjustable Die Set	2000R63	$2,060.56
HSS–Tap & Hexagon Die Set	2000H63	2,364.61

TAP & 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 NPT & 1/4-18 NPT
INCLUDES– 1" & 2" O. D. Round Die Stocks, #7 to 1/2" & 1/4" to 1" Adjustable Tap Wrenches, #0 to 3/8" T-Handle Tap Wrench & 2 Screw Drivers.



TAP & DIE SETS (IMPORT)

HSS–40 pc Tap & Die Set 4-40 thru 1/2"	2000E40	$445.88
HSS– 36 pc Metric Tap & Die Set 5mm thru 12mm	2800E36	429.43
CARBON–36 pc Metric Tap & Die Set 5mm thru 12mm	2800C36	313.72

HEXAGON DIE SETS

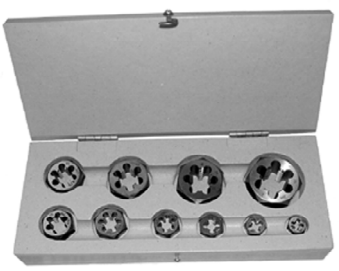
HSS–10pc Hexagon Threading Die Set (NC)	3300EC10	$547.28
HSS–10pc Hexagon Threading Die Set (NF)	3300EF10	547.28
CARBON–10pc Hex Rethreading Die Set (NC)	3350CC10	243.14
CARBON–10pc Hex Rethreading Die Set (NF)	3350CF10	243.14
HSS–20pc Hex Threading Die Set (NC &NF)	3300E20	1,051.06
CARB–20pc Hex Rethreading Die Set (NC &	3350C20	442.78

HEX DIES– 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4, 7/8 & 1"

12 Pc. PIPE TAP & DIE SET (IMPORT)

CARBON–Taper Pipe Taps & Dies	2700C12	$313.72

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.



Countersinks, Milling Cutters & Reamers



COUNTERSINKS:

Combined Drill & Countersinks (Import)
Bell Type
All Sizes (3500E) 171
Plain Type Regular
All Sizes (3500E) 171
Plain Type Long Length
All Sizes (3500E) 171

Combined Drill & Countersinks (USA)
Plain Type Regular
All Sizes (3500) 171

Countersinks (Import)
Single Flute Countersinks 60°, 82°, 90° & 100°
Fractional Sizes (3600E) 172
3 Flute Center Reamers 60°, 82°, 90° & 100°
Fractional Sizes (3700E) 172
4 Flute Machine Countersinks 60°, 82°, 90° & 100°
Fractional Sizes (3800E) 172
6 Flute Chatterless Countersinks 60°, 82° & 90°
Fractional Sizes (3900E) 173
Countersinks & Deburring Tools
Fractional Sizes (4000E) 173

MILLING CUTTERS:

Double Angle Cutters (Import)
Fractional Sizes (4950E) 178

Side Milling Cutters (Import)
Plain Teeth
Fractional Sizes (4800E) ..... 174 & 175

Side Milling Cutters (Import)
Staggered Teeth
Fractional Sizes (4850E) ..... 176 & 177

REAMERS:

Adjustable Blade Reamers (Import)
All Sizes (4100E) 170

Bridge Reamers (Import)
Straight Flute Taper Shank
Fractional Sizes (4200E) 161
Spiral Flute Taper Shank
Fractional Sizes (4250E) 161

Bridge Reamers (USA)
Straight Flute Taper Shank
Fractional Sizes (4200E) 161
Spiral Flute Taper Shank
Fractional Sizes (4250E) 161

Construction Reamers (Import)
Spiral Fluted 1/2" Shank
Fractional Sizes (4285E) 162
Spiral Flute Hex Nut Shank
Fractional Sizes (4290E) 162

Construction Reamers (USA)
Spiral Fluted 1/2" Shank
Fractional Sizes (4285E) 162
Spiral Fluted High Spiral 1/2" Shank
Fractional Sizes (4275E) 162
Spiral Flute Hex Nut Shank
Fractional Sizes (4290E) 163

Nitro Construction Reamers (USA)
Nitro Spiral Fluted 1/2" Shank
Fractional Sizes (4285E) 163
Nitro Spiral Fluted High Spiral 1/2" Shank
Fractional Sizes (4275E) 163
Nitro Spiral Flute Hex Nut Shank
Fractional Sizes (4290E) 163

Chucking Reamers (Import)
Spiral Flute Straight Shank
Fractional Sizes (4375E) 164
Straight Flute Straight Shank
Fractional Sizes (4300E) 164
Letter Sizes (4340E) 166
Wire Gauge Sizes (4380E) 165
Metric Sizes (4350E) 166

Chucking Reamers (USA)
Spiral Flute Straight Shank
Fractional Sizes (4300) 164
Letter Sizes (4340) 166
Wire Gauge Sizes (4380) 165
Straight Flute Straight Shank
Fractional Sizes (4300) 164
Letter Sizes (4340) 166
Wire Gauge Sizes (4380) 165
Metric Sizes (4350) 166

Taper Pin Reamers (Import)
Helical Flute
All Sizes (4570E) 169
Spiral Fluted
All Sizes (4550E) 169
Straight Flute
All Sizes (4500E) 169

Taper Pin Reamers (USA)
Helical Flute
All Sizes (4570) 168
Spiral Fluted
All Sizes (4550) 168
Straight Flute
All Sizes (4500) 168

Taper Pipe Reamers (Import)
Spiral Flute
Fractional Sizes (4600E) 170
Straight Flute
Fractional Sizes (4650E) 170

Bridge Reamers

TAPER & STRAIGHT SHANK HIGH SPEED STEEL USA & IMPORT

SERIES 4200 STRAIGHT FLUTE TAPER SHANK



SERIES 4250 SPIRAL FLUTE TAPER SHANK



Commonly used on bridgework, ship construction and structural steel fabrication where extreme accuracy of diameter is not important. Reamers have pilot type points for alignment purposes and easy entry into small and off-center holes.

Packaging: Individually packaged.

IMPORT | **MADE IN USA**

STRAIGHT & SPIRAL FLUTED SER 4200E SER 4250E SER 4200 SER 4250

TOOL SIZE	POINT DIA	# OF TAPER	No OF FLUTE	FLUTE LGTH	OAL	ST. FLUTE EDP NO.	ST. FLUTE PRICE	SPIRAL FLUTE EDP NO.	SPIRAL FLUTE PRICE	ST. FLUTE EDP NO	ST. FLUTE PRICE	SPIRAL FLUTE EDP NO.	SPIRAL FLUTE PRICE
5/16	11/64	2	5	4-3/8	8-1/4	-----	**$-----**	425E120	**$50.27**	420A120	**$79.21**	425A120	**$79.21**
11/32	11/64	2	5	4-3/8	8-1/4	-----	**-----**	-----	**-----**	420A122	**79.21**	425A122	**79.21**
3/8	7/32	2	5	4-3/8	8-1/4	-----	**-----**	-----	**-----**	420A124	**71.06**	425A124	**71.06**
13/32	7/32	2	5	4-3/8	8-1/4	420E126	**50.27**	425E126	**50.27**	420A126	**84.89**	425A126	**84.89**
7/16	17/64	2	5	4-3/8	8-1/4	420E128	**20.27**	425E128	**50.27**	420A128	**81.38**	425A128	**81.38**
15/32	9/32	2	5	5-1/8	9"	420E130	**56.61**	425E130	**55.83**	420A130	**95.53**	425A130	**95.53**
1/2	5/16	2	5	5-1/8	9"	420E132	**56.61**	425E132	**55.83**	420A132	**87.85**	425A132	**87.85**
17/32	11/32	2	5	5-1/8	9"	420E134	**59.43**	425E134	**59.43**	420A134	**99.41**	425A134	**99.41**
9/16	3/8	2	5	5-1/8	9"	420E136	**59.43**	425E136	**59.43**	420A136	**94.82**	425A136	**94.82**
19/32	3/8	2	5	5-1/8	9"	-----	**-----**	-----	**-----**	420A138	**112.86**	425A138	**112.86**
5/8	25/64	2	5	6-1/8	10"	420E140	**68.59**	425E140	**68.59**	420A140	**107.60**	425A140	**107.60**
21/32	25/64	3	5	7-1/8	11-3/4	-----	**-----**	-----	**-----**	420A142	**132.01**	425A142	**132.01**
11/16	13/32	3	5	7-1/8	11-3/4	420E144	**82.22**	425E144	**82.22**	420A144	**132.01**	425A144	**132.01**
3/4	15/32	3	5	7-3/8	12"	420E148	**88.56**	425E148	**88.56**	420A148	**151.52**	425A148	**151.52**
25/32	15/32	3	5	7-3/8	12"	-----	**-----**	-----	**-----**	420A150	**151.52**	425A150	**151.52**
13/16	35/64	3	5	7-3/8	12"	420E152	**96.07**	425E152	**96.07**	420A152	**151.52**	425A152	**151.52**
27/32	35/64	3	5	7-3/8	12"	-----	**-----**	-----	**-----**	420A154	**172.23**	425A154	**172.23**
7/8	39/64	3	5	7-3/8	12"	420E156	**106.64**	425E156	**106.64**	420A156	**172.23**	425A156	**172.23**
29/32	39/64	3	5	7-3/8	12"	-----	**-----**	-----	**-----**	420A158	**172.23**	425A158	**172.23**
15/16	43/64	3	5	7-3/8	12"	420E160	**109.70**	425E160	**109.70**	420A160	**172.23**	425A160	**172.23**
1"	47/64	3	5	7-3/8	12"	420E164	**121.91**	425E164	**121.91**	420A164	**194.06**	425A164	**194.06**
1-1/32	47/64	3	5	7-3/8	12"	-----	**-----**	-----	**-----**	420A202	**212.92**	425A202	**212.92**
1-1/16	13/16	3	5	7-3/8	12"	420E204	**133.89**	425E204	**133.89**	420A204	**212.92**	425A204	**212.92**
1-1/8	55/64	3	5	7-3/8	12"	420E208	**149.16**	425E208	**149.16**	420A208	**239.34**	425A208	**239.34**
1-3/16	59/64	3	5	7-3/8	12"	420E212	**166.07**	425E212	**166.07**	420A212	**265.46**	425A212	**265.46**
1-1/4	63/64	3	5	7-3/8	13"	420E216	**175.00**	425E216	**175.00**	420A216	**298.67**	425A216	**298.67**
1-5/16	1-1/16	3	5	7-3/8	13"	420E220	**200.84**	425E220	**200.84**	420A220	**343.48**	425A220	**343.48**
1-3/8	1-1/8	4	5	7-3/8	13"	420E224	**254.04**	425E224	**254.04**	420A224	**386.83**	425A224	**386.83**
1-7/16	1-3/16	4	5	7-3/8	13"	420E228	**273.23**	425E228	**273.23**	420A228	**402.15**	425A228	**402.15**
1-1/2	1-1/4	4	5	7-3/8	13"	420E232	**309.68**	425E232	**309.68**	420A232	**456.59**	425A232	**456.59**
1-9/16	1-1/4	4	5	7-3/8	13"	420E236	**368.79**	425E236	**368.79**	420A236	**548.69**	425A236	**548.69**
1-5/8	1-3/8	4	5	7-3/8	13"	420E240	**368.79**	425E240	**368.79**	420A240	**632.69**	425A240	**632.69**
1-11/16	1-3/8	4	5	7-3/8	13"	---	**-----**	425E244	**392.28**	---	**-----**	**-----**	**-----**
1-3/4	1-7/16	4	5	7-3/8	13"	---	**-----**	425E248	**474.50**	---	**-----**	**-----**	**-----**
1-13/16	1-7/16	4	5	7-3/8	13"	---	**-----**	425E252	**474.50**	---	**-----**	**-----**	**-----**
1-7/8	1-1/2	4	5	7-3/8	13"	---	**-----**	425E256	**474.50**	---	**-----**	**-----**	**-----**
1-15/16	1-1/2	4	5	7-3/8	13"	---	**-----**	425E260	**549.67**	---	**-----**	**-----**	**-----**
2"	1-3/4	4	5	7-3/8	13"	---	**-----**	425E264	**549.67**	---	**-----**	**-----**	**-----**

Construction Reamers

1/2" & HEX SHANK HIGH SPEED STEEL USA & IMPORT

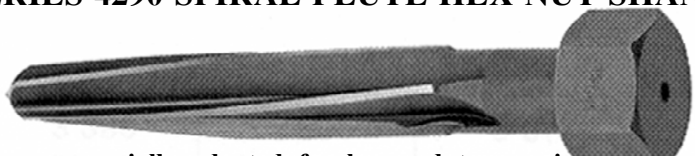
SERIES 4275 SPIRAL FLUTE 1/2" SHANK WITH 3 FLATS ON SHANK



SERIES 4285 HIGH SPIRAL FLUTE 1/2" SHANK WITH 3 FLATS ON SHANK



SERIES 4290 SPIRAL FLUTE HEX NUT 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.

Packaging: Individually packaged

IMPORT | **MADE IN USA**

SERIES	4275E		4290E		4275		4285		4290	
TOOL SIZE	SHANK DIA	FLUTE LGTH	OAL	1/2" SPIRAL FLUTE EDP #	1/2" SPIRAL FLUTE PRICE	HEX SHANK EDP NO.	HEX SHANK LIST PRICE	1/2" SPIRAL FLUTE EDP #	1/2" SPIRAL FLUTE PRICE	1/2" HIGH SPIRAL EDP #	1/2" HIGH SPIRAL PRICE	HEX SHANK EDP NO.	HEX SHANK LIST PRICE
1/4	1/4	2-1/2	4-3/8	-----	**$-----**	-----	**$-----**	427A116	**$65.66**	428A116	**$72.22**	-----	**$-----**
5/16	5/16	2-3/4	4-5/8	427E120	**56.18**	-----	**-----**	427A120	**68.28**	428A120	**75.11**	-----	**-----**
3/8	3/8	2-3/4	4-5/8	427E124	**56.18**	-----	**-----**	427A124	**68.28**	428A124	**75.11**	-----	**-----**
13/32	13/32	3-1/2	5-3/8	-----	**-----**	-----	**-----**	427A126	**75.09**	428A126	**82.59**	-----	**-----**
7/16	7/16	3-1/2	5-3/8	427E128	**56.18**	-----	**-----**	427A128	**75.09**	428A128	**82.59**	-----	**-----**
1/2	1/2	4"	5-7/8	427E132	**63.03**	-----	**-----**	427A132	**81.40**	428A132	**89.64**	-----	**-----**
9/16	1/2	4"	5-7/8	427E136	**66.32**	-----	**-----**	427A136	**86.48**	428A136	**95.13**	429A136	**107.98**
5/8	1/2	4-1/2	6-3/8	427E140	**76.46**	-----	**-----**	427A140	**94.35**	428A140	**103.77**	429A140	**117.77**
.652	1/2	4-1/2	6-3/8	-----	**-----**	-----	**-----**	427A141	**104.85**	428A141	**115.33**	-----	**-----**
21/32	1/2	4-1/2	6-3/8	-----	**-----**	-----	**-----**	427A142	**104.85**	428A142	**115.33**	-----	**-----**
11/16	1/2	4-1/2	6-3/8	427E144	**91.53**	429E144	**97.29**	427A144	**104.85**	428A144	**115.33**	429A144	**130.89**
3/4	1/2	5"	6-7/8	427E148	**98.66**	-----	**-----**	427A148	**125.81**	428A148	**138.39**	-----	**-----**
.776	1/2	5"	6-7/8	-----	**-----**	-----	**-----**	427A149	**125.81**	428A149	**138.39**	-----	**-----**
25/32	1/2	5"	6-7/8	-----	**-----**	-----	**-----**	427A150	**125.81**	428A150	**138.39**	-----	**-----**
13/16	1/2	5"	6-7/8	427E152	**106.88**	429E152	**106.88**	427A152	**125.81**	428A152	**138.39**	429A152	**156.89**
7/8	1/2	5"	6-7/8	427E156	**118.66**	-----	**-----**	427A156	**142.13**	428A156	**156.35**	-----	**-----**
15/16	1/2	5"	6-7/8	427E160	**122.23**	429E160	**122.23**	427A160	**142.13**	428A160	**156.35**	429A160	**177.49**
1"	1/2	5"	6-7/8	427E164	**135.65**	-----	**-----**	427A164	**167.26**	428A164	**183.99**	-----	**-----**
1.027	1/2	5"	6-7/8	-----	**-----**	-----	**-----**	427A201	**191.38**	428A201	**210.52**	-----	**-----**
1-1/16	1/2	5"	6-7/8	427E204	**149.08**	429E204	**149.08**	427A204	**191.38**	428A204	**210.52**	429A204	**234.51**
1-1/8*	3/4	5"	6-7/8	-----	**-----**	-----	**-----**	427A208	**223.83**	428A208	**246.22**	-----	**-----**
1-3/16*	3/4	5"	6-7/8	-----	**-----**	-----	**-----**	427A212	**245.62**	428A212	**270.18**	429A212	**289.78**
1-1/4*	3/4	5"	6-7/8	-----	**-----**	-----	**-----**	427A216	**262.57**	428A216	**288.77**	-----	**-----**

*** 1/2" SHANK AVAILABLE IN USA TOOLS**

Nitro Construction Reamers

1/2" & HEX SHANK HIGH SPEED BLACK & GOLD USA

SERIES 4275N SPIRAL FLUTE 1/2" SHANK WITH 3 FLATS ON SHANK



SERIES 4285N HIGH SPIRAL FLUTE 1/2" SHANK WITH 3 FLATS ON SHANK



SERIES 4290N SAFETY FIRST SPIRAL FLUTE HEX NUT SHANK

DrillCo's *Nitro* Safety First Hex Shank Reamers have been designed to protect against the danger and loss of a falling reamers. The *Nitro* Safety First Reamer is designed to meet OSHA 29CFR Part 1926.759 (falling object protection.)



Manufactured from a premium grade of M-7N molybdenum high speed steel. The *Nitro* Heavy Duty Construction Reamers has a Ferritic Nitro Carburizing surface treatment, that gives a hard, protective layer to the reamer, which increases hardness (Rc 75-80) without increasing brittleness, which is measurably harder than 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.

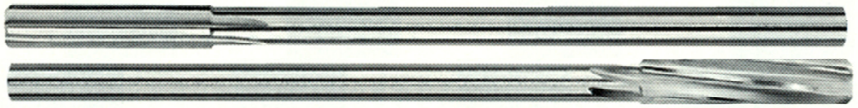
Packaging: All sizes individually packaged

				4275N		4285N		4290N	
TOOL SIZE	SHANK DIA	FLUTE LGTH	OAL	1/2" SHANK SPIRAL FLUTE EDP NUMBEER	1/2" SHANK SPIRAL FLUTE LIST PRICE	1/2" SHANK HIGH SPIRAL EDP NUMBER	1/2" SHANK HIGH SPIRAL LIST PRICE	SAFETY FIRST HEX SHANK EDP NUMBER	SAFETY FIRST HEX SHANK LIST PRICE
1/4	1/4	2-1/2	4-3/8	427N116	**$73.54**	428N116	**$80.89**	-----	**$-----**
5/16	5/16	2-3/4	4-5/8	427N120	**76.47**	428N120	**84.12**	-----	**-----**
3/8	3/8	2-3/4	4-5/8	427N124	**76.47**	428N124	**84.12**	-----	**-----**
13/32	13/32	3-1/2	5-3/8	427N126	**84.10**	428N126	**92.50**	-----	**-----**
7/16	7/16	3-1/2	5-3/8	427N128	**84.10**	428N128	**92.50**	-----	**-----**
1/2	1/2	4"	5-7/8	427N132	**91.17**	428N132	**100.40**	-----	**-----**
9/16	1/2	4"	5-7/8	427N136	**96.86**	428N136	**106.55**	429N136	**125.26**
5/8	1/2	4-1/2	6-3/8	427N140	**105.67**	428N140	**116.22**	429N140	**136.61**
.652	1/2	4-1/2	6-3/8	427N141	**117.43**	428N141	**129.17**	-----	**-----**
21/32	1/2	4-1/2	6-3/8	427N142	**117.43**	428N142	**129.17**	-----	**-----**
11/16	1/2	4-1/2	6-3/8	427N144	**117.43**	428N144	**129.17**	429N144	**151.83**
3/4	1/2	5"	6-7/8	427N148	**140.91**	428N148	**155.00**	-----	**-----**
.776	1/2	5"	6-7/8	427N149	**140.91**	428N149	**155.00**	-----	**-----**
25/32	1/2	5"	6-7/8	427N150	**140.91**	428N150	**155.00**	-----	**-----**
13/16	1/2*	5"	6-7/8	427N152	**140.91**	428N152	**155.00**	429N152	**181.99**
7/8	1/2*	5"	6-7/8	427N156	**159.19**	428N156	**175.11**	-----	**-----**
15/16	1/2*	5"	6-7/8	427N160	**159.19**	428N160	**175.11**	429N160	**205.89**
1"	1/2*	5"	6-7/8	427N164	**187.33**	428N164	**206.07**	-----	**-----**
1.027	1/2*	5"	6-7/8	427N201	**214.35**	428N201	**235.78**	-----	**-----**
1-1/16	1/2*	5"	6-7/8	427N204	**214.35**	428N204	**235.78**	429N204	**272.03**
1-1/8	3/4**	5"	6-7/8	427N208	**250.69**	428N208	**275.78**	-----	**-----**
1-3/16	3/4**	5"	6-7/8	427N212	**275.09**	428N212	**302.60**	429N212	**336.14**
1-1/4	3/4**	5"	6-7/8	427N216	**294.08**	428N216	**323.42**	-----	**-----**
1-5/16	3/4**	5"	6-7/8	427N220	**324.60**	428N220	**360.60**	429N220	**399.46**

*** 3/4" SHANK AVAILABLE, ** 1/2" SHANK AVAILABLE**

Chucking Reamers

STRAIGHT & SPIRAL 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 are regularly pointed with a 45° chamfer and are suitable for machine reaming most of the engineering materials ordinarily encountered.

Packaging: Individually packaged

IMPORT SERIES 4300E 4375E

TOOL SIZE	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE EDP NUMBER	STRAIGHT FLUTE LIST PRICE	SPIRAL FLUTE EDP NUMBER	SPIRAL FLUTE LIST PRICE
1/8	7/8	3-1/2	430E108	**$14.21**	437E108	**$17.03**
9/64	1"	4"	430E109	**13.51**	437E109	**15.27**
5/32	1"	4"	430E110	**13.51**	437E110	**15.27**
11/64	1-1/8	4-1/2	430E111	**14.80**	437E111	**15.27**
3/16	1-1/8	4-1/2	430E112	**14.80**	437E112	**16.68**
13/64	1-1/4	5"	430E113	**16.09**	437E113	**17.73**
7/32	1-1/4	5"	430E114	**16.09**	437E114	**17.73**
15/64	1-1/2	6"	430E115	**17.15**	437E115	**19.03**
1/4	1-1/2	6"	430E116	**17.15**	437E116	**19.03**
17/64	1-1/2	6"	430E117	**18.44**	437E117	**20.44**
9/32	1-1/2	6"	430E118	**18.44**	437E118	**20.44**
19/64	1-1/2	6"	430E119	**18.44**	437E119	**20.44**
5/16	1-1/2	6"	430E120	**18.44**	437E120	**20.44**
21/64	1-1/2	6"	430E121	**19.73**	437E121	**22.79**
11/32	1-1/2	6"	430E122	**19.73**	437E122	**22.79**
23/64	1-3/4	6"	430E123	**21.96**	437E123	**25.25**
3/8	1-3/4	7"	430E124	**21.96**	437E124	**25.25**
25/64	1-3/4	7"	430E125	**21.96**	437E125	**25.25**
13/32	1-3/4	7"	430E126	**21.96**	437E126	**25.25**
27/64	1-3/4	7"	430E127	**21.96**	437E127	**25.25**
7/16	1-3/4	7"	430E128	**21.96**	437E128	**25.25**
15/32	1-3/4	7"	430E130	**24.31**	437E130	**27.95**
1/2	2"	8"	430E132	**29.25**	437E132	**34.06**
17/32	2"	8"	430E134	**30.54**	437E134	**34.06**
9/16	2"	8"	430E136	**30.54**	437E136	**37.82**
19/32	2"	8"	430E138	**32.77**	437E138	**37.82**
5/8	2-1/4	9"	430E140	**35.35**	437E140	**42.99**
21/32	2-1/4	9"	430E142	**37.70**	437E142	**42.99**
11/16	2-1/4	9"	430E144	**37.70**	437E144	**42.99**
23/32	2-1/4	9"	430E146	**42.52**	437E146	**49.33**
3/4	2-1/2	9-1/2	430E148	**47.45**	437E148	**55.67**
25/32	2-1/2	9-1/2	430E150	**48.62**	437E150	**61.78**
13/16	2-1/2	9-1/2	430E152	**48.62**	437E152	**61.78**
27/32	2-1/2	9-1/2	430E154	**54.97**	437E154	**61.78**
7/8	2-5/8	10"	430E156	**59.90**	437E156	**69.53**
29/32	2-5/8	10"	430E158	**60.84**	437E158	**69.53**
15/16	2-5/8	10"	430E160	**60.84**	437E160	**78.46**
31/32	2-5/8	10"	430E162	**68.32**	437E162	**78.46**
1"	2-3/4	10-1/2	430E164	**72.82**	437E164	**87.15**
1-1/32	2-3/4	10-1/2	430E202	**72.82**	-----	**-----**
1-1/16	2-3/4	10-1/2	430E204	**72.82**	437E204	**87.15**
1-3/32	2-.3/4	10-1/2	430E204	**83.86**	-----	**-----**
1-1/8	2-7/8	11"	430E208	**83.86**	437E208	**96.07**
1-5/32	2-7/8	11"	430E210	**92.32**	-----	**-----**
1-3/16	2-7/8	11"	430E212	**92.32**	437E212	**105.71**
1-1/4	3"	11-1/2	430E216	**103.12**	437E216	**118.39**
1-5/16	3"	11-1/2	430E220	**112.99**	437E220	**128.49**
1-3/8	3-1/4	12"	430E224	**125.20**	437E224	**141.17**
1-7/16	3-1/4	12-1/2	430E228	**134.83**	437E228	**153.86**
1-1/2	3-1/2	12-1/2	430E232	**145.64**	430E232	**166.31**

Chucking Reamers

STRAIGHT & SPIRAL 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 are regularly pointed with a 45° chamfer and are suitable for machine reaming most of the engineering materials ordinarily encountered.

Packaging: Individually packaged

IMPORT SERIES 4380E

TOOL SIZE	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE EDP NUMBER	STRAIGHT FLUTE LIST PRICE
1	1-1/2	6"	438E001	$16.33
2	1-1/2	6"	438E002	16.33
3	1-1/4	5"	438E003	16.33
4	1-1/4	5"	438E004	16.33
5	1-1/4	5"	438E005	16.33
6	1-1/4	5"	438E006	16.33
7	1-1/4	5"	438E007	16.33
8	1-1/4	5"	438E008	16.33
9	1-1/4	5"	438E009	16.33
10	1-1/4	5"	438E010	16.33
11	1-1/4	5"	438E011	16.33
12	1-1/8	4-1/2	438E012	16.33
13	1-1/8	4-1/2	438E013	15.03
14	1-1/8	4-1/2	438E014	15.03
15	1-1/8	4-1/2	438E015	15.03
16	1-1/8	4-1/2	438E016	15.03
17	1-1/8	4-1/2	438E017	15.03
18	1-1/8	4-1/2	438E018	15.03
19	1-1/8	4-1/2	438E019	15.03
20	1-1/8	4-1/2	438E020	15.03
21	1-1/8	4-1/2	438E021	15.03
22	1"	4"	438E022	13.74
23	1"	4"	438E023	13.74
24	1"	4"	438E024	13.74
25	1"	4"	438E025	13.74
26	1"	4"	438E026	13.74
27	1"	4"	438E027	13.74
28	1"	4"	438E028	13.74
29	1"	4"	438E029	13.74
30	7/8	3-1/2	438E030	11.39
31	7/8	3-1/2	438E031	11.98
32	7/8	3-1/2	438E032	11.98
33	7/8	3-1/2	-----	-----
34	7/8	3-1/2	-----	-----
35	7/8	3-1/2	-----	-----
36	7/8	3-1/2	-----	-----
37	7/8	3-1/2	-----	-----
38	7/8	3-1/2	-----	-----
39	7/8	3-1/2	-----	-----
40	7/8	3-1/2	-----	-----
41	7/8	3-1/2	-----	-----
42	3/4	3"	-----	-----
43	3/4	3"	-----	-----
44	3/4	3"	-----	-----
45	3/4	3"	-----	-----
46	3/4	3"	-----	-----
47	3/4	3"	-----	-----
48	3/4	3"	-----	-----

Chucking Reamers

STRAIGHT & SPIRAL 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 are regularly pointed with a 45° chamfer and are suitable for machine reaming most of the engineering materials ordinarily encountered.

Packaging: Individually packaged

IMPORT SERIES 4340E

TOOL SIZE	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE EDP NUMBER	STRAIGHT FLUTE LIST PRICE
A	1-1/2	6"	434E501	$17.15
B	1-1/2	6"	434E502	17.15
C	1-1/2	6"	434E503	17.15
D	1-1/2	6"	434E504	17.15
E	1-1/2	6"	434E505	17.15
F	1-1/2	6"	434E506	17.15
G	1-1/2	6"	434E507	17.15
H	1-1/2	6"	434E508	18.44
I	1-1/2	6"	434E509	18.44
J	1-1/2	6"	434E510	18.44
K	1-1/2	6"	434E511	18.44
L	1-1/2	6"	434E512	18.44
M	1-1/2	6"	434E513	18.44
N	1-1/2	6"	434E514	18.44
O	1-1/2	6"	434E515	19.73
P	1-1/2	6"	434E516	19.73
Q	1-1/2	6"	434E517	19.73
R	1-1/2	6"	434E518	19.73
S	1-3/4	7"	434E519	23.29
T	1-3/4	7"	434E520	23.29
U	1-3/4	7"	434E521	23.29
V	1-3/4	7"	434E522	23.29
W	1-3/4	7"	434E523	23.29
X	1-3/4	7"	434E524	23.29
Y	1-3/4	7"	434E525	23.29
Z	1-3/4	7"	434E526	23.29



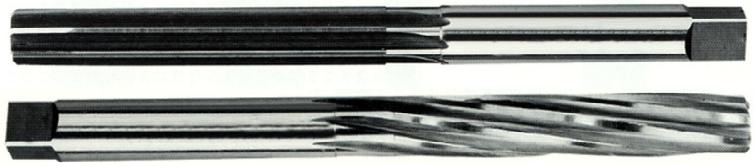
METRIC SIZES H S S STRAIGHT FLUTE SERIES 4350E

METRIC SIZES	SHANK DIA	FLUTE LENGTH	OAL	EDP NUMBER	LIST PRICE
2.5mm	2.5mm	20mm	70mm	435E025	$18.64
3.0mm	3.0mm	20mm	70mm	435E030	18.64
3.2mm	3.2mm	22mm	80mm	435E032	18.64
3.5mm	3.5mm	22mm	80mm	435E035	18.64
4.0mm	4.0mm	22mm	80mm	435E040	19.46
4.5mm	4.5mm	22mm	80mm	435E045	20.28
5.0mm	5.0mm	25mm	90mm	435E050	20.28
6.0mm	6.0mm	28mm	100mm	435E060	21.65
7.0mm	7.0mm	30mm	110mm	435E070	24.80
8.0mm	8.0mm	32mm	120mm	435E080	29.32
9.00mm	9.0mm	36mm	130mm	435E090	32.89
10.0mm	10.0mm	40mm	140mm	435E110	36.72
11.0mm	9.0mm	40mm	145mm	435E111	39.74

METRIC SIZES	SHANK DIA	FLUTE LENGTH	OAL	EDP NUMBER	LIST PRICE
12mm	10mm	40mm	155MM	435E112	$39.74
13mm	11mm	45mm	160MM	435E113	47.27
14mm	11mm	45mm	170MM	435E114	50.97
15mm	13mm	45mm	175MM	435E115	53.99
16mm	13mm	45mm	180MM	435E116	59.19
17mm	14mm	50mm	190MM	435E117	72.62
18mm	14mm	50mm	195MM	435E118	72.63
19mm	16mm	50mm	205MM	435E119	75.64
20mm	16mm	50mm	210MM	435E120	75.64
21mm	18mm	55mm	215MM	435E121	107.55
22mm	18mm	55mm	225MM	435E122	115.10
23mm	18mm	60mm	230MM	435E123	126.06
24mm	20mm	60mm	240MM	435E124	134.28

Hand Reamer

STRAIGHT & SPIRAL FLUTE — STRAIGHT SHANK — RIGHT HAND CUT



Hand Reamers are used for final sizing of holes. The square on the shank end is suitable for holding in a tap wrench or vise. The cutting end 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.

Packaging: Individually packaged

IMPORT | **MADE IN USA**

SERIES			4400E		4450E		4400		4450	
TOOL SIZE	FLUTE LGTH	OAL	ST. FLUTE EDP NO.	ST. FLUTE PRICE	SPIRAL FLUTE EDP NO.	SPIRAL FLUTE PRICE	ST. FLUTE EDP NO	ST. FLUTE PRICE	SPIRAL FLUTE EDP NO.	SPIRAL FLUTE PRICE
1/16	1"	2"	-----	**$-----**	-----	**$-----**	------	**$------**	------	**$------**
5/64	1"	2"	-----	**-----**	-----	**-----**	------	**------**	------	**------**
3/32	1-1/4	2-1/2	-----	**-----**	-----	**-----**	------	**------**	------	**------**
7/64	1-1/4	2-1/2	-----	**-----**	-----	**-----**	------	**------**	------	**------**
1/8	1-1/2	3"	440E108	**30.07**	445E108	**37.14**	------	**------**	------	**------**
9/64	1-5/8	3-1/4	-----	**-----**	-----	**-----**	------	**------**	------	**------**
5/32	1-5/8	3-1/4	440E110	**29.48**	445E110	**32.06**	------	**------**	------	**------**
11/64	1-3/4	3-1/2	440E111	**29.48**	-----	**-----**	-------	**------**	------	**------**
3/16	1-3/4	3-1/2	440E112	**29.48**	445E112	**32.06**	------	**------**	------	**------**
13/64	1-7/8	3-3/4	440E113	**-----**	-----	**-----**	------	**------**	------	**------**
7/32	1-7/8	3-3/4	440E114	**32.06**	445E114	**34.53**	------	**------**	------	**------**
15/64	2"	4"	-----	**-----**	-----	**-----**	------	**------**	------	**------**
1/4	2"	4"	440E116	**32.06**	445E116	**34.53**	------	**------**	------	**------**
17/64	2-1/8	4-1/4	-----	**-----**	-----	**-----**	------	**------**	------	**------**
9/32	2-1/8	4-1/4	440E118	**34.53**	445E118	**36.76**	------	**------**	------	**------**
19/64	2-1/4	4-1/2	-----	**-----**	-----	**-----**	------	**------**	------	**------**
5/16	2-1/4	4-1/2	440E120	**34.53**	445E120	**36.76**	------	**------**	------	**------**
11/32	2-3/8	4-3/4	440E122	**39.11**	445E122	**44.16**	------	**------**	------	**------**
3/8	2-1/2	5"	440E124	**39.11**	445E124	**44.16**	440A124	**73.35**	445A124	**83.38**
13/32	2-5/8	5-1/4	440E126	**47.25**	445E126	**48.86**	440A126	**85.12**	445A126	**92.69**
7/16	2-3/4	5-1/2	440E128	**41.69**	445E128	**48.86**	440A128	**83.35**	445A128	**93.01**
15/32	2-7/8	5-3/4	440E130	**48.86**	445E130	**54.03**	440A130	**92.29**	445A130	**102.69**
1/2	3"	6"	440E132	**48.86**	445E132	**54.03**	440A132	**88.70**	445A132	**100.15**
17/32	3-1/8	6-1/4	440E134	**53.09**	445E134	**66.82**	440A134	**95.80**	445A134	**116.95**
9/16	3-1/4	6-1/2	440E136	**53.09**	445E136	**58.96**	440A136	**102.49**	445A136	**117.59**
129/32	3-3/8	6-3/4	440E138	**63.89**	445E138	**72.15**	440A138	**113.91**	445A138	**127.92**
5/8	3-1/2	7"	440E140	**56.38**	445E140	**63.66**	440A140	**110.45**	445A140	**125.58**
21/32	3-11/16	7-3/8	440E142	**69.22**	445E142	**78.00**	440A142	**123.76**	445A142	**137.67**
11/16	3-7/8	7-3/4	440E144	**61.07**	445E144	**68.83**	440A144	**121.35**	445A144	**137.67**
23/32	4-1/16	8-1/8	440E146	**75.07**	445E146	**83.33**	440A146	**132.89**	445A146	**148.02**
3/4	4-3/16	8-3/4	440E148	**66.24**	445E148	**73.52**	440A148	**129.41**	445A148	**145.19**
25/32	4-3/8	8-3/4	440E150	**80.66**	445E150	**88.92**	440A150	**141.98**	445A150	**157.78**
13/16	4-9/16	9-1/8	440E152	**80.66**	445E152	**78.46**	440A152	**129.41**	445A152	**157.78**
27/32	4-11/16	9-3/8	440E154	**88.92**	445E154	**96.90**	440A154	**155.44**	445A154	**172.66**
7/8	4-7/8	9-3/4	440E156	**78.46**	445E156	**85.50**	440A156	**156.78**	445A156	**172.66**
29/32	5"	10"	440E158	**99.83**	445E158	**110.75**	440A158	**173.25**	445A158	**192.49**
15/16	5-1/8	10-1/4	440E160	**99.83**	445E160	**97.72**	440A160	**156.93**	445A160	**192.49**
31/32	5-5/16	10-5/8	440E162	**108.35**	445E162	**120.60**	440A162	**190.75**	445A162	**211.94**
1"	5-7/16	10-7/8	440E164	**95.60**	445E164	**106.41**	440A164	**189.87**	445A164	**211.94**
1-1/16	5-5/8	11-1/4	440E204	**120.60**	445E204	**131.51**	-----	**-----**	-----	**-----**
1-1/8	5-13/16	11-5/8	440E208	**117.45**	445E208	**128.26**	440A208	**248.20**	445A208	**272.83**
1-3/16	6"	12"	440E212	**149.88**	445E212	**163.73**	-----	**-----**	-----	**-----**
1-1/4	6-1/8	12-1/4	440E216	**154.09**	445E216	**160.44**	440A216	**304.75**	445A216	**335.68**
1-5/16	6-1/4	12-1/2	440E220	**179.96**	445E220	**198.33**	-----	**-----**	-----	**-----**
1-3/8	6-5/16	12-5/8	440E224	**171.01**	445E224	**190.74**	440A224	**360.22**	445A224	**396.10**
1-7/16	6-7/16	12-7/8	440E228	**213.24**	445E228	**235.34**	-----	**-----**	-----	**-----**
1-1/2	6-1/2	13"	440E232	**203.89**	445E232	**224.80**	440A232	**425.18**	445A232	**469.13**

Taper Pin Reamers

TAPER 1/4" PER FOOT HIGH SPEED M-2 STEEL STRAIGHT SHANK

STRAIGHT FLUTE
RIGHT HAND CUT



SPIRAL FLUTE
LEFT HAND SPIRAL — RIGHT HAND CUT



HELICAL FLUTE
LEFT HAND SPIRAL — RIGHT HAND CUT



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 thousandths smaller than the small diameter of the finished reamed hole. Square shank allows hand (straight & spiral) reamers to be held in a tap wrench or vise, depending on whether the reamer or the part is rotated.

STRAIGHT FLUTE PIN REAMERS are designed for hand use in easy to ream materials.

SPIRAL FLUTE PIN REAMERS are designed for hand use in hard to ream materials.

HELICAL FLUTE PIN REAMERS are designed for machine reaming of holes for taper pins on a production basis. Helical design throws the chips forward to relieve packing of the flutes.

Packaging: All reamers are individually packaged.

MADE IN USA						STRAIGHT SERIES 4500		SPIRAL SERIES 4550		HELICAL SERIES 4570	
SIZES	SHANK DIA	SMALL END DIA	LARGE END DIA	FLUTE LGTH	OAL	4500 EDP NUMBER	4500 LIST PRICE	4550 EDP NUMBER	4550 LIST PRICE	4570 EDP NUMBER	4570 LIST PRICE
7/0	5/64	.0497	.0666	13/16	1-13/16	450A007	**$58.40**	455A007	**$60.59**	457A007	**$54.69**
6/0	3/32	.0611	.0806	15/16	1-15/16	450A006	**58.40**	455A006	**60.59**	457A006	**51.01**
5/0	7/64	.0719	.0966	1-3/16	2-3/16	450A005	**53.20**	455A005	**58.41**	457A005	**52.92**
4/0	1/8	.0869	.1142	1-5/16	2-5/16	450A004	**53.20**	455A004	**58.40**	457A004	**52.92**
3/0	9/64	.1029	.1302	1-5/16	2-5/16	450A003	**53.20**	455A003	**58.40**	457A003	**47.75**
2/0	5/32	.1137	.1462	1-9/16	2-9/16	450A002	**47.60**	455A002	**51.01**	457A002	**48.35**
0	11/64	.1287	.1638	1-11/16	2-15/16	450A000	**45.81**	455A000	**48.77**	457A000	**49.52**
1	3/16	.1447	.1798	1-11/16	2-15/16	450A010	**44.34**	455A010	**49.52**	457A010	**50.26**
2	13/64	.1605	.2008	1-15/16	3-3/16	450A020	**44.34**	455A020	**49.52**	457A020	**56.91**
3	15/64	.1813	.2294	2-5/16	3-11/16	450A030	**44.34**	455A030	**49.52**	457A030	**58.82**
4	17/64	.2071	.2604	2-9/16	4-1/16	450A040	**49.52**	455A040	**53.97**	457A040	**66.21**
5	5/16	.2409	.2994	2-13/16	4-5/16	450A050	**53.20**	455A050	**57.58**	457A050	**45.56**
6	23/64	.2773	.3540	3-11/16	5-7/16	450A060	**64.30**	455A060	**70.94**	457A060	**85.00**
7	13/32	.3297	.4220	4-7/16	6-5/16	450A070	**82.76**	455A070	**89.72**	457A070	**104.93**
8	7/16	.3971	.5050	5-3/16	7-3/16	450A080	**105.95**	455A080	**116.02**	457A080	**123.14**
9	9/16	.4805	.6066	6-1/16	8-5/16	450A090	**128.59**	455A090	**139.99**	457A090	**135.26**
10	5/8	.5799	.7219	6-13/16	9-5/16	450A100	**141.16**	455A100	**155.19**	457A100	**171.74**
11	3/4	.7060	.8780	8-1/4	11-1/4	450A111	**150.49**	455A111	**165.54**	457A111	**182.06**
12	3/4	.8420	1.0500	10"	13-7/8	450A112	**232.82**	455A112	**256.09**	457A112	**281.84**
13	1-1/16	1.0090	1.2590	12"	16"	450A113	**451.58**	455A113	**496.74**	457A113	**761.31**
14	1-3/32	1.2500	1.5420	14"	18-1/4	450A114	**729.99**	455A114	**802.97**	457A114	**881.72**

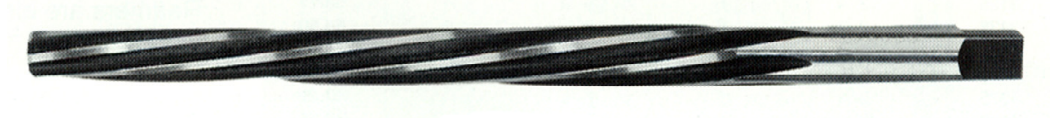
Taper Pin Reamers

TAPER 1/4" PER FOOT HIGH SPEED M-2 STEEL STRAIGHT SHANK

STRAIGHT FLUTE
RIGHT HAND CUT



SPIRAL FLUTE
LEFT HAND SPIRAL — RIGHT HAND CUT



HELICAL FLUTE
LEFT HAND SPIRAL — RIGHT HAND CUT



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 thousandths smaller than the small diameter of the finished reamed hole. Square shank allows hand (straight & spiral) reamers to be held in a tap wrench or vise, depending on whether the reamer or the part is rotated.

STRAIGHT FLUTE PIN REAMERS are designed for hand use in easy to ream materials.

SPIRAL FLUTE PIN REAMERS are designed for hand use in hard to ream materials.

HELICAL FLUTE PIN REAMERS are designed for machine reaming of holes for taper pins on a production basis. Helical design throws the chips forward to relieve packing of the flutes.

Packaging: All reamers are individually packaged.

						STRAIGHT		SPIRAL		HELICAL	
						IMPORT SERIES 4500E		IMPORT SERIES 4550E		IMPORT SERIES 4570E	
SIZES	SHANK DIA	SMALL END DIA	LARGE END DIA	FLUTE LGTH	OAL	4500E EDP NUMBER	4500E LIST PRICE	4550E EDP NUMBER	4550E LIST PRICE	4570E EDP NUMBER	4570E LIST PRICE
7/0	5/64	.0497	.0666	13/16	1-13/16	450E007	**$59.66**	455E007	**$60.84**	457E007	**$60.84**
6/0	3/32	.0611	.0806	15/16	1-15/16	450E006	**46.98**	455E006	**47.92**	457E006	**47.92**
5/0	7/64	.0719	.0966	1-3/16	2-3/16	450E005	**41.11**	455E005	**41.69**	457E005	**41.69**
4/0	1/8	.0869	.1142	1-5/16	2-5/16	450E004	**37.35**	455E004	**38.17**	457E004	**38.17**
3/0	9/64	.1029	.1302	1-5/16	2-5/16	450E003	**33.24**	455E003	**31.12**	457E003	**34.06**
2/0	5/32	.1137	.1462	1-9/16	2-9/16	450E002	**29.83**	455E002	**27.95**	457E002	**31.12**
0	11/64	.1287	.1638	1-11/16	2-15/16	450E000	**28.19**	455E000	**26.43**	457E000	**29.36**
1	3/16	.1447	.1798	1-11/16	2-15/16	450E010	**29.83**	455E010	**27.95**	457E010	**29.36**
2	13/64	.1605	.2008	1-15/16	3-3/16	450E020	**29.83**	455E020	**27.95**	457E020	**31.12**
3	15/64	.1813	.2294	2-5/16	3-11/16	450E030	**29.83**	455E030	**27.95**	457E030	**31.12**
4	17/64	.2071	.2604	2-9/16	4-1/16	450E040	**33.24**	455E040	**31.12**	457E040	**34.06**
5	5/16	.2409	.2994	2-13/16	4-5/16	450E050	**37.00**	455E050	**34.65**	457E050	**38.05**
6	23/64	.2773	.3540	3-11/16	5-7/16	450E060	**46.98**	455E060	**44.04**	457E060	**48.62**
7	13/32	.3297	.4220	4-7/16	6-5/16	450E070	**61.07**	455E070	**57.32**	457E070	**63.19**
8	7/16	.3971	.5050	5-3/16	7-3/16	450E080	**88.79**	455E080	**83.15**	457E080	**91.38**
9	9/16	.4805	.6066	6-1/16	8-5/16	450E090	**113.69**	455E090	**106.64**	457E090	**117.45**
10	5/8	.5799	.7219	6-13/16	9-5/16	450E100	**133.42**	455E100	**125.20**	457E100	**137.89**

Adjustable Blade Reamers

IMPORT — HIGH SPEED M-2 STEEL



Adjustable Reamers are designed to permit the user to set them to any desired diameter within the range of the adjustment. This adjustment permits them to be set to a special diameter, and also, when the reamers are worn, allows them to be set oversize, reground, and resharpened.

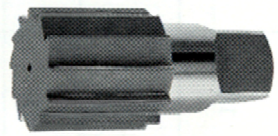
Packaging: All reamers are individually packaged.

SERIES 4100E

FRAC SIZES	SIZE RANGE	OAL	EDP NUMBER	LIST PRICE
8/A	1/4 - 9/32	3-1/2	41E008	$54.59
7/A	9/32 - 5/16	3-3/4	41E007	54.59
6/A	5/16 - 11/32	4"	41E006	48.07
5/A	11/32 - 3/8	4-1/4	41E005	48.07
4/A	3/8 - 13/32	4-1/2	41E004	50.46
3/A	13/32 - 7/16	4-3/4	41E003	55.68
2/A	7/16 - 15/32	5"	41E002	55.68
A	15/32 - 17/32	5-1/4	41E501	59.38
B	17/32 - 19/32	5-3/4	41E502	59.38
C	19/32 - 21/32	6-1/4	41E503	61.77
D	21/32 - 23/32	6-3/4	41E504	64.60

FRAC SIZES	SIZE RANGE	OAL	EDP NUMBER	LIST PRICE
E	23/32 - 25/32	7-1/4	41E505	$67.86
F	25/32 - 27/32	7-3/4	41E506	69.82
G	27/32 - 15/16	8-1/4	41E507	73.95
H	15/16 - 1-11/32	8-3/4	41E508	77.87
I	1-1/16 - 1-3/16	10"	41E509	98.96
J	1-3/16 - 1-11/32	11"	41E510	117.89
K	1-11/32 - 1-1/2	12"	41E511	142.25
L	1-1/2 - 1-13/16	13"	41E512	208.80
M	1-13/16 - 2-7/32	15"	41E513	284.27
N	2-7/32 - 2-3/4	17"	41E514	480.24
O	2-3/4 - 3-11/32	19"	41E515	652.72

Taper Pipe Reamers





Taper Pipe Reamers are tapered 3/4" to the foot and are designed to ream holes to be tapped with American Standard taper pipe taps. They are made to fit standard pipe sizes.

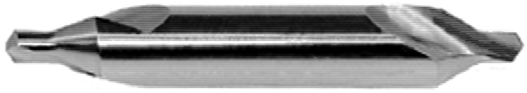
Packaging: All reamers are individually packaged.

STRAIGHT FLUTE SERIES 4600E — SPIRAL FLUTE SERIES 4650E

FRAC SIZES	DIAMETER LARGE END	DIAMETER SMALL END	FLUTE LENGTH	OVERALL LENGTH	STRAIGHT FLUTE EDP	ST. FLUTE LIST PRICE	SPIRAL FLUTE EDP	SP. FLUTE LIST PRICE
1/16	.291	.245	3/4	2"	460E104	$27.71	465E104	$33.20
1/8	.362	.316	3/4	2-1/8	460E108	27.72	465E108	33.20
1/4	.472	.406	1-1/16	2-7/16	460E116	35.24	465E116	41.97
3/8	.606	.540	1-1/16	2-9/16	460E124	37.58	465E124	45.34
1/2	.751	.665	1-3/8	3-1/8	460E132	49.80	465E132	59.90
3/4	.962	.876	1-3/8	3-1/4	460E148	68.83	465E148	82.22
1"	1.212	1.103	1-3/4	3-3/4	460E164	109.62	465E164	116.20
1-1/4	1.553	1.444	1-3/4	4"	460E216	181.03	465E216	189.09
1-1/2	1.793	1.684	1-3/4	4-1/4	460E232	241.16	465E232	230.20
2"	2.268	2.159	1-3/4	4-1/2	460E264	323.38	465E264	305.37
2-1/2	2.772	2.561	2-5/8	5-1/2	460E365	539.88	465E365	508.95
3"	3.380	3.202	2-5/8	6"	460E364	734.45	465E364	692.96

Combined Drill & Countersinks

USA & IMPORT HIGH SPEED STEEL 60° INCLUDED 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 for the machine centers. The Plain Type is by the most commonly used.

Packaging: All countersinks are individually packaged.

PLAIN TYPE IMPORT 3500E USA 3500

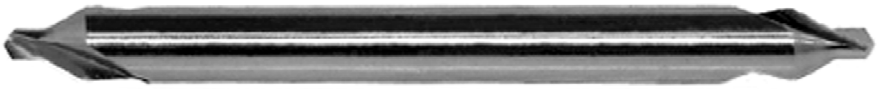
TOOL SIZE	BODY DIAMETER	DRILL DIAMETER & LENGTH	OVERALL LENGTH	IMPORT EDP NUMBER	IMPORT LIST PRICE	USA EDP NUMBER	USA LIST PRICE
000	1/8	.020	1-1/4	-----	$-----	350A000	**$11.53**
00	1/8	.025	1-1/4	-----	-----	350AA00	**11.53**
0	1/8	1/32	1-1/4	-----	-----	350AAB0	**11.53**
1	1/8	3/64	1-1/4	350E001	**3.26**	350A001	**9.35**
2	3/16	5/64	1-7/8	350E002	**3.26**	350A002	**9.79**
3	1/4	7/64	2"	350E003	**3.26**	350A003	**10.22**
4	5/16	1/8	2-1/8	350E004	**3.26**	350A004	**10.66**
5	7/16	3/16	2-3/4	350E005	**5.99**	350A005	**16.75**
6	1/2	7/32	3"	350E006	**9.16**	350A006	**25.45**
7	5/8	1/4	3-1/4	350E007	**11.75**	350A007	**36.76**
8	3/4	5/16	3-1/2	350E008	**15.74**	350A008	**51.11**

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, it is advisable to use the Bell Type. They have an additional small 120° chamfer to protect the edges of the 60° hole.

IMPORT BELL TYPE SERIES 3500E

TOOL SIZE	BODY DIA	DRILL DIA & LGTH	OAL	EDP NUMBER	LIST PRICE
11	1/8	3/64	1-1/4	350E011	**$4.96**
12	3/16	1/16	1-7/8	350E012	**4.96**
13	1/4	3/32	2"	350E013	**4.96**
14	5/16	7/64	2-1/8	350E014	**4.96**

TOOL SIZE	BODY DIA	DRILL DIA & LGTH	OAL	EDP NUMBER	LIST PRICE
15	7/16	5/32	2-3/4	350E015	**$7.22**
16	1/2	3/16	3"	350E016	**10.96**
17	5/8	7/32	3-1/4	350E017	**14.70**
18	3/4	1/4	3-1/2	350E018	**19.92**



IMPORT LONG LENGTH SERIES SERIES 3575E

TOOL SIZE	BODY DIA	DRILL DIA & LGTH	OAL	EDP NUMBER	LIST PRICE
1	1/8	3/64	3"	35E001A	**$14.96**
1	1/8	3/64	4"	35E001B	**15.62**
1	1/8	3/64	5"	35E001C	**21.75**
1	1/8	3/64	6"	35E001D	**28.45**
2	3/16	5/64	4"	35E002A	**17.14**
2	3/16	5/64	5"	35E002B	**21.75**
2	3/16	5/64	6"	35E002C	**28.45**
3	1/4	7/64	4"	35E003A	**18.01**
3	1/4	7/64	5"	35E003B	**23.75**
3	1/4	7/64	6"	35E003C	**28.80**
4	5/16	1/8	4"	35E004A	**19.84**
4	5/16	1/8	5"	35E004B	**25.32**

TOOL SIZE	BODY DIA.	DRILL DIA & LGTH	OAL	EDP NUMBER	LIST PRICE
4	5/16	1/8	6"	35E004C	**$29.32**
4-1/2	3/8	9/64	4"	35E045A	**21.49**
4-1/2	3/8	9/64	5"	35E045B	**25.71**
4-1/2	3/8	9/64	6"	35E045C	**29.01**
5	7/16	3/16	4"	35E005A	**25.32**
5	7/16	3/16	5"	35E005B	**29.28**
5	7/16	3/16	6"	35E006A	**32.67**
6	1/2	7/32	5"	35E006B	**30.89**
6	1/2	7/32	6"	35E006C	**37.24**
7	5/8	1/4	5"	35E007A	**64.60**
7	5/8	1/4	6"	35E007B	**67.77**
8	3/4	5/16	6"	35E008A	**74.52**

Solid Carbide C D & C's are on page 157

Countersinks

IMPORT HIGH SPEED STEEL 60° 82° 90° 100°



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 & rivet holes. Packaging: All countersinks are individually packaged.

SINGLE FLUTE COUNTERSINK SERIES 3600E

TOOL SIZE	SHANK DIAMETER	OVERALL LENGTH	60° EDP NUMBER	82° EDP NUMBER	90° EDP NUMBER	100° EDP NUMBER	LIST PRICE
3/16	3/16	1-1/2	36E112A	36E112B	36E112C	36E112D	**$11.04**
1/4	1/4	2"	36E116A	36E116B	36E116C	36E116D	**11.63**
5/16	1/4	2"	36E120A	36E120B	36E120C	36E120D	**12.57**
3/8	1/4	2"	36E124A	36E124B	36E124C	36E124D	**13.39**
1/2	1/4	2"	36E132A	36E132B	36E132C	36E132D	**16.80**
5/8	1/2	2-3/4	36E140A	36E140B	36E140C	36E140D	**24.55**
3/4	1/2	2-3/4	36E148A	36E148B	36E148C	36E148D	**32.89**
7/8	1/2	2-3/4	36E156A	36E156B	36E156C	36E156D	**53.32**
1"	1/2	2-3/4	36E164A	36E164B	36E164C	36E164D	**55.91**
1-1/4	3/4	3-3/8	36E216A	36E216B	36E216C	36E216D	**77.28**
1-1/2	3/4	3-3/8	36E232A	36E232B	36E232C	36E232D	**100.77**
2"	3/4	3-3/8	36E264A	36E264B	36E264C	36E264D	**191.68**



Center Reamers are designed for countersinking holes for flathead screws, and rivets, in portable drilling applications.

3 FLUTE CENTER REAMER SERIES 3700E

TOOL SIZE	SHANK DIAMETER	SHANK LENGTH	OVERALL LENGTH	60° EDP NUMBER	82° EDP NUMBER	90° EDP NUMBER	100° EDP NUMBER	LIST PRICE
1/4	3/16	3/4	1-1/2	37E116A	37E116B	37E116C	37E116D	**$8.69**
3/8	1/4	7/8	1-3/4	37E124A	37E124B	37E124C	37E124D	**10.22**
1/2	3/8	1"	2"	37E132A	37E132B	37E132C	37E132D	**12.45**
5/8	3/8	1"	2-1/4	37E140A	37E140B	37E140C	37E140D	**18.91**
3/4	1/2	1-1/4	2-5/8	37E148A	37E148B	37E148C	37E148D	**28.19**
1"	1/2	1-1/4	3-1/2	37E164A	37E164B	37E164C	37E164D	**44.87**
1-1/4	3/4	1-1/2	3-1/2	37E216A	37E216B	37E216C	37E216D	**92.32**
1-1/2	3/4	1-1/2	3-1/2	37E232A	37E232B	37E232C	37E232D	**125.91**
2"	3/4	1-1/2	3-3/4	37E264A	37E264B	37E264C	37E264D	**208.36**



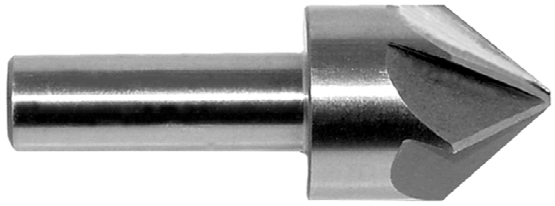
Four Flute Machine Countersinks have a longer shank for use in Turret lathes and for screw machine work.

4 FLUTE MACHINE COUNTERSINK SERIES 3800E

TOOL SIZE	SHANK DIAMETER	SHANK LENGTH	OVERALL LENGTH	60° EDP NUMBER	82° EDP NUMBER	90° EDP NUMBER	LIST PRICE
1/2	1/2	2-1/4	3-7/8	38E132A	38E132B	38E132C	**$24.66**
5/8	1/2	2-1/4	4"	38E140A	38E140B	38E140C	**31.59**
3/4	1/2	2-1/4	4-1/8	38E148A	38E148B	38E148C	**41.69**
7/8	1/2	2-1/4	4-1/4	38E156A	38E156B	38E156C	**45.69**
1"	1/2	2-1/4	4-3/8	38E164A	38E164B	38E164C	**52.15**
1-1/4	1/2	2-1/4	5"	38E216A	38E216B	38E216C	**68.83**
1-1/2	1/2	2-1/4	5-3/8	38E232A	38E232B	38E232C	**93.02**

Countersinks

IMPORT HIGH SPEED M-2 STEEL 60° 82° & 90°

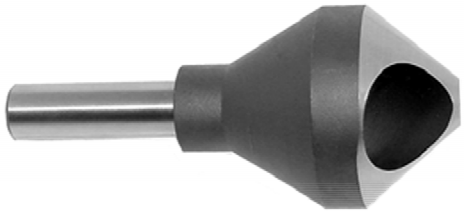


Six Flute Chatterless countersinks are designed for fast shearing cuts.

Packaging: All countersinks are individually packaged.

6 FLUTE CHATTERLESS COUNTERSINKS SERIES 3900E

TOOL SIZE	SHANK DIAMETER	SHANK LENGTH	OVERALL LENGTH	60° EDP NUMBER	82° EDP NUMBER	90° EDP NUMBER	LIST PRICE
3/16	3/16	1"	1-1/2	39E112A	39E112B	39E112C	**$10.81**
1/4	1/4	1"	2"	39E116A	39E116B	39E116C	**11.39**
5/16	1/4	1"	2"	39E120A	39E120B	39E120C	**12.45**
3/8	1/4	1"	2"	39E124A	39E124B	39E124C	**14.80**
1/2	1/4	1"	2"	39E132A	39E132B	39E132C	**18.32**
5/8	1/2	1-1/8	2-1/2	39E140A	39E140B	39E140C	**26.19**
3/4	1/2	1-5/16	2-3/4	39E148A	39E148B	39E148C	**38.64**
7/8	1/2	1-5/16	2-3/4	39E156A	39E156B	39E156C	**46.98**
1"	1/2	1-5/16	2-3/4	39E164A	39E164B	39E164C	**56.38**
1-1/4	3/4	1-5/8	3-3/8	39E216A	39E216B	39E216C	**83.86**
1-1/2	3/4	1-5/8	3-1/2	39E232A	39E232B	39E232C	**119.33**
1-3/4	1"	2-1/8	4-1/4	39E248A	39E248B	39E248C	**158.09**
2"	1"	2-1/8	4-3/8	39E264A	39E264B	39E264C	**184.63**



COUNTERSINKS & DEBURRING TOOLS SERIES 4000E

TOOL SIZE	SMALLEST DIAMETER	LARGEST DIAMETER	SHANK DIAMETER	80° EDP NUMBER	82° EDP NUMBER	90° EDP NUMBER	LIST PRICE
0 double end	1/16	15/64	1/4	40E000A	40E000B	40E000C	**$22.19**
1 single end	5/32	13/32	1/4	40E001A	40E001B	40E001C	**22.19**
2single end	3/16	17/32	1/4	40E002A	40E002B	40E002C	**23.71**
3 single end	5/16	25/32	1/2	40E003A	40E003B	40E003C	**43.50**
4 single end	9/16	1-1/16	1/2	40E004A	40E004B	40E004C	**67.43**
5 single end	5/8	1-15/32	1/2	---	40E005B	---	**115.28**
6 single end	3/4	1-3/4	5/8	---	40E006B	---	**180.53**
7 single end	1"	2"	5/8	---	40E007B	---	**241.43**
8 single end	1-1/4	2-1/2	3/4	---	40E008B	---	**284.93**
0 - 4 SET	---	---	---	40ESETA	40ESETB	40ESETC	**183.79**

Side Milling Cutters

PLAIN TEETH HIGH SPEED M-2 STEEL SERIES 4800E



For slotting and light duty side milling. These cutters can be ganged and used as straddle mills.
Packaging: All milling cutters are individually packaged.

IMPORT

DIA	HOLE SIZE	NO OF TEETH	WIDTH OF FACE	EDP NUMBER	LIST PRICE
2"	1/2	14	3/16	480E201	**$52.37**
2"	1/2	14	1/4	480E202	**54.37**
2"	1/2	14	5/16	480E203	**71.10**
2"	1/2	14	3/8	480E204	**56.38**
2"	5/8	14	3/16	480E205	**52.37**
2"	5/8	14	1/4	480E206	**50.98**
2"	5/8	14	5/16	480E207	**71.10**
2"	5/8	14	3/8	480E208	**60.13**
2"	7/8	14	1/4	480E209	**67.96**
2"	7/8	14	5/16	480E210	**71.10**
2"	7/8	14	3/8	480E211	**75.17**
2"	7/8	14	7/16	480E212	**84.25**
2-1/2	7/8	16	3/16	480E213	**84.25**
2-1/2	7/8	16	1/4	480E214	**67.40**
2-1/2	7/8	16	5/16	480E215	**70.66**
2-1/2	7/8	16	3/8	480E216	**74.92**
2-1/2	7/8	16	7/16	480E217	**101.16**
2-1/2	7/8	16	1/2	480E218	**77.52**
2-1/2	7/8	16	9/16	480E219	**114.32**
2-1/2	7/8	16	5/8	480E220	**121.83**
2-1/2	1"	16	3/16	480E221	**84.25**
2-1/2	1"	16	1/4	480E222	**84.25**
2-1/2	1"	16	5/16	480E223	**88.32**
2-1/2	1"	16	3/8	480E224	**93.65**
2-1/2	1"	16	7/16	480E225	**101.16**
2-1/2	1"	16	1/2	480E226	**103.36**
2-1/2	1"	16	9/16	480E227	**114.32**
2-1/2	1"	16	5/8	480E228	**121.83**
3"	1"	18	3/16	480E301	**97.41**
3"	1"	18	7/32	480E302	**101.16**
3"	1"	18	1/4	480E303	**80.93**
3"	1"	18	9/32	480E304	**106.80**
3"	1"	18	5/16	480E305	**85.44**
3"	1"	18	11/32	480E306	**110.56**
3"	1"	18	3/8	480E307	**88.45**
3"	1"	18	13/32	480E308	**118.08**
3"	1"	18	7/16	480E309	**94.46**
3"	1"	18	1/2	480E310	**98.72**
3"	1"	18	9/16	480E311	**140.63**
3"	1"	18	5/8	480E312	**140.63**
3"	1"	18	11/16	480E313	**157.23**
3"	1"	18	3/4	480E314	**157.23**
3"	1"	18	13/16	480E315	**164.43**
3"	1"	18	7/8	480E316	**164.43**
3"	1"	18	15/16	480E317	**196.38**
3"	1"	18	1"	480E318	**224.56**

DIA	HOLE SIZE	NO OF TEETH	WIDTH OF FACE	EDP NUMBER	LIST PRICE
3"	1-1/4	18	3/16	480E319	**$97.41**
3"	1-1/4	18	7/32	480E320	**101.16**
3"	1-1/4	18	1/4	480E321	**101.16**
3"	1-1/4	18	9/32	480E322	**106.80**
3"	1-1/4	18	5/16	480E323	**106.80**
3"	1-1/4	18	11/32	480E324	**110.56**
3"	1-1/4	18	3/8	480E325	**110.56**
3"	1-1/4	18	13/32	480E326	**118.08**
3"	1-1/4	18	7/16	480E327	**118.08**
3"	1-1/4	18	1/2	480E328	**123.40**
3"	1-1/4	18	9/16	480E329	**140.63**
3"	1-1/4	18	5/8	480E330	**140.63**
3"	1-1/4	18	11/16	480E331	**157.23**
3"	1-1/4	18	3/4	480E332	**157.23**
3"	1-1/4	18	13/16	480E333	**164.43**
3"	1-1/4	18	7/8	480E334	**164.43**
3"	1-1/4	18	15/16	480E335	**196.38**
3"	1-1/4	18	1"	480E336	**224.56**
3-1/2	1"	20	3/16	480E337	**134.99**
3-1/2	1"	20	1/4	480E338	**139.06**
3-1/2	1"	20	5/16	480E339	**149.71**
3-1/2	1"	20	3/8	480E340	**155.35**
3-1/2	1"	20	7/16	480E341	**177.58**
3-1/2	1"	20	1/2	480E342	**177.58**
3-1/2	1"	20	5/8	480E343	**206.09**
3-1/2	1-1/4	20	7/16	480E344	**177.58**
3-1/2	1-1/4	20	1/2	480E345	**177.58**
4"	1"	22	3/16	480E401	**134.99**
4"	1"	22	7/32	480E402	**139.06**
4"	1"	22	1/4	480E403	**111.25**
4"	1"	22	9/32	480E404	**149.71**
4"	1"	22	5/16	480E405	**149.71**
4"	1"	22	11/32	480E406	**155.35**
4"	1"	22	3/8	480E407	**124.28**
4"	1"	22	13/32	480E408	**177.58**
4"	1"	22	7/16	480E409	**177.58**
4"	1"	22	1/2	480E410	**142.07**
4"	1"	22	9/16	480E411	**190.74**
4"	1"	22	5/8	480E412	**152.59**
4"	1"	22	11/16	480E413	**206.09**
4"	1"	22	3/4	480E414	**164.87**
4"	1"	22	13/16	480E415	**231.45**
4"	1"	22	7/8	480E416	**185.16**
4"	1"	22	15/16	480E417	**269.67**
4"	1"	22	1"	480E318	**269.67**
4"	1"	22	1-1/8	480E419	**308.50**
4"	1"	22	1-1/4	480E420	**347.65**
4"	1"	22	1-1/2	480E321	**405.59**

CONTINUED ON NEXT PAGE

Side Milling Cutters

PLAIN TEETH HIGH SPEED M-2 STEEL SERIES 4800E

DIA	HOLE SIZE	NO OF TEETH	WIDTH OF FACE	EDP NUMBER	LIST PRICE
4"	1-1/4	22	3/16	480E422	$134.99
4"	1-1/4	22	7/32	480E423	139.06
4"	1-1/4	22	1/4	480E424	139.06
4"	1-1/4	22	9/32	480E425	149.71
4"	1-1/4	22	5/16	480E426	149.71
4"	1-1/4	22	11/32	480E427	155.35
4"	1-1/4	22	3/8	480E428	155.35
4"	1-1/4	22	13/32	480E429	177.58
4"	1-1/4	22	7/16	480E430	177.58
4"	1-1/4	22	1/2	480E431	142.07
4"	1-1/4	22	9/16	480E432	190.74
4"	1-1/4	22	5/8	480E433	152.59
4"	1-1/4	22	11/16	480E434	206.09
4"	1-1/4	22	3/4	480E435	164.87
4"	1-1/4	22	13/16	480E436	231.45
4"	1-1/4	22	7/8	480E437	185.16
4"	1-1/4	22	15/16	480E438	269.67
4"	1-1/4	22	1"	480E339	269.67
4"	1-1/4	22	1-1/8	480E440	308.50
4"	1-1/4	22	1-1/4	480E441	347.65
4"	1-1/4	22	1-1/2	480E342	405.59
4-1/2	1-1/4	24	3/8	480E443	239.91
4-1/2	1-1/4	24	4/16	480E444	239.91
4-1/2	1-1/4	24	1/2	480E345	239.91
5"	1"	24	1/4	480E501	173.59
5"	1"	24	9/32	480E502	231.45
5"	1"	24	5/16	480E503	192.45
5"	1"	24	11/32	480E504	239.91
5"	1"	24	3/8	480E505	200.54
5"	1"	24	13/32	480E506	239.91
5"	1"	24	7/16	480E507	212.28
5"	1"	24	1/2	480E508	191.93
5"	1"	24	9/16	480E509	232.07
5"	1"	24	5/8	480E510	201.84
5"	1"	24	11/16	480E511	265.57
5"	1"	24	3/4	480E512	234.25
5"	1"	24	13/16	480E513	308.50
5"	1"	24	7/8	480E514	319.07
5"	1"	24	15/16	480E515	328.43
5"	1"	24	1"	480E516	355.48
5"	1-1/4	24	1/4	480E517	173.61
5"	1-1/4	24	9/32	480E518	231.45
5"	1-1/4	24	5/16	480E519	192.49
5"	1-1/4	24	11/32	480E520	231.45
5"	1-1/4	24	3/8	480E521	200.54
5"	1-1/4	24	13/32	480E522	239.91
5"	1-1/4	24	7/16	480E523	212.28
5"	1-1/4	24	1/2	480E524	191.93
5"	1-1/4	24	9/16	480E525	232.07
5"	1-1/4	24	5/8	480E526	201.84
5"	1-1/4	24	11/16	480E527	265.57
5"	1-1/4	24	3/4	480E528	234.25
5"	1-1/4	24	13/16	480E529	308.50
5"	1-1/4	24	7/8	480E530	319.07
5"	1-1/4	24	15/16	480E531	328.43
5"	1-1/4	24	1"	480E532	234.25
5"	1-1/4	24	1-1/4	480E533	435.35
6"	1"	26	1/4	480E601	231.38
6"	1"	26	5/16	480E602	231.38
6"	1"	26	3/8	480E603	233.94
6"	1"	26	7/16	480E604	277.97
6"	1"	26	1/2	480E605	244.04
6"	1"	26	9/16	480E606	338.26
6"	1"	26	5/8	480E607	364.88
6"	1"	26	11/16	480E608	374.27
6"	1"	26	3/4	480E609	319.46
6"	1"	26	13/16	480E610	435.35
6"	1"	26	7/8	480E611	488.07
6"	1"	26	15/16	480E612	456.10
6"	1"	26	1"	480E613	485.46
6"	1"	26	1-1/4	480E614	551.23
6"	1-1/4	26	1/4	480E615	231.38
6"	1-1/4	26	9/32	480E616	308.50
6"	1-1/4	26	5/16	480E617	231.38

DIA	HOLE SIZE	NO OF TEETH	WIDTH OF FACE	EDP NUMBER	LIST PRICE
6"	1-1/4	26	11/32	480E618	$311.95
6"	1-1/4	26	3/8	480E619	233.94
6"	1-1/4	26	13/32	480E620	324.16
6"	1-1/4	26	7/16	480E621	286.80
6"	1-1/4	26	1/2	480E622	244.04
6"	1-1/4	26	9/16	480E623	338.26
6"	1-1/4	26	5/8	480E624	273.66
6"	1-1/4	26	11/16	480E624	374.27
6"	1-1/4	26	3/4	480E626	313.85
6"	1-1/4	26	13/16	480E627	435.35
6"	1-1/4	26	7/8	480E628	485.46
6"	1-1/4	26	15/16	480E629	485.46
6"	1-1/4	26	1"	480E630	372.23
6"	1-1/4	26	1-1/8	480E631	513.65
6"	1-1/4	26	1-1/4	480E632	551.23
7"	1-1/4	28	1/4	480E701	389.93
7"	1-1/4	28	5/16	480E702	401.68
7"	1-1/4	28	3/8	480E703	418.12
7"	1-1/4	28	7/16	480E704	427.52
7"	1-1/4	28	1/2	480E705	427.52
7"	1-1/4	28	9/16	480E706	451.31
7"	1-1/4	28	5/8	480E707	474.06
7"	1-1/4	28	11/16	480E708	529.61
7"	1-1/4	28	3/4	480E709	479.33
7"	1-1/4	28	13/16	480E710	679.64
7"	1-1/4	28	7/8	480E711	713.18
7"	1-1/4	28	15/16	480E712	745.42
7"	1-1/4	28	1"	480E713	586.86
8"	1"	32	1/4	480E801	761.08
8"	1"	32	5/16	480E802	801.79
8"	1"	32	3/8	480E803	836.24
8"	1"	32	7/16	480E804	886.36
8"	1"	32	1/2	480E805	886.36
8"	1-1/4	32	1/4	480E806	573.16
8"	1-1/4	32	5/16	480E807	601.34
8"	1-1/4	32	3/8	480E808	627.18
8"	1-1/4	32	7/16	480E809	664.77
8"	1-1/4	32	1/2	480E810	664.77
8"	1-1/4	32	9/16	480E811	671.81
8"	1-1/4	32	5/8	480E812	695.30
8"	1-1/4	32	11/16	480E813	718.79
8"	1-1/4	32	3/4	480E814	739.94
8"	1-1/4	32	13/16	480E815	768.12
8"	1-1/4	32	7/8	480E816	803.01
8"	1-1/4	32	15/16	480E817	862.17
8"	1-1/4	32	1"	480E818	773.82
8"	1-1/2	32	1/4	480E819	764.21
9"	1-1/4	34	1/4	480E901	749.33
9"	1-1/4	34	3/8	480E902	855.12
9"	1-1/4	34	1/2	480E903	951.35
9"	1-1/4	34	5/8.	480E904	1,003.02
9"	1-1/4	34	3/4	480E905	1,064.10
9"	1-1/4	34	1"	480E906	1,188.59
10"	1-1/4	36	5/8	480E101	1,882.33
10"	1-1/4	36	3/4	480E102	1,991.95
10"	1-1/2	36	1/4	480E103	995.98
10"	1-1/2	36	5/16	480E104	1,096.98
10"	1-1/2	36	3/8	480E105	1,162.76
10"	1-1/2	36	7/16	480E106	1,277.86
10"	1-1/2	36	1/2	480E107	1,327.19
10"	1-1/2	36	9/16	480E108	1,360.07
10"	1-1/2	36	5/8	480E109	1,411.75
10"	1-1/2	36	11/16	480E810	1,458.73
10"	1-1/2	36	3/4	480E811	1,493.96
10"	1-1/2	36	13/16	480E812	1,559.74
10"	1-1/2	36	7/8	480E113	1,625.51
10"	1-1/2	36	15/16	480E114	1,693.63
10"	1-1/2	36	1"	480E115	1,740.61
10"	1-1/2	36	1-1/8	480E116	2,439.83
10"	1-1/2	36	1-1/4	480E117	2,543.18
10"	1-1/2	36	1-1/2	480E118	2,875.18
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Side Milling Cutters

STAGGERED TEETH HIGH SPEED M-2 STEEL SERIES 4850E



For deep slotting and heavy duty side milling. Side thrust is eliminated by the shear-cutting action, alternately right and left. These cutters can be ganged and used as straddle mills.

Packaging: All milling cutters are individually packaged.

IMPORT

DIA	HOLE SIZE	NO OF TEETH	WIDTH OF FACE	EDP NUMBER	LIST PRICE
2-1/2	7/8	16	3/16	485E201	**$99.60**
2-1/2	7/8	16	1/4	485E202	**79.39**
2-1/2	7/8	16	5/16	485E203	**84.17**
2-1/2	7/8	16	3/8	485E204	**92.44**
2-1/2	7/8	16	7/16	485E205	**119.96**
2-1/2	7/8	16	1/2	485E206	**98.53**
2-1/2	1"	16	1/4	485E207	**99.60**
2-1/2	1"	16	7/16	485E208	**119.96**
2-1/2	1"	16	1/2	485E209	**121.83**
3"	1"	16	5/32	485E301	**114.32**
3"	1"	16	3/16	485E302	**87.00**
3"	1"	16	7/32	485E303	**119.96**
3"	1"	16	1/4	485E304	**96.57**
3"	1"	16	9/32	485E305	**127.47**
3"	1"	16	5/16	485E306	**103.31**
3"	1"	16	11/32	485E307	**133.11**
3"	1"	16	3/8	485E308	**106.79**
3"	1"	16	7/16	485E309	**142.19**
3"	1"	16	1/2	485E310	**148.14**
3"	1"	16	9/16	485E311	**159.11**
3"	1"	16	5/8	485E312	**159.11**
3"	1"	16	11/16	485E313	**170.38**
3"	1"	16	3/4	485E314	**170.38**
3"	1"	16	13/16	485E315	**203.58**
3"	1"	16	7/8	485E316	**203.58**
3"	1"	16	15/16	485E317	**258.08**
3"	1"	16	1"	485E318	**258.08**
3"	1-1/4	16	3/16	485E319	**114.32**
3"	1-1/4	16	1/4	485E320	**119.96**
3"	1-1/4	16	5/16	485E321	**127.47**
3"	1-1/4	16	3/8	485E322	**133.11**
3"	1-1/4	16	7/16	485E323	**142.19**
3"	1-1/4	16	1/2	485E324	**113.54**
3"	1-1/4	16	9/16	485E325	**159.11**
3"	1-1/4	16	5/8	485E326	**128.54**
3"	1-1/4	16	11/16	485E327	**170.38**
3"	1-1/4	16	3/4	485E328	**142.90**
3"	1-1/4	16	13/16	485E329	**203.58**
3"	1-1/4	16	7/8	485E330	**203.58**
3"	1-1/4	16	15/16	485E331	**265.59**
3"	1-1/4	16	1"	485E332	**265.59**
3-1/2	1"	18	1/4	485E333	**117.02**
3-1/2	1"	18	5/16	485E334	**196.38**
3-1/2	1"	18	3/8	485E335	**196.38**
3-1/2	1"	18	1/2	485E336	**225.50**
3-1/2	1"	18	5/8	485E337	**244.92**
3-1/2	1"	18	11/16	485E338	**265.59**

DIA	HOLE SIZE	NO OF TEETH	WIDTH OF FACE	EDP NUMBER	LIST PRICE
4"	1"	18	3/16	485E401	**$174.14**
4"	1"	18	7/32	485E402	**174.14**
4"	1"	18	1/4	485E403	**176.02**
4"	1"	18	9/32	485E404	**185.41**
4"	1"	18	5/16	485E405	**185.41**
4"	1"	18	11/32	485E406	**196.38**
4"	1"	18	3/8	485E407	**196.38**
4"	1"	18	7/16	485E408	**207.65**
4"	1"	18	1/2	485E409	**225.50**
4"	1"	18	9/16	485E410	**244.61**
4"	1"	18	5/8	485E411	**244.61**
4"	1"	18	11/16	485E412	**265.59**
4"	1"	18	3/4	485E413	**265.59**
4"	1"	18	13/16	485E414	**285.33**
4"	1"	18	7/8	485E415	**285.33**
4"	1"	18	15/16	485E416	**308.19**
4"	1"	18	1"	485E417	**308.19**
4"	1-1/4	18	3/16	485E318	**174.14**
4"	1-1/4	18	7/32	485E419	**174.14**
4"	1-1/4	18	1/4	485E420	**142.25**
4"	1-1/4	18	9/32	485E421	**185.41**
4"	1-1/4	18	5/16	485E422	**144.20**
4"	1-1/4	18	11/32	485E423	**196.38**
4"	1-1/4	18	3/8	485E424	**149.64**
4"	1-1/4	18	13/32	485E425	**207.65**
4"	1-1/4	18	7/16	485E426	**159.43**
4"	1-1/4	18	1/2	485E427	**169.22**
4"	1-1/4	18	9/16	485E428	**244.61**
4"	1-1/4	18	5/8	485E429	**196.84**
4"	1-1/4	18	11/16	485E430	**265.59**
4"	1-1/4	18	3/4	485E431	**206.63**
4"	1-1/4	18	13/16	485E432	**285.33**
4"	1-1/4	18	7/8	485E433	**219.68**
4"	1-1/4	18	15/16	485E434	**308.19**
4"	1-1/4	18	1"	485E435	**308.19**
4"	1-1/4	18	1-1/8	485E436	**357.05**
4"	1-1/4	18	1-3/16	485E437	**385.24**
4"	1-1/4	18	1-1/4	485E438	**422.82**
4"	1-1/4	18	1-1/2	485E439	**570.02**
4-1/2	1"	20	1/2	485E440	**300.05**
4-1/2	1-1/4	20	1/2	485E441	**300.05**
5"	1"	22	1/4	485E501	**251.65**
5"	1"	22	5/16	485E502	**251.65**
5"	1"	22	3/8	485E503	**300.05**
5"	1"	22	7/16	485E504	**300.05**
5"	1"	22	1/2	485E505	**300.05**
5"	1"	22	9/16	485E506	**324.16**
5"	1"	22	5/8	485E507	**324.16**
5"	1"	22	11/16	485E508	**350.18**
5"	1"	22	3/4	485E509	**359.96**
5"	1"	22	13/16	485E510	**369.53**
5"	1"	22	7/8	485E511	**394.76**

CONTINUED ON NEXT PAGE

Side Milling Cutters

STAGGERED TEETH — HIGH SPEED M-2 STEEL — SERIES 4850E

DIA	HOLE SIZE	NO OF TEETH	WIDTH OF FACE	EDP NUMBER	LIST PRICE
5"	1-1/4	22	1/4	485E512	$251.65
5"	1-1/4	22	5/16	485E513	269.48
5"	1-1/4	22	3/8	485E514	300.05
5"	1-1/4	22	7/16	485E515	300.05
5"	1-1/4	22	1/2	485E516	234.25
5"	1-1/4	22	9/16	485E517	324.16
5"	1-1/4	22	5/8	485E518	258.61
5"	1-1/4	22	11/16	485E529	350.18
5"	1-1/4	22	3/4	485E520	282.97
5"	1-1/4	22	13/16	485E521	369.75
5"	1-1/4	22	7/8	485E522	394.76
5"	1-1/4	22	15/16	485E523	419.12
5"	1-1/4	22	1"	485E524	428.91
6"	1"	24	1/4	485E601	366.44
6"	1"	24	9/32	485E602	366.44
6"	1"	24	5/16	485E603	366.44
6"	1"	24	3/8	485E604	389.33
6"	1"	24	7/16	485E605	385.24
6"	1"	24	1/2	485E606	408.73
6"	1"	24	9/16	485E607	423.04
6"	1"	24	5/8	485E608	437.18
6"	1"	24	11/16	485E609	468.28
6"	1"	24	3/4	485E610	487.85
6"	1"	24	13/16	485E611	527.44
6"	1"	24	7/8	485E612	576.59
6"	1"	24	15/16	485E613	657.72
6"	1"	24	1"	480E614	657.72
6"	1-1/4	24	1/4	485E615	366.44
6"	1-1/4	24	9/32	480E616	366.44
6"	1-1/4	24	5/16	485E617	366.44
6"	1-1/4	24	3/8	485E618	266.66
6"	1-1/4	24	7/16	485E619	385.24
6"	1-1/4	24	1/2	485E620	302.33
6"	1-1/4	24	9/16	485E621	423.04
6"	1-1/4	24	5/8	485E622	350.00
6"	1-1/4	24	11/16	485E623	468.28
6"	1-1/4	24	3/4	485E624	385.19
6"	1-1/4	24	13/16	485E625	527.44
6"	1-1/4	24	7/8	485E626	458.06
6"	1-1/4	24	15/16	485E627	576.59
6"	1-1/4	24	1"	485E628	493.29
6"	1-1/4	24	1-1/8	485E629	692.17
6"	1-1/4	24	1-3/16	485E630	717.23
6"	1-1/4	24	1-1/4	485E631	748.55
6"	1-1/4	24	1-1/2	485E632	855.04
6"	1-1/2	24	1"	485E633	657.72
7"	1-1/4	26	1/4	485E701	629.53
7"	1-1/4	26	5/16	485E702	629.53
7"	1-1/4	26	3/8	485E703	689.04
7"	1-1/4	26	7/16	485E704	723.49
7"	1-1/4	26	1/2	485E705	748.55
7"	1-1/4	26	9/16	485E706	773.60
7"	1-1/4	26	5/8	485E707	801.79
7"	1-1/4	26	11/16	485E708	819.98
7"	1-1/4	26	3/4	485E709	822.80
7"	1-1/4	26	13/16	485E710	836.72
7"	1-1/4	26	7/8	485E711	995.98
7"	1-1/4	26	15/16	485E712	1,089.94
7"	1-1/4	26	1"	485E713	1,089.95
7"	1-1/2	26	3/8	485E714	689.04
7"	1-1/2	26	7/16	485E715	748.55
7"	1-1/2	26	1/2	485E716	748.55
7"	1-1/2	26	5/8	485E717	801.79
7"	1-1/2	26	3/4	485E718	886.36
7"	1-1/2	26	7/8	485E719	992.84
7"	1-1/2	26	1"	485E720	1,071.14
8"	1"	28	1/4	485E801	$748.55
8"	1"	28	3/8	485E802	833.11
8"	1"	28	1/2	485E803	876.96
8"	1-1/4	28	1/4	485E804	748.55
8"	1-1/4	28	5/16	485E805	786.13
8"	1-1/4	28	3/8	485E806	826.86
8"	1-1/4	28	7/16	485E807	876.96
8"	1-1/4	28	1/2	485E808	876.96
8"	1-1/4	28	9/16	485E809	925.46
8"	1-1/4	28	5/8	485E810	925.46
8"	1-1/4	28	11/16	485E811	980.27
8"	1-1/4	28	3/4	485E812	1,019.86
8"	1-1/4	28	13/16	485E813	1,059.23
8"	1-1/4	28	7/8	485E814	1,064.66
8"	1-1/4	28	15/16	485E815	1,081.19
8"	1-1/4	28	1"	485E816	1,098.38
8"	1-1/2	28	1/4	485E817	748.55
8"	1-1/2	28	5/16	485E818	786.13
8"	1-1/2	28	3/8	485E819	620.14
8"	1-1/2	28	7/16	485E820	876.96
8"	1-1/2	28	1/2	485E821	657.72
8"	1-1/2	28	9/16	485E822	925.46
8"	1-1/2	28	5/8	485E823	758.73
8"	1-1/2	28	11/16	485E824	1,102.46
8"	1-1/2	28	3/4	485E825	826.85
8"	1-1/2	28	13/16	485E826	1,059.01
8"	1-1/2	28	7/8	485E827	918.46
8"	1-1/2	28	15/16	485E828	1,070.75
8"	1-1/2	28	1"	485E829	986.58
8"	1-1/2	28	1-1/8	485E830	1,400.00
8"	1-1/2	28	1-1/4	485E831	1,481.44
8"	1-1/2	28	1-1/2	485E832	1,688.15
9"	1-1/4	30	1/4	485E901	1,029.43
9"	1-1/4	30	3/8	485E902	1,121.00
9"	1-1/4	30	1/2	485E903	1,256.28
9"	1-1/4	30	5/8.	485E904	1,400.00
9"	1-1/4	30	3/4	485E905	1,429.19
9"	1-1/4	30	1"	485E906	1,644.30
9"	1-1/2	30	1/4	485E907	1,039.00
9"	1-1/2	30	3/8	485E908	1,121.00
9"	1-1/2	30	1/2	485E909	1,247.58
9"	1-1/2	30	5/8.	485E910	1,400.00
9"	1-1/2	30	3/4	485E911	1,500.23
9"	1-1/2	30	1"	485E912	1,644.30
10"	1-1/4	32	3/8	480E101	1,638.04
10"	1-1/4	32	13/16	480E102	2,167.34
10"	1-1/4	32	15/16	480E103	2,364.66
10"	1-1/2	32	1/4	480E104	1,100.90
10"	1-1/2	32	5/16	480E105	1,162.76
10"	1-1/2	32	3/8	480E106	1,226.18
10"	1-1/2	32	7/16	480E107	1,346.98
10"	1-1/2	32	1/2	480E108	1,395.31
10"	1-1/2	32	9/16	480E109	1,425.84
10"	1-1/2	32	5/8	480E810	1,475.17
10"	1-1/2	32	11/16	480E811	1,529.98
10"	1-1/2	32	3/4	480E812	1,571.22
10"	1-1/2	32	13/16	480E113	1,625.51
10"	1-1/2	32	7/8	480E114	1,693.63
10"	1-1/2	32	15/16	480E115	1,773.50
10"	1-1/2	32	1"	480E116	1,858.06
10"	1-1/2	32	1-1/8	480E117	2,608.96
10"	1-1/2	32	1-1/4	480E118	2,762.42
10"	1-1/2	32	1-1/2	480E119	3,027.60
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Double Angle Cutters

45°, 60° & 90° ANGLES HIGH SPEED M-2 STEEL SERIES 4950E



For milling grooves, notches, serrations or threads. Regularly furnished with an included angle of 45, 60 and 90 degrees.
Packaging: All angle cutters are individually packaged.

IMPORT

DIAMETER	WIDTH OF FACE	HOLE SIZE	NUMBER OF TEETH	ANGLE	EDP NUMBER	LIST PRICE
2-3/4	1/2	1"	18	45°	495E201	**$104.79**
2-3/4	1/2	1"	18	60°	495E202	**107.79**
2-3/4	1/2	1"	18	90°	495E203	**104.79**
3"	5/8	1"	22	45°	492E301	**232.39**
3"	5/8	1"	22	60°	492E302	**232.39**
3"	5/8	1"	22	90°	492E303	**232.39**
3"	5/8	1"	22	60°	492E304	**254.94**
3"	5/8	1"	22	90°	492E305	**254.94**
4"	1/2	1-1/4	26	45°	495E401	**246.65**
4"	1/2	1-1/4	26	60°	495E402	**246.65**
4"	1/2	1-1/4	26	90°	495E403	**246.65**
4"	3/4	1"	26	45°	495E404	**389.93**
4"	3/4	1"	26	60°	495E405	**389.93**
4"	3/4	1"	26	90°	495E406	**389.93**
4"	3/4	1-1/4	26	45°	495E407	**303.63**
4"	3/4	1-1/4	26	60°	495E408	**303.63**
4"	3/4	1-1/4	26	90°	495E409	**303.63**
4"	1"	1-1/4	26	60°	495E410	**335.39**
4"	1"	1-1/4	26	90°	495E411	**335.39**
5"	3/4	1-1/4	28	45°	495E501	**363.23**
5"	3/4	1-1/4	28	60°	495E502	**363.23**
5"	3/4	1-1/4	28	90°	495E503	**363.23**
5"	1"	1-1/4	28	45°	495E504	**456.53**
5"	1"	1-1/4	28	60°	495E505	**456.53**
5"	1"	1-1/4	28	90°	495E506	**456.53**
6"	3/4	1-1/4	30	45°	495E601	**679.64**
6"	3/4	1-1/4	30	60°	495E602	**679.64**
6"	3/4	1-1/4	30	90°	495E603	**679.64**
6"	1"	1-1/4	30	45°	495E604	**634.23**
6"	1"	1-1/4	30	60°	495E605	**634.23**
6"	1"	1-1/4	30	90°	495E606	**634.23**
6"	1-1/2	1-1/4	30	45°	495E607	**822.15**
6"	1-1/2	1-1/4	30	60°	495E608	**822.15**
6"	1-1/2	1-1/4	30	90°	495E609	**822.15**

BENTLEY END MILLS

END MILLS:

Double End (HSS)

Two Flute (Import)

Ball End (6450E) 191
Miniature (6000E & 6200E) 192
Regular Length (5400E) 189

Two Flute (USA)

Ball End (6450) 190
Regular Length (5400) 189

Multiple Flute (Import)

Miniature (6100E & 6300E) 192
Regular Length (5100E) 133

Multiple Flute (USA)

Regular Length (5500) 189

Double End (Cobalt)

Two Flute (Import)

Regular Length (6900E) 198

Two Flute (USA)

Regular Length (6900) 198

Multiple Flute (Import)

Regular Length (6950E) 197

Multiple Flute (USA)

Regular Length (6950) 197

Single End (HSS)

Two Flute (Import)

Ball End (6400E) 191
Medium Length (5025E) 182
Miniature (6050E) 192
Regular Length (5000E) 181

Two Flute (USA)

Ball End (6400) 190
Long Length (5075) 182
Medium Length (5025) 182
Metric Sizes (5600) 188
Regular Length (5000) 180

Multiple Flute Center Cutting (Import)

Ball End (6420E) 191

Multiple Flute Center Cutting (USA)

Ball End (6420) 190
Long Length (5250) 186
Extra Long Length (5350) 186
Medium Length (5225) 186
Metric Sizes (5650) 188
Regular Length (5150) 183
Rougher & Finisher (7125) 199
Roughing (7100) 200

Multiple Flute Non Center Cutting (Import)

Long Length (5200E) 187
Extra Long Length (5300E) 187
Miniature (6150E) 192
Regular Length (5100E) 185
Long Length (6800E) 142

Multiple Flute Non Center Cutting (USA)

Long Length (5200E) 187
Extra Long Length (5300E) 187
Regular Length (5100) 184

Single End (Cobalt)

Two Flute (Import)

Ball End (6600E) 194
Regular Length (6500E) 194

Two Flute (USA)

Ball End (6600) 193
Regular Length (6500) 193

Multiple Flute Center Cutting (Import)

Ball End (6650E) 194
Long Length (6750E) 196
Regular Length (6700E) 196
Roughing (7150) 200

Multiple Flute Center Cutting (USA)

Ball End (6650) 193
Long Length (6750) 195
Extra Long Length (6775) 195
Medium Length (6725) 195
Regular Length (6700) 195
Rougher & Finisher (7175) 199
Roughing (7150) 200

Multiple Flute Non Center Cutting (Import)

Roughing (7150E) 201

END MILLS MISC.:

Corner Rounding HSS (Import)

Fractional Sizes (5920E) 202

Corner Rounding Cobalt (Import)

Fractional Sizes (5930E) 202

Double Angle Cutters HSS (Import)

Fractional Sizes (5960E) 203

Dovetail Cutters HSS (Import)

Fractional Sizes (5900E) 202

Dovetail Cutters Cobalt (Import)

Fractional Sizes (5910E) 202

Single Angle Cutters HSS (Import)

Fractional Sizes (5950E) 203

T-Slot Cutters HSS (Import)

Fractional Sizes (5970E) 203

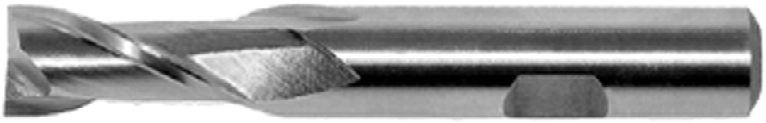
T-Slot Cutters Cobalt (Import)

Fractional Sizes (5980E) 203

End Mills

SINGLE END TWO FLUTE CENTER CUTTING HIGH SPEED M-7

REGULAR LENGTH



The two flute end mill is a hard working center cutting tool and can be used for multiple operation, plunge cutting and slotting, spotting, drilling and profiling, which can minimize the number of tools required to complete a given job. Since these end mills have only tow 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.

Packaging: All end mills are individually packaged.

MADE IN USA RIGHT HAND CUT & HELIX SERIES 5000A

DIA OF CUT	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	2-5/16	50A108A	$21.08
11/64	3/8	7/16	2-3/8	50A111A	30.46
3/16	3/8	7/16	2-3/8	50A112A	21.08
13/64	3/8	1/2	2-7/16	50A113A	30.46
7/32	3/8	1/2	2-7/16	50A114A	23.66
15/64	3/8	1/2	2-7/16	50A115A	30.46
1/4	3/8	1/2	2-7/16	50A116A	21.08
17/64	3/8	9/16	2-1/2	50A117A	30.46
9/32	3/8	9/16	2-1/2	50A118A	23.66
19/64	3/8	9/16	2-1/2	50A119A	30.46
5/16	3/8	9/16	2-1/2	50A120A	21.08
21/64	3/8	9/16	2-1/2	50A121A	23.66
11/32	3/8	9/16	2-1/2	50A122A	23.66
23/64	3/8	9/16	2-1/2	50A123A	29.33
3/8	3/8	9/16	2-1/2	50A124A	21.08
25/64	3/8	13/16	2-11/16	50A125A	42.33
13/32	3/8	13/16	2-11/16	50A126A	30.74
27/64	3/8	13/16	2-11/16	50A127A	41.53
7/16	3/8	13/16	2-11/16	50A128A	29.27
29/64	3/8	13/16	2-11/16	50A128A	45.84
15/32	3/8	13/16	2-11/16	50A130A	33.96
1/2	3/8	13/16	2-11/16	50A132A	30.25
1/2	1/2	1"	3-1/4	50A132B	30.67
17/32	1/2	1-1/8	3-3/8	50A134B	42.30
9/16	1/2	1-1/8	3-3/8	50A136B	37.26
19/32	1/2	1-1/8	3-3/8	50A138B	46.28
5/8	1/2	1-1/8	3-3/8	50A140B	41.80
5/8	5/8	1-3/8	3-3/4	50A140C	42.43
21/32	5/8	1-5/16	3-3/4	50A142C	48.37
11/16	1/2	1-5/16	3-5/8	50A144B	45.09
11/16	5/8	1-5/16	3-3/4	50A144C	45.09
23/32	3/4	1-5/8	3-7/8	50A146D	51.86
3/4	1/2	1-5/16	3-5/8	50A148B	48.46
3/4	5/8	1-5/16	3-3/4	50A148C	48.46
3/4	3/4	1-5/16	3-7/8	50A148D	48.46
25/32	3/4	1-1/2	4"	50A150D	63.48

DIA OF CUT	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
13/16	5/8	1-1/2	4"	50A152C	$59.66
13/16	3/4	1-7/8	4-1/8	50A152D	60.85
27/32	7/8	1-7/8	4-1/8	50A154E	64.44
7/8	5/8	1-1/2	4"	50A156C	59.66
7/8	3/4	1-1/2	4-1/8	50A156D	60.08
7/8	7/8	1-1/2	4-1/8	50A156E	60.08
29/32	7/8	1-7/8	4-1/8	50A158E	72.10
15/16	5/8	1-1/2	4"	50A160C	67.43
15/16	3/4	1-1/2	4-1/8	50A160D	67.43
15/16	7/8	1-1/2	4-1/8	50A160E	67.37
31/32	1"	1-5/8	4-1/2	50A162F	73.43
1"	5/8	1-1/2	4"	50A164C	67.22
1"	3/4	1-1/2	4-1/8	50A164D	67.22
1"	7/8	1-1/2	4-1/8	50A164E	71.71
1"	1"	1-5/8	4-1/2	50A164F	81.72
1-1/16	3/4	1-5/8	4-1/4	50A204D	123.39
1-1/16	3/4	2"	4-1/4	50A204E	123.39
1-1/8	3/4	1-5/8	4-1/4	50A208D	109.73
1-1/8	7/8	1-5/8	4-1/4	50A208E	110.29
1-1/8	1"	1-5/8	4-1/2	50A208F	112.04
1-3/16	3/4	1-5/8	4-1/4	50A212D	135.74
1-3/16	1"	1-5/8	4-1/2	50A212F	135.74
1-1/4	3/4	1-5/8	4-1/2	50A216D	136.12
1-1/4	7/8	1-5/8	4-1/2	50A216E	110.29
1-1/4	1"	1-5/8	4-1/2	50A216F	124.85
1-1/4	1-1/4	1-5/8	4-1/2	50A216G	124.85
1-3/8	3/4	1-5/8	4-1/4	50A224D	147.68
1-3/8	1"	1-5/8	4-1/2	50A224F	138.78
1-1/2	3/4	1-5/8	4-1/4	50A232D	161.61
1-1/2	1	1-5/8	4-1/2	50A232F	152.64
1-1/2	1-1/4	1-5/8	4-1/2	50A232G	152.64
1-5/8	1-1/4	1-5/8	4-1/2	50A240G	163.29
1-3/4	3/4	1-5/8	4-1/4	50A248D	182.27
1-3/4	1-1/4	1-5/8	4-1/2	50A248G	182.27
1-7/8	1-1/4	1-5/8	4-1/2	50A256G	196.62
2"	3/4	1-5/8	4-1/4	50A264D	215.53
2"	1-1/4	1-5/8	4-1/2	50A264G	215.53

End Mills

SINGLE END **TWO FLUTE** **REGULAR LENGTH** **HIGH SPEED M-2**

CENTER CUTTING



The two flute end mill is a hard working center cutting tool and can be used for multiple operation, plunge cutting and slotting, spotting, drilling and profiling, which can minimize the number of tools required to complete a given job. Since these end mills have only tow 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.

Packaging: All end mills are individually packaged.

IMPORT **RIGHT HAND CUT & HELIX** **SERIES 5000E**

DIA OF CUT	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	2-5/16	50E108A	$10.45
5/32	3/8	3/8	2-5/16	50E110A	10.45
3/16	3/8	3/8	2-5/16	50E112A	10.45
7/32	3/8	3/8	2-5/16	50E114A	10.45
1/4	3/8	1/2	2-5/16	50E116A	10.45
9/32	3/8	1/2	2-5/16	50E118A	11.63
5/16	3/8	9/16	2-5/16	50E120A	11.63
11/32	3/8	9/16	2-5/16	50E122A	11.63
3/8	3/8	9/16	2-5/16	50E124A	11.63
13/32	3/8	13/16	2-1/2	50E126A	14.68
7/16	3/8	13/16	2-1/2	50E128A	14.68
15/32	3/8	13/16	2-1/2	50E130A	14.68
1/2	3/8	13/16	2-1/2	50E132A	14.68
1/2	1/2	1"	3"	50E132B	14.68
9/16	1/2	1-1/8	3-1/8	50E136B	19.85
5/8	1/2	1-1/8	3-1/8	50E140B	21.73
5/8	5/8	1-5/16	3-7/16	50E140C	21.73
11/16	1/2	1-5/16	3-5/16	50E144B	23.84
11/16	5/8	1-5/16	3-7/16	50E144C	23.84
3/4	1/2	1-5/16	3-5/16	50E148B	25.13
3/4	5/8	1-5/16	3-7/16	50E148C	25.13
3/4	3/4	1-5/16	3-9/16	50E148D	25.13
13/16	1/2	1-1/2	3-1/2	50E152B	31.12
13/16	5/8	1-1/2	3-5/8	50E152C	31.12
13/16	3/4	1-1/2	3-3/4	50E152D	32.06
7/8	1/2	1-1/2	3-5/8	50E156B	33.24
7/8	5/8	1-1/2	3-5/8	50E156C	33.24
7/8	3/4	1-1/2	3-3/4	50E156D	33.24
7/8	7/8	1-1/2	3-3/4	50E156E	34.18

DIA OF CUT	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
15/16	1/2	1-1/2	3-5/8	50E160B	$38.41
15/16	5/8	1-1/2	3-5/8	50E160C	38.41
15/16	3/4	1-1/2	3-3/4	50E160D	38.41
15/16	7/8	1-1/2	3-3/4	50E160E	38.41
1"	1/2	1-1/2	3-1/2	50E164B	39.35
1"	5/8	1-1/2	3-5/8	50E164C	39.35
1"	3/4	1-1/2	3-3/4	50E164D	39.35
1"	7/8	1-1/2	3-3/4	50E164E	41.46
1"	1"	1-5/8	4-1/8	50E164F	42.52
1-1/16	5/8	1-5/8	3-7/8	50E204C	60.84
1-1/16	3/4	1-5/8	3-7/8	50E204D	60.84
1-1/16	7/8	1-5/8	3-7/8	50E204E	60.84
1-1/8	3/4	1-5/8	3-7/8	50E208D	60.84
1-1/8	7/8	1-5/8	3-7/8	50E208E	60.84
1-1/8	1"	1-5/8	4-1/8	50E208F	65.30
1-3/16	3/4	1-5/8	3-7/8	50E212D	67.42
1-1/4	3/4	1-5/8	3-7/8	50E216D	67.42
1-1/4	7/8	1-5/8	3-7/8	50E216E	67.42
1-1/4	1"	1-5/8	4-1/8	50E216F	69.77
1-1/4	1-1/4	1-5/8	4-1/8	50E216G	69.77
1-5/16	3/4	1-5/8	3-7/8	50E220D	72.82
1-3/8	3/4	1-5/8	3-7/8	50E224D	72.82
1-3/8	1"	1-5/8	4-1/8	50E224F	76.81
1-7/16	3/4	1-5/8	3-7/8	50E228D	82.22
1-1/2	1/2	1-5/8	3-7/8	50E232B	82.22
1-1/2	3/4	1-5/8	3-7/8	50E232D	82.22
1-1/2	1"	1-5/8	4-1/8	50E232F	84.80
1-1/2	1-1/4	1-5/8	4-1/8	50E232G	84.80
1-5/8	3/4	1-5/8	3-7/8	50E240D	96.07
1-5/8	1-1/4	1-5/8	4-1/8	50E240G	96.07
1-3/4	3/4	1-5/8	3-7/8	50E248D	109.46
1-3/4	1-1/4	1-5/8	4-1/8	50E248G	109.46
1-7/8	3/4	1-5/8	3-7/8	50E256D	122.38
1-7/8	1-1/4	1-5/8	4-1/8	50E256G	117.22
2"	3/4	1-5/8	3-7/8	50E264D	127.32
2"	1-1/4	1-5/8	4-1/8	50E264G	130.60
2"	1-1/4	2-1/2	5"	50E264H	130.60
2"	2"	4"	7-3/4	50E264J	216.34
2-1/2	2"	4"	7-5/8	50E332J	284.23
2-1/2	2"	6"	9-5/8	50E332K	259.40

End Mills

SINGLE END TWO FLUTE CENTER CUTTING HIGH SPEED

MEDIUM & LONG LENGTHS



For general purpose end milling in all types of materials, wherever the location of the operation is such as to require the additional overall and flute lengths of this design.

Packaging: All end mills are individually packaged.

MEDIUM LENGTH RT HAND CUT & HELIX IMPORT 5025E USA 5025A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	IMPORT EDP NUMBER	IMPORT LIST PRICE	USA EDP NUMBER	USA LIST PRICE
1/4	**3/8**	3/4	2-5/8	502E116A	**$-----**	502A116A	**$33.49**
5/16	**3/8**	1"	2-3/4	502E120A	**-----**	502A120A	**33.49**
3/8	**3/8**	1-1/8	2-7/8	502E124A	**12.10**	502A124A	**33.49**
1/2	**1/2**	1-1/2	3-1/2	502E132B	**18.44**	502A132B	**41.94**
5/8	**5/8**	1-7/8	4"	502E140C	**27.13**	502A140C	**57.55**
3/4	**3/4**	2-1/4	4-1/2	502E148D	**33.47**	502A148D	**63.04**
7/8	**7/8**	2-1/2	4-3/4	502E156E	**42.28**	502A156E	**77.00**
1''	**1"**	3"	5-1/2	502E164F	**54.03**	502A164F	**103.53**
1-1/8	**1"**	3"	5-1/2	502E208F	**79.63**	502A208F	**154.43**
1-1/4	**1"**	3"	5-1/2	502E216F	**90.91**	502A216F	**159.92**
1-1/4	**1-1/4**	3"	5-1/2	502E216G	**90.91**	502A216G	**159.92**
1-3/8	**1"**	3"	5-1/2	502E224F	**113.22**	502A224F	**169.07**
1-1/2	**1-1/4**	3"	5-1/2	502E232G	**113.22**	502A232G	**191.82**
1-5/8	**1-1/4**	3"	5-1/2	502E240G	**140.00**	502A240G	**191.82**
1-3/4	**1-1/4**	3"	5-1/2	502E248G	**140.00**	502A248G	**236.12**
1-7/8	**1-1/4**	3"	5-1/2	502E256G	**169.13**	502A256G	**256.04**
2''	**1-1/4**	3"	5-1/2	502E264G	**178.29**	502A264G	**290.58**

LONG LENGTH MADE IN USA RT HAND CUT SERIES 5075A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	USA EDP NUMBER	LIST PRICE
3/16	3/8	3/4	2-5/8	507A112A	**$31.52**
1/4	3/8	1-1/4	3-1/16	507A116A	**31.52**
9/32	3/8	1-3/8	3-1/8	507A118A	**31.05**
5/16	3/8	1-3/8	3-1/8	507A120A	**31.52**
11/32	3/8	1-1/2	3-1/4	507A122A	**31.05**
3/8	3/8	1-1/2	3-1/4	507A124A	**31.52**
13/32	3/8	2"	3-11/16	507A126A	**36.34**
7/16	3/8	2"	3-11/16	507A128A	**36.05**
15/32	3/8	2"	3-11/16	507A130A	**40.45**
1/2	1/2	2"	4"	507A132B	**40.94**
9/16	1/2	2-1/2	4-1/2	507A136B	**53.50**
5/8	1/2	2-3/8	4-1/2	507A140B	**49.86**
5/8	5/8	2-1/2	4-5/8	507A140C	**79.86**
11/16	5/8	3"	5-1/8	507A144C	**56.16**
3/4	1/2	3"	5"	507A148B	**59.90**
3/4	3/4	3"	5-1/4	507A148D	**71.46**
13/16	3/4	3-1/2	5-3/4	507A152D	**81.56**
7/8	7/8	3-1/2	5-3/4	507A156E	**87.00**
15/16	7/8	4"	6-1/4	507A160E	**111.64**
1"	1"	4"	6-1/2	507A164F	**117.09**

End Mills

SINGLE END | MULIT FLUTE | CENTER CUTTING | HIGH SPEED M-7

REGULAR LENGTH



The Multi Flute End Mill has a better finishing capability than the two flute end mill. At any given instant, at least one and frequently two of the multi teeth are solidly in the cut. The cutting action is smoother than that of the two 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.

Packaging: All end mills are individually packaged.

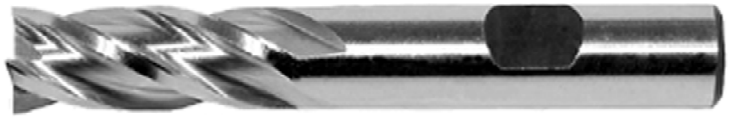
MADE IN USA | RT HAND CUT & HELIX | SERIES 5150A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	2-5/16	4	515A108A	**$28.30**
3/16	**3/8**	1/2	2-3/8	4	515A112A	**28.30**
7/32	**3/8**	5/8	2-7/16	4	515A114A	**29.14**
1/4	**3/8**	5/8	2-7/16	4	515A116A	**28.14**
9/32	**3/8**	5/8	2-7/16	4	515A118A	**29.38**
5/16	**3/8**	3/4	2-1/2	4	515A120A	**28.14**
11/32	**3/8**	3/4	2-1/2	4	515A122A	**29.38**
3/8	**3/8**	3/4	2-1/2	4	515A124A	**28.14**
						40.07
13/32	**3/8**	1"	2-11/16	4	515A126A	
7/16	**3/8**	1"	2-11/16	4	515A128A	**38.00**
15/32	**3/8**	1"	2-11/16	4	515A130A	**38.00**
1/2	**1/2**	1-1/4	3-1/4	4	515A132B	**41.55**
17/32	**1/2**	1-3/8	3-3/8	4	515A134B	**49.05**
9/16	**1/2**	1-3/8	3-3/8	4	515A136B	**53.72**
5/8	**5/8**	1-5/8	3-3/4	4	515A140C	**52.85**
11/16	**5/8**	1-5/8	3-3/4	4	515A144C	**55.45**
3/4	**3/4**	1-5/8	3-7/8	4	515A148D	**58.82**
3/4	**3/4**	1-5/8	3-7/8	6	515A148E	**58.82**
13/16	**3/4**	1-7/8	4-1/8	4	515A152D	**69.65**
7/8	**7/8**	1-7/8	4-1/8	4	515A156E	**74.54**
7/8	**7/8**	1-7/8	4-1/8	6	515A156F	**74.54**
15/16	**7/8**	1-7/8	4-1/8	4	515A160E	**78.89**
1"	**1"**	2"	4-1/2	4	515A164F	**89.42**
1"	**1"**	2"	4-1/2	6	515A164G	**89.42**
1-1/8	**1"**	2"	4-1/2	4	515A208F	**121.15**
1-1/8	**1"**	2"	4-1/2	6	515A208G	**121.15**
1-1/4	**1-1/4**	2"	4-1/2	4	515A216G	**133.02**
1-1/4	**1-1/4**	2"	4-1/2	6	515A216H	**133.02**
1-1/2	**1-1/4**	2"	4-1/2	4	515A232G	**167.91**
1-1/2	**1-1/4**	2"	4-1/2	6	515A232H	**167.91**
2"	**1-1/4**	2"	4-1/2	6	515A264G	**226.87**

End Mills

SINGLE END | **MULTI FLUTE** | **HIGH SPEED M-7 STEEL**

REGULAR LENGTH



The Multi Flute End Mill has a better finishing capability than the two flute end mill. At any given instant, at least one and frequently two of the multi teeth are solidly in the cut. The cutting action is smoother than that of the two 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.

Packaging: All end mills are individually packaged.

MADE IN USA | **NON-CENTER CUTTING** | **SERIES 5100A**

DIA OF CUT	SK. DIA	LGTH OF CUT	OAL	NUMBER OF FLUTES	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	2-5/16	4	51A108A	$22.60
11/64	3/8	1/2	2-3/8	4	51A111A	30.76
3/16	3/8	1/2	2-3/8	4	51A112A	22.60
13/64	3/8	1/2	2-3/8	4	51A113A	30.76
7/32	3/8	5/8	2-7/16	4	51A114A	23.15
15/64	3/8	5/8	2-7/16	4	51A115A	30.76
1/4	3/8	5/8	2-7/16	4	51A116A	22.60
17/64	3/8	5/8	2-7/16	4	51A117A	30.76
9/32	3/8	3/4	2-7/16	4	51A118A	23.15
19/64	3/8	3/4	2-1/2	4	51A119A	30.76
5/16	3/8	3/4	2-1/2	4	51A120A	22.60
21/64	3/8	3/4	2-1/2	4	51A121A	28.27
11/32	3/8	3/4	2-1/2	4	51A122A	23.15
23/64	3/8	3/4	2-1/2	4	51A123A	28.27
3/8	3/8	3/4	2-1/2	4	51A124A	22.60
25/64	3/8	1"	2-11/16	4	51A125A	41.59
13/32	3/8	1"	2-11/16	4	51A126A	32.00
27/64	3/8	1"	2-11/16	4	51A127A	40.94
7/16	3/8	1"	2-11/16	4	51A128A	29.99
29/64	3/8	1"	2-11/16	4	51A129A	40.94
15/32	3/8	1"	2-11/16	4	51A130A	30.41
31/64	3/8	1"	2-11/16	4	51A131A	40.94
1/2	3/8	1"	2-11/16	4	51A132A	29.70
1/2	1/2	1-1/4	3-1/4	4	51A132B	29.99
33/64	1/2	1-1/4	3-1/4	4	51A133B	40.94
17/32	1/2	1-3/8	3-3/8	4	51A134B	39.39
35/64	1/2	1-3/8	3-3/8	4	51A135B	48.49
9/16	1/2	1-3/8	3-3/8	4	51A136B	38.77
37/64	1/2	1-3/8	3-3/8	4	51A137B	52.25
19/32	1/2	1-3/8	3-3/8	4	51A138B	47.29
39/64	5/8	1-5/8	3-3/4	4	51A139C	62.78
5/8	1/2	1-3/8	3-3/8	4	51A140B	42.40
5/8	5/8	1-5/8	3-3/4	4	51A140C	47.42
41/64	5/8	1-5/8	3-3/4	4	51A141C	65.57
21/32	5/8	1-5/8	3-3/4	4	51A142C	49.21
43/64	5/8	1-5/8	3-3/4	4	51A143C	65.57
11/16	1/2	1-5/8	3-5/8	4	51A144B	45.43
11/16	5/8	1-5/8	3-3/4	4	51A144C	48.89
45/64	3/4	1-5/8	3-7/8	4	51A145D	69.20
23/32	3/4	1-5/8	3-7/8	4	51A146D	52.00
47/64	3/4	1-5/8	3-7/8	4	51A147D	69.20

DIA OF CUT	SK. DIA	LGTH OF CUT	OAL	NUMBER OF FLUTES	EDP NUMBER	LIST PRICE
3/4	1/2	1-5/8	3-5/8	4	51A148B	$47.98
3/4	5/8	1-5/8	3-3/4	4	51A148C	50.70
3/4	3/4	1-5/8	3-7/8	4	51A148D	52.65
25/32	3/4	1-7/8	4-1/8	4	51A150D	65.57
13/16	5/8	1-7/8	4"	6	51A152C	64.64
13/16	3/4	1-7/8	4-1/8	4	51A152D	61.12
27/32	7/8	1-7/8	4-1/8	4	51A154E	65.57
7/8	1/2	1-5/8	3-5/8	4	51A156B	66.40
7/8	5/8	1-7/8	4"	6	51A156C	66.40
7/8	3/4	1-7/8	4-1/8	4	51A156D	66.40
7/8	7/8	1-7/8	4-1/8	4	51A156E	65.48
29/32	7/8	1-7/8	4-1/8	4	51A158E	77.52
15/16	5/8	1-7/8	4"	6	51A160C	73.92
15/16	3/4	1-7/8	4-1/8	4	51A160D	82.57
15/16	7/8	1-7/8	4-1/8	4	51A160E	73.92
1"	5/8	1-7/8	4"	6	51A164C	75.66
1"	3/4	1-7/8	4-1/8	4	51A164D	74.26
1"	7/8	1-7/8	4-1/8	4	51A164E	74.26
1"	1"	2"	4-1/2	4	51A164F	78.73
1-1/16	3/4	2"	4-1/4	6	51A204D	120.27
1-1/8	3/4	2"	4-1/4	6	51A208D	110.75
1-1/8	7/8	2"	4-1/4	6	51A208E	104.25
1-1/8	1"	2"	4-1/2	6	51A208F	107.53
1-1/4	3/4	1-3/4	4"	6	51A216D	116.25
1-1/4	7/8	2"	4-1/4	6	51A216E	113.05
1-1/4	1"	2"	4-1/2	6	51A216F	117.37
1-1/4	1-1/4	2"	4-1/2	6	51A216G	121.69
1-3/8	3/4	2"	4-1/4	6	51A224D	139.82
1-3/8	1"	2"	4-1/2	6	51A224F	133.48
1-1/2	3/4	2"	4-1/4	6	51A232D	156.77
1-1/2	1"	2"	4-1/2	6	51A232F	150.14
1-1/2	1-1/4	2"	4-1/2	4	51A232G	150.14
1-1/2	1-1/4	2"	4-1/2	6	51A232H	150.14
1-5/8	1-1/4	2"	4-1/2	6	51A240G	163.95
1-3/4	3/4	2"	4-1/4	6	51A248D	177.06
1-3/4	1-1/4	2"	4-1/2	4	51A248G	177.06
1-3/4	1-1/4	2"	4-1/2	6	51A248H	177.06
1-7/8	1-1/4	2"	4-1/2	4	51A256G	177.40
1-7/8	1-1/4	2"	4-1/2	6	51A264H	177.40
2"	3/4	2"	4-1/4	8	51A264D	214.24
2"	1-1/4	2"	4-1/2	6	51A264G	214.24
2"	1-1/4	2"	4-1/2	8	51A264H	214.24

End Mills

SINGLE END | MULTIPLE FLUTE | HIGH SPEED M-2 STEEL

REGULAR LENGTH



The Multi Flute End Mill has a better finishing capability than the two flute end mill. At any given instant, at least one and frequently two of the multi teeth are solidly in the cut. The cutting action is smoother than that of the two 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.

Packaging: All end mills are individually packaged.

IMPORT | RIGHT HAND CUT & HELIX | SERIES 5100E

DIA OF CUT	SHANK DIA	LENGTH OF CUT	OAL	NO OF FLUTE	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	2-5/16	4	51E108A	$10.34
5/32	3/8	3/8	2-3/8	4	51E110A	10.34
3/16	3/8	1/2	2-3/8	4	51E112A	10.34
7/32	3/8	1/2	2-3/8	4	51E114A	10.34
1/4	3/8	5/8	2-1/2	4	51E116A	10.34
9/32	3/8	5/8	2-1/2	4	51E118A	10.34
5/16	3/8	3/4	2-1/2	4	51E120A	11.16
11/32	3/8	3/4	2-1/2	4	51E122A	11.16
3/8	3/8	3/4	2-1/2	4	51E124A	11.16
13/32	3/8	1"	2-11/16	4	51E126A	12.80
7/16	3/8	1"	2-11/16	4	51E128A	12.80
15/32	3/8	1"	2-11/16	4	51E130A	12.80
1/2	3/8	1"	2-11/16	4	51E132A	12.80
1/2	1/2	1-1/4	3-1/4	4	51E132B	12.80
9/16	1/2	1-3/8	3-3/8	4	51E136B	19.14
5/8	1/2	1-3/8	3-3/8	4	51E140B	21.38
5/8	5/8	1-5/8	3-3/4	4	51E140C	21.38
11/16	1/2	1-5/8	3-3/8	4	51E144B	23.49
11/16	5/8	1-5/8	3-3/4	4	51E144C	23.49
3/4	1/2	1-5/8	3-5/8	4	51E148B	24.55
3/4	5/8	1-5/8	3-3/4	4	51E148C	24.55
3/4	3/4	1-5/8	3-3/4	4	51E148D	24.55
3/4	3/4	1-5/8	3-3/4	6	51E148J	24.55
13/16	1/2	1-7/8	4"	4	51E152B	30.42
13/16	5/8	1-7/8	4"	4	51E152C	30.42
13/16	5/8	1-7/8	4"	6	51E152J	30.42
13/16	3/4	1-7/8	4-1/8	4	51E152D	31.48
7/8	1/2	1-7/8	4"	4	51E156B	32.53
7/8	1/2	1-7/8	4"	6	51E156J	32.53
7/8	5/8	1-7/8	4"	4	51E156C	32.53
7/8	3/4	1-7/8	4-1/8	4	51E156D	32.53
7/8	3/4	1-7/8	4-1/8	6	51E156K	32.53
7/8	7/8	1-7/8	4-1/8	4	51E156E	33.36
15/16	1/2	1-7/8	4"	6	51E160B	36.17
15/16	5/8	1-7/8	4"	6	51E160C	36.17
15/16	3/4	1-7/8	4-1/8	4	51E160D	37.35
15/16	7/8	1-7/8	4-1/8	4	51E160E	37.35

DIA OF CUT	SHANK DIA	LENGTH OF CUT	OAL	NO OF FLUTE	EDP NUMBER	LIST PRICE
1"	1/2	1-7/8	4"	4	51E164B	$38.41
1"	1/2	1-7/8	4"	6	51E164J	38.41
1"	5/8	1-7/8	4"	4	51E164C	38.41
1"	5/8	1-7/8	4"	6	51E164K	38.41
1"	3/4	1-7/8	4-1/8	4	51E164D	38.41
1"	3/4	1-7/8	4-1/8	6	51E164L	38.41
1"	7/8	1-7/8	4-1/8	4	51E164E	40.52
1"	1"	2"	4-1/2	4	51E164F	41.34
1"	1"	2"	4-1/2	6	51E164M	41.34
1-1/16	3/4	2"	4-1/4	4	51E204D	59.90
1-1/16	3/4	2"	4-1/4	6	51E204J	59.90
1-1/8	3/4	2"	4-1/4	6	51E208D	59.90
1-1/8	7/8	2"	4-1/4	6	51E208E	59.90
1-1/8	1"	2"	4-1/2	6	51E208F	63.42
1-3/16	3/4	2"	4-1/4	6	51E212D	66.01
1-1/4	3/4	2"	4-1/4	6	51E216D	66.01
1-1/4	7/8	2"	4-1/4	4	51E216E	66.01
1-1/4	7/8	2"	4-1/4	6	51E216J	66.01
1-1/4	1"	2"	4-1/2	6	51E216F	68.12
1-1/4	1-1/4	2"	4-1/2	4	51E216G	68.12
1-1/4	1-1/4	2"	4-1/2	6	51E216K	68.12
1-5/16	3/4	2"	4-1/2	6	51E220D	71.64
1-3/8	3/4	2"	4-1/2	6	51E224D	71.64
1-3/8	1"	2"	4-1/2	6	51E224F	75.40
1-3/8	1-1/4	2"	4-1/2	6	51E224G	75.40
1-7/16	1"	2"	4-1/2	6	51E228F	80.57
1-1/2	3/4	2"	4-1/2	6	51E232D	80.57
1-1/2	1"	2"	4-1/2	4	51E232F	82.92
1-1/2	1"	2"	4-1/2	6	51E232J	82.92
1-1/2	1-1/4	2"	4-1/4	4	51E232G	82.92
1-1/2	1-1/4	2"	4-1/2	6	51E232K	82.92
1-5/8	3/4	2"	4-1/2	6	51E240D	94.43
1-5/8	1-1/4	2"	4-1/2	4	51E240G	94.43
1-5/8	1-1/4	2"	4-1/2	6	51E240J	94.43
1-3/4	3/4	2"	4-1/2	6	51E248D	106.88
1-3/4	1-1/4	2"	4-1/2	4	51E248G	106.88
1-3/4	1-1/4	2"	4-1/2	6	51E248J	106.88
1-7/8	3/4	2"	4-1/2	6	51E256D	120.50
1-7/8	1-1/4	2"	4-1/2	4	51E256G	114.84
1-7/8	1-1/4	2"	4-1/2	6	51E256J	114.87
1-7/8	1-1/4	2"	4-1/2	8	51E256K	114.87
2"	3/4	2"	4-1/4	8	51E264D	127.55
2"	1-1/4	2"	4-1/2	4	51E264G	127.55
2"	1-1/4	2"	4-1/2	6	51E264J	127.55
2"	1-1/4	2"	4-1/2	8	51E264K	127.55

End Mills

MADE IN USA **MULTI FLUTES** **CENTER CUTTING** **HIGH SPEED M-7**



Packaging: All sizes are individually packaged.

MEDIUM LENGTH SINGLE END SERIES 5225A

DIA OF CUT	SHANK DIA	LGTH CUT	OAL	No OF FLUTE	EDP NUMBER	LIST PRICE
3/16	3/8	5/8	2-1/2	4	522A112A	$34.12
7/32	3/8	3/4	2-9/16	4	522A114A	35.90
1/4	3/8	3/4	2-9/16	4	522A116A	32.86
9/32	3/8	1"	2-3/4	4	522A118A	34.12
5/16	3/8	1"	2-3/4	4	522A120A	33.53
11/32	3/8	1-1/8	2-7/8	4	522A122A	34.54
3/8	3/8	1-1/8	2-7/8	4	522A124A	33.73
13/32	3/8	1-3/8	3-1/16	4	522A126A	48.41
7/16	3/8	1-3/8	3-1/16	4	522A128A	46.07
15/32	3/8	1-1/2	3-3/16	4	522A130A	46.07
1/2	1/2	1-1/2	3-1/2	4	522A132B	46.05
9/16	1/2	1-7/8	3-7/8	4	522A136B	70.10
5/8	5/8	1-7/8	4"	4	522A140C	$64.56
3/4	3/4	2"	4-1/4	4	522A148D	74.91
3/4	3/4	2"	4-1/4	6	522A148H	77.36
7/8	7/8	2-5/8	4-7/8	4	522A156E	91.58
1"	1"	3"	5-1/2	4	522A164F	121.27
1"	1"	3"	5-1/2	6	522A164H	121.27
1-1/4	1-1/4	3"	5-1/2	4	522A216G	158.54
1-1/4	1-1/4	3"	5-1/2	6	522A216H	158.54
1-1/2	1-1/4	3"	5-1/2	4	522A232G	205.91
1-1/2	1-1/4	3"	5-1/2	6	522A232H	205.91
2"	1-1/4	3"	5-1/2	6	522A264G	345.20
2"	2"	4"	7-3/4	6	522A264H	377.47

LONG LENGTH SERIES 5250A

DIA OF CUT	SHANK DIA	LGTH CUT	OAL	No OF FLUTE	EDP NUMBER	LIST PRICE
1/4	3/8	1-1/4	3-1/16	4	525A116A	$37.01
5/16	3/8	1-3/8	3-1/8	4	525A120A	37.01
3/8	3/8	1-1/2	3-1/4	4	525A124A	37.01
1/2	1/2	2"	4"	4	525A132B	50.26
5/8	5/8	2-1/2	4-5/8	4	525A140C	70.56
5/8	5/8	3"	5-1/8	4	425A140D	70.59
3/4	3/4	3"	5-1/4	4	525A148D	74.59
3/4	3/4	3"	5-1/4	6	525A148H	74.59
13/16	3/4	3-1/2	5-3/4	4	525A152D	87.17
7/8	7/8	3-1/2	5-3/4	4	525A156E	$91.79
7/8	7/8	3-1/2	5-3/4	6	525A156H	91.79
15/16	15/16	4"	6-1/4	4	525A160F	110.75
1"	1"	4"	6-1/2	4	525A164F	123.91
1"	1"	4"	6-1/2	6	525A164H	123.91
1-1/4	1-1/4	4"	6-1/2	4	525A216G	181.35
1-1/4	1-1/4	4"	6-1/2	6	525A216H	181.35
1-1/2	1-1/4	4"	6-1/2	4	525A232G	226.13
1-1/2	1-1/4	4"	6-1/2	6	525A232H	226.13
2"	1-1/4	4"	6-1/2	6	525A264G	359.00
2"	2"	6"	9-3/4	6	525A264J	460.79

EXTRA LONG LENGTH SERIES 5350A

DIA OF CUT	SHANK DIA	LGTH CUT	OAL	NO OF FLUTE	EDP NUMBER	LIST PRICE
3/16	3/8	1-1/8	3"	4	535A112A	$39.42
7/32	3/8	1-3/4	3-9/16	4	535A114A	41.08
1/4	3/8	1-3/4	3-9/16	4	535A116A	37.79
9/32	3/8	2"	3-3/4	4	535A118A	41.32
5/16	3/8	2"	3-3/4	4	535A120A	39.74
11/32	3/8	2-1/2	4-1/4	4	535A122A	41.32
3/8	3/8	2-1/2	4-1/4	4	535A124A	41.91
13/32	3/8	2-5/8	4-5/16	4	535A126A	51.93
7/16	3/8	2-5/8	4-5/16	4	535A128A	49.14
15/32	3/8	3"	4-11/16	4	535A130A	49.14
1/2	1/2	3"	5"	4	535A132B	54.36
1/2	1/2	4"	6"	4	535A132C	54.17
5/8	5/8	4"	6-1/8	4	535A140C	$78.85
3/4	3/4	4"	6-1/4	4	535A148D	91.09
3/4	3/4	4"	6-1/4	6	535A148H	91.09
7/8	7/8	5"	7-1/4	4	535A156E	118.66
7/8	7/8	5"	7-1/4	6	535A156H	118.66
1"	1"	6"	8-1/2	4	535A164F	152.45
1"	1"	6"	8-1/2	6	535A164H	152.45
1-1/4	1-1/4	6"	8-1/2	4	535A216G	221.66
1-1/4	1-1/4	6"	8-1/2	6	535A216H	221.66
1-1/2	1-1/2	6"	8-1/2	4	535A232H	294.15
1-1/2	1-1/2	6"	8-1/2	6	535A232J	294.15
2"	2"	6"	8-1/2	6	535A264G	421.68

End Mills

SINGLE END MULTIPLE FLUTE NON CENTER CUTTING HSS

EXTRA LENGTHS



For general purpose end milling in all types of materials, wherever the location of the operation is such as to require the additional overall and flute lengths of this design.

Packaging: All end mills are individually packaged.

LONG LENGTH RT HAND CUT & HELIX IMPORT 5200E USA 5200A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	IMPORT EDP NUMBER	IMPORT LIST PRICE	USA EDP NUMBER	USA LIST PRICE
1/4	3/8	1-1/4	3-1/16	4	52E116A	$11.63	52A116A	$29.24
5/16	3/8	1-3/8	3-1/8	4	52E120A	11.63	52A120A	29.24
3/8	3/8	1-1/2	3-1/4	4	52E124A	11.63	52A124A	29.24
7/16	1/2	1-3/4	3-3/4	4	52E128B	16.80	52A128B	40.65
1/2	1/2	2"	4"	4	52E132B	17.73	52A132B	40.38
5/8	1/2	2-1/2	4-5/8	4	52E140B	17.73	-----	------
5/8	5/8	2-1/2	4-5/8	4	52E140C	25.96	52A140C	56.39
3/4	1/2	3"	5-1/4	4	52E148B	32.06	52A148B	68.78
3/4	3/4	3"	5-1/4	4	52E148D	32.06	52A148D	65.49
7/8	7/8	3-1/2	5-3/4	4	52E156E	40.29	52A156E	86.62
1"	3/4	4"	6-1/2	4	52E164D	51.68	-----	------
1"	1"	4"	6-1/2	4	52E164F	51.68	52A164F	112.51
1-1/8	3/4	4"	6-1/2	6	52E208D	76.11	-----	------
1-1/8	1"	4"	6-1/2	6	52E208F	76.11	52A208F	149.03
1-1/4	3/4	4"	6-1/2	4	52E216D	86.91	-----	------
1-1/4	1"	4"	6-1/2	6	52E216F	86.91	52A216F	174.57
1-1/4	1-1/4	4"	6-1/2	4	52E216G	86.91	52A216G	174.57
1-1/4	1-1/4	4"	6-1/2	6	52E216H	86.91	52A216H	------
1-3/8	1"	4"	6-1/2	6	52E224F	86.91	52A224F	189.37
1-1/2	1"	4"	6-1/2	6	52E232F	103.12	52A232F	222.20
1-1/2	1-1/4	4"	6-1/2	4	-----	-----	52A232G	222.20
1-1/2	1-1/4	4"	6-1/2	6	52E232G	106.64	52A232H	222.20
1-3/4	1-1/4	4"	6-1/2	6	52E248G	139.53	52A248G	271.40
2''	1-1/4	4"	6-1/2	4	52E264G	170.30	52A264G	333.25
2''	1-1/4	4"	6-1/2	6	52E264H	170.30	52A264H	333.25
2''	1-1/4	4"	6-1/2	8	52E264J	170.30	52A264J	333.25

EXTRA LONG LENGTH RT HAND CUT IMPORT 5300E USA 5300A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	IMPORT EDP NUMBER	IMPORT LIST PRICE	USA EDP NUMBER	USA LIST PRICE
1/4	3/8	1-3/4	3-9/16	4	53E116A	$15.62	53A116A	$33.68
5/16	3/8	2"	3-3/4	4	53E120A	16.91	53A120A	33.68
3/8	3/8	2-1/2	4-1/4	4	53E124A	17.38	53A124A	33.68
1/2	1/2	3"	5"	4	53E132B	23.61	53A132B	45.75
5/8	1/2	4"	6-1/8	4	53E140B	36.29	-----	------
5/8	5/8	4"	6-1/8	4	53E140C	36.29	53A140C	70.36
3/4	1/2	4"	6-1/4	4	53E148B	46.04	-----	------
3/4	3/4	4"	6-1/4	4	53E148D	46.04	53A148D	73.34
7/8	7/8	5"	7-1/4	4	53E156E	58.26	53A156E	91.49
1''	1"	6"	8-1/2	4	53E164F	71.17	53A164F	123.5
1-1/4	1-1/4	6"	8-1/2	4	53E216G	146.81	-----	------
1-1/4	1-1/4	6"	8-1/2	6	53E216H	146.81	53A216H	180.75
1-1/2	1-1/4	8"	10-9/16	6	53E232G	216.81	53A232G	225.59
2"	2"	8"	11-3/4	6	53E264J	327.69	53A264J	357.82

Metric End Mills

MADE IN USA **CENTER CUTTING** **HIGH SPEED M-7 STEEL**



The two flute end mill is a hard working center cutting tool and can be used for multiple operation, plunge cutting and slotting, spotting, drilling and profiling, which can minimize the number of tools required to complete a given job. Since these end mills have only tow 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.

Packaging: All end mills are individually packaged.

SINGLE END TWO FLUTE SERIES 5600A

SIZE MM	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
3.0	**3/8**	3/8	2-5/16	560A030	**$21.45**
3.5	**3/8**	7/16	2-3/8	560A035	**21.45**
4.0	**3/8**	7/16	2-3/8	560A040	**21.45**
4.5	**3/8**	7/16	2-3/8	560A045	**21.45**
5.0	**3/8**	7/16	2-7/16	560A050	**21.45**
5.5	**3/8**	1/2	2-7/16	560A055	**21.45**
6.0	**3/8**	1/2	2-7/16	560A060	**21.45**
6.5	**3/8**	1/2	2-7/16	560A065	**21.45**
7.0	**3/8**	9/16	2-1/2	560A070	**21.45**
7.5	**3/8**	9/16	2-1/2	560A075	**21.45**
8.0	**3/8**	9/16	2-1/2	560A080	**21.45**
8.5	**3/8**	9/16	2-1/2	560A085	**21.45**
9.0	**3/8**	9/16	2-1/2	560A090	**21.45**
9.5	**3/8**	3/4	2-1/2	560A095	**21.45**
10.0	**3/8**	3/4	2-1/2	560A100	**35.13**
10.5	**3/8**	1"	2-11/16	560A105	**35.45**
11.0	**3/8**	1"	2-11/16	560A110	**35.45**
11.5	**3/8**	1"	2-11/16	560A115	**35.72**
12.0	**1/2**	1"	3-1/4	560A120	**37.70**
12.5	**1/2**	1-1/4	3-1/4	560A125	**37.70**

SIZE MM	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
13.0	**1/2**	1-1/8	3-1/8	560A130	**$44.01**
13.5	**1/2**	1-1/8	3-1/8	560A135	**44.01**
14.0	**1/2**	1-1/8	3-1/8	560A140	**44.01**
14.5	**1/2**	1-1/8	3-3/8	560A145	**45.91**
15	**1/2**	1-1/8	3-1/8	560A150	**45.91**
16	**5/8**	1-3/8	3-3/4	560A160	**50.13**
17	**5/8**	1-5/8	3-3/4	560A170	**53.45**
18	**5/8**	1-5/8	3-3/4	560A180	**56.01**
19	**3/4**	1-5/8	3-7/8	560A190	**57.27**
20	**5/8**	1-1/2	3-5/8	560A200	**65.70**
21	**5/8**	1-1/2	3-5/8	560A210	**65.70**
22	**7/8**	1-7/8	4-1/8	560A220	**70.53**
23	**7/8**	1-7/8	4-1/8	560A230	**81.96**
24	**1"**	2"	4-1/2	560A240	**85.02**
25	**1"**	2"	4-1/2	560A250	**85.02**
28	**1"**	2"	4-1/2	560A280	**122.38**
32	**1"**	2"	4-1/2	560A320	**138.63**
36	**1"**	2"	4-1/2	560A360	**164.67**

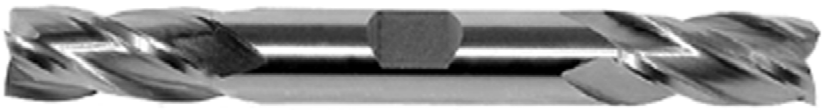
SINGLE END FOUR FLUTE SERIES 5650A

SIZE MM	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
3.0	**3/8**	3/8	2-5/16	565A030	**$24.11**
3.5	**3/8**	7/16	2-3/8	565A035	**24.11**
4.0	**3/8**	7/16	2-3/8	565A040	**24.11**
4.5	**3/8**	7/16	2-3/8	565A045	**24.11**
5.0	**3/8**	7/16	2-7/16	565A050	**24.11**
5.5	**3/8**	1/2	2-7/16	565A055	**24.11**
6.0	**3/8**	1/2	2-7/16	565A060	**24.11**
6.5	**3/8**	1/2	2-7/16	565A065	**24.11**
7.0	**3/8**	9/16	2-1/2	565A070	**24.11**
7.5	**3/8**	9/16	2-1/2	565A075	**24.11**
8.0	**3/8**	9/16	2-1/2	565A080	**24.11**
8.5	**3/8**	9/16	2-1/2	565A085	**24.11**
9.0	**3/8**	9/16	2-1/2	565A090	**24.11**
9.5	**3/8**	3/4	2-1/2	565A095	**24.11**
10.0	**3/8**	3/4	2-1/2	565A100	**30.16**
10.5	**3/8**	1"	2-11/16	565A105	**32.15**
11.0	**3/8**	1"	2-11/16	565A110	**32.15**
11.5	**3/8**	1"	2-11/16	565A115	**32.15**
12.0	**1/2**	1"	3-1/4	565A120	**32.40**
12.5	**1/2**	1-1/4	3-1/4	565A125	**32.40**

SIZE MM	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
13.0	**1/2**	1-1/8	3-1/8	565A130	**$37.95**
13.5	**1/2**	1-1/8	3-1/8	565A135	**37.95**
14.0	**1/2**	1-1/8	3-1/8	565A140	**37.95**
14.5	**1/2**	1-1/8	3-1/8	565A145	**39.20**
15	**1/2**	1-1/8	3-1/8	565A150	**39.20**
16	**5/8**	1-3/8	3-3/4	565A160	**53.28**
17	**5/8**	1-5/8	3-3/4	565A170	**53.28**
18	**5/8**	1-5/8	3-3/4	565A180	**51.29**
19	**3/4**	1-5/8	3-7/8	565A190	**53.11**
20	**5/8**	1-1/2	3-5/8	565A200	**65.12**
21	**5/8**	1-1/2	3-5/8	565A210	**69.02**
22	**7/8**	1-7/8	4-1/8	565A220	**70.35**
23	**7/8**	1-7/8	4-1/8	565A230	**76.89**
24	**1"**	2"	4-1/2	565A240	**79.80**
25	**1"**	2"	4-1/2	565A250	**79.80**
28	**1"**	2"	4-1/2	565A280	**109.05**
32	**1"**	2"	4-1/2	565A320	**141.93**
36	**1"**	2"	4-1/2	565A360	**160.82**
40	**1-1/4**	2"	4-1/2	565A400	**175.41**
45	**1-1/4**	2"	4-1/2	565A450	**204.33**

End Mills

DOUBLE END **2 & 4 FLUTE** **HIGH SPEED STEEL**



Packaging: All end mills are individually packaged.

IMPORT **MADE IN USA**

2 FLUTE RIGHT HAND CUT & HELIX SERIES 5400E SERIES 5400A

DIAMETER of CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	5400E EDP NUMBER	5400E LIST PRICE	5400A EDP NUMBER	5400A LIST PRICE
1/8	3/8	3/8	3-1/16	54E108A	$16.44	54A108A	$29.94
5/32	3/8	7/16	3-1/8	54E110A	16.44	54A110A	32.04
3/16	3/8	7/16	3-1/4	54E112A	16.44	54A112A	29.94
7/32	3/8	1/2	3-1/4	54E114A	16.44	54A114A	32.04
1/4	3/8	1/2	3-3/8	54E116A	16.44	54A116A	29.94
9/32	3/8	9/16	3-3/8	54E118A	17.38	54A118A	32.04
5/16	3/8	9/16	3-1/2	54E120A	17.38	54A120A	29.94
11/32	3/8	9/16	3-1/2	54E122A	17.38	54A122A	32.04
3/8	3/8	9/16	3-1/2	54E124A	17.38	54A124A	29.94
13/32	1/2	13/16	7-1/8	54E126B	24.55	54A126B	48.27
7/16	1/2	13/16	4-1/8	54E128B	24.55	54A128B	46.39
15/32	1/2	13/16	4-1/8	54E130B	24.55	54A130B	48.27
1/2	1/2	13/16	4-1/8	54E132B	24.55	54A132B	46.11
9/16	5/8	1-1/8	5"	54E136C	32.65	54A136C	63.96
5/8	5/8	1-1/8	5"	54E140C	32.65	54A140C	63.96
11/16	3/4	1-5/16	5-5/8	54E144D	40.76	54A144D	80.47
3/4	3/4	1-5/16	5-5/8	54E148D	40.76	54A148D	80.47
13/16	7/8	1-9/16	6-1/8	54E152E	50.74	54A152E	101.38
7/8	7/8	1-9/16	6-1/8	54E156E	50.74	54A156E	101.38
15/16	1"	1-5/8	6-3/8	54E160F	62.01	54A160F	124.69
1"	1"	1-5/8	6-3/8	54E164F	63.89	54A164F	124.69

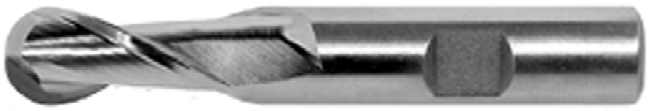
IMPORT **MADE IN USA**

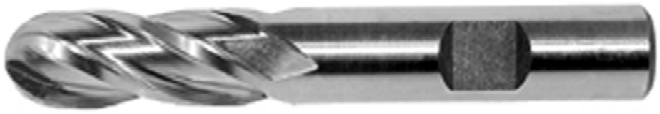
FOUR FLUTE RIGHT HAND CUT & HELIX SERIES 5500E SERIES 5500A

DIAMETER Of CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	5500E EDP NUMBER	5500E LIST PRICE	5500A EDP NUMBER	5500A LIST PRICE
1/8	3/8	3/8	3-1/16	55E108A	$16.44	55A108A	$29.18
5/32	3/8	7/16	3-1/8	55E110A	16.44	55A110A	30.64
3/16	3/8	1/2	3-1/4	55E112A	16.44	55A112A	29.18
7/32	3/8	9/16	3-1/4	55E114A	16.44	55A114A	30.64
1/4	3/8	5/8	3-3/8	55E116A	16.44	55A116A	28.62
9/32	3/8	11/16	3-3/8	55E118A	17.38	55A118A	30.64
5/16	3/8	3/4	3-1/2	55E120A	17.38	55A120A	28.62
11/32	3/8	3/4	3-1/2	55E122A	17.38	55A122A	30.64
3/8	3/8	3/4	3-1/2	55E124A	17.38	55A124A	28.62
13/32	1/2	1"	4-1/8	55E126B	24.55	55A126B	42.47
7/16	1/2	1"	4-1/8	55E128B	24.55	55A128B	42.54
15/32	1/2	1"	4-1/8	55E130B	24.55	55A130B	44.57
1/2	1/2	1"	4-1/8	55E132B	24.55	55A132B	42.54
9/16	5/8	1-3/8	5"	55E136C	32.65	55A136C	60.31
5/8	5/8	1-3/8	5"	55E140C	32.65	55A140C	60.31
11/16	3/4	1-5/8	5-5/8	55E144D	40.76	55A144D	75.84
3/4	3/4	1-5/8	5-5/8	55E148D	40.76	55A148D	75.84
13/16	7/8	1-7/8	6-1/8	55E152E	50.74	55A152E	96.54
7/8	7/8	1-7/8	6-1/8	55E156E	50.74	55A156E	96.54
15/16	1"	1-7/8	6-3/8	55E160F	62.01	55A160F	111.11
1''	1"	1-7/8	6-3/8	55E164F	63.89	55A164F	116.77

Ball End Mills

MADE IN USA **SINGLE & DOUBE END** **HIGH SPEED STEEL**





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.

Packaging: All end mills are individually packaged.

TWO FLUTE S E SERIES 6400A

DIA OF CUT	SHANK DIA	LGTH OF CUT	OAL	EDP NO	LIST PRICE
1/8	3/8	3/8	2-5/16	640A108A	**$29.04**
3/16	3/8	1/2	2-3/8	640A112A	**29.04**
1/4	3/8	5/8	2-7/16	640A116A	**29.04**
5/16	3/8	3/4	2-1/2	640A120A	**32.61**
3/8	3/8	3/4	2-1/2	640A124A	**33.59**
7/16	1/2	1"	3-1/4	640A128B	**44.28**
1/2	1/2	1"	3-1/4	640A132B	**44.28**
9/16	1/2	1-1/8	3-3/8	640A136B	**54.86**
5/8	1/2	1-1/8	3-3/8	640A140B	**62.91**
5/8	5/8	1-3/8	3-3/4	640A140C	**62.91**
3/4	1/2	1-5/16	3-5/8	640A148B	**73.89**
3/4	3/4	1-5/8	3-7/8	640A148D	**73.89**
13/16	3/4	2"	4-1/4	640A152D	**93.82**
7/8	3/4	2"	4-1/4	640A156D	**93.82**
7/8	7/8	2"	4-1/4	640A156E	**93.82**
15/16	3/4	2-1/4	4-1/2	640A160D	**111.88**
1''	3/4	2-1/4	4-1/2	640A164D	**118.53**
1"	1"	2-1/4	4-3/4	640A164F	**118.53**
1-1/8	1"	2-1/4	4-3/4	640A208F	**139.37**
1-1/4	1-1/4	2-1/2	5"	640A216G	**160.44**
1-1/2	1-1/4	2-1/2	5"	640A232G	**197.79**

FOUR FLUTE S E SERIES 6420A

DIA OF CUT	SHANK DIA	LGTH OF CUT	OAL	EDP NO	LIST PRICE
1/4	**3/8**	5/8	2-7/16	642A116A	**$52.48**
5/16	**3/8**	3/4	2-1/2	642A120A	**49.03**
3/8	**3/8**	3/4	2-1/2	642A124A	**55.44**
1/2	**1/2**	1-1/4	3-1/4	642A132B	**64.10**
5/8	**5/8**	1-5/8	3-3/4	642A140C	**97.57**
3/4	**3/4**	1-5/8	3-7/8	642A148D	**112.97**
1"	**1"**	2"	4-1/2	642A164F	**188.92**
2"	2"	4"	7-3/4	642A264G	**502.81***

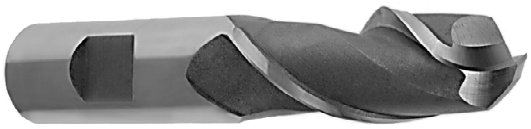
*The 2" Ball Nose End Mill Above Has 6 Flutes

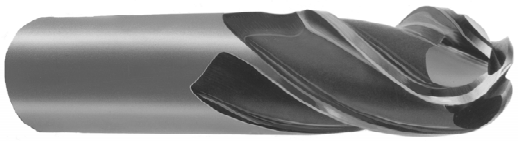
DOUBLE END TWO FLUTE SERIES 6450A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/16	2-3/4	645A108A	**$49.10**
1/8	**3/8**	3/8	3-1/16	645A108H	**51.11**
5/32	**3/8**	7/16	3"	645A110A	**51.11**
3/16	**3/8**	9/32	2-3/4	645A112A	**49.10**
3/16	**3/8**	7/16	3-1/4	645A112H	**51.11**
7/32	**3/8**	1/2	3"	645A114A	**51.11**
1/4	**3/8**	3/8	2-7/8	645A116A	**49.10**
1/4	**3/8**	1/2	3-3/8	645A116H	**51.11**
9/32	**3/8**	9/16	3"	645A118A	**51.11**
5/16	**3/8**	9/16	3-1/2	645A120A	**51.11**
11/32	**3/8**	9/16	3"	645A122A	**51.11**
3/8	**3/8**	9/16	3-1/2	645A124A	**51.11**
7/16	**1/2**	13/16	3-3/4	645A128B	**71.77**
1/2	**1/2**	13/16	4-1/8	645A132B	**71.49**
5/8	**5/8**	1-1/8	5"	645A140C	**97.77**
3/4	**3/4**	1-5/16	5-5/8	645A148D	**124.28**
7/8	**7/8**	1-9/16	6-1/8	645A156E	**152.65**
1"	**1"**	1-5/8	6-3/8	645A164F	**188.92**

Ball End Mills

SINGLE END — IMPORT — HIGH SPEED M-2 STEEL





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.

Packaging: All end mills are individually packaged.

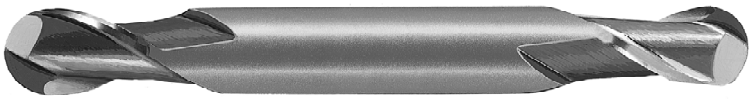
TWO FLUTE SERIES 6400E

DIA OF CUT	SHANK DIA	LGTH of CUT	OAL	EDP NO	LIST PRICE
1/8	**3/8**	3/8	2-5/16	640E108A	**$21.79**
3/16	**3/8**	1/2	2-3/8	640E112A	**21.79**
1/4	**3/8**	5/8	2-7/16	640E116A	**18.67**
5/16	**3/8**	3/4	2-1/2	640E120A	**20.67**
3/8	**3/8**	3/4	2-1/2	640E124A	**20.67**
7/16	**1/2**	1"	3"	640E128B	**29.13**
1/2	**1/2**	1"	3"	640E132B	**29.13**
9/16	**1/2**	1"	3"	640E136B	**41.93**
5/8	**1/2**	1-3/8	3-3/8	640E140B	**40.87**
5/8	**5/8**	1-3/8	3-1/2	640E140C	**50.01**
3/4	**1/2**	1-5/8	3-5/8	640E148B	**54.26**
3/4	**3/4**	1-5/8	3-7/8	640E148D	**54.26**
7/8	**7/8**	2"	4-1/4	640E156E	**62.96**
1''	**1"**	2-1/4	4-3/4	640E164F	**86.60**
1-1/8	**1-1/4**	2-2/4	4-3/4	640E208G	**108.05**
1-1/4	**1-1/4**	2-1/2	5"	640E216G	**120.58**
1-3/8	**1-1/4**	2-1/4	5"	640E224G	**118.39**
1-1/2	**1-1/4**	2-1/2	5"	640E232G	**135.30**
2''	**1-1/4**	2-1/2	5"	640E264G	**172.57**

FOUR FLUTE SERIES 6420E

DIA OF CUT	SHANK DIA	LGTH of CUT	OAL	EDP NO	LIST PRICE
3/8	**3/8**	3/4	2-1/2	642E124A	**$34.26**
1/2	**1/2**	1-1/4	3-1/4	642E132B	**41.38**
5/8	**5/8**	1-5/8	3-3/4	642E140C	**59.38**
3/4	**3/4**	1-5/8	3-7/8	642E148D	**67.96**
7/8	**7/8**	1-7/8	4-1/2	642E156E	**99.86**
1"	**1"**	2"	4-1/2	642E164F	**108.25**
1-1/4	**1-1/4**	2"	4-1/2	642E216G	**128.53**
1-1/2	**1-1/4**	2"	4-1/2	642E216H	**177.59**

DOUBLE END — TWO FLUTE — HIGH SPEED M-2 STEEL



TWO FLUTE — SERIES 6450E

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	3-1/16	645E108A	**$32.58**
3/16	**3/8**	7/16	3-1/8	645E112A	**32.58**
1/4	**3/8**	1/2	3-1/8	645E116A	**32.58**
5/16	**3/8**	9/16	3-1/8	645E120A	**33.47**
3/8	**3/8**	9/16	3-1/8	645E124A	**33.47**
7/16	**1/2**	13/16	3-3/4	645E128B	**45.15**
1/2	**1/2**	13/16	3-3/4	645E132B	**43.69**
5/8	**5/8**	1-1/8	4-9/16	645E140C	**71.27**
3/4	**3/4**	1-5/16	5"	645E148D	**82.42**
7/8	**7/8**	1-9/16	5-1/2	645E156E	**99.91**
1"	**1"**	1-5/8	5-7/8	645E164F	**122.84**

Miniature Single End Regular Length End Mills

3/16 SHANK DIAMETER 1-1/2" OVERALL LENGTH HIGH SPEED M-7



Packaging: All sizes individually packaged.

2 FLUTE CENTER CUTTING

IMPORT SERIES 6050

DIAMETER of CUT	LENGTH of CUT	EDP NUMBER	LIST PRICE
1/32	3/32	605E102	$19.97
3/64	9/64	605E103	19.97
1/16	3/16	605E104	19.97
5/64	15/64	605E105	19.97
3/32	9/32	605E106	19.97
7/64	21/64	605E107	19.97
1/8	3/8	605E108	19.97
9/64	27/64	605E109	19.97
5/32	7/16	605E110	19.97
11/64	1/2	605E111	19.97
3/16	1/2	605E112	19.97

4 FLUTE NON-CENTER CUTTING

IMPORT SERIES 6150E

DIAMETER of CUT	LENGTH of CUT	EDP NUMBER	LIST PRICE
1/32	3/32	615E102	$19.97
3/64	9/64	615E103	19.97
1/16	3/16	615E104	19.97
5/64	15/64	615E105	19.97
3/32	9/32	615E106	19.97
7/64	21/64	615E107	19.97
1/8	3/8	615E108	19.97
9/64	9/64	615E109	19.97
5/32	7/16	615E110	19.97
11/64	1/2	615E111	19.97
3/16	1/2	615E112	19.97

Miniature Double End

3/16 SHANK DIAMETER MULTI FLUET & OAL'S HIGH SPEED M-7



Packaging: All sizes individually packaged.

2 FLUTE CENTER CUTTING

IMPORT 6000E & 6200E

DIAMETER of Cut	Lgth of Cut	OAL	EDP NUMBER	LIST PRICE
1/32	3/64	1-7/8	60E102	$19.97
1/32	3/32	2"	62E102	22.08
3/64	1/16	1-7/8	60E103	19.97
3/64	9/64	2"	62E103	22.08
1/16	3/16	2-1/4	60E104	19.97
1/16	7/32	2-1/2	62E104	22.08
5/64	1/8	2"	60E105	19.97
5/64	15/64	2-1/4	62E105	22.08
3/32	9/32	2-1/4	60E106	19.97
3/32	9/32	2-5/8	62E106	22.08
7/64	11/64	2"	60E107	19.97
7/64	21/64	2-1/4	62E107	22.08
1/8	3/8	2-1/4	60E108	19.97
1/8	3/4	3-1/8	62E108	22.08
9/64	7/32	2"	60E109	19.97
9/64	27/64	2-1/4	62E109	22.08
5/32	7/16	2-1/4	60E110	19.97
5/32	7/8	3-1/4	62E110	22.08
11/64	17/64	2"	60E111	19.97
11/64	1/2	2-1/4	62E111	22.08
3/16	1/2	2-1/4	60E112	19.97
3/16	1"	3-3/8	62E112	22.08

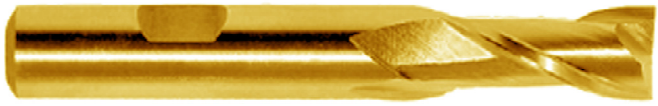
4 FLUTE NON-CENTER CUTTING

IMPORT 6100 & 6300

DIAMETER of Cut	Lgth of Cut	OAL	EDP NUMBER	LIST PRICE
1/32	3/64	1-7/8	61E102	$19.97
1/32	3/32	2"	63E102	22.08
3/64	1/16	1-7/8	61E103	19.97
3/64	9/64	2"	63E103	22.08
1/16	3/16	2"	61E104	19.97
1/16	7/32	2-1/2	63E104	22.08
5/64	1/8	2"	61E105	19.97
5/64	15/64	2-1/4	63E105	22.08
3/32	9/32	2-1/4	61E106	19.97
3/32	9/32	2-5/8	63E106	22.08
7/64	11/64	2"	61E107	19.97
7/64	21/64	2-1/4	63E107	22.08
1/8	3/8	2-1/4	61E108	19.97
1/8	3/4	3-1/8	63E108	22.08
9/64	7/32	2"	61E109	19.97
9/64	27/64	2-1/4	63E109	22.08
5/32	7/16	2-1/4	61E110	19.97
5/32	7/8	3-1/4	63E110	22.08
11/64	17/64	2"	61E111	19.97
11/64	1/2	2-1/4	63E111	22.08
3/16	1/2	2-1/4	61E112	19.97
3/16	1"	3-3/8	63E112	22.08

Cobalt End Mills

USA SINGLE END CENTER CUTTING TWO FLUTE M-42 COBALT



The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10 percent faster than conventional high speed steel 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 conventional high speed steel end mills, they stay sharper longer, providing more cuts between grinds and less downtime, resulting in lower end mill costs.

Packaging: All end mills are individually packaged.

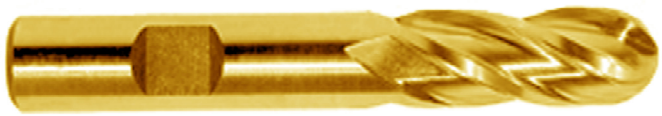
REGULAR LENGTH SERIES 6500A

DIAMETER of CUT	SHANK DIAMETER	LENGTH OF CUT	OAL	NUMBER of FLUTES	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	2-5/16	2	650A108A	$29.99
3/16	3/8	7/16	2-3/8	2	650A112A	29.99
1/4	3/8	1/2	2-7/16	2	650A116A	29.99
1/4	3/8	5/8	2-7/16	2	650A116B	32.64
5/16	3/8	9/16	2-1/2	2	650A120A	29.99
3/8	3/8	9/16	2-1/2	2	650A124A	29.99
7/16	3/8	13/16	2-11/16	2	650A128A	45.06
1/2	1/2	1"	3-1/4	2	650A132B	46.59
5/8	5/8	1-5/16	3-3/4	2	650A140C	61.82
3/4	3/4	1-5/16	3-7/8	2	650A148D	70.65
3/4	3/4	2"	4-1/4	2	650A148C	84.47
1"	1"	1-5/8	4-1/2	2	650A164F	106.42

Cobalt Ball Nose End Mills

USA SINGLE END CENTER CUTTING MULTI FLUTE M-42 COBALT





2 FLUTE SERIES 6600A

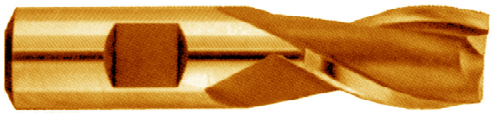
DIA of CUT	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
1/4	3/8	5/8	2-7/16	660A116A	$44.74
5/16	3/8	3/4	2-1/2	660A120A	48.03
3/8	3/8	3/4	2-1/2	660A124A	49.01
1/2	1/2	1-1/4	3-1/4	660A132B	63.23
5/8	5/8	1-3/8	3-1/2	660A140C	94.59
3/4	3/4	1-5/8	3-7/8	660A148D	110.56

4 & 6 FLUTE SERIES 6650A

DIA of CUT	SHANK DIA	LGTH CUT	OAL	NO of FL	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	2-5/16	4	665A108A	$56.64
3/16	3/8	1/2	2-3/8	4	665A112A	61.41
1/4	3/8	5/8	2-7/16	4	665A116A	61.41
5/16	3/8	3/4	2-1/2	4	665A120A	64.98
3/8	3/8	3/4	2-1/2	4	665A124A	64.98
1/2	1/2	1-1/4	3-1/4	4	665A132B	86.82
5/8	5/8	1-5/8	3-3/4	4	665A140C	115.46
3/4	3/4	1-5/8	3-7/8	4	665A148D	132.06
1"	1"	2"	4-1/2	4	665A164F	173.32
1-1/4	1-1/4	2"	4-1/2	6	665A216G	246.12

Cobalt End Mills

IMPORT SINGLE END CENTER CUTTING TWO FLUTE M-42 COBALT



The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10 percent faster than conventional high speed steel 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 conventional high speed steel end mills, they stay sharper longer, providing more cuts between grinds and less downtime, resulting in lower end mill costs.

Packaging: All end mills are individually packaged.

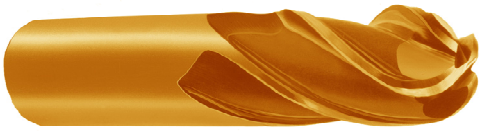
REGULAR LENGTH SERIES 6500E

DIAMETER of CUT	SHANK DIAMETER	LENGTH OF CUT	OAL	NUMBER of FLUTES	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	2-5/16	2	650E108A	**$20.66**
3/16	**3/8**	7/16	2-5-16	2	650E112A	**20.66**
1/4	**3/8**	1/2	2-5/16	2	650E116A	**20.66**
5/16	**3/8**	9/16	2-5/16	2	650E120A	**20.66**
3/8	**3/8**	9/16	2-5/16	2	650E124A	**20.66**
1/2	**1/2**	1"	3"	2	650E132B	**29.38**
5/8	**1/2**	1-1/8	3-1/8	2	650E140B	**51.18**
3/4	**1/2**	1-5/16	3-5/16	2	650E148B	**71.61**
7/8	**3/4**	1-1/2	3-3/4	2	650E156D	**85.15**
1"	**1"**	1-5/8	4-1/8	2	650E164F	**91.58**
1-1/8	**1"**	1-5/8	4-1/8	2	650E208F	**146.76**
1-1/4	**1-1/4**	1-5/8	4-1/8	2	650E216G	**156.76**
2"	**1-1/4**	1-5/8	4-1/8	2	650E264G	**302.50**

Cobalt Ball Nose End Mills

IMPORT SINGLE END CENTER CUTTING MULTI FLUTE M-42 COBALT





2 FLUTE SERIES 6600E

DIA of CUT	SHANK DIA	LENGTH OF CUT	OAL	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	2-5/16	660E108A	**$35.80**
3/16	**3/8**	1/2	2-3/8	660E112A	**35.80**
1/4	**3/8**	5/8	2-7/16	660E116A	**35.80**
5/16	**3/8**	3/4	2-1/2	660E120A	**35.80**
3/8	**3/8**	3/4	2-1/2	660E124A	**35.80**
7/16	**1/2**	1"	3"	660E128B	**50.95**
1/2	**1/2**	1"	3"	660E132B	**50.95**
9/16	**1/2**	1-1/8	3-1/8	660E136B	**53.25**
5/8	**1/2**	1-1/8	3-1/8	660E136B	**88.13**
5/8	**5/8**	1-3/8	3-1/2	660E140C	**88.13**
3/4	**3/4**	1-5/8	3-7/8	660E148D	**113.15**
7/8	**7/8**	2"	4-1/4	660E156E	**130.14**
1"	**1"**	2-1/4	4-3/4	660E164F	**159.51**
1-1/8	**1"**	2-1/4	4-3/4	660E208F	**260.73**
1-1/4	**1-1/4**	2-1/2	2"	660E216G	**280.01**

4 & 6 FLUTE SERIES 6650E

DIA of CUT	SHANK DIA	LGTH CUT	OAL	NO of FL	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	2-5/16	4	665E108A	**$49.12**
3/16	**3/8**	1/2	2-3/8	4	665E112A	**49.12**
1/4	**3/8**	5/8	2-7/16	4	665E116A	**49.12**
1/4	**3/8**	1-1/4	3-1/16	4	665E116B	**63.35**
5/16	**3/8**	3/4	2-1/2	4	665E120A	**49.12**
3/8	**3/8**	3/4	2-1/2	4	665E124A	**49.12**
3/8	**3/8**	1-1/2	3-1/4	4	665E124B	**63.35**
1/2	**1/2**	1-1/4	3-1/4	4	665E132B	**67.71**
1/2	**1/2**	2"	4"	4	665E132C	**79.18**
5/8	**5/8**	1-5/8	3-3/4	4	665E140C	**109.02**
5/8	**5/8**	2-1/2	4-5/8	4	665E140D	**124.40**
3/4	**3/4**	1-5/8	3-7/8	4	665E148D	**138.63**
3/4	**3/4**	3"	5-1/4	4	665E148E	**160.66**
1"	**1"**	2"	4-1/2	4	665E164F	**188.43**
1"	**1"**	4"	6-1/2	4	665E216G	**234.11**

Cobalt End Mills

USA SINGLE END CENTER CUTTING MULTI FLUTE M-42 COBALT



The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10 percent faster than conventional high speed steel 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 conventional high speed steel end mills, they stay sharper longer, providing more cuts between grinds and less downtime, resulting in lower end mill costs.

Packaging: All end mills are individually packaged.

REGULAR LENGTH SERIES 6700A

DIA of CUT	SHANK DIA	LGTH CUT	OAL	NO of FL	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	2-5/16	4	670A108A	$34.24
3/16	3/8	1/2	2-3/8	4	670A112A	34.24
1/4	3/8	5/8	2-7/16	4	670A116A	34.24
5/16	3/8	3/4	2-1/2	4	670A120A	34.24
3/8	3/8	3/4	2-1/2	4	670A124A	34.24
1/2	1/2	1-1/4	3-1/4	4	670A132B	50.56
5/8	5/8	1-5/8	3-3/4	4	670A140C	68.77
3/4	3/4	1-5/8	3-7/8	4	670A148D	82.20
3/4	3/4	1-5/8	3-7/8	6	670A148J	82.20
1"	1"	2"	4-1/2	4	670A164F	122.54
1"	1"	2"	4-1/2	6	670A164G	122.54
1-1/4	1-1/4	2"	4-1/2	4	670A216G	183.95
1-1/4	1-1/4	2"	4-1/2	6	670A216J	183.95
1-1/2	1-1/4	2"	4-1/2	4	670A232G	225.47
1-1/2	1-1/4	2"	4-1/2	6	670A232J	225.47
2"	1-1/4	2"	4-1/2	6	670A264G	285.07

MEDIUM LENGTH SERIES 6725A

DIA of CUT	SHANK DIA	LGTH CUT	OAL	NO of FL	EDP NUMBER	LIST PRICE
3/8	3/8	1-1/2	3-1/4	4	672A124A	$44.81
1/2	1/2	2"	4"	4	672A132B	63.51
5/8	5/8	2-1/2	4-5/8	4	672A140C	92.71
3/4	3/4	2"	4-1/4	4	672A148D	99.57
3/4	3/4	2"	4-1/4	6	672A148J	99.57
1"	1"	3"	5-1/2	4	672A164F	156.08
1"	1"	3"	5-1/2	6	672A164J	156.08
1-1/4	1-1/4	3"	5-1/2	4	672A216G	250.82
1-1/4	1-1/4	3"	5-1/2	6	672A216J	250.82
1-1/2	1-1/4	3"	5-1/2	4	672A232G	335.89
1-1/2	1-1/4	3"	5-1/2	6	672A232J	335.89
2"	1-1/4	3"	5-1/2	6	672A264G	469.22
2"	2"	4"	7-3/4	6	672A264H	P O A



LONG LENGTH SERIES 6750A

DIA of CUT	SHANK DIA	LGTH CUT	OAL	NO of FL	EDP NUMBER	LIST PRICE
3/8	3/8	2-1/2	4-1/4	4	675A124A	$55.88
1/2	1/2	3"	5"	4	675A132B	77.38
5/8	5/8	3"	5-1/8	4	675A140C	97.05
3/4	3/4	3"	5-1/4	4	675A148D	119.18
3/4	3/4	3"	5-1/4	6	675A148J	119.18
1"	1"	4"	6-1/2	4	675A164F	193.12
1"	1"	4"	6-1/2	6	675A164J	193.12
1-1/4	1-1/4	4"	6-1/2	4	675A216G	289.82
1-1/4	1-1/4	4"	6-1/2	6	675A216J	289.82
1-1/2	1-1/4	4"	6-1/2	4	675A232G	360.26
1-1/2	1-1/4	4"	6-1/2	6	675A232J	360.26
2"	1-1/4	4"	6-1/2	6	675A264G	543.64
2"	2"	6"	9-3/4	6	675A264H	P O A

X-LONG LENGTH SERIES 6775A

DIA of CUT	SHANK DIA	LGTH CUT	OAL	NO of FL	EDP NUMBER	LIST PRICE
1/2	1/2	4"	6"	4	677A132B	$96.84
5/8	5/8	4"	6-1/8	4	677A140C	116.93
3/4	3/4	4"	6-1/4	4	677A148D	139.15
3/4	3/4	4"	6-1/4	6	677A148J	139.15
1"	1"	6"	8-1/2	4	677A164F	187.24
1"	1"	6"	8-1/2	6	677A164J	187.24
1-1/4	1-1/4	6"	8-1/2	6	677A216G	331.27
1-1/2	1-1/4	6"	10-1/2	4	677A232G	425.73
1-1/2	1-1/4	6"	10-1/2	6	677A232J	425.73

Cobalt End Mills

IMPORT SINGLE END CENTER CUTTING MULTI FLUTE M-42 COBALT



The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10 percent faster than conventional high speed steel 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 conventional high speed steel end mills, they stay sharper longer, providing more cuts between grinds and less downtime, resulting in lower end mill costs.

Packaging: All end mills are individually packaged.

REGULAR LENGTH SERIES 6700E

DIAMETER OF CUT	SHANK DIAMETER	LENGDTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	2-5/16	3/8	2-5/16	**$20.66**
3/16	**3/8**	1/2	2-3/8	1/2	2-3/8	**20.66**
1/4	**3/8**	5/8	2-7/16	5/8	2-7/16	**20.66**
5/16	**3/8**	3/4	2-1/2	3/4	2-1/2	**20.66**
3/8	**3/8**	3/4	2-1/2	3/4	2-1/2	**20.66**
1/2	**1/2**	1-1/4	3-1/4	1-1/4	3-1/4	**29.38**
5/8	**1/2**	1-5/8	3-3/4	1-5/8	3-3/4	**53.48**
5/8	**5/8**	1-5/8	3-3/4	1-5/8	3-3/4	**53.48**
3/4	**5/8**	1-5/8	3-7/8	1-5/8	3-7/8	**71.61**
3/4	**3/4**	1-5/8	3-7/8	1-5/8	3-7/8	**71.61**
1"	**3/4**	2"	4-1/2	2"	4-1/2	**91.58**
1"	**1"**	2"	4-1/2	2"	4-1/2	**91.58**
1-1/4	**1-1/4**	2"	4-1/2	2"	4-1/2	**156.76**
1-1/4	**1-1/4**	2"	4-1/2	2"	4-1/2	**156.76**
1-1/2	**1-1/4**	2"	4-1/2	2"	4-1/2	**217.12**
1-1/2	**1-1/4**	2"	4-1/2	2"	4-1/2	**217.12**
2"	**1-1/4**	2"	4-1/2	2"	4-1/2	**302.50**



LONG LENGTH SERIES 6750E

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	NUMBER OF FLUTES	EDP NUMBER	LIST PRICE
1/4	3/8	1-3/4	3-9/16	4	675E116A	**$44.53**
5/16	3/8	2"	3-3/4	4	675E120A	**46.59**
3/8	3/8	2-1/2	4-1/4	4	675E124A	**48.66**
1/2	1/2	3"	5"	4	675E132B	**55.77**
5/8	5/8	3"	5"	4	675E140C	**66.33**
3/4	3/4	3"	5-1/4	4	675E148D	**80.10**
1"	3/4	4"	6-1/2	4	675E164D	**123.48**
1"	1"	4"	6-1/2	4	675E164F	**133.81**
1-1/4	1-1/4	4"	6-1/2	4	675E216G	**204.04**
1-1/4	1-1/4	4"	6-1/2	6	675E216J	**204.04**
1-1/2	1-1/4	4"	6-1/2	4	675E232G	**383.98**
1-1/2	1-1/4	4"	6-1/2	6	675E232J	**383.98**

Cobalt End Mills

MADE IN USA | **DOUBLE END** | **2 & 4 FLUTE** | **M-42 8% COBALT**

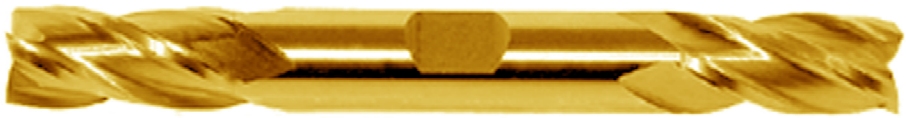


The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10 percent faster than conventional high speed steel end mills. This translates to shorter machining times and permits fuller utilization of available machine horsepower. While cobalt end mills are initially more expensive than conventional high speed steel end mills, they stay sharper longer, providing more cuts between grinds and less downtime, resulting in lower end mill costs.

Packaging: All end mills are individually packaged.

TWO FLUTE — CENTER CUTTING — SERIES 6900A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	3/8	3/8	3-1/16	690A108A	**$46.63**
5/32	3/8	7/16	3-1/16	690A110A	**46.63**
3/16	3/8	7/16	3-1/4	690A112A	**46.63**
7/32	3/8	1/2	3-1/4	690A114A	**46.63**
1/4	3/8	1/2	3-3/8	690A116A	**46.63**
9/32	3/8	9/16	3-3/8	690A118A	**46.63**
5/16	3/8	9/16	3-1/2	690A120A	**46.63**
3/8	3/8	9/16	3-1/2	690A124A	**46.63**
1/2	1/2	13/16	4-1/8	690A132B	**66.10**
5/8	5/8	1-1/8	5"	690A140C	**91.17**
3/4	3/4	1-5/16	5-5/8	690A148D	**110.64**



FOUR FLUTE — CENTER CUTTING — SERIES 6950A

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	3-1/16	695A108A	**$49.22**
3/16	**3/8**	1/2	3-1/4	695A112A	**49.22**
1/4	**3/8**	5/8	3-3/8	695A116A	**50.69**
5/16	**3/8**	3/4	3-1/2	695A120A	**50.69**
3/8	**3/8**	3/4	3-1/2	695A124A	**50.69**
1/2	**1/2**	1"	4-1/8	695A132B	**74.22**
5/8	**5/8**	1-3/8	5"	695A140C	**100.34**
3/4	**3/4**	1-5/8	5-5/8	695A148D	**121.13**

Cobalt End Mills

IMPORT | DOUBLE END | 2 & 4 FLUTE | M-42 8% COBALT



The greater red hardness of M-42 Cobalt end mills enables these tools to run about 10 percent faster than conventional high speed steel 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 conventional high speed steel end mills, they stay sharper longer, providing more cuts between grinds and less downtime, resulting in lower end mill costs.

Packaging: All end mills are individually packaged.

TWO FLUTE | CENTER CUTTING | SERIES 6900E

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/4	3/8	1/2	3-3/8	690E116A	**$26.62**
3/8	3/8	9/16	3-1/2	690E124A	**26.62**
7/16	1/2	13/16	3-3/4	690E128B	**44.07**
1/2	1/2	13/16	4-1/8	690E132B	**44.07**
5/8	5/8	1-1/8	5"	690E140C	**67.02**
3/4	3/4	1-5/16	5-5/8	690E148D	**85.38**
1"	1"	1-5/8	5-7/8	690E164F	**131.05**



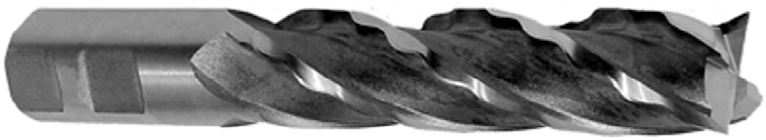
FOUR FLUTE | CENTER CUTTING | SERIES 6950E

DIAMETER OF CUT	SHANK DIAMETER	LENGTH OF CUT	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	**3/8**	3/8	3-1/16	695E108A	**$26.62**
3/16	**3/8**	1/2	3-1/4	695E112A	**26.62**
1/4	**3/8**	1/2	3-1/4	695E116A	**26.62**
5/16	**3/8**	9/16	3-1/4	695E120A	**26.62**
3/8	**3/8**	9/16	3-1/4	695E124A	**26.62**
7/16	**1/2**	13/16	3-3/4	695E128B	**44.07**
1/2	**1/2**	13/16	3-3/4	695E132B	**44.07**
9/16	**5/8**	1-1/8	4-1/2	695E136C	**67.02**
5/8	**5/8**	1-1/8	4-1/2	695E140C	**67.02**
11/16	**3/4**	1-5/16	5"	695E144D	**85.38**
3/4	**3/4**	1-5/16	5"	695E148D	**85.38**
1"	**1"**	1-5/8	5-7/8	69EA164F	**131.05**

Prime Kut End Mills

MADE IN USA | **CENTER CUTTING** | **SINGLE END**

ROUGHER AND FINISHER



Prime Kut End Mills rough and finish in one operation. Sinusoidal cutting edges feature continuously changing helical and radial rake angles to the work. Cuts longer, faster and more quietly than coventional end mills.

Packaging: All end mills are individually packaged.

HIGH SPEED STEEL AND COBALT | **HSS 7125** | **COBALT 7175**

DIAMETER OF CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	NUMBER OF FLUTES	HSS EDP NUMBER	HSS LIST PRICE	COBALT EDP NUMBER	COBALT LIST PRICE
3/8	**3/8**	3/4	2-1/2	4	712A124A	**$47.09**	--------	**$------**
3/8	**3-8**	1-3/8	3-1/8	4	712A124J	**61.53**	717A124J	**81.62**
1/2	**1/2**	1-1/4	3-1/4	4	712A132B	**47.12**	--------	**------**
1/2	**1/2**	2"	4"	4	712A132J	**58.82**	717A132J	**90.42**
1/2	**1/2**	3"	5"	4	712A132K	**75.00**	--------	**------**
5/8	**5/8**	1-5/8	3-3/4	4	712A140C	**58.33**	--------	**------**
5/8	**5/8**	2-1/2	4-5/8	4	712A140J	**79.12**	717A140J	**120.60**
5/8	**5/8**	4"	6-1/8	4	712A140K	**101.25**	--------	**------**
3/4	**3/4**	1-5/8	3-7/8	4	712A148D	**63.16**	--------	**------**
3/4	**3/4**	3"	5-1/4	4	712A148J	**92.28**	717A148J	**156.11**
3/4	**3/4**	4"	6-1/4	4	712A148K	**111.76**	--------	**------**
7/8	**7/8**	1-7/8	4-1/8	4	712A156D	**78.57**	--------	**------**
7/8	**7/8**	3-1/2	5-3/4	4	712A156J	**110.92**	--------	**------**
1''	**1"**	2"	4-1/2	4*	712A164F	**94.11**	717A164F	**156.46**
1''	**1"**	3"	5-1/2	4	712A164J	**129.96**	--------	**------**
1''	**1"**	4"	6-1/2	4*	712A164K	**141.58**	717A164K	**214.49**
1-1/4	**1-1/4**	2"	4-1/2	4	712A216G	**133.81**	--------	**------**
1-1/4	**1-1/4**	3"	5-1/2	4	712A216J	**171.13**	--------	**------**
1-1/4	**1-1/4**	4"	6-1/2	4*	712A216K	**191.09**	717A216K	**318.08**
1-1/4	**1-1/4**	6"	8-1/2	4	712A216L	**246.76**	--------	**------**
1-1/2	**1-1/4**	2"	4-1/2	4	712A232G	**158.81**	--------	**------**
1-1/2	**1-1/4**	4"	6-1/2	4*	712A232J	**234.15**	717A232J	**368.14**
1-1/2	**1-1/4**	6"	8-1/2	4	712A232K	**285.76**	--------	**------**
2"	**2"**	4"	7-3/4	6	712A264K	**351.02**	717A264K	**534.10**
2'	**2"**	6"	9-3/4	6	712A264M	**522.36**	717A264M	**483.99**

*** Cobalt 7175 series has 6 flutes**

Roughing End Mills

MADE IN USA **100% GROUND FORM** **SINGLE END**



For extremely rapid stock removal. These mills can remove material at up to three times the rate of regular end mills. Designed to machine low alloy, high strength steels at faster feed and speed rates.

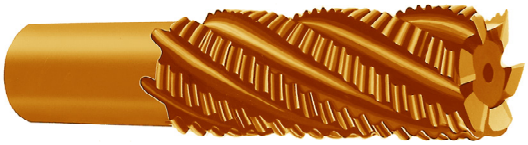
Packaging: All end mills are individually packaged.

HIGH SPEED STEEL & M-42 COBALT HSS 7100 COBALT 7150

DIAMETER OF CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	NUMBER OF FLUTES	HSS EDP NUMBER	HSS LIST PRICE	COBALT EDP NUMBER	COBALT LIST PRICE
3/8	**3/8**	3/4	2-1/2	4	710A124A	**$32.70**	-----	**$-----**
7/16	**1/2**	7/8	3"	4	710A128B	**40.55**	-----	**-----**
1/2	**1/2**	1-1/4	3-1/4	4	710A132B	**47.12**	715A132B	**61.69**
1/2	**1/2**	2"	4"	4	710A132J	**63.02**	715A132J	**80.32**
9/16	**1/2**	1-3/8	3-3/8	4	------	**------**	715A136B	**80.32**
5/8	**5/8**	1-5/8	3-3/4	4	710A140C	**60.57**	715A140C	**78.57**
5/8	**5/8**	2-1/2	4-5/8	4	710A140J	**53.55**	715A140J	**104.89**
3/4	**3/4**	1-5/8	3-7/8	4	710A148D	**68.69**	715A148D	**91.03**
3/4	**3/4**	3"	5-1/4	4	710A148J	**88.58**	715A148J	**115.89**
7/8	**3/4**	1-3/4	3-7/8	5	710A156D	**80.88**	715A156D	**121.49**
7/8	**3/4**	3-1/2	5-5/8	5	710A156J	**110.92**	715A156J	**150.34**
1''	**1"**	2"	4-1/2	5	710A164F	**104.05**	715A164F	**136.71**
1''	**1"**	3"	5-1/2	5	710A164J	**115.89**	715A164J	**166.16**
1''	**1"**	4"	6-1/2	5	710A164K	**134.37**	715A164K	**181.08**
1"	**1"**	6"	8-1/2	5	710A164L	**165.25**	715A164L	**243.04**
1-1/8	**1"**	2"	4-1/2	6	710A208F	**134.23**	715A208F	**179.95**
1-1/4	**1-1/4**	2"	4-1/2	6	710A216G	**145.02**	715A216G	**195.22**
1-1/4	**1-1/4**	3"	5-1/2	6	710A216J	**168.68**	715A216J	**242.28**
1-1/4	**1-1/4**	4"	6-1/2	6	710A216K	**192.35**	715A216K	**263.07**
1-1/4	**1-1/4**	6"	8-1/2	6	710A216L	**226.80**	715A216L	**346.67**
1-1/2	**1-1/4**	2"	4-1/2	6	710A232G	**174.85**	715A232G	**235.62**
1-1/2	**1-1/4**	4"	6-1/2	6	710A232J	**224.00**	715A232J	**329.66**
1-1/2	**1-1/4**	6"	8-1/2	6	710A232K	**297.25**	715A232K	**493.58**
1-3/4	**1-1/4**	4"	6-1/2	6	710A248G	**286.03**	715A248G	**384.21**
2"	**1-1/4**	2"	4-1/2	8	710A264G	**238.08**	715A264G	**339.40**
2"	**1-1/4**	4"	6-1/2	8	710A264J	**289.26**	715A264J	**463.68**
2"	**2"**	4"	7-3/4	8	710A264H	**312.30**	715A264H	**506.68**
2"	**2"**	6"	9-3/4	8	710A264K	**385.47**	715A264K	**626.97**

Roughing End Mills

IMPORT | **M-42 COBALT** | **SINGLE END**



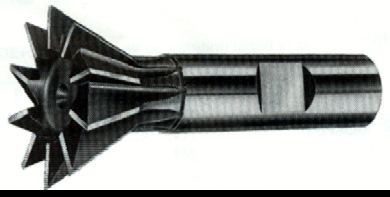
For extremely rapid stock removal. These mills can remove material at up to three times the rate of regular end mills. Designed to machine low alloy, high strength steels at faster feed and speed rates.
Packaging: All end mills are individually packaged.

MULITPLE FLUTE — COBALT SERIES 7150E

DIAMETER OF CUT	SHANK DIAMETER	FLUET LENGTH	OVERALL LENGTH	NUMBER OF FLUTES	EDP NUMBER	LIST PRICE
1/4	3/8	5/8	2-7/16	3	715E116A	$40.39
5/16	3/8	3/4	2-1/2	3	715E120A	40.39
3/8	3/8	3/4	2-1/2	4	715E124A	40.39
7/16	3/8	1"	2-3/4	4	715E128B	52.56
1/2	1/2	1-1/4	3-1/4	4	715E132B	52.56
1/2	1/2	2"	4"	4	715E132J	68.40
9/16	1/2	1-3/8	3-3/8	4	715E136B	65.41
5/8	5/8	1-5/8	3-3/4	4	715E140C	65.41
5/8	5/8	2-1/2	4-5/8	4	715E140J	91.58
11/16	5/8	1-5/8	3-3/4	4	715E144C	81.48
3/4	5/8	1-5/8	3-3/4	4	715E148C	81.48
3/4	3/4	1-5/8	3-7/8	4	715E148J	81.48
3/4	3/4	3"	5-1/4	4	715E148K	102.59
13/16	3/4	1-7/8	4-1/8	4	715E152D	108.33
7/8	3/4	1-7/8	4-1/8	4	715E156D	110.63
7/8	7/8	1-7/8	4-1/8	4	715E156J	110.63
7/8	7/8	3-1/2	5-3/4	4	715E156K	136.10
15/16	3/4	1-7/8	4-1/8	4	715E160D	122.56
1''	3/4	2"	4-1/4	5	715E164F	117.74
1''	1"	2"	4-1/2	5	715E164J	117.74
1''	1"	3"	5-1/2	5	715E164K	159.97
1"	1"	4"	6-1/2	5	715E164L	174.43
1"	1"	6"	8-1/2	5	715E164M	246.50
1-1/8	1"	2"	4-1/2	5	715E208F	167.09
1-1/4	3/4	2"	4-1/2	6	715E216D	210.01
1-1/4	1-1/4	2"	4-1/2	6	715E216J	210.01
1-1/4	1-1/4	3"	5-1/2	6	715E216K	263.49
1-1/4	1-1/4	4"	6-1/2	6	715E216L	299.75
1-1/4	1-1/4	6"	8-1/2	6	715E216M	383.75
1-1/2	3/4	2"	4-1/2	6	715E232D	283.68
1-1/2	1-1/4	2"	4-1/2	6	715E232J	283.68
1-1/2	1-1/4	3"	5-1/2	6	715E232K	290.57
1-1/2	1-1/4	4"	6-1/2	6	715E232L	360.80
1-1/2	1-1/4	6"	8-1/2	6	715E232M	399.82
1-3/4	3/4	2"	4-1/2	6	715E248D	345.88
1-3/4	1-1/4	2"	4-1/2	6	715E248J	360.11
1-3/4	1-1/4	4"	6-1/2	6	715E248L	448.05
2"	3/4	2"	4-1/2	8	715E264D	405.10
2"	1-1/4	2"	4-1/2	8	715E264J	426.67
2"	2"	4"	6-1/2	8	715E264K	571.50
2"	2"	3"	6-3/4	8	715E264L	621.53
2"	2"	4"	7-3/4	8	715E264M	704.16
2"	2"	5"	8-3/4	8	715E264N	753.50
2"	2"	6"	9-3/4	8	715E264O	785.87
2"	2"	8"	11-3/4	8	715E264P	1,134.96

End Mills

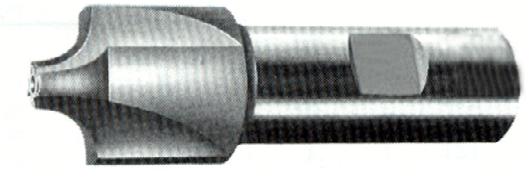
IMPORT — HIGH SPEED M-2 & COBALT M-42 8%



Packaging: All sizes individually packaged.

DOVETAIL CUTTERS — WELDON SK — HSS SERIES 5900E — COBALT 5910E

DIA of CUTTER	SHANK DIA	WIDTH of CUTTER	OAL	NUMBER of FLUTES	ANGLE	HSS EDP NUMBER	HSS LIST PRICE	COBALT EDP NUMBER	COBALT LIST PRICE
3/8	**3/8**	1/8	2-1/8	6	45°	590E124A	**$55.34**	591E124A	**$83.01**
3/8	**3/8**	3/16	2-1/8	6	60°	590E124B	**55.34**	591E124B	**83.01**
1/2	**3/8**	5/32	2-1/8	6	45°	590E132A	**55.34**	591E132A	**83.01**
1/2	**3/8**	1/4	2-1/8	6	60°	590E132B	**55.34**	591E132B	**83.01**
3/4	**3/8**	1/4	2-1/8	8	45°	590E148A	**56.80**	591E148A	**84.71**
3/4	**3/8**	5/16	2-1/8	8	60°	590E148B	**56.80**	591E148B	**84.71**
1-3/8	**5/8**	7/16	2-7/8	10	45°	590E224A	**94.42**	591E224A	**141.27**
1-3/8	**5/8**	9/16	2-7/8	10	60°	590E224B	**94.42**	591E224B	**141.27**
1-7/8	**7/8**	9/16	3-1/4	12	45°	590E256A	**202.92**	591E256A	**304.63**
1-7/8	**7/8**	13/16	3-1/4	12	60°	590E256B	**202.92**	591E256B	**304.63**
2-1/4	**1"**	5/8	3-3/4	12	45°	590E316A	**247.58**	591E316A	**371.38**
2-1/4	**1"**	1-1/16	3-3/4	12	60°	590E316B	**247.50**	591E316B	**371.38**



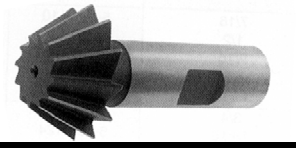
Packaging: All sizes individually packaged.

CORNER ROUNDING — WELDON SK — HSS SERIES 5920E — COBALT 5930E

RADIUS INCHES	SHANK DIAMETER	CUTTER DIAMETER	OVERALL LENGTH	HSS EDP NUMBER	HSS LIST PRICE	COBALT EDP NUMBER	COBALT LIST PRICE
1/16	**3/8**	7/16	2-1/2	592E104A	**$55.59**	593E104A	**$76.95**
3/32	**3/8**	1/2	2-1/2	592E106A	**59.47**	593E106A	**82.04**
1/8	**1/2**	5/8	3"	592E108B	**75.73**	593E108B	**104.37**
5/32	**1/2**	3/4	3"	592E110B	**78.40**	593E110B	**108.01**
3/16	**1/2**	7/8	3"	592E112B	**92.48**	593E112B	**126.95**
3/16	**3/4**	7/8	3-1/8	592E112D	**92.48**	593E112D	**126.95**
1/4	**1/2**	1"	3"	592E116B	**102.43**	593E116B	**140.54**
1/4	**3/4**	1"	3-1/4	592E116D	**102.43**	593E116D	**140.54**
9/32	**5/8**	1"	3"	592E118C	**124.28**	-----	**-----**
5/16	**1/2**	1-1/8	3-1/4	592E120B	**125.98**	593E120B	**173.31**
5/16	**5/8**	1-1/8	3-1/2	592E120C	**125.98**	-----	**-----**
5/16	**3/4**	1-1/8	3-1/4	592E120D	**125.98**	593E120D	**173.31**
5/16	**7/8**	1-1/8	3-1/2	592E120E	**125.98**	593E120E	**173.31**
3/8	**1/2**	1-1/4	3-1/2	592E124B	**145.15**	593E124B	**199.77**
3/8	**3/4**	1-1/4	3-1/2	592E124D	**145.15**	593E124D	**199.77**
3/8	**7/8**	1-1/4	3-3/4	592E124E	**145.15**	593E124E	**199.77**
7/16	**3/4**	1-3/8	3-3/4	592E128D	**157.29**	593E128D	**217.00**
7/16	**1"**	1-3/8	4"	592E128F	**157.29**	593E128F	**217.00**
1/2	**3/4**	1-1/2	3-7/8	592E132D	**170.15**	593E132D	**234.23**
1/2	**1"**	1-1/2	4-1/8	592E132F	**170.15**	593E132F	**234.23**
5/8	**3/4**	1-5/8	4"	592E140D	**287.64**	593E140D	**400.50**
5/8	**1"**	1-5/8	4"	592E140F	**287.64**	-----	**-----**
3/4	**3/4**	1-7/8	4"	592E148D	**341.04**	593E148D	**475.75**
3/4	**1"**	1-7/8	4"	592E148F	**341.04**	-----	**-----**

End Mills

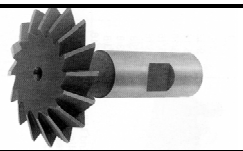
IMPORT — HIGH SPEED M-2 & COBALT M-42 8%



Packaging: All sizes individually packaged.

SINGLE ANGLE CUTTERS — WELDON SK — HSS — SERIES 5950E

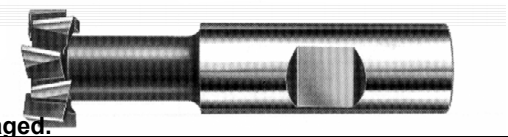
DIAMETER OF CUTTER	SHANK DIAMETER	CUTTER WIDTH	OVERALL LENGTH	INCLUDED ANGLE	EDP NUMBER	LIST PRICE
1/2	3/8	1/8	2-1/8	45	595E132A	**$67.72**
1/2	3/8	7/32	2-1/8	60	595E132B	**67.72**
3/4	3/8	3/16	2-1/8	45	595E148A	**87.87**
3/4	3/8	5/16	2-1/8	60	595E148B	**87.87**
1"	1/2	5/16	2-1/2	45	595E164A	**101.22**
1"	1/2	7/16	2-1/2	60	595E164B	**101.22**
1-1/2	3/4	1/2	2-3/4	45	595E232A	**128.40**
1-1/2	3/4	5/8	2-3/4	60	595E232B	**128.40**



Packaging: All sizes individually packaged.

DOUBLE ANGLE CUTTERS — WELDON SK — HSS — SERIES 5960E

DIAMETER OF CUT	SHANK DIAMETER	CUTTER WIDTH	OVERALL LENGTH	INCLUDED ANGLE	EDP NUMBER	LIST PRICE
3/4	**3/8**	3/16	2-3/8	60°	596E148A	**$73.06**
3/4	**3/8**	1/4	2-7/16	90°	596E148B	**73.06**
1"	**1/2**	5/16	2-37/32	60°	596E164A	**85.44**
1"	**1/2**	3/8	2-29/32	90°	596E164B	**85.44**
1-3/8	**5/8**	7/16	3-7/32	60°	596E224A	**113.11**
1-3/8	**5/8**	1/2	3-9/32	90°	596E224B	**113.11**
1-1/2	**5/8**	1/2	3-3/8	60°	596E232A	**123.31**
1-1/2	**5/8**	9/16	3-7/16	90°	596E232B	**123.31**
1-7/8	**3/4**	5/8	3-25/32	60°	596E256A	**137.63**
1-7/8	**3/4**	5/8	3-25/32	90°	596E256B	**137.63**
2-1/4	**3/4**	1/2	3-1/8	60°	296E316A	**175.49**
2-1/4	**3/4**	1/2	3-1/8	90°	596E316B	**175.49**
2-1/4	**7/8**	3/4	4-5/32	60°	596E316C	**182.29**
2-1/4	**7/8**	3/4	4-5/32	90°	596E316D	**208.99**



Packaging: All sizes individually packaged.

T-SLOT CUTTERS — WELDON SK — HSS 5970E — COBALT 5980E

DIA OF CUT	BOLT SIZE	SHANK DIA	NECK DIA	CUTTER WIDTH	OAL	NUMBER OF FLUTES	HSS EDP NUMBER	HSS LIST PRICE	COBALT EDP NUMBER	COBALT LIST PRICE
9/16	**1/4**	1/2	17/64	15/64	2-19/32	8	597E136	**$66.27**	598E136	**$92.72**
21/32	**5/16**	1/2	21/64	17/64	2-11/32	8	597E142	**72.09**	598E142	**100.25**
25/32	**3/8**	3/4	13/32	21/64	3-1/4	8	597E150	**102.43**	598E150	**144.51**
31/32	**1/2**	3/4	17/32	25/64	3-7/16	8	597E162	**115.30**	598E162	**315.55**
1-1/4	**5/8**	1"	21/32	31/64	3-15/16	10	597E216	**157.05**	598E216	**219.19**
1-15/32	**3/4**	1"	25/32	5/8	4-7/16	10	597E230	**176.71**	598E230	**246.37**
1-27/32	**1"**	1-1/4	1-1/32	53/64	4-13/16	10	597E254	**296.13**	598E254	**415.07**
2-7/32	**1-1/4**	1-1/4	1-9/32	1-3/32	5-3/8	12	597A314	**373.80**	598A314	**521.87**
2-21/32	**1-1/2**	1-1/4	1-17/32	1-11/32	5-29/32	12	597E342	**492.74**	598E342	**684.50**

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 BHN)	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		

Tool Geometry

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)

Diameter 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 - .005	.003 - .006
2	.0002 - .0005	.0002 - .001	.0005 - .003	.0005 - .004	.001 - .006	.002 - .006	.003 - .006
3	.0002 - .0005	.0002 - .001	.0005 - .003	.001 - .004	.002 - .006	.003 - .006	.003 - .006
4	.0002 - .0005	.0002 - .0005	.0005 - .003	.001 - .004	.002 - .006	.002 - .006	.003 - .006
5	—	.0002 - .0005	.0003 - .002	.0005 - .002	.001 - .004	.002 - .005	.003 - .005
6	—	—	.0002 - .001	.0005 - .002	.001 - .003	.002 - .004	.002 - .004

MAGNUM SOLID CARBIDE

BURS:

Aluminum Cut Burs

1/4" Shank

Ball Shape (7000DAL) 224
Cylindrical (7000AAL) 224
Cylindrical Ball Nose (7000CAL) 224
Oval Shape (7000EAR) 224
Round Tree Shape (7000FAL) 224
14° Included Angle (7000LAL) 224

Extra Long Burs

1/4" Shank Single & Double Cut

Ball Shape (7000DX) 223
Cylindrical (7000AX) 223
Cylindrical Ball Nose (7000CX) 223
Flame Shape (7000HX) 223
Oval Shape (7000EX) 223
Pointed Tree Shape (7000GX) 223
Round Tree Shape (7000FX) 223
14° Included Angle (7000LX) 223

Miniature Burs

3/32" Shank, 1/16" & 3/32" Cutting Dia. (SC & DC)

61 & 63 228

1/8" Shank, 1-1/2" OAL (SC & DC)

41, 42 & 43 225

1/8" Shank, 2" OAL (SC & DC)

41L2, 42L2, 43L2 & 44L2 226

1/8" Shank, 3" OAL (SC & DC)

41L3, 42L3, 43L3 & 44L3 226

1/8" Shank, 1/4" Cutting Diameter (SC & DC)

51 227

1/8" Shank, 5/32" & 3/16" Cutting Dia. (SC & DC)

52 & 53 227

3/16" Shank, 3/16" Cutting Dia. (SC & DC)

81 228

Regular Burs

1/4" Shank Single & Double Cut

Ball Shape (7000D) 220
Cone Shape (7000M) 222
Cylindrical (7000A) 220
Cylindrical /w End Cut (7000B) 220
Cylindrical Ball Nose (7000C) 220
Flame Shape (7000HX) 223
Inverted Cone (7000N) 222
Inverted Cone /w End Cut (7000NE) 222
Oval Shape (7000E) 221
Pointed Tree Shape (7000G) 221
Round Tree Shape (7000F) 221
14° Included Angle (7000L) 222
60° Included (7000J) 222
90° Included (7000K) 222

BUR DISPLAYS AND SETS:

Air Grinder Display

Double Cut Set (70S014DC) 230
Single Cut Set (70S014SC) 230

Display

Double Cut Display (70S014DC) 230
Single Cut Display (70S014SC) 230

Sets

#1 thru #6 Sets (70S001DC) 229
#7 thru #9 Sets (70S001DC) 230

COUNTERSINKS:

Combined D & C

Tool Sizes 213

Single Flute

Fractional Sizes (8500) 219

Three Flute

Fractional Sizes (8600) 219

Four Flute

Fractional Sizes (8700) 219

Six Flute

Fractional Sizes (8800) 219

DRILLS:

Regular Helix

Fractional Sizes (700) 206
Letter Sizes (700) 206
Wire Sizes (700) 207

Straight Flute

Fractional Sizes (710) 208
Letter Sizes (710) 208
Wire Sizes (710) 209

Fast Helix

Fractional Sizes (720) 212

Slow Helix

Fractional Sizes (720) 210
Letter Sizes (720) 210
Wire Sizes (720) 211

Spade Drill

Fractional Sizes (750) 213

Three Flute

Fractional Sizes (730) 212

END MILLS:

Double End

Two Flute

Ball Nose Stub Length (7800) 216
Stub Length (7400) 216

Four Flute

Ball Nose Stub Length (7900) 216
Stub Length (7500) 216

Single End

Two Flute

Ball Nose Standard Length (7600) 215
Ball Nose X-Long Length (7650) 215
Micro-Miniature (7275) 217
Standard Length (7200) 214
X-Long Length (7250) 214

Three Flute

Standard Length (7950) 217

Four Flute

Ball Nose Standard Length (7700) 215
Ball Nose X-Long Length (7750) 215
Micro-Miniature (7375) 217
Standard Length (7300) 214
X-Long Length (7350) 214

FIBER GLASS ROUTERS:

Bur End

Tool Number (8300) 218

Drill End

Tool Number (8400) 218

End Mill End

Tool Number (8100) 218

No End Cut

Tool Number (8000) 218

Solid Carbide Drills

MADE IN USA **JOBBERS LENGTH** **BRIGHT FINISH**

COATING TiN AVAILABLE



Solid Carbide drills have the ability to retain hardness and a sharp edge at high temperature, plus its excellent abrasion-resistant qualities, makes it advantageous for use in drilling abrasive materials, such cast iron, the non-ferrous alloys, high silicon aluminum, hard rubber and plexiglass. Carbide drills are generally run at higher speeds than high speed steel drills. They offer the advantage of extreme rigidity for greater drilling accuracy.

Packaging: All sizes are individually packaged.

SERIES 700 REGULAR HELIX 118° POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/32	3/8	1-1/8	700A102	$17.55
3/64	3/4	1-1/2	700A103	15.59
1/16	3/4	1-1/2	700A104	13.83
5/64	7/8	1-3/4	700A105	16.05
3/32	1"	2"	700A106	18.34
7/64	1-1/4	2-1/4	700A107	21.66
1/8	1-1/4	2-1/4	700A108	21.66
9/64	1-3/8	2-1/2	700A109	26.17
5/32	1-3/8	2-1/2	700A110	27.41
11/64	1-5/8	2-3/4	700A111	33.34
3/16	1-5/8	2-3/4	700A112	32.95
13/64	1-3/4	3"	700A113	42.02
7/32	1-3/4	3"	700A114	44.70
15/64	2"	3-1/4	700A115	48.09
1/4	2"	3-1/4	700A116	45.74
17/64	2-1/8	3-1/2	700A117	53.90

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	2-1/8	3-1/2	700A118	$56.18
19/64	2-3/8	3-3/4	700A119	64.14
5/16	2-3/8	3-3/4	700A120	63.03
21/64	2-1/2	4"	700A121	74.25
11/32	2-1/2	4"	700A122	80.00
23/64	2-1/2	4"	700A123	84.43
3/8	2-3/4	4-1/4	700A124	90.05
25/64	2-7/8	4-1/2	700A125	102.96
13/32	2-7/8	4-1/2	700A126	111.38
27/64	2-7/8	4-1/2	700A127	117.25
7/16	2-7/8	4-1/2	700A128	117.58
29/64	3"	4-3/4	700A129	138.07
15/32	3"	4-3/4	700A130	143.29
31/64	3"	4-3/4	700A131	146.55
1/2	3"	4-3/4	700A132	138.98

SERIES 700 REGULAR HELIX 118° POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	2"	3-1/4	700A501	$52.53
B	2"	3-1/4	700A502	53.05
C	2"	3-1/4	700A503	53.44
D	2"	3-1/4	700A504	53.83
E	2"	3-1/4	700A505	55.14
F	2"	3-1/4	700A506	56.70
G	2-1/8	3-1/2	700A507	57.88
H	2-1/8	3-1/2	700A508	60.68
I	2-1/8	3-1/2	700A509	61.40
J	2-1/8	3-1/2	700A510	62.44
K	2-1/8	3-1/2	700A511	63.03
L	2-1/8	3-1/2	700A512	65.71
M	2-3/8	3-3/4	700A513	70.27

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
N	2.3/8	3-3/4	700A514	$74.45
O	2-3/8	3-3/4	700A515	80.19
P	2-3/8	3-3/4	700A516	80.19
Q	2-1/2	4"	700A517	83.19
R	2-1/2	4"	700A518	86.65
S	2-1/2	4"	700A519	90.44
T	2-1/2	4"	700A520	91.87
U	2-3/4	4-1/4	700A521	104.99
V	2-3/4	4-1/4	700A522	108.84
W	2-7/8	4-1/2	700A523	111.12
X	2-7/8	4-1/2	700A524	120.26
Y	2-7/8	4-1/2	700A525	121.23
Z	2-7/8	4-1/2	700A526	126.98

Solid Carbide Drills

MADE IN USA **JOBBERS LENGTH** **BRIGHT FINISH**



COATING TiN AVAILABLE

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Packaging: All sizes are individually packaged.

SERIES 700 **REGULAR HELIX** **118° POINT**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	1-3/4	3"	700A001	**$46.07**
2	1-3/4	3"	700A002	**45.81**
3	1-3/4	3"	700A003	**44.04**
4	1-3/4	3"	700A004	**43.26**
5	1-3/4	3"	700A005	**42.48**
6	1-3/4	3"	700A006	**41.63**
7	1-3/4	3"	700A007	**40.52**
8	1-3/4	3"	700A008	**39.35**
9	1-3/4	3"	700A009	**38.89**
10	1-5/8	2-3/4	700A010	**55.59**
11	1-5/8	2-3/4	700A011	**36.21**
12	1-5/8	2-3/4	700A012	**35.82**
13	1-5/8	2-3/4	700A013	**34.52**
14	1-5/8	2-3/4	700A014	**34.26**
15	1-5/8	2-3/4	700A015	**33.54**
16	1-5/8	2-3/4	700A016	**33.21**
17	1-5/8	2-3/4	700A017	**32.82**
18	1-5/8	2-3/4	700A018	**31.71**
19	1-5/8	2-3/4	700A019	**31.32**
20	1-3/8	2-1/2	700A020	**30.15**
		2-1/2		
21	1-3/8	2-1/2	700A021	**29.88**
22	1-3/8	2-1/2	700A022	**29.17**
23	1-3/8	2-1/2	700A023	**27.27**
24	1-3/8	2-1/2	700A024	**27.08**
25	1-3/8	2-1/2	700A025	**27.01**
26	1-3/8	2-1/2	700A026	**26.69**
27	1-3/8	2-1/2	700A027	**26.43**
28	1-3/8	2-1/2	700A028	**25.12**
29	1-3/8	2-1/2	700A029	**24.08**
30	1-1/4	2-1/4	700A030	**23.36**
31	1-1/4	2-1/4	700A031	**23.88**
32	1-1/4	2-1/4	700A032	**23.42**
33	1-1/4	2-1/4	700A033	**23.16**
34	1-1/4	2-1/4	700A034	**22.77**
35	1-1/4	2-1/4	700A035	**22.51**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
36	1-1/4	2-1/4	700A036	**$21.86**
37	1-1/4	2-1/4	700A037	**21.60**
38	1-1/4	2-1/4	700A038	**21.34**
39	1-1/4	2-1/4	700A039	**21.08**
40	1"	2"	700A040	**20.81**
41	1"	2"	700A041	**20.55**
42	1"	2"	700A042	**19.90**
43	1"	2"	700A043	**19.64**
44	1"	2"	700A044	**19.12**
45	7/8	2"	700A045	**18.53**
46	7/8	1-3/4	700A046	**17.94**
47	7/8	1-3/4	700A047	**17.42**
48	7/8	1-3/4	700A048	**16.25**
49	7/8	1-3/4	700A049	**15.73**
50	7/8	1-3/4	700A050	**15.27**
51	3/4	1-1/2	700A051	**15.01**
52	3/4	1-1/2	700A052	**14.75**
53	3/4	1-1/2	700A053	**16.51**
54	3/4	1-1/2	700A054	**16.51**
55	3/4	1-1/2	700A055	**16.31**
56	3/4	1-1/2	700A056	**16.64**
57	3/4	1-1/2	700A057	**16.64**
58	3/4	1-1/2	700A058	**16.64**
59	3/4	1-1/2	700A059	**16.64**
60	3/4	1-1/2	700A060	**16.64**
61	1/2	1-1/4	700A061	**16.90**
62	1/2	1-1/4	700A062	**17.16**
63	1/2	1-1/4	700A063	**17.42**
64	1/2	1-1/4	700A064	**17.68**
65	3/8	1-1/8	700A065	**18.01**
66	3/8	1-1/8	700A066	**18.20**
67	3/8	1-1/8	700A067	**18.47**
68	3/8	1-1/8	700A068	**18.73**
69	3/8	1-1/8	700A069	**20.97**
70	3/8	1-1/8	700A070	**21.23**

Solid Carbide Drills

MADE IN USA | **SHORT LENGTH** | **BRIGHT FINISH**

COATING TiN AVAILABLE



Straight Flute Solid Carbide Drill design increases edge strength, produces good size control, and hole surface finish. The 140° split point provides ease of penetration. Straight Flute Solid Carbide Drill is used to drill difficult materials (hardened up to Rc 60), including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless steel weldments.

Packaging: All sizes are individually packaged.

SERIES 710 — STRAIGHT FLUTE — 140° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
3/64	1/2	1-3/8	710A103	$20.23
1/16	5/8	1-5/8	710A104	19.64
5/64	11/16	1-11/16	710A105	20.23
3/32	3/4	1-3/4	710A106	19.64
7/64	13/16	1-13/16	710A107	23.03
1/8	7/8	1-7/8	710A108	20.42
9/64	15/16	1-15/16	710A109	26.03
5/32	1"	2-1/16	710A110	27.27
11/64	1-1/16	2-1/8	710A111	32.36
3/16	1-1/8	2-3/16	710A112	30.93
13/64	1-3/16	2-1/4	710A113	37.91
7/32	1-1/4	2-3/8	710A114	38.82
15/64	1-5/16	2-7/16	710A115	47.63
1/4	1-3/8	2-1/2	710A116	41.43
17/64	1-7/16	2-5/8	710A117	54.42

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	1-1/2	2-11/16	710A118	$54.16
19/64	1-9/16	2-3/4	710A119	58.59
5/16	1-5/8	2-13/16	710A120	54.09
21/64	1-11/16	2-15/16	710A121	63.42
11/32	1-11/16	3"	710A122	68.84
23/64	1-3/4	3-1/16	710A123	76.93
3/8	1-13/16	3-1/8	710A124	77.52
25/64	1-7/8	3-1/4	710A125	94.81
13/32	1-15/16	3-5/16	710A126	102.96
27/64	2"	3-3/8	710A127	116.67
7/16	2-1/16	3-7/16	710A128	109.69
29/64	2-1/8	3-9/16	710A129	124.50
15/32	2-1/8	3-5/8	710A130	120.97
31/64	2-3/16	3-11/16	710A131	124.50
1/2	2-1/4	3-3/4	710A132	117.65

SERIES 710 — STRAIGHT FLUTE — 140° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	1-5/16	2-7/16	710A501	$60.00
B	1-3/8	2-1/2	710A502	63.34
C	1-3/8	2-1/2	710A503	63.34
D	1-3/8	2-1/2	710A504	63.34
E	1-3/8	2-1/2	710A505	55.08
F	1-7/16	2-5/8	710A506	74.25
G	1-7/16	2-5/8	710A507	78.03
H	1-1/2	2-11/16	710A508	80.06
I	1-1/2	2-11/16	710A509	80.06
J	1-1/2	2-11/16	710A510	81.57
K	1-1/2	2-11/16	710A511	89.99
L	1-9/16	2-3/4	710A512	93.55
M	1-9/16	2-3/4	710A513	95.29

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
N	1-5/8	2-13/16	710A514	$96.68
O	1-11/16	2-15/16	710A515	99.60
P	1-11/16	2-15/16	710A516	100.46
Q	1-11/16	3"	710A517	104.24
R	1-11/16	3"	710A518	104.88
S	1-3/4	3-1/16	710A519	113.42
T	1-3/4	3-1/16	710A520	124.52
U	1-13/16	3-1/8	710A521	130.25
V	1-7/8	3-1/4	710A522	132.29
W	1-7/8	3-1/4	710A523	134.89
X	1-15/16	3-5/16	710A524	146.75
Y	1-15/16	3-5/16	710A525	161.44
Z	2"	3-3/8	710A526	165.43

Solid Carbide Drills

MADE IN USA | **SHORT LENGTH** | **BRIGHT FINISH**



COATING TiN AVAILABLE

Straight Flute Solid Carbide Drill design increases edge strength, produces good size control, and hole surface finish. The 140° split point provides ease of penetration. Straight Flute Solid Carbide Drill is used to drill difficult materials (hardened up to Rc 60), including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless steel weldments.

Packaging: All sizes are individually packaged.

SERIES 710 — STRAIGHT FLUTE — 140° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	1-5/16	2-7/16	710A001	$44.83
2	1-5/16	2-7/16	710A002	44.83
3	1-1/4	2-3/8	710A003	41.89
4	1-1/4	2-3/8	710A004	41.89
5	1-1/4	2-3/8	710A005	41.89
6	1-1/4	2-3/8	710A006	41.89
7	1-3/16	2-1/4	710A007	39.67
8	1-3/16	2-1/4	710A008	39.67
9	1-3/16	2-1/4	710A009	44.96
10	1-3/16	2-1/4	710A010	38.43
11	1-3/16	2-1/4	710A011	36.28
12	1-3/16	2-1/4	710A012	36.28
13	1-1/8	2-3/16	710A013	36.47
14	1-1/8	2-3/16	710A014	36.47
15	1-1/8	2-3/16	710A015	34.58
16	1-1/8	2-3/16	710A016	34.58
17	1-1/8	2-3/16	710A017	34.58
18	1-1/16	2-1/8	710A018	33.86
19	1-1/16	2-1/8	710A019	33.86
20	1-1/16	2-1/8	710A020	32.63
21	1-1/16	2-1/8	710A021	32.63
22	1-1/16	2-1/8	710A022	31.84
23	1"	2-1/16	710A023	29.43
24	1"	2-1/16	710A024	29.43
25	1"	2-1/16	710A025	29.43
26	1"	2-1/16	710A026	29.43
27	1"	2-1/16	710A027	27.99
28	15/16	1-15/16	710A028	27.27
29	15/16	1-15/16	710A029	27.27
30	15/16	1-15/16	710A030	27.27

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	7/8	1-7/8	710A031	$25.12
32	7/8	1-7/8	710A032	25.12
33	7/8	1-7/8	710A033	25.12
34	7/8	1-7/8	710A034	25.12
35	7/8	1-7/8	710A035	25.12
36	13/16	1-13/16	710A036	24.14
37	13/16	1-13/16	710A037	24.14
38	13/16	1-13/16	710A038	24.14
39	13/16	1-13/16	710A039	24.14
40	13/16	1-13/16	710A040	24.14
41	13/16	1-13/16	710A041	24.14
42	3/4	1-3/4	710A042	21.21
43	3/4	1-3/4	710A043	21.21
44	3/4	1-3/4	710A044	21.21
45	3/4	1-3/4	710A045	21.21
46	3/4	1-3/4	710A046	21.21
47	3/4	1-3/4	710A047	21.21
48	11/16	1-11/16	710A048	21.21
49	11/16	1-11/16	710A049	21.21
50	11/16	1-11/16	710A050	21.21
51	11/16	1-11/16	710A051	18.73
52	11/16	1-11/16	710A052	18.73
53	5/8	1-1/2	710A053	18.40
54	5/8	1-1/2	710A054	18.40
55	5/8	1-1/2	710A055	18.20
56	1/2	1-3/8	710A056	18.20
57	1/2	1-3/8	710A057	18.20
58	1/2	1-3/8	710A058	18.20
59	1/2	1-3/8	710A059	18.20
60	1/2	1-3/8	710A060	18.20

Solid Carbide Drills

MADE IN USA | **SHORT LENGTH** | **BRIGHT FINISH**

COATING TiN AVAILABLE



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

Packaging: All sizes are individually packaged.

SERIES 720 — SLOW HELIX — 135° SPLIT POINT

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
3/64	1/2	1-3/8	720A103	$21.27
1/16	5/8	1-5/8	720A104	21.27
5/64	11/16	1-11/16	720A105	22.38
3/32	3/4	1-3/4	720A106	22.71
7/64	13/16	1-13/16	720A107	26.75
1/8	7/8	1-7/8	720A108	27.27
9/64	15/16	1-15/16	720A109	32.56
5/32	1"	2-1/16	720A110	34.19
11/64	1-1/16	2-1/8	720A111	44.24
3/16	1-1/8	2-3/16	720A112	40.46
13/64	1-3/16	2-1/4	720A113	51.68
7/32	1-1/4	2-3/8	720A114	51.68
15/64	1-5/16	2-7/16	720A115	64.47
1/4	1-3/8	2-1/2	720A116	58.14
17/64	1-7/16	2-5/8	720A117	82.22

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
9/32	1-1/2	2-11/16	720A118	$85.35
19/64	1-9/16	2-3/4	720A119	93.37
5/16	1-5/8	2-13/16	720A120	85.35
21/64	1-11/16	2-15/16	720A121	105.51
11/32	1-11/16	3"	720A122	116.93
23/64	1-3/4	3-1/16	720A123	128.87
3/8	1-13/16	3-1/8	720A124	136.11
25/64	1-7/8	3-1/4	720A125	146.42
13/32	1-15/16	3-5/16	720A126	162.28
27/64	2"	3-3/8	720A127	177.94
7/16	2-1/16	3-7/16	720A128	167.50
29/64	2-1/8	3-9/16	720A129	217.02
15/32	2-1/8	3-5/8	720A130	226.16
31/64	2-3/16	3-11/16	720A131	146.55
1/2	2-1/4	3-3/4	720A132	138.98

SERIES 720 — SLOW HELIX — 140° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
A	1-5/16	2-7/16	720A501	$60.00
B	1-3/8	2-1/2	720A502	63.34
C	1-3/8	2-1/2	720A503	63.34
D	1-3/8	2-1/2	720A504	63.34
E	1-3/8	2-1/2	720A505	55.08
F	1-7/16	2-5/8	720A506	74.25
G	1-7/16	2-5/8	720A507	78.03
H	1-1/2	2-11/16	720A508	80.06
I	1-1/2	2-11/16	720A509	80.06
J	1-1/2	2-11/16	720A510	81.57
K	1-1/2	2-11/16	720A511	89.99
L	1-9/16	2-3/4	720A512	93.55
M	1-9/16	2-3/4	720A513	95.29

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
N	1-5/8	2-13/16	720A514	$96.68
O	1-11/16	2-15/16	720A515	99.60
P	1-11/16	2-15/16	720A516	100.46
Q	1-11/16	3"	720A517	104.24
R	1-11/16	3"	720A518	104.88
S	1-3/4	3-1/16	720A519	113.42
T	1-3/4	3-1/16	720A520	124.52
U	1-13/16	3-1/8	720A521	130.25
V	1-7/8	3-1/4	720A522	132.29
W	1-7/8	3-1/4	720A523	134.89
X	1-15/16	3-5/16	720A524	146.75
Y	1-15/16	3-5/16	720A525	161.44
Z	2"	3-3/8	720A526	165.43

Solid Carbide Drills

MADE IN USA | **SLOW HELIX** | **BRIGHT FINISH**



COATING TiN AVAILABLE

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

Packaging: All sizes are individually packaged.

SHORT LENGTH | SERIES 720 | 135° SPLIT POINT

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1	1-5/16	2-7/16	720A001	**$56.22**
2	1-5/16	2-7/16	720A002	**55.03**
3	1-1/4	2-3/8	720A003	**53.42**
4	1-1/4	2-3/8	720A004	**51.46**
5	1-1/4	2-3/8	720A005	**50.72**
6	1-1/4	2-3/8	720A006	**50.72**
7	1-3/16	2-1/4	720A007	**48.23**
8	1-3/16	2-1/4	720A008	**47.37**
9	1-3/16	2-1/4	720A009	**46.29**
10	1-3/16	2-1/4	720A010	**45.32**
11	1-3/16	2-1/4	720A011	**44.79**
12	1-3/16	2-1/4	720A012	**44.02**
13	1-1/8	2-3/16	720A013	**43.50**
14	1-1/8	2-3/16	720A014	**42.73**
15	1-1/8	2-3/16	720A015	**42.52**
16	1-1/8	2-3/16	720A016	**42.30**
17	1-1/8	2-3/16	720A017	**41.66**
18	1-1/16	2-1/8	720A018	**41.11**
19	1-1/16	2-1/8	720A019	**41.11**
20	1-1/16	2-1/8	720A020	**38.52**
21	1-1/16	2-1/8	720A021	**36.47**
22	1-1/16	2-1/8	720A022	**35.61**
23	1"	2-1/16	720A023	**35.29**
24	1"	2-1/16	720A024	**34.41**
25	1"	2-1/16	720A025	**33.24**
26	1"	2-1/16	720A026	**32.91**
27	1"	2-1/16	720A027	**32.74**
28	15/16	1-15/16	720A028	**32.30**
29	15/16	1-15/16	720A029	**32.30**
30	15/16	1-15/16	720A030	**30.39**

WIRE SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
31	7/8	1-7/8	720A031	**$28.33**
32	7/8	1-7/8	720A032	**29.07**
33	7/8	1-7/8	720A033	**26.72**
34	7/8	1-7/8	720A034	**26.45**
35	7/8	1-7/8	720A035	**25.84**
36	13/16	1-13/16	720A036	**25.55**
37	13/16	1-13/16	720A037	**24.96**
38	13/16	1-13/16	720A038	**24.96**
39	13/16	1-13/16	720A039	**23.93**
40	13/16	1-13/16	720A040	**23.93**
41	13/16	1-13/16	720A041	**23.34**
42	3/4	1-3/4	720A042	**22.90**
43	3/4	1-3/4	720A043	**22.45**
44	3/4	1-3/4	720A044	**22.24**
45	3/4	1-3/4	720A045	**22.02**
46	3/4	1-3/4	720A046	**21.29**
47	3/4	1-3/4	720A047	**21.29**
48	11/16	1-11/16	720A048	**21.29**
49	11/16	1-11/16	720A049	**20.85**
50	11/16	1-11/16	720A050	**20.55**
51	11/16	1-11/16	720A051	**20.26**
52	11/16	1-11/16	720A052	**20.26**
53	5/8	1-1/2	720A053	**19.82**
54	5/8	1-1/2	720A054	**19.82**
55	5/8	1-1/2	720A055	**19.75**
56	1/2	1-3/8	720A056	**19.75**
57	1/2	1-3/8	720A057	**19.75**
58	1/2	1-3/8	720A058	**19.75**
59	1/2	1-3/8	720A059	**19.75**
60	1/2	1-3/8	720A060	**19.75**

Solid Carbide Drills

MADE IN USA — JOBBERS LENGTH — BRIGHT FINISH

COATING TiN AVAILABLE



THREE FLUTE SOLID CARBIDE DRILLS can be used for centering, spotting, core drilling or drilling. This tool provides precision hole size, finish, and higher productivity. Applications include titanium, cast iron, low alloy steel, and high silicon aluminum.

Packaging: All sizes are individually packaged.

SERIES 730 — THREE FLUTE DRILLS — 150° SELF-CENTERING

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
3.0mm	1-1/4	2-1/4	730A003	**$27.08**
1/8	1-1/4	2-1/4	730A108	**27.08**
9/64	1-3/8	2-1/2	730A109	**31.78**
5/32	1-3/8	2-1/2	730A110	**33.34**
11/64	1-5/8	2-3/4	730A111	**38.11**
3/16	1-5/8	2-3/4	730A112	**38.69**
13/64	1-3/4	3"	730A113	**49.52**
7/32	1-3/4	3"	730A114	**51.09**
15/64	2"	3-1/4	730A115	**55.01**
6.00mm	2"	3-1/4	730A006	**94.88**
1/4	2"	3-1/4	730A116	**52.27**
17/64	2-1/8	3-1/2	730A117	**63.49**
9/32	2-1/8	3-1/2	730A118	**68.19**
19/64	2-3/8	3-3/4	730A119	**77.26**
5/16	2-3/8	3-3/4	730A120	**72.04**
8.0mm	2-3/8	3-3/4	730A008	**141.38**
21/64	2-1/2	4"	730A121	**87.57**
11/32	2-1/2	4"	730A122	**94.29**

FRAC SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
23/64	2-1/2	4"	730A123	**$102.74**
3/8	2-3/4	4-1/2	730A124	**102.96**
25/64	2-7/8	4-1/2	730A125	**125.02**
10.0mm	2-7/8	4-1/2	730A010	**210.74**
13/32	2-7/8	4-1/2	730A126	**135.33**
27/64	2-7/8	4-1/2	730A127	**142.31**
7/16	2-7/8	4-1/2	730A128	**142.77**
29/64	3"	4-1/2	730A129	**167.63**
15/32	3"	4-3/4	730A130	**172.33**
12.0mm	3"	4-3/4	730A012	**295.03**
31/64	3"	4-3/4	730A131	**177.87**
1/2	3"	4-3/4	730A132	**138.74**
17/32	3"	4-3/4	730A134	**279.79**
14.0mm	3-1/2	5-3/4	730A014	**404.05**
9/16	3-1/2	5-3/4	730A136	**283.05**
5/8	3-1/2	5-3/4	730A140	**414.53**
16.0mm	3-1/2	5-3/4	730A016	**592.74**
3/4	4-1/4	5-3/4	730A148	**638.73**

MADE IN USA — JOBBERS LENGTH — BRIGHT FINISH



The Heavy Duty Parabolic flute with the split point permits higher feed rates, without the need for frequent withdrawals. The unique parabolic flute design gives better hole size, finish and location. Application include titanium, cast iron and high silicon aluminum.

Packaging: All sizes are individually packaged.

SERIES 740 — FAST HELIX — 135° SPLIT POINT

LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
1/8	1-1/4	2-1/4	740A108	**P O R**
9/64	1-3/8	2-1/2	740A109	**P O R**
5/32	1-3/8	2-1/2	740A110	**P O R**
11/64	1-5/8	2-3/4	740A111	**P O R**
3/16	1-5/8	2-3/4	740A112	**P O R**
13/64	1-3/4	3"	740A113	**P O R**
7/32	1-3/4	3"	740A114	**P O R**
15/64	2"	3-1/4	740A115	**P O R**
1/4	2"	3-1/4	740A116	**P O R**
17/64	2-1/8	3-1/2	740A117	**P O R**
9/32	2-1/8	3-1/2	740A118	**P O R**
19/64	2-3/8	3-3/4	740A119	**P O R**
5/16	2-3/8	3-3/4	740A120	**P O R**

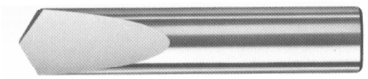
LETTER SIZES	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBERS	LIST PRICE
21/64	2-1/2	4"	740A121	**P O R**
11/32	2-1/2	4"	740A122	**P O R**
23/64	2-1/2	4"	740A123	**P O R**
3/8	2-3/4	4-1/4	740A124	**P O R**
25/64	2-7/8	4-1/2	740A125	**P O R**
13/32	2-7/8	4-1/2	740A126	**P O R**
27/64	2-7/8	4-1/2	740A127	**P O R**
7/16	2-7/8	4-1/2	740A128	**P O R**
29/64	3"	4-3/4	740A129	**P O R**
15/32	3"	4-3/4	740A130	**P O R**
31/64	3"	4-3/4	740A131	**P O R**
1/2	3"	4-3/4	740A132	

POR = Price on Request

Solid Carbide Drills

MADE IN USA | **JOBBERS LENGTH** | **BRIGHT FINISH**

COATING TiN AVAILABLE



SOLID CARBIDE SPADE DRILLS perform well in hard to machine materials (hardened up to Rc 60), high strength alloys, plastics, and glass. can be used in thin sheet metal and spotting applications. drilling depth should not exceed two times the drill diameter.

Packaging: All sizes are individually packaged.

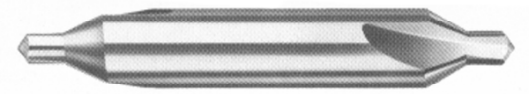
SERIES 750 | **SPADE DRILLS** | **118° POINT**

FRAC SIZES	SHANK DIA	FLUTE LENGTH	OAL	EDP NUMBER	LIST PRICE
1/32	1/8	3/16	1-1/2	750A102	**$18.34**
3/64	1/8	7/32	1-1/2	750A103	**21.10**
1/16	1/8	5/16	1-1/2	750A104	**18.34**
5/64	1/8	7/16	1-1/2	750A105	**21.10**
3/32	1/8	7/16	1-1/2	750A106	**18.34**
7/64	1/8	7/16	1-1/2	750A107	**21.10**
1/8	1/8	1/2	1-1/2	750A108	**18.34**
9/64	3/16	1/2	2"	750A109	**25.45**
5/32	3/16	9/16	2"	750A110	**22.71**
11/64	3/16	9/16	2"	750A111	**25.45**
3/16	3/16	11/16	2"	750A112	**25.06**

FRAC SIZES	SHANK DIA	FLUTE LENGTH	OAL	EDP NUMBER	LIST PRICE
7/32	1/4	19/32	2-1/2	750A114	**$28.97**
1/4	1/4	11/16	2-1/2	750A116	**33.67**
9/32	5/16	3/4	2-1/2	750A118	**44.76**
5/16	5/16	7/8	2-1/2	750A120	**48.09**
11/32	3/8	15/16	2-1/2	750A122	**54.59**
3/8	3/8	1-1/8	2-1/2	750A124	**58.59**
13/32	1/2	1-1/8	2-1/2	750A126	**67.86**
7/16	1/2	1-3/16	3"	750A128	**74.58**
15/32	1/2	1-3/16	3"	750A130	**80.91**
1/2	1/2	1-3/16	3"	750A132	**89.39**

Solid Carbide Combined D & C

MADE IN USA | **COMBINED DRILL & COUNTERSINK** | **BRIGHT**



COATING TiN AVAILABLE

SOLID CARBIDE COMBINATION DRILL & COUNTERSINKS have shank and flute strength, making it ideal for drilling and countersinking in difficult materials. It may also be used in high production applications where tolerance, finish, and down-times are considered. Included angle is 60 degrees. Other angles can be made to order on request.

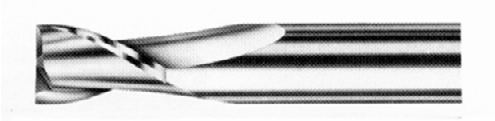
Packaging: All sizes are individually packaged.

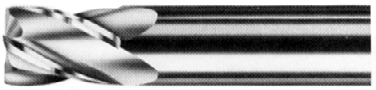
SERIES 3500C | **60°**

TOOL SIZES	BODY DIAMETER	DRILL DIAMETER & LENGTH	OVERALL LENGTH	60° EDP NUMBERS	60° LIST PRICE
00	1/8	0.25	1-1/4	350CA00A	**$38.82**
0	1/8	1/32	1-1/4	350CAB0A	**36.98**
1	1/8	3/64	1-1/4	350C001A	**30.99**
2	3/16	5/64	1-7/8	350C002A	**38.82**
3	1/4	7/64	2"	350C003A	**51.87**
4	5/16	1/8	2-1/8	350C004A	**70.80**
5	7/16	3/16	2-3/4	350C005A	**104.07**
6	1/2	7/32	3"	350C006A	**143.22**

Solid Carbide End Mills

SINGLE END STANDARD LENGTH 2 & 4 FLUTES MADE IN USA



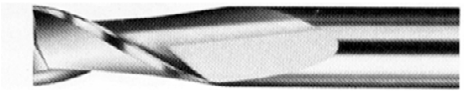


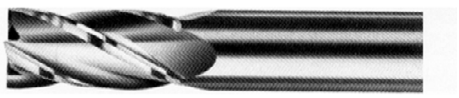
Packaging: All sizes individually packaged.

SQUARE END CENTER CUTTING 2 FL SERIES 7200 4 FL SERIES 7300

DIAMETER OF CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	TWO FLUTE EDP NO.	TWO FLUTE LIST PRICE	FOUR FLUTE EDP NO.	FOUR FLUTE LIST PRICE
1/32	**1/8**	5/64	1-1/2	72A102C	**$25.01**	73A102C	**$25.01**
3/64	**1/8**	7/64	1-1/2	72A103C	**25.01**	73A103C	**25.01**
1/16	**1/8**	3/16	1-1/2	72A104C	**18.27**	73A104C	**18.27**
5/64	**1/8**	3/16	1-1/2	72A105C	**19.77**	73A105C	**19.77**
3/32	**1/8**	9/32	1-1/2	72A106C	**17.29**	73A106C	**17.29**
7/64	**1/8**	3/8	1-1/2	72A107C	**18.73**	73A107C	**18.73**
1/8	**1/8**	3/8	1-1/2	72A108C	**15.92**	73A108C	**15.92**
					25.51		**25.51**
9/64	**3/16**	1/2	2"	72A109C		73A109C	
5/32	**3/16**	1/2	2"	72A110C	**24.80**	73A110C	**24.80**
11/64	**3/16**	5/8	2"	72A111C	**25.51**	73A111C	**25.51**
3/16	**3/16**	5/8	2"	72A112C	**22.38**	73A112C	**22.38**
7/32	**1/4**	5/8	2-1/2	72A114C	**31.12**	73A114C	**31.12**
1/4	**1/4**	3/4	2-1/2	72A116C	**26.95**	73A116C	**26.95**
9/32	**5/16**	3/4	2-1/2	72A118C	**40.24**	73A118C	**40.24**
5/16	**5/16**	13/16	2-1/2	72A120C	**37.78**	73A120C	**37.78**
11/32	**3/8**	1"	2-1/2	72A122C	**57.42**	73A122C	**57.42**
3/8	**3/8**	1"	2-1/2	72A124C	**47.05**	73A124C	**47.05**
13/32	**7/16**	1"	2-3/4	72A126C	**73.95**	73A126C	**73.95**
7/16	**7/16**	1"	2-3/4	72A128C	**60.42**	73A128C	**60.42**
15/32	**1/2**	1"	3"	72A130C	**90.22**	73A130C	**90.22**
1/2	**1/2**	1"	3"	72A132C	**75.43**	73A132C	**75.43**
9/16	**9/16**	1-1/8	3-1/2	72A136C	**135.46**	73A136C	**135.46**
5/8	**5/8**	1-1/4	3-1/2	72A140C	**145.44**	73A140C	**145.44**
11/16	**3/4**	1-3/8	4"	72A144C	**254.67**	73A144C	**254.67**
3/4	**3/4**	1-1/2	4"	72A148C	**213.17**	73A148C	**213.17**
7/8	**7/8**	1-1/2	4"	72A156C	**322.66**	73A156C	**322.66**
1"	**1"**	1-1/2	4"	72A164C	**335.45**	73A164C	**335.45**

SINGLE END X-LONG LENGTH 2 & 4 FLUTES MADE IN USA





Packaging: All sizes individually packaged.

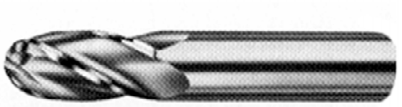
SQUARE END CENTER CUTTING 2 FL SERIES 7250 4 FL SERIES 7350

DIAMETER OF CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	TWO FLUTE EDP NO.	TWO FLUTE LIST PRICE	FOUR FLUTE EDP NO.	FOUR FLUTE LIST PRICE
1/8	1/8	1"	3"	725A108C	**$36.08**	735A108C	**$36.08**
3/16	3/16	1-1/8	3"	725A112C	**41.89**	735A112C	**41.89**
1/4	1/4	1-1/2	4"	725A116C	**48.68**	735A116C	**48.68**
5/16	5/16	1-5/8	4"	725A120C	**66.88**	735A120C	**66.88**
3/8	3/8	1-3/4	4"	725A124C	**70.34**	735A124C	**70.34**
7/16	7/16	3"	6"	725A128C	**135.33**	735A128C	**135.33**
1/2	1/2	3"	6'	725A132C	**148.84**	735A132C	**148.84**
5/8	5/8	3"	6"	725A140C	**212.19**	735A140C	**212.19**
3/4	3/4	3"	6"	725A148C	**338.00**	735A148C	**338.00**
1"	1"	3"	6"	725A164C	**604.28**	735A164C	**604.28**

Solid Carbide End Mills

SINGLE END STANDARD LENGTH 2 & 4 FLUTES MADE IN USA



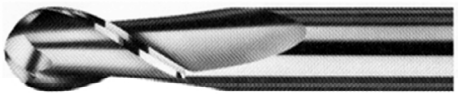


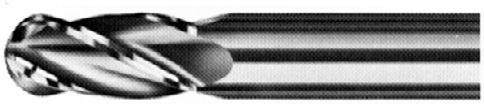
Packaging: All sizes individually packaged.

BALL NOSE CENTER CUTTING 2 FL SERIES 7600 4 FL SERIES 7700

DIAMETER of CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	TWO FLUTE EDP NO.	TWO FLUTE LIST PRICE	FOUR FLUTE EDP NO.	FOUR FLUTE LIST PRICE
1/32	**1/8**	5/64	1-1/2	76A102C	**$30.02**	77A102C	**$30.02**
3/64	**1/8**	7/64	1-1/2	76A103C	**30.02**	77A103C	**30.02**
1/16	**1/8**	3/16	1-1/2	76A104C	**23.56**	77A104C	**23.56**
5/64	**1/8**	3/16	1-1/2	76A105C	**25.51**	77A105C	**25.51**
3/32	**1/8**	9/32	1-1/2	76A106C	**22.58**	77A106C	**22.58**
7/64	**1/8**	3/8	1-1/2	76A107C	**24.40**	77A107C	**24.40**
1/8	**1/8**	3/8	1-1/2	76A108C	**20.42**	77A108C	**20.42**
9/64	**3/16**	1/2	2"	76A109C	**32.49**	77A109C	**32.49**
5/32	**3/16**	1/2	2"	76A110C	**31.52**	77A110C	**31.52**
11/64	**3/16**	5/8	2"	76A111C	**32.49**	77A111C	**32.49**
3/16	**3/16**	5/8	2"	76A112C	**26.95**	77A112C	**26.95**
7/32	**1/4**	5/8	2-1/2	76A114C	**36.67**	77A114C	**36.67**
1/4	**1/4**	3/4	2-1/2	76A116C	**33.47**	77A116C	**33.47**
9/32	**5/16**	3/4	2-1/2	76A118C	**49.81**	77A118C	**49.81**
5/16	**5/16**	13/16	2-1/2	76A120C	**43.91**	77A120C	**43.91**
11/32	**3/8**	1"	2-1/2	76A122C	**65.69**	77A122C	**65.69**
3/8	**3/8**	1"	2-1/2	76A124C	**53.70**	77A124C	**53.70**
13/32	**7/16**	1"	2-3/4	76A126C	**94.83**	77A126C	**94.83**
7/16	**7/16**	1"	2-3/4	76A128C	**69.56**	77A128C	**69.56**
15/32	**1/2**	1"	3"	76A130C	**108.10**	77A130C	**108.10**
1/2	**1/2**	1"	3"	76A132C	**100.03**	77A132C	**100.03**
9/16	**9/16**	1-1/8	3-1/2	76A136C	**153.08**	77A136C	**153.08**
5/8	**5/8**	1-1/4	3-1/2	76A140C	**161.69**	77A140C	**161.69**
11/16	**3/4**	1-3/8	4"	76A144C	**282.99**	77A144C	**282.99**
3/4	**3/4**	1-1/2	4"	76A148C	**237.97**	77A148C	**237.97**
7/8	**7/8**	1-1/2	4"	76A156C	**400.83**	77A156C	**400.83**
1"	**1"**	1-1/2	4"	76A164C	**433.98**	77A164C	**433.98**

SINGLE END X-LONG LENGTH 2 & 4 FLUTES MADE IN USA





Packaging: All sizes individually packaged.

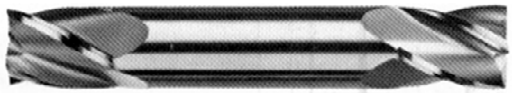
BALL NOSE CENTER CUTTING 2 FL SERIES 7650 4 FL SERIES 7750

DIAMETER of CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	TWO FLUTE EDP NO.	TWO FLUTE LIST PRICE	FOUR FLUTE EDP NO.	FOUR FLUTE LIST PRICE
1/8	1/8	1"	3"	765A108C	**$42.48**	775A108C	**$42.48**
3/16	3/16	1-1/8	3"	765A112C	**49.26**	775A112C	**49.26**
1/4	1/4	1-1/2	4"	765A116C	**57.03**	775A116C	**57.03**
5/16	5/16	1-5/8	4"	765A120C	**78.63**	775A120C	**78.63**
3/8	3/8	1-3/4	4"	765A124C	**82.74**	775A124C	**82.74**
7/16	7/16	3"	6"	765A128C	**155.62**	775A128C	**155.62**
1/2	1/2	3"	6'	765A132C	**164.76**	775A132C	**164.76**
5/8	5/8	3"	6"	765A140C	**242.21**	775A140C	**242.21**
3/4	3/4	3"	6"	765A148C	**397.44**	775A148C	**397.44**
1"	1"	3"	6"	765A164C	**710.77**	775A164C	**710.77**

Solid Carbide End Mills

DOUBLE END STUB LENGTH 2 & 4 FLUTES MADE IN USA



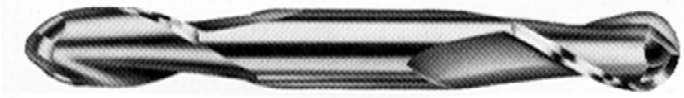


Packaging: All sizes individually packaged.

SQUARE END CENTER CUTTING 2 FL SERIES 7400 4 FL SERIES 7500

DIAMETER of CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	TWO FLUTE EDP NO.	TWO FLUTE LIST PRICE	FOUR FLUTE EDP NO.	FOUR FLUTE LIST PRICE
1/32	**1/8**	5/64	1-1/2	74A102C	**$35.37**	75A102C	**$35.37**
3/64	**1/8**	3/32	1-1/2	74A103C	**35.37**	75A103C	**35.37**
1/16	**1/8**	1/8	1-1/2	74A104C	**35.37**	75A104C	**35.37**
5/64	**1/8**	5/32	1-1/2	74A105C	**35.37**	75A105C	**35.37**
3/32	**1/8**	3/16	1-1/2	74A106C	**35.37**	75A106C	**35.37**
7/64	**1/8**	7/32	1-1/2	74A107C	**35.37**	75A107C	**35.37**
1/8	**1/8**	1/4	1-1/2	74A108C	**21.92**	75A108C	**21.92**
9/64	**3/16**	9/32	2"	74A109C	**35.37**	75A109C	**35.37**
5/32	**3/16**	5/16	2"	74A110C	**39.59**	75A110C	**39.59**
3/16	**3/16**	3/8	2"	74A112C	**33.73**	75A112C	**33.73**
7/32	**1/4**	1/2	2-1/2	74A114C	**47.20**	75A114C	**47.20**
1/4	**1/4**	1/2	2-1/2	74A116C	**43.91**	75A116C	**43.91**
5/16	**5/16**	1/2	2-1/2	74A120C	**54.61**	75A120C	**54.61**
3/8	**3/8**	1/2	2-1/2	74A124C	**54.74**	75A124C	**54.74**
7/16	**7/16**	9/16	2-3/4	74A128C	**86.35**	75A128C	**86.35**
1/2	**1/2**	5/8	3"	74A132C	**75.43**	75A132C	**75.43**

DOUBLE END STUB LENGTH 2 & 4 FLUTES MADE IN USA





Packaging: All sizes individually packaged.

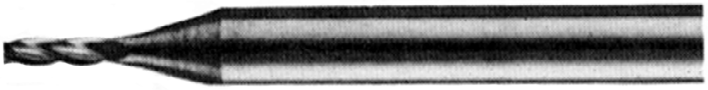
BALL NOSE CENTER CUTTING 2 FL SERIES 7800 4 FL SERIES 7900

DIAMETER of CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	TWO FLUTE EDP NO.	TWO FLUTE LIST PRICE	FOUR FLUTE EDP NO.	FOUR FLUTE LIST PRICE
1/32	**1/8**	5/64	1-1/2	78A102C	**$36.11**	79A102C	**$36.11**
3/64	**1/8**	3/32	1-1/2	78A103C	**40.24**	79A103C	**40.24**
1/16	**1/8**	1/8	1-1/2	78A104C	**33.28**	79A104C	**33.28**
5/64	**1/8**	5/32	1-1/2	78A105C	**40.24**	79A105C	**40.24**
3/32	**1/8**	3/16	1-1/2	78A106C	**33.71**	79A106C	**33.71**
7/64	**1/8**	7/32	1-1/2	78A107C	**40.24**	79A107C	**40.24**
1/8	**1/8**	1/4	1-1/2	78A108C	**33.71**	79A108C	**33.71**
9/64	**3/16**	9/32	2"	78A109C	**40.24**	79A109C	**40.24**
5/32	**3/16**	5/16	2"	78A110C	**44.81**	79A110C	**44.81**
3/16	**3/16**	3/8	2"	78A112C	**44.81**	79A112C	**44.81**
7/32	**1/4**	1/2	2-1/2	78A114C	**57.42**	79A114C	**57.42**
1/4	**1/4**	1/2	2-1/2	78A116C	**58.07**	79A116C	**58.07**
5/16	**5/16**	1/2	2-1/2	78A120C	**76.13**	79A120C	**76.13**
3/8	**3/8**	1/2	2-1/2	78A124C	**83.96**	79A124C	**83.96**
7/16	**7/16**	9/16	2-3/4	78A128C	**119.63**	79A128C	**119.63**
1/2	**1/2**	5/8	3"	78A132C	**132.24**	79A132C	**132.24**

Decimal Solid Carbide End Mills

SINGLE END **MICRO-MINIATURE** **2 & 4 FLUTES** **MADE IN USA**





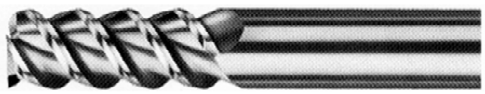
Packaging: All sizes individually packaged.

SQUARE END **CENTER CUTTING** **2 FL SERIES 7275** **4 FL SERIES 7375**

DIAMETER of CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	TWO FLUTE EDP NO.	TWO FLUTE LIST PRICE	FOUR FLUTE EDP NO.	FOUR FLUTE LIST PRICE
.005	1/8	.015	1-1/2	727A005C	$61.66	737A005C	$61.66
.010	1/8	.030	1-1/2	727A010C	37.85	737A010C	37.85
.015	1/8	.045	1-1/2	727A015C	37.85	737A015C	37.85
.020	1/8	.060	1-1/2	727A020C	37.85	737A020C	37.85
.025	1/8	.075	1-1/2	727A025C	37.85	737A025C	37.85
.030					37.85		37.85
.035	1/8	.090	1-1/2	727A030C	37.85	737A030C	37.85
.040	1/8	1.05	1-1/2	727A035C	37.85	737A035C	37.85
.045	1/8	1.20	1-1/2	727A040C	23.16	737A040C	23.16
.050	1/8	1.35	1-1/2	727A045C	23.16	737A045C	23.16
	1/8	1.50	1-1/2	727A050C		737A050C	
.055					23.16		23.16
.060	1/8	1.65	1-1/2	727A055C	23.16	737A055C	23.16
.065	1/8	1.80	1-1/2	727A060C	23.16	737A060C	23.16
.070	1/8	1.95	1-1/2	727A065C	23.16	737A065C	23.16
.075	1/8	2.10	1-1/2	727A070C	23.16	737A070C	23.16
.080	1/8	2.25	1-1/2	727A075C	23.16	737A075C	23.16
.085					23.16		23.16
.090	1/8	2.40	1-1/2	727A080C	23.16	737A080C	23.16
.095	1/8	2.55	1-1/2	727A085C	23.16	737A085C	23.16
1.00	1/8	2.70	1-1/2	727A090C	23.16	737A090C	23.16
	1/8	2.85	1-1/2	727A095C		737A095C	
1.05	1/8	3.00	1-1/2	727A100C	23.16	737A100C	23.16
1.10					23.16		23.16
1.15					23.16		23.16
1.20	1/8	3.15	1-1/2	727A105C	23.16	737A105C	23.16

High Performance Carbide End Mills

SINGLE END **THREE FLUTES** **MADE IN USA**



Packaging: All sizes individually packaged.

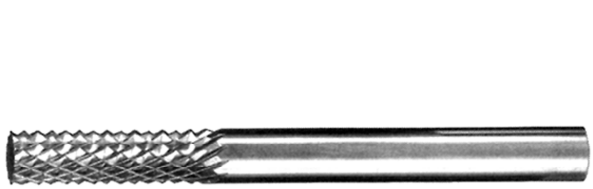
60° HIGH HELIX **HIGH PERFORMANCE** **SERIES 7950**

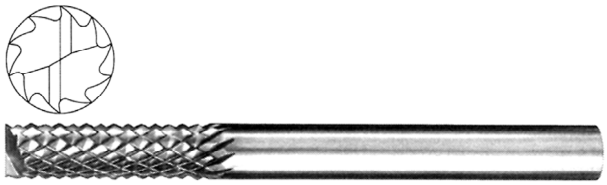
DIAMETER of CUT	SHANK DIAMETER	FLUTE LENGTH	OVERALL LENGTH	EDP NUMBER	LIST PRICE
1/8	1/8	1/2	1-1/2	795A108C	$POR
3/16	3/16	5/8	2"	795A112C	POR
1/4	1/4	3/4	2-1/2	795A116C	POR
5/16	5/16	13/16	2-1/2	795A120C	POR
3/8	3/8	7/8	2-1/2	795A124C	POR
7/16	7/16	1"	3"	795A128C	POR
1/2	1/2	1"	3"	795A132C	POR
5/8	5/8	1-1/4	3-1/2	795A140C	POR
3/4	3/4	1-1/2	4"	795A148C	POR
1"	1"	1-1/2	4"	795A164C	POR

POR = Price on Request

Carbide Fiber Glass Routers

SOLID CARBIDE **DIAMOND CUT** **MADE IN USA**





Solid Carbide, single end 30 degree left hand helix, right hand cut, straight shank. For use in graphite composite laminates, polyester glass reinforced products, phenolic epoxy parts.

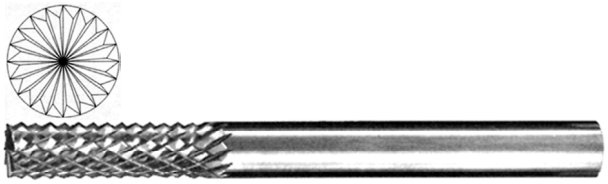
Packaging: All routers are individually packaged.

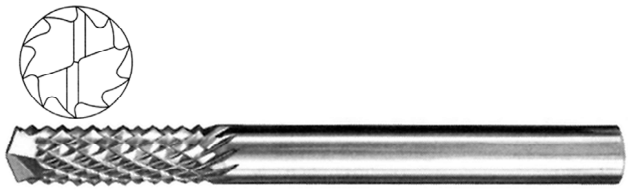
NO END CUT SERIES 8000

TOOL NO	CUTTER DIA	SHANK DIA	FLUTE LENGTH	OAL	EDP NO	LIST PRICE
FGR 1	1/16	1/8	3/16	1-1/2	80A104	$12.70
FGR1-1	3/32	1/8	3/8	1-1/2	80A106	12.70
FGR 2	1/8	1/8	1/2	1-1/2	80A108	12.70
FGR 3	3/16	3/16	5/8	2"	80A112	18.51
FGR 4	3/16	1/4	5/8	2"	80A112A	23.71
FGR 5	1/4	1/4	3/4	2"	80A116	27.06
FGR 6	1/4	1/4	3/4	2-1/2	80A116A	28.36
FGR 6-1	1/4	1/4	1"	3"	80A116B	30.45
FGR 7	5/16	5/16	1"	2-1/2	80A120	33.41
FGR 8	3/8	3/8	1"	2-1/2	80A124	41.11
FGR 9	1/2	1/2	1"	3"	80A132	77.82

END MILL END SERIES 8100

TOOL NO	CUTTER DIA	SHANK DIA	FLUTE LENGTH	OAL	EDP NO	LIST PRICE
FGR 1	1/16	1/8	3/16	1-1/2	81A104	$15.14
FGR1-1	3/32	1/8	3/8	1-1/2	81A106	15.14
FGR 2	1/8	1/8	1/2	1-1/2	81A108	15.14
FGR 3	3/16	3/16	5/8	2"	81A112	22.46
FGR 4	3/16	1/4	5/8	2"	81A112A	27.62
FGR 5	1/4	1/4	3/4	2"	81A116	28.58
FGR 6	1/4	1/4	3/4	2-1/2	81A116A	29.88
FGR 6-1	1/4	1/4	1"	3"	81A116B	31.97
FGR 7	5/16	5/16	1"	2-1/2	81A120	35.15
FGR 8	3/8	3/8	1"	2-1/2	81A124	48.72
FGR 9	1/2	1/2	1"	3"	81A132	86.65





BUR END SERIES 8300

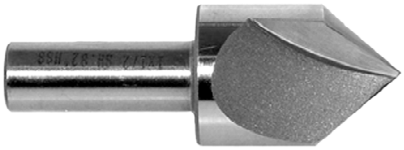
TOOL NO	CUTTER DIA	SHANK DIA	FLUTE LENGTH	OAL	EDP NO	LIST PRICE
FGR 1	1/16	1/8	3/16	1-1/2	83A104	$14.41
FGR1-1	3/32	1/8	3/8	1-1/2	83A106	14.41
FGR 2	1/8	1/8	1/2	1-1/2	83A108	14.41
FGR 3	3/16	3/16	5/8	2"	83A112	20.57
FGR 4	3/16	1/4	5/8	2"	83A112A	25.75
FGR 5	1/4	1/4	3/4	2"	83A116	28.58
FGR 6	1/4	1/4	3/4	2-1/2	83A116A	29.88
FGR 6-1	1/4	1/4	1"	3"	83A116B	31.97
FGR 7	5/16	5/16	1"	2-1/2	83A120	35.15
FGR 8	3/8	3/8	1"	2-1/2	83A124	48.72
FGR 9	1/2	1/2	1"	3"	83A132	86.65

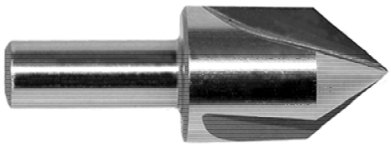
DRILL END SERIES 8400

TOOL NO	CUTTER DIA	SHANK DIA	FLUTE LENGTH	OAL	EDP NO	LIST PRICE
FGR 1	1/16	1/8	3/16	1-1/2	84A104	$16.03
FGR1-1	3/32	1/8	3/8	1-1/2	84A106	16.03
FGR 2	1/8	1/8	1/2	1-1/2	84A108	16.03
FGR 3	3/16	3/16	5/8	2"	84A112	23.40
FGR 4	3/16	1/4	5/8	2"	84A112A	25.75
FGR 5	1/4	1/4	3/4	2"	84A116	28.58
FGR 6	1/4	1/4	3/4	2-1/2	84A116A	29.88
FGR 6-1	1/4	1/4	1"	3"	84A116B	31.97
FGR 7	5/16	5/16	1"	2-1/2	84A120	35.15
FGR 8	3/8	3/8	1"	2-1/2	84A124	48.72
FGR 9	1/2	1/2	1"	3"	84A132	86.65

Carbide Countersinks

SOLID CARBIDE 60°, 80° & 90° MADE IN USA





Use the Single Flute Solid Carbide Countersinks on soft materials. Use the Three Flute Solid Carbide Countersinks on general purpose materials. Use the Four Flute Solid Carbide Countersinks on general purpose materials. Use the Six Flute Solid Carbide Countersinks on hardened steel.

Packaging: All countersinks are individually packaged.

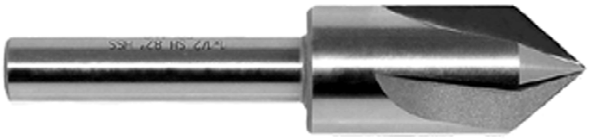
SINGLE FLUTE SERIES 8500

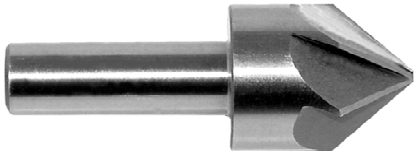
TOOL DIA	SK DIA	OAL	60° EDP NO	82° EDP NO	90° EDP NO	LIST PRICE
1/8	1/8	1-1/2	85A108A	85A108B	85A108C	$POR
3/16	3/16	2"	85A112A	85A112B	85A112C	POR
1/4	1/4	2"	85A116A	85A116B	85A116C	POR
3/8	1/4	2-7/8	85A124A	85A124B	85A124C	POR
1/2	1/4	2-7/8	85A132A	85A132B	85A132C	POR
5/8	3/8	3"	85A140A	85A140B	85A140C	POR
3/4	1/2	3"	85A148A	85A148B	85A148C	POR
1"	1/2	3-1/4	85A164A	85A164B	85A164C	POR

THREE FLUTE SERIES 8600

TOOL DIA	SK DIA	OAL	60° EDP NO	82° EDP NO	90° EDP NO	LIST PRICE
1/8	1/8	1-1/2	86A108A	86A108B	86A108C	$POR
3/16	3/16	2"	86A112A	86A112B	86A112C	POR
1/4	1/4	2"	86A116A	86A116B	86A116C	POR
3/8	1/4	2-7/8	86A124A	86A124B	86A124C	POR
1/2	1/4	2-7/8	86A132A	86A132B	86A132C	POR
5/8	3/8	3"	86A140A	86A140B	86A140C	POR
3/4	1/2	3"	86A148A	86A148B	86A148C	POR
1"	1/2	3-1/4	86A164A	86A164B	86A164C	POR

POR = Price on Request





FOUR FLUTE SERIES 8700

TOOL DIA	SK DIA	OAL	60° EDP NO	82° EDP NO	90° EDP NO	LIST PRICE
1/8	1/8	1-1/2	87A108A	87A108B	87A108C	$POR
3/16	3/16	2"	87A112A	87A112B	87A112C	POR
1/4	1/4	2"	87A116A	87A116B	87A116C	POR
3/8	1/4	2-7/8	87A124A	87A124B	87A124C	POR
1/2	1/4	2-7/8	87A132A	87A132B	87A132C	POR
5/8	3/8	3"	87A140A	87A140B	87A140C	POR
3/4	1/2	3"	87A148A	87A148B	87A148C	POR
1"	1/2	3-1/4	87A164A	87A164B	87A164C	POR

SIX FLUTE SERIES 8800

TOOL DIA	SK DIA	OAL	60° EDP NO	82° EDP NO	90° EDP NO	LIST PRICE
1/8	1/8	1-1/2	88A108A	88A108B	88A108C	$POR
3/16	3/16	2"	88A112A	88A112B	88A112C	POR
1/4	1/4	2"	88A116A	88A116B	88A116C	POR
3/8	1/4	2-7/8	88A124A	88A124B	88A124C	POR
1/2	1/4	2-7/8	88A132A	88A132B	88A132C	POR
5/8	3/8	3"	88A140A	88A140B	88A140C	POR
3/4	1/2	3"	88A148A	88A148B	88A148C	POR
1"	1/2	3-1/4	88A164A	88A164B	88A164C	POR

POR = Price on Request

Carbide Burs

SOLID CARBIDE | **1/4 SHANK** | **MADE IN USA**





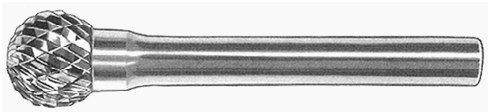
SERIES 7000A
CYLINDRICAL

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SA-11	1/8	1/2	7A108BSC	7A108BDC	$16.61
SA-12	1/8	5/8	7A108ASC	7A108ADC	15.08
SA-14	3/16	5/8	7A112ASC	7A112ADC	16.61
SA-1	1/4	5/8	7A116ASC	7A116ADC	13.33
SA-1L	1/4	1"	7A116BSC	7A116BDC	17.15
SA-2	5/16	3/4	7A120ASC	7A120ADC	17.42
SA-2L	5/16	1"	7A120BSC	7A120BDC	23.05
SA-3	3/8	3/4	7A124ASC	7A124ADC	18.74
SA-3L	3/8	1"	7A124BSC	7A124BDC	24.54
SA-3XL	3/8	1-1/2	7A124CSC	7A124CDC	31.45
SA-4	7/16	1"	7A128BSC	7A128BDC	28.45
SA-5	1/2	1"	7A132BSC	7A132BDC	29.40
SA-6	5/8	1"	7A140BSC	7A140BDC	36.83
SA-16	3/4	3/4	7A148ASC	7A148ADC	50.60
SA-7	3/4	1"	7A148BSC	7A148BDC	63.49
SA-9	1"	1"	7A164BSC	7A164BDC	76.85

SERIES 7000B
CYLINDRICAL with END CUT

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SB-11	1/8	1/2	7B108BSC	7B108BDC	$17.33
SB-12	1/8	5/8	7B108ASC	7B108ADC	17.29
SB-14	3/16	5/8	7B112ASC	7B112ADC	18.05
SB-1	1/4	5/8	7B116ASC	7B116ADC	18.05
SB-1L	1/4	1"	7B116BSC	7B116BDC	22.51
SB-2	5/16	3/4	7B120ASC	7B120ADC	22.49
SB-2L	5/16	1"	7B120BSC	7B120BDC	30.79
SB-3	3/8	3/4	7B124ASC	7B124ADC	25.90
SB-3L	3/8	1"	7B124BSC	7B124BDC	32.15
SB-3XL	3/8	1-1/2	7B124CSC	7B124CDC	40.11
SB-4	7/16	1"	7B128BSC	7B128BDC	37.82
SB-5	1/2	1"	7B132BSC	7B132BDC	40.29
SB-6	5/8	1"	7B140BSC	7B140BDC	50.65
SB-16	3/4	3/4	7B148ASC	7B148ADC	61.36
SB-7	3/4	1"	7B148BSC	7B148BDC	72.04
SB-9	1"	1"	7B164BSC	7B164BDC	92.30





SERIES 7000C
CYLINDRICAL BALL NOSE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SC-11	1/8	1/2	7C108BSC	7C108BDC	$16.61
SC-12	1/8	5/8	7C108ASC	7C108ADC	17.65
SC-14	3/16	5/8	7C112ASC	7C112ADC	19.04
SC-1	1/4	5/8	7C116ASC	7C116ADC	19.04
SC-1L	1/4	1"	7C116BSC	7C116BDC	22.28
SC-2	5/16	3/4	7C120ASC	7C120ADC	23.78
SC-2L	5/16	1"	7C120BSC	7C120BDC	27.38
SC-3	3/8	3/4	7C124ASC	7C124ADC	25.21
SC-3L	3/8	1"	7C124BSC	7C124BDC	29.31
SC-3XL	3/8	1-1/2	7C124CSC	7C124CDC	36.56
SC-4	7/16	1"	7C128BSC	7C128BDC	36.75
SC-5	1/2	1"	7C132BSC	7C132BDC	39.58
SC-6	5/8	1"	7C140BSC	7C140BDC	44.17
SC-7	3/4	1"	7C148BSC	7C148BDC	65.14
SC-9	1"	1"	7C164BSC	7C164BDC	118.19

SERIES 7000D
BALL SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SD-12	1/8	1/8	7D108ASC	7D108ADC	$16.21
SD-14	3/16	3/16	7D112ASC	7D112ADC	16.57
SD-1	1/4	1/4	7D116ASC	7D116ADC	17.29
SD-2	5/16	5/16	7D120ASC	7D120ADC	18.74
SD-3	3/8	3/8	7D124ASC	7D124ADC	20.22
SD-4	7/16	7/16	7D128ASC	7D128ADC	24.68
SD-5	1/2	1/2	7D132ASC	7D132ADC	27.38
SD-6	5/8	5/8	7D140ASC	7D140ADC	34.58
SD-7	3/4	3/4	7D148ASC	7D148ADC	48.99
SD-9	1"	1"	7D164ASC	7D164ADC	81.05

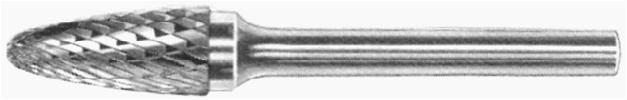
Packaging: All burs individually packaged.

CHIP BREAKER (CB) & DIAMOND CUT (DA) ADD 10%

Carbide Burs

SOLID CARBIDE | **1/4 SHANK** | **MADE IN USA**





SERIES 7000E
OVAL SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SE-11	**3/16**	5/16	7E112ASC	7E112ADC	**$20.89**
SE-1	**1/4**	3/8	7E116ASC	7E116ADC	**20.89**
SE-2	**5/16**	5/8	7E120ASC	7E120ADC	**21.52**
SE-3	**3/8**	5/8	7E124ASC	7E124ADC	**22.79**
SE-5	**1/2**	7/8	7E132ASC	7E132ADC	**40.29**
SE-6	**5/8**	1"	7E140ASC	7E140ADC	**52.53**
SE-7	**3/4**	1"	7E148ASC	7E148ADC	**69.53**

SERIES 7000F
ROUND TREE SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SF-11	**1/8**	1/2	7F108BSC	7F108BDC	**$20.21**
SF-12	**1/8**	5/8	7F108ASC	7F108ADC	**20.21**
SF-1	**1/4**	5/8	7F116ASC	7F116ADC	**20.23**
SF-1L	**1/4**	3/4	7F116BSC	7F116BDC	**21.30**
SF-3	**3/8**	3/4	7F124ASC	7F124ADC	**25.52**
SF-4	**7/16**	1"	7F128ASC	7F128ADC	**35.52**
SF-13	**1/2**	3/4	7F132ASC	7F132ADC	**36.33**
SF-5	**1/2**	1"	7F132BSC	7F132BDC	**36.75**
SF-6	**5/8**	1"	7F140ASC	7F140ADC	**52.23**
SF-7	**3/4**	1"	7F148ASC	7F148ADC	**68.61**
SF-14	**3/4**	1-1/4	7F148BSC	7F148BDC	**72.59**
SF-15	**3/4**	1-1/2	7F148CSC	7F148CDC	**101.30**





SERIES 7000G
POINTED TREE SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SG-1	**1/4**	5/8	7G116ASC	7G116ADC	**$20.21**
SG-1L	**1/4**	3/4	7G116BSC	7G116BDC	**20.62**
SG-2	**5/16**	3/4	7G120ASC	7G120ADC	**24.54**
SG-3	**3/8**	3/4	7G124ASC	7G124ADC	**25.94**
SG-13	**1/2**	3/4	7G132ASC	7G132ADC	**36.33**
SG-5	**1/2**	1"	7G132BSC	7G132BDC	**36.75**
SG-6	**5/8**	1"	7G140ASC	7G140ADC	**51.46**
SG-7	**3/4**	1"	7G148ASC	7G148ADC	**68.61**
SG-15	**3/4**	1-1/2	7G148BSC	7G148BDC	**105.89**

SERIES 7000H
FLAME SHAPE

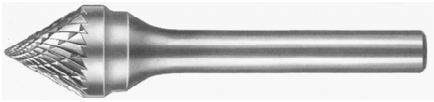
TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SH-1	**1/4**	1/2	7H116ASC	7H116ADC	**$22.74**
SH-2	**5/16**	3/4	7H120ASC	7H120ADC	**24.14**
SH-5	**1/2**	1-1/4	7H132ASC	7H132ADC	**50.65**
SH-6	**5/8**	1-7/16	7H140ASC	7H140ADC	**75.50**
SH-7	**3/4**	1-5/8	7H148ASC	7H148ADC	**99.14**

Packaging: All burs individually packaged.

CHIP BREAKER (CB) & DIAMOND CUT (DA) ADD 10%

Carbide Burs

SOLID CARBIDE | **1/4 SHANK** | **MADE IN USA**





SERIES 7000J

60° INCLUDED

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SJ-1	**1/4**	3/16	7J116ASC	7J116ADC	**$18.74**
SJ-2	**5/16**	1/4	7J120ASC	7J120ADC	**20.62**
SJ-3	**3/8**	1/4	7J124ASC	7J124ADC	**23.05**
SJ-5	**1/2**	7/16	7J132ASC	7J132ADC	**28.45**
SJ-6	**5/8**	1/2	7J140ASC	7J140ADC	**37.41**
SJ-7	**3/4**	5/8	7J148ASC	7J148ADC	**51.28**
SJ-9	**1"**	3/4	7J164ASC	7J164ADC	**84.15**

SERIES 7000K

90° INCLUDED

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SK-1	**1/4**	1/8	7K116ASC	7K116ADC	**$19.18**
SK-2	**5/16**	3/16	7K120ASC	7K120ADC	**20.62**
SK-3	**3/8**	3/16	7K124ASC	7K124ADC	**23.64**
SK-5	**1/2**	1/4	7K132ASC	7K132ADC	**28.45**
SK-6	**5/8**	5/16	7K140ASC	7K140ADC	**37.41**
SK-7	**3/4**	3/8	7K148ASC	7K148ADC	**50.11**
SK-9	**1"**	1/2	7K164ASC	7K164ADC	**79.24**





SERIES 7000L

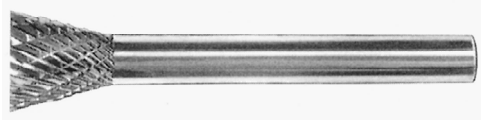
14° INCLUDED ANGLE

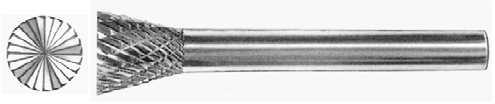
TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SL-1	**1/4**	5/8	7L116ASC	7L116ADC	**$20.75**
SL-2	**5/16**	7/8	7L120ASC	7L120ADC	**26.29**
SL-3	**3/8**	1-1/16	7L124ASC	7L124ADC	**31.34**
SL-4	**1/2**	1-1/8	7L132ASC	7L132ADC	**39.98**
SL-5	**5/8**	1-3/16	7L140ASC	7L140ADC	**70.19**
SL-6	**5/8**	1-5/16	7L140BSC	7L140BDC	**78.03**
SL-7	**3/4**	1-1/2	7L148ASC	7L148ADC	**100.76**

SERIES 7000M

CONE SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SM-1	**1/4**	1/2	7M116ASC	7M116ADC	**$20.27**
SM-2	**1/4**	3/4	7M116BSC	7M116BDC	**21.61**
SM-3	**1/4**	1"	7M116CSC	7M116CDC	**23.05**
SM-3L	**1/4**	1-1/4	7M116DSC	7M116DDC	**24.85**
SM3XL	**1/4**	1-1/2	7M116ESC	7M116EDC	**35.48**
SM-4	**3/8**	5/8	7M124ASC	7M124ADC	**30.92**
SM-4L	**3/8**	1"	7M124BSC	7M124BDC	**39.58**
SM-5	**1/2**	7/8	7M132ASC	7M132ADC	**39.58**
SM-6	**5/8**	1"	7M140ASC	7M140ADC	**54.66**





SERIES 7000N

INVERTED CONE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SN-1	**1/4**	5/16	7N116ASC	7N116ADC	**$18.50**
SN-2	**3/8**	3/8	7N124ASC	7N124ADC	**34.42**
SN-4	**1/2**	1/2	7N132ASC	7N132ADC	**35.25**
SN-6	**5/8**	3/4	7N140ASC	7N140ADC	**55.33**
SN-7	**3/4**	5/8	7N148ASC	7N148ADC	**74.51**

SERIES 7000NE

INVERTED CONE with END CUT

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SN-1E	**1/4**	5/16	7N116ESC	7N116EDC	**$22.20**
SN-2E	**3/8**	3/8	7N124ESC	7N124EDC	**38.58**
SN-4E	**1/2**	1/2	7N132ESC	7N132EDC	**42.32**
SN-7E	**3/4**	5/8	7N148ESC	7N148EDC	**89.42**

Packaging: All burs individually packaged.

CHIP BREAKER (CB) & DIAMOND CUT (DA) ADD 10%

Extra Long Carbide Burs

SOLID CARBIDE **1/4" x 6" LONG SHANK** **MADE IN USA**



SERIES 7000AX

CYLINDRICAL SHAPE

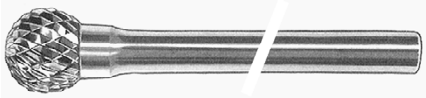
TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SA-1L6	1/4	1/2	7AX116SC	7AX116DC	$38.04
SA-3L6	3/8	3/4	7AX124SC	7AX124DC	41.42
SA-5L6	1/2	1"	7AX132SC	7AX132DC	50.38



SERIES 7000CX

CYLINDRICAL BALL NOSE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SC-1L6	1/4	1/2	7CX116SC	7CX116DC	$41.42
SC-3L6	3/8	3/4	7CX124SC	7CX124DC	46.83
SC-5L6	1/2	1"	7CX132SC	7CX132DC	61.19



SERIES 7000DX

BALL SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SD-1L6	1/4	7/32	7DX116SC	7DX116DC	$36.02
SD-3L6	3/8	5/16	7DX124SC	7DX124DC	37.82
SD-5L6	1/2	7/16	7DX132SC	7DX132DC	52.23



SERIES 7000EX

OVAL SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SE-1L6	1/4	3/8	7EX116SC	7EX116DC	$43.22
SE-3L6	3/8	5/8	7EX124SC	7EX124DC	44.98
SE-5L6	1/2	7/8	7EX132SC	7EX132DC	57.63



SERIES 7000FX

ROUND TREE SHAPE

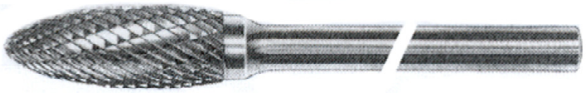
TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SF-1L6	1/4	1/2	7FX116SC	7FX116DC	$37.60
SF-3L6	3/8	3/4	7FX124SC	7FX124DC	39.09
SF-5L6	1/2	1"	7FX132SC	7FX132DC	50.11



SERIES 7000GX

POINTED TREE SHAPE

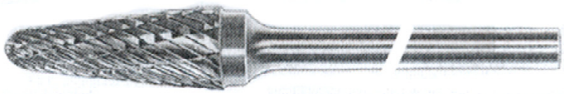
TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SG-1L6	1/4	1/2	7GX116SC	7GX116DC	$43.22
SG-3L6	3/8	3/4	7GX124SC	7GX124DC	44.98
SG-5L6	1/2	1"	7GX132SC	7GX132DC	57.63



SERIES 7000HX

FLAME SHAPE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SH-2L6	5/16	3/4	7HX120SC	7HX120DC	$44.98
SH-5L6	1/2	1-1/4	7HX132SC	7HX132DC	64.79



SERIES 7000LX

14° INCLUDED ANGLE

TOOL NO.	CUTTER DIA.	LENGTH OF CUT	SINGLE CUT EDP	DOUBLE CUT EDP	LIST PRICE
SL-1L6	1/4	5/8	7LX116SC	7LX116DC	$43.38
SL-3L6	3/8	1-1/16	7LX124SC	7LX124DC	50.38
SL-4L6	1/2	1-1/8	7LX132SC	7LX132DC	60.24

Packaging: All burs individually packaged.

CHIP BREAKER (CB) & DIAMOND CUT (DA) ADD 10%

Aluminum Cut Carbide Burs

SOLID CARBIDE | **1/4 SHANK** | **MADE IN USA**



SERIES 7000AAL

CYLINDRICAL

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
SA-1NF	**1/4**	3/4	7AAL116	**$26.57**
SA-3NF	**3/8**	3/4	7AAL124	**30.79**
SA-5NF	**1/2**	1"	7AAL132	**48.22**
SA-6NF	**5/8**	1"	7AAL140	**59.80**
SA-7NF	**3/4**	1"	7AAL148	**82.75**



SERIES 7000CAL

CYLINDRICAL BALL NOSE

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
SC-1NF	**1/4**	3/4	7CAL116	**$27.14**
SC-3NF	**3/8**	3/4	7CAL124	**31.07**
SC-5NF	**1/2**	1"	7CAL132	**45.25**
SC-6NF	**5/8**	1"	7CAL140	**66.94**
SC-7NF	**3/4**	1"	7CAL148	**97.88**



SERIES 7000DAL

BALL SHAPE

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
SD-1NF	**1/4**	7/32	7DAL116	**$27.14**
SD-3NF	**3/8**	5/16	7DAL124	**27.38**
SD-5NF	**1/2**	7/16	7DAL132	**36.48**
SD-6NF	**5/8**	9/16	7DAL140	**46.83**
SD-7NF	**3/4**	11/16	7DAL148	**72.98**



SERIES 7000EAL

OVAL SHAPE

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
SE-1NF	**1/4**	3/8	7EAL116	**$27.14**
SE-3NF	**3/8**	5/8	7EAL124	**35.25**
SE-5NF	**1/2**	7/8	7EAL132	**45.25**
SE-6NF	**5/8**	1"	7EAL140	**68.34**
SE-7NF	**3/4**	1"	7EAL148	**84.72**



SERIES 7000FAL

ROUND TREE SHAPE

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
SF-1NF	**1/4**	3/4	7FAL116	**$27.14**
SF-3NF	**3/8**	3/4	7FAL124	**35.66**
SF-5NF	**1/2**	1"	7FAL132	**45.25**
SF-6NF	**5/8**	1"	7FAL140	**66.94**
SF-14NF	**3/4**	1-1/4	7FAL148	**101.44**



SERIES 7000LAL

14°INCLUDED ANGLE

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	EDP NUMBER	LIST PRICE
SL-1NF	**1/4**	5/8	7LAL116	**$27.14**
SL-3NF	**3/8**	1-1/16	7LAL124	**36.20**
SL-4NF	**1/2**	1-1/8	7LAL132	**52.00**
SL-5NF	**5/8**	1-3/16	7LAL140	**93.47**
SL-6NF	**5/8**	1-5/16	7LAL140A	**101.44**

Packaging: All burs individually packaged.

CHIP BREAKER (CB) & DIAMOND CUT (DA) ADD 10%

Miniature Carbide Burs

SOLID CARBIDE **1/16" thru 1/8" DIA. HEAD** **MADE IN USA**

Packaging: All burs individually packaged.

SERIES 7000

1/8" SHANK DIAMETER **1-1/2" OVERALL LENGTH**

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	SINGLE CUT EDP No.	DOUBLE CUT EDP No.	LIST PRICE
SA-41	**1/16**	1/4	70A041SC	70A041DC	**$7.97**
SA-42	**3/32**	7/16	70A042SC	70A042DC	**7.97**
SA-43	**1/8**	9/16	70A043SC	70A043DC	**7.97**
SB-43	**1/8**	9/16	70B043SC	70B043DC	**7.97**
SB-ECO	**1/8**	---	70BECOSC	70BECODC	**7.97**
SC-41	**3/32**	7/16	70C041SC	70C041DC	**7.97**
SC-42	**1/8**	9/16	70C042SC	70C042DC	**7.97**
SD-41	**3/32**	3/32	70D041SC	70D041DC	**7.97**
SD-42	**1/8**	1/8	70D042SC	70D042DC	**7.97**
SE-41	**1/8**	7/32	70E041SC	70E041DC	**7.97**
SF-41	**1/8**	1/4	70F041SC	70F041DC	**7.97**
SF-42	**1//8**	1/2	70F042SC	70F042DC	**7.97**
SG-41	**1/8**	1/4	70G041SC	70G041DC	**7.97**
SG-42	**1/8**	5/16	70G042SC	70G042DC	**7.97**
SG-43	**1/8**	3/8	70G043SC	70G043DC	**7.97**
SG-44	**1/8**	1/2	70G044SC	70G044DC	**7.97**
SH-41	**1/8**	1/4	70H041SC	70H041DC	**7.97**
SJ-42	**1/8**	3/32	70J042SC	70J042DC	**7.97**
SK-42	**1/8**	1/16	70K042SC	70K042DC	**7.97**
SL-41	**1/8**	3/8	70L041SC	70L041DC	**7.97**
SL-42	**1/8**	1/2	70L042SC	70L042DC	**7.97**
SM-41	**1/8**	11/32	70M041SC	70M041DC	**7.97**
SM-42	**1/8**	7/16	70M042SC	70M042DC	**7.97**
SM-43	**1/8**	5/8	70M043SC	70M043DC	**7.97**
SN-41	**3/32**	1/8	70N041SC	70N041DC	**7.97**
SN-42	**1/8**	3/16	70N042SC	70N042DC	**7.97**



CHIP BREADER (CB) & DIAMOND CUT (DA) ADD 10%

TiN COATING AVAILABLE

Miniature Carbide Burs

SOLID CARBIDE | **EXTRA LONG** | **MADE IN USA**

Packaging: All burs individually packaged.

SERIES 7000

1/8" CUTTING DIA. | 1/8" SHANK DIA. | 2"OVERALL LENGTH

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	SINGLE CUT EDP No.	DOUBLE CUT EDP No.	LIST PRICE
SA-43L2	1/8	9/16	7A43L2SC	7A43L2DC	$10.62
SC-42L2	1/8	9/16	7C42L2SC	7C42L2DC	10.62
SD-42L2	1/8	1/8	7D42L2SC	7D42L2DC	10.62
SE-41L2	1/8	7/32	7E41L2SC	7E41L2DC	10.62
SF-42L2	1/8	1/2	7F42L2SC	7F42L2DC	10.62
SG-44L2	1/8	1/2	7G44L2SC	7G44L2DC	10.62
SH-41L2	1/8	1/4	7H41L2SC	7H41L2DC	10.62
SL-42LS	1/8	1/2	7L42L2SC	7L42L2DC	10.62
SM-42L2	1/8	7/16	7M42L2SC	7M42L2DC	10.62

SA-43L2



SC-42LS



SD-42L2



SE-41L2



SF-42L2



SG-44L2



SH-41L2



SL-42LS



SM-42L2



SERIES 7000

1/8" CUTTING DIA. | 1/8" SHANK DIA. | 3" OVERALL LENGTH

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	SINGLE CUT EDP No.	DOUBLE CUT EDP No.	LIST PRICE
SA-43L3	1/8	9/16	7A43L3SC	7A43L3DC	$13.50
SC-42L3	1/8	9/16	7C42L3SC	7C42L3DC	13.50
SD-42L3	1/8	1/8	7D42L3SC	7D42L3DC	13.50
SE-41L3	1/8	7/32	7E41L3SC	7E41L3DC	13.50
SF-42L3	1/8	1/2	7F42L3SC	7F42L3DC	13.50
SG-44L3	1/8	1/2	7G44L3SC	7G44L3DC	13.50
SH-41L3	1/8	1/4	7H41L3SC	7H41L3DC	13.50
SL-42L3	1/8	1/2	7L42L3SC	7L42L3DC	13.50
SM-42L3	1/8	7/16	7M42L3SC	7M42L3DC	13.50

SA-43L3



SC-42L3



SD-42L3



SE-41L3



SF-42L3



SG-44L3



SH-41L3



SL-42L3



SM-42L3



CHIP BREAKER (CB) & DIAMOND CUT (DA) ADD 10%

TiN COATING AVAILABLE

Miniature Carbide Burs

SOLID CARBIDE **MINIATURE BURS** **MADE IN USA**

Packaging: All burs individually packaged.

SERIES 7000

1/4" CUTTING DIAMETER 1/8" SHANK DIAMETER

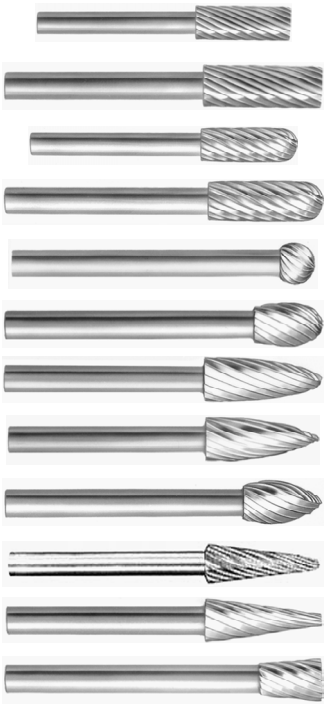
TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	SINGLE CUT EDP No.	DOUBLE CUT EDP No.	LIST PRICE
SA-51	**1/4**	1/2	**70A051SC**	**70A051DC**	**$15.39**
SB-51	**1/4**	3/16	70B051SC	70B051DC	**15.39**
SC-51	**1/4**	1/2	70C051SC	70C051DC	**15.39**
SD-51	**1/4**	7/32	70D051SC	70D051DC	**15.39**
SE-51	**1/4**	3/8	70E051SC	70E051DC	**15.39**
SF-51	**1/4**	1/2	70F051SC	70F051DC	**15.39**
SG-51	**1/4**	1/2	70G051SC	70G051DC	**15.39**
SM-51	**1/4**	1/2	70M051SC	70M051DC	**15.39**
SN-51	**1/4**	1/4	70N051SC	70N051DC	**15.39**



SERIES 7000

5/32 & 3/16 CUTTING DIA. 1/8" SHANK DIA. 1-1/2" OVERALL LENGTH

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	SINGLE CUT EDP No.	DOUBLE CUT EDP No.	LIST PRICE
SA-52	**5/32**	1/2	70A052SC	70A052DC	**$15.39**
SA-53	**3/16**	1/2	70A053SC	70A053DC	**15.39**
SC-52	**5/32**	1/2	70C052SC	70C052DC	**15.39**
SC-53	**3/16**	1/2	70C053SC	70C053DC	**15.39**
SD-53	**3/16**	5/32	70D053SC	70D053DC	**15.39**
SE-53	**3/16**	9/32	70E053SC	70E053DC	**15.39**
SF-53	**3/16**	1/2	70F053SC	70F053DC	**15.39**
SG-53	**3/16**	1/2	70G053SC	70G053DC	**15.39**
SH-53	**3/16**	3/8	70H053SC	70H053DC	**15.39**
SL-53	**3/16**	1/2	70L053SC	70L053DC	**15.39**
SM-53	**3/16**	1/2	70M053SC	70M053DC	**15.39**
SN-53	**3/16**	1/4	70N053SC	70N053DC	**15.39**



CHIP BREAKER (CB) & DIAMOND CUT ADD 10%

TiN COATING AVAILABLE

Miniature Carbide Burs

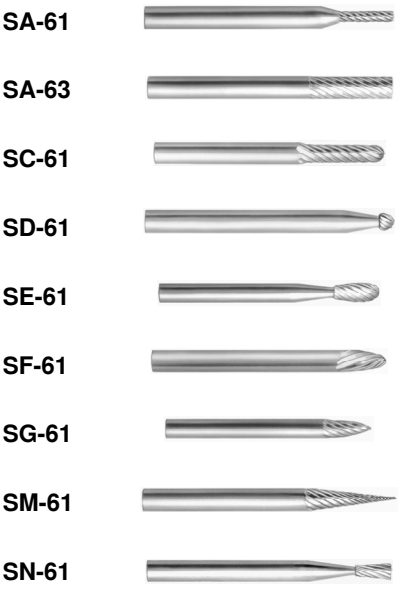
SOLID CARBIDE **MINIATURE BURS** **MADE IN USA**

Packaging: All burs individually packaged.

SERIES 7000

1/16 & 3/32 CUTTING DIA. 3/32" SHANK DIA. 1-1/4"OVERALL LENGTH

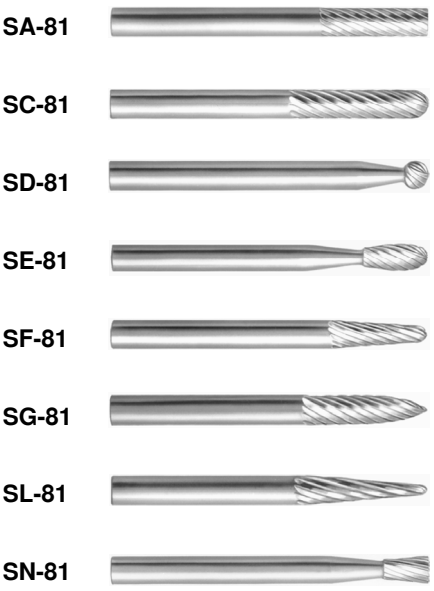
TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	SINGLE CUT EDP No.	DOUBLE CUT EDP No.	LIST PRICE
SA-61	**1/16**	1/4	70A061SC	70A061DC	**$8.05**
SA-63	**3/32**	3/8	70A063SC	70A063DC	**8.05**
SC-61	**3/32**	3/8	70C061SC	70C061DC	**8.05**
SD-61	**3/32**	3/32	70D061SC	70D061DC	**8.05**
SE-61	**3/32**	1/8	70E061SC	70E061DC	**8.05**
SF-61	**3/32**	1/4	70F061SC	70F061DC	**8.05**
SG-61	**3/32**	1/4	70G061SC	70G061DC	**8.05**
SM-61	**3/32**	1/4	70M061SC	70M061DC	**8.05**
SN-61	**3/32**	1/8	70N061SC	70N061DC	**8.05**



SERIES 7000

3/16" CUTTING DIA. 3/16" SHANK DIA. 2" OVERALL LENGTH

TOOL NUMBER	CUTTER DIAMETER	LENGTH OF CUT	SINGLE CUT EDP No.	DOUBLE CUT EDP No.	LIST PRICE
SA-81	**3/16**	1/2	70A081SC	70A081DC	**$15.93**
SC-81	**3/16**	1/2	70C081SC	70C081DC	**15.93**
SD-81	**3/16**	5/32	70D081SC	70D081DC	**15.93**
SE-81	**3/16**	9/32	70E081SC	70E081DC	**15.93**
SF-81	**3/16**	1/2	70F081SC	70F081DC	**15.93**
SG-81	**3/16**	1/2	70G081SC	70G081DC	**15.93**
SL-81	**3/16**	7/16	70L081SC	70L081DC	**15.93**
SN-81	**3/16**	1/4	70N081SC	70N081DC	**15.93**



Carbide Bur Sets

SOLID CARBIDE **BUR SETS** **MADE IN USA**

BUR SET #1
1/4" SHANK DIAMETER

$158.04 ea.



TOOL No.
SA-1
SC-1
SD-1
SE-1
SF-1
SG-1
SL-1
SM-1

EDP No. 70S001SC for SINGLE CUT
EDP No. 70S001DC for DOUBLE CUT

BUR SET #2
1/4" SHANK DIAMETER

$198.81 ea.



TOOL No.
SA-3
SC-3
SD-3
SE-3
SF-3
SG-3
SL-3
SM-4

EDP No. 70S002SC for SINGLE CUT
EDP No. 70S002DC for DOUBLE CUT

BUR SET #3
1/4" SHANK DIAMETER

$295.71 ea.



TOOL No.
SA-5
SC-5
SD-5
SE-5
SF-5
SG-5
SL-4
SM-5

EDP No. 70S003SC for SINGLE CUT
EDP No. 70S003DC for DOUBLE CUT

BUR SET #4
1/4" SHANK DIAMETER

$256.54 ea.



TOOL No.
SA-1
SA-3
SA-5
SC-1
SC-3
SC-5
SD-3
SF-3
SF-5
SH-1

EDP No. 70S004SC for SINGLE CUT
EDP No. 70S004DC for DOUBLE CUT

BUR SET #5
1/4" SHANK DIAMETER

$315.29 ea.



TOOL No.
SA-5
SC-3
SC-5
SD-5
SE-3
SF-3
SF-5
SG-3
SG-5
SL-4

EDP No. 70S005SC for SINGLE CUT
EDP No. 70S005DC for DOUBLE CUT

BUR SET #6
1/8" CUTTING DIA.
1/8" SHANK - 1-1/2 OAL

$69.79 ea.



TOOL No.
SA-43
SC-42
SD-42
SE-41
SF-42
SG-42
SL-41
SN-42

EDP No. 70S006SC for SINGLE CUT
EDP No. 70S006DC for DOUBLE CUT

Carbide Bur Sets

SOLID CARBIDE **BUR SETS** **MADE IN USA**

BUR SET #7
1/4" CUTTING DIA.
1/8" SHANK DIAMETER

$129.19 ea.

TOOL No.



SA-51
SB-51
SC-51
SD-51
SE-51
SF-51
SG-51
SM-51

EDP No. 70S007SC for SINGLE CUT
EDP No. 70S007DC for DOUBLE CUT

BUR SET #8
3/16" CUTTING DIA.
1/8 SHANK – 1-1/2 OAL

$1129.19 ea.

TOOL No.



SA-53
SC-53
SD-53
SE-53
SF-53
SG-53
SL-53
SN-53

EDP No. 70S008SC for SINGLE CUT
EDP No. 70S008DC for DOUBLE CUT

3/32"SK. – 1-1/4" OAL

$63.96 ea.

TOOL No.



SA-61
SC-61
SD-61
SE-61
SF-61
SG-61
SM-61
SN-61

EDP No. 70S009SC for SINGLE CUT
EDP No. 70S009DC for DOUBLE CUT

$332.00 ea.

EDP No. 70S014SC for SINGLE CUT
EDP No. 70S014DC for DOUBLE CUT

BUR KIT with AIR GRINDER

1 - Air Grinder with Precision Collet
7 - Solid Carbide Burs
SA-1, SC-1, SD-1, SE-1, SG-1 & SL-1



99 Pc. BUR DISPLAY $2,866.68

EDP No. 70S099SC for SINGLE CUT — EDP No. 70S099DC for DOUBLE CUT

3 EACH OF THE FOLLOWING DC & NF BURS: 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, 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, SL-3NF, SM-1, SM-4, SM-5

66 Pc. BUR DISPLAY $2,027.12

EDP No. 70S066SC for SINGLE CUT — EDP No. 70S066DC for DOUBLE CUT

2 EACH OF THE FOLLOWING DC & NF BURS: 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, 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, SL-3NF, SM-1, SM-4, SM-5

33 Pc. BUR DISPLAY $1,209.31

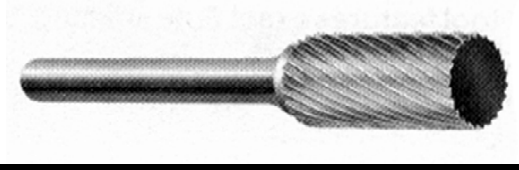
EDP No. 70S033SC for SINGLE CUT — EDP No. 70S033DC for DOUBLE CUT

1 EACH OF THE FOLLOWING DC & NF BURS: 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, 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, SL-3NF, SM-1, SM-4, SM-5



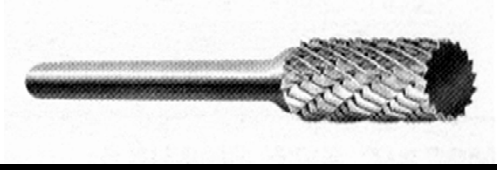
Technical

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 SingleCutrighthandspiraldesign.

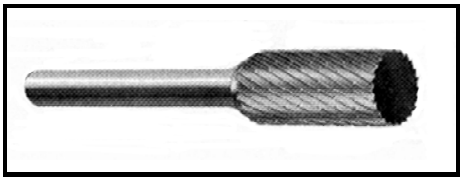


DOUBLE CUT

DrillCo's Double Cut, with is'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.

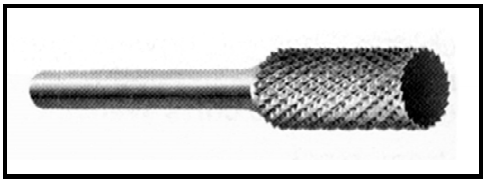
The right and left hand helical flutes combined to produce an chisel type cutting tooth. This results in faster penetration and stock removal with minimal bounce or chatter. The Double Cut design also produces an easy to handle granular type chip, in most metals, as opposed to the conventional sliver 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.



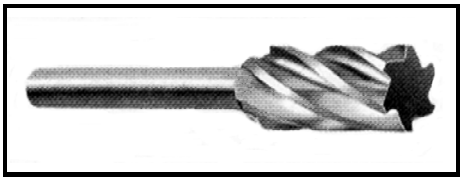
CHIP BREAKER

The addition of a chip breaker will reduce sliver size and improve operator control at a slightly reduced surface finish.



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.



ALUMINUM CUT

DrillCo's Aluminum Cut burs are outstanding on soft or non-ferrous type materials. Use the Aluminum Cut design on aluminum, magnesium, brass, leadandmostplastics.

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.

Technical

DECIMAL EQUIVALENT

DRILL SIZE	MM	DECIMAL INCHES	DRILL SIZE	MM	DECIMAL INCHES	DRILL SIZE	MM	DECIMAL INCHES	DRILL SIZE	MM	DECIMAL INCHES
---	0.10	.0039	45	2.08	.0820	5	5.22	.2055	7/16	11.11	.4375
---	0.20	.0079	44	2.18	.0860	4	5.31	.2090	29/64	11.15	.4531
---	0.25	.0098	43	2.26	.0890	3	5.41	.2130	15/32	11.91	.4688
---	0.30	.0118	42	2.37	.0935	7/32	5.56	.2188	---	12.00	.4724
80	0.34	.0135	3/32	2.38	.0938	2	5.61	.2210	31/64	12.30	.4844
79	0.37	.0145	41	2.44	.0960	1	5.79	.2280	1/2	12.70	.5000
1/64	0.40	.0156	40	2.50	.0980	A	5.94	.2340	---	13.00	.5118
78	0.41	.0160	39	2.53	.0995	15/64	5.95	.2344	33/64	13.10	.5156
77	0.46	.0180	38	2.58	.1015	---	6.00	.2360	17/32	13.49	.5312
---	0.50	.0197	37	2.64	.1040	B	6.05	.2380	35/64	13.89	.5469
76	0.51	.0200	36	2.71	.1065	C	6.15	.2420	---	14.00	.5512
75	0.53	.0210	7/64	2.78	.1094	D	6.25	.2460	9/16	14.29	.5625
74	0.57	.0225	35	2.79	.1100	1/4	6.35	.2500	37/64	14.68	.5781
---	0.60	.0236	34	2.82	.1110	E	6.35	.2500	---	15.00	.5906
73	0.61	.0240	33	2.87	.1130	F	6.53	.2570	19/32	15.08	.5938
72	0.64	.0250	32	2.95	.1160	G	6.63	.2610	39/64	15.48	.6094
71	0.66	.0260	---	3.00	.1181	17/64	6.75	.2656	5/8	15.88	.6250
---	0.70	.0276	31	3.05	.1200	H	6.76	.2660	---	16.00	.6299
70	0.71	.0280	1/8	3.18	.1250	I	6.91	.2720	41/64	16.27	.6406
69	0.74	.0282	30	3.26	.1285	---	7.00	.2756	21/32	16.67	.6562
---	0.75	.0295	29	3.45	.1360	J	7.04	.2770	---	17.00	.6693
68	0.79	.0310	28	3.57	.1405	K	7.14	.2810	43/64	17.07	.6719
1/32	0.79	.0313	9/64	3.57	.1406	9/32	7.14	.2812	11/16	17.46	.6875
---	0.80	.0315	27	3.66	.1440	L	7.37	.2900	45/64	17.86	.7031
67	0.81	.0320	26	3.73	.1470	M	7.49	.2950	---	18.00	.7087
66	0.84	.0330	25	3.80	.1495	19/64	7.54	.2969	23/32	18.26	.7188
65	0.89	.0350	24	3.86	.1520	N	7.67	.3020	47/64	18.65	.7344
---	0.90	.0354	23	3.91	.1540	5/16	7.94	.3125	---	19.00	.7480
64	0.91	.0360	5/32	3.97	.1562	---	8.00	.3150	3/4	19.05	.7500
63	0.94	.0370	22	3.99	.1570	O	8.03	.3160	49/64	19.45	.7656
62	0.97	.0380	---	4.00	.1575	P	8.20	.3230	25/32	19.84	.7812
61	0.99	.0390	21	4.04	.1590	21/64	8.33	.3281	---	20.00	.7874
---	1.00	.0394	20	4.09	.1610	Q	8.43	.3320	51/64	20.24	.7969
60	1.02	.0400	19	4.22	.1660	R	8.61	.3390	13/16	20.64	.8125
59	1.04	.0410	18	4.31	.1695	11/32	8.73	.3438	---	21.00	.8268
58	1.07	.0420	11/64	4.37	.1719	S	8.84	.3480	53/64	21.03	.8281
57	1.09	.0430	17	4.39	.1730	---	9.00	.3543	27/32	21.43	.8438
56	1.18	.0465	16	4.50	.1770	T	9.09	.3580	55/64	21.84	.8594
3/64	1.19	.0469	15	4.57	.1800	23/64	9.13	.3594	---	22.00	.8661
55	1.32	.0520	14	4.62	.1820	U	9.35	.3680	7/8	22.23	.8750
54	1.40	.0550	13	4.70	.1850	3/8	9.53	.3750	57/64	22.62	.8906
53	1.51	.0595	3/16	4.76	.1875	V	9.56	.3770	---	23.00	.9055
1/16	1.59	.0625	12	4.80	.1890	W	9.80	.3860	29/32	23.02	.9062
52	1.61	.0635	11	4.85	.1910	25/64	9.92	.3906	59/64	23.42	.9219
51	1.70	.0670	10	4.91	.1935	---	10.00	.3937	15/16	23.81	.9375
50	1.78	.0700	9	4.98	.1960	X	10.08	.3970	---	24.00	.9449
49	1.85	.0730	---	5.00	.1968	Y	10.26	.4040	61/64	24.21	.9531
48	1.93	.0760	8	5.05	.1990	13/32	10.32	.4062	31/32	24.61	.9688
5/64	1.98	.0781	7	5.11	.2010	Z	10.49	.4130	---	25.00	.9843
47	1.99	.0785	13/64	5.16	.2031	27/64	10.72	.4219	63/64	25.00	.9844
---	2.00	.0787	6	5.18	.2040	---	11.00	.4331	1"	25.40	1.0000
46	2.06	.0810									

Technical

TAP DRILL SIZES

TAP SIZE	DRILL SIZE	PROBABLE %THREAD	TAP SIZE	DRILL SIZE	PROBABLE %THREAD	TAP SIZE	DRILL SIZE	PROBABLE %THREAD
0-80	3/64	71-81	10-32	21	68-76	5/8-18	37/64	58-65
M1.6-.35	1.25MM	69-77	M5 x .8	4.2 MM	69-77	M16 x 2	35/64	76-81
1-64	53	59-67	12-24	16	66-72	3/4-10	21/32	68-72
M2 x .4	1/16	72-79	12-28	15	70-78	3/4-16	11/16	71-77
1-72	53	67-75	M6 x 1	10	76-84	M20x2.5	11/16	74-78
2-56	50	62-69	1/4-20	7	70-75	7/8-9	49/64	72-76
2-64	50	70-79	1/4-28	3	72-80	7/8-14	13/16	62-67
M2 x .45	2.05MM	69-77	5/16-18	F	72-77	M24 x 3	53/64	72-76
3-48	5/64	70-77	5/16-24	1	67-75	1" -8	7/8	73-77
3-56	46	69-78	M8x1.25	6.7 MM	74-80	1"- 12	59/64	67-72
4-40	43	65-71	3/8-16	5/16	72-77	1"- 14	15/16	61-67
4-48	42	61-68	3/8-24	Q	71-79	1-1/8"- 7	63/64	72-76
M3 x .5	40	70-79	M10x1.5	8.4 MM	76-82	1-1/8-12	1-3/16	66-72
5-40	38	65-72	7/16-14	U	70-75	M30x3.5	1-3/64	75
5-44	37	63-71	7/16-20	25/64	65-72	1-1/4 - 7	1-7/64	76
M3.5 x .6	33	72-81	M12x1.7	13/32	69-74	1-1/4-12	1-11/64	72
6-32	36	71-78	1/2-13	27/64	73-78	1-3/8 - 6	1-7/32	72
6-40	33	69-77	1/2-20	29/64	65-72	1-3/8-12	1-19/64	72
M4 x .7	3.25MM	74-82	M14 x 2	15/32	76-81	M36 x 4	1-1/4	82
8-32	29	62-69	9/16-12	31/64	68-72	1-1/2 - 6	1-11/32	72
8-36	29	70-78	9/16-18	33/64	58-65	1-1/2-12	1-27/64	72
10-24	25	69-75	5/8-11	17/32	75-79	---	---	---

TAP DRILL SIZES

TAP SIZE	TAPER PIPE NPF & NPTF	DECIMAL EQUIVALENT	STRAIGHT PIPE NPS	DECIMAL EQUIVALENT
1/8-27	Q	.3320	11/32	.3438
1/4-18	7/16	.4375	7/16	.7375
3/8-18	9/16	.5625	37/64	.5781
1/2-14	45/64	.7031	23/32	.7188
3/4-14	29/32	.9062	59/64	.9219
1"- 11-1/2	1-9/64	1.1406	1-5/32	1.1562
1-1/4"- 11-1/2	1-31/64	1.4844	1-1/2	1.5000
1-1/2"- 11-1/2	1-23/32	1.7188	1-3/4	1.7500
2"- 11-1/2	2-3/16	2.1875	2-7/32	2.2188
2-1/2"- 8	2-39/64	2.6094	2-21/32	2.6562
3"- 8	3-15/64	3.2344	---	---

Technical

DECIMAL EQUIVALENT

DRILL SIZE	MM	DECIMAL INCHES	DRILL SIZE	MM	DECIMAL INCHES	DRILL SIZE	MM	DECIMAL INCHES	DRILL SIZE	MM	DECIMAL INCHES
---	0.10	.0039	45	2.08	.0820	5	5.22	.2055	7/16	11.11	.4375
---	0.20	.0079	44	2.18	.0860	4	5.31	.2090	29/64	11.15	.4531
---	0.25	.0098	43	2.26	.0890	3	5.41	.2130	15/32	11.91	.4688
---	0.30	.0118	42	2.37	.0935	7/32	5.56	.2188	---	12.00	.4724
80	0.34	.0135	3/32	2.38	.0938	2	5.61	.2210	31/64	12.30	.4844
79	0.37	.0145	41	2.44	.0960	1	5.79	.2280	1/2	12.70	.5000
1/64	0.40	.0156	40	2.50	.0980	A	5.94	.2340	---	13.00	.5118
78	0.41	.0160	39	2.53	.0995	15/64	5.95	.2344	33/64	13.10	.5156
77	0.46	.0180	38	2.58	.1015	---	6.00	.2360	17/32	13.49	.5312
---	0.50	.0197	37	2.64	.1040	B	6.05	.2380	35/64	13.89	.5469
76	0.51	.0200	36	2.71	.1065	C	6.15	.2420	---	14.00	.5512
75	0.53	.0210	7/64	2.78	.1094	D	6.25	.2460	9/16	14.29	.5625
74	0.57	.0225	35	2.79	.1100	1/4	6.35	.2500	37/64	14.68	.5781
---	0.60	.0236	34	2.82	.1110	E	6.35	.2500	---	15.00	.5906
73	0.61	.0240	33	2.87	.1130	F	6.53	.2570	19/32	15.08	.5938
72	0.64	.0250	32	2.95	.1160	G	6.63	.2610	39/64	15.48	.6094
71	0.66	.0260	---	3.00	.1181	17/64	6.75	.2656	5/8	15.88	.6250
---	0.70	.0276	31	3.05	.1200	H	6.76	.2660	---	16.00	.6299
70	0.71	.0280	1/8	3.18	.1250	I	6.91	.2720	41/64	16.27	.6406
69	0.74	.0282	30	3.26	.1285	---	7.00	.2756	21/32	16.67	.6562
---	0.75	.0295	29	3.45	.1360	J	7.04	.2770	---	17.00	.6693
68	0.79	.0310	28	3.57	.1405	K	7.14	.2810	43/64	17.07	.6719
1/32	0.79	.0313	9/64	3.57	.1406	9/32	7.14	.2812	11/16	17.46	.6875
---	0.80	.0315	27	3.66	.1440	L	7.37	.2900	45/64	17.86	.7031
67	0.81	.0320	26	3.73	.1470	M	7.49	.2950	---	18.00	.7087
66	0.84	.0330	25	3.80	.1495	19/64	7.54	.2969	23/32	18.26	.7188
65	0.89	.0350	24	3.86	.1520	N	7.67	.3020	47/64	18.65	.7344
---	0.90	.0354	23	3.91	.1540	5/16	7.94	.3125	---	19.00	.7480
64	0.91	.0360	5/32	3.97	.1562	---	8.00	.3150	3/4	19.05	.7500
63	0.94	.0370	22	3.99	.1570	O	8.03	.3160	49/64	19.45	.7656
62	0.97	.0380	---	4.00	.1575	P	8.20	.3230	25/32	19.84	.7812
61	0.99	.0390	21	4.04	.1590	21/64	8.33	.3281	---	20.00	.7874
---	1.00	.0394	20	4.09	.1610	Q	8.43	.3320	51/64	20.24	.7969
60	1.02	.0400	19	4.22	.1660	R	8.61	.3390	13/16	20.64	.8125
59	1.04	.0410	18	4.31	.1695	11/32	8.73	.3438	---	21.00	.8268
58	1.07	.0420	11/64	4.37	.1719	S	8.84	.3480	53/64	21.03	.8281
57	1.09	.0430	17	4.39	.1730	---	9.00	.3543	27/32	21.43	.8438
56	1.18	.0465	16	4.50	.1770	T	9.09	.3580	55/64	21.84	.8594
3/64	1.19	.0469	15	4.57	.1800	23/64	9.13	.3594	---	22.00	.8661
55	1.32	.0520	14	4.62	.1820	U	9.35	.3680	7/8	22.23	.8750
54	1.40	.0550	13	4.70	.1850	3/8	9.53	.3750	57/64	22.62	.8906
53	1.51	.0595	3/16	4.76	.1875	V	9.56	.3770	---	23.00	.9055
1/16	1.59	.0625	12	4.80	.1890	W	9.80	.3860	29/32	23.02	.9062
52	1.61	.0635	11	4.85	.1910	25/64	9.92	.3906	59/64	23.42	.9219
51	1.70	.0670	10	4.91	.1935	---	10.00	.3937	15/16	23.81	.9375
50	1.78	.0700	9	4.98	.1960	X	10.08	.3970	---	24.00	.9449
49	1.85	.0730	---	5.00	.1968	Y	10.26	.4040	61/64	24.21	.9531
48	1.93	.0760	8	5.05	.1990	13/32	10.32	.4062	31/32	24.61	.9688
5/64	1.98	.0781	7	5.11	.2010	Z	10.49	.4130	---	25.00	.9843
47	1.99	.0785	13/64	5.16	.2031	27/64	10.72	.4219	63/64	25.00	.9844
---	2.00	.0787	6	5.18	.2040	---	11.00	.4331	1"	25.40	1.0000
46	2.06	.0810									

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