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WHY CHOOSE ULTRA BOR?



- **Substantially longer cutting life**

The nitro-carburized flute has an increased Rockwell hardness.

- **Cuts harder materials**

The flatter point takes a smaller chip. More torque is directed to a smaller area. This allows drilling into materials with hardness of over 30 on the Rockwell "C" scale.

- **Stops drill walking**

The split point design gives accurate starting without the use of a center punch.

- **Holds tighter hole size**

The split point design is self centering. This limits the normal oversize drilling characteristics.

- **Outstanding quality appearance**

The rich amber gold color sets it apart from commodity cutting tools.

- **Runs cooler, uses less torque**

135° point takes a smaller chip resulting in less heat. Friction is reduced by amber gold surface treatment.

- **Stops chuck slippage**

Flats on drill shanks allow easy positive chuck grip.

Why Choose Ultra Bor Super Premium

ULTRA BOR SUPER PREMIUM VS. COBALT

The **Ultra Bor Super Premium** drills will substantially outperform cobalt drills in work hardening stainless steel applications. This performance advantage is the result of construction differences between the two types of drills. Cobalt drills, manufactured to **Type J NAS 907** specs, have a very thick web. This web is necessary to limit breakage of the brittle cobalt steel. **Ultra Bor Super Premium** drills are made of special Hi-moly tool steel, which is much tougher than cobalt steel. The web on an **Ultra Bor Super Premium** drill can be thinned considerably due to the toughness of the steel.

A **Ultra Bor Super Premium** drill with its thin web will penetrate the work hardening stainless fast enough to continually cut beneath the chip which is hardening from deformation. This means the drill is cutting softer steel. The cobalt drill, with its thick web, cannot be fed at a fast enough rate to cut beneath the area which is hardening. As a result the cobalt drill is continually drilling into hardened steel.

STAINLESS STEEL WORK HARDENING VS. FREE MACHINING

Work hardening grades of stainless are the 300 series with the exception of 303, which is free machining. Free machining grades include the 400 series in addition to type 303. A quick way to identify work hardening vs free machining stainless is to observe the chip formation. Work hardening chips break up during the drilling process, while free machining chips are long and stringy.

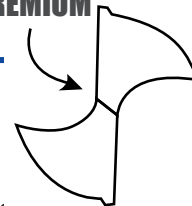
COBALT APPLICATIONS

Cobalt drills are recommended for free machining stainless (400 series & 303), titanium alloys and other high tensile strength materials. These applications require the high red hardness of cobalt steel to counter the substantial heat generated in the drilling process.

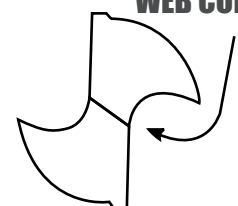
ULTRA BOR SUPER PREMIUM VS. COBALT

A **Ultra Bor Super Premium** drill with its thin web will penetrate the work hardening stainless fast enough to continually cut beneath the chip which is hardening from deformation. This means the drill is cutting softer steel. The cobalt drill, with its thick web, cannot be fed at a fast enough rate to cut beneath the area which is hardening. As a result the cobalt drill is continually drilling into hardened steel.

ULTRA BOR
SUPER PREMIUM



WEB COBALT



Jobber Length NAS 907B Heavy Duty 135° Split point

Type 240-UB Heavy Duty 6

Type 240-CN CN-TECH™ CRYO/NITRIDE 7

Type 643-UB 8 - 9

*Type 278-UB 3/8" Shank 7

Type 240-A Black Oxide 10 - 11

*Type 248-A V-Line Black Oxide. 15

Type 240-AN Titanium Nitride 10 - 11

Type 240-ACN Titanium Carbon Nitride. 12 - 14

Type 240-ALN Aluminum Titanium Nitride. 12 - 14

*Type 240-GF GoldStrike™ 3-flats 15

*Type 240-GFR GoldStrike™ 3/8" RS 15

*** Not NAS907B**

Mechanic Length 135° Split point

Type 250-UB 28

Type 258-UB 3/8" Shank 28

Type QR-UB 1/4" Hex Shank 29

Type 241-A V-line Black Oxide. 28

Jobber Length NAS 907A

Type 340-A Black Oxide 118° Split point . . 16

Jobber Length General Purpose 118° point

Type 240-B Bright Finish. 17 - 21

Type 643-W Metric - Bright Finish 22

Type 278 3/8" RS Bright Finish 23

Type 240-BN Titanium Nitride 17 - 21

Type 240 Black Oxide 17 - 21

Type 643 Metric - Black Oxide. 22

Type 248 V-Line Black Oxide 21

Type 230 Tang Drive 27

Jobber Length Parabolic 135° Split point

Type 240-P Black Oxide 25 - 26

Type 240-PT Titanium Nitride Coated . . . 25 - 26

Jobber Length Hi-Helix 135° SP

Type 240-SS Black & Gold 9

Jobber Length Hi-Helix 118° point

Type 240-F Bright Finish 24

Screw Machine Length NAS 907C

Type 260-UB 34 - 35

Type 260-T Black Oxide. 37

Type 260-TN Titanium Nitride Coated . . 37

Type 260-TW Bright Finish. 37

*Type 260-QT 1/4" Reduced Shank. . . . 36

*** Not NAS907B**

Screw Machine Length 118° point

Type 260 Bright Finish. 38 - 39

Type 260-BN Titanium Nitride. 38 - 39

1/4" Shank 118°

Type 275 23

Drill Blank

Type 240-DB

Fully Hardened - Precision Ground 50

Jobber Length Cobalt NAS 907J

Type 240-D M42 135° Split point 30

Type 240-DN M42 Titanium Nitride. 30

Type 240-AND M42 Titanium Aluminum Nitride . 30

Type 643-D M42 Metric - 135° Split pt. . . 31

DIN Length Wide Land Parabolic Cobalt

Type XGT-J M42 135° Split point. . . 32 - 33

Type XGT-JN M42 135° SP TiN Coated. 33

Screw Machine Length Cobalt

Type 260-D M42 135° Split point. . . . 35-36

Type 260-DN M42 Titanium Nitride Coated 35

Type 260-AND M42 Titanium Aluminum Nitride. . . 35

Silver & Deming 1/2" Shank

Type 280-UB 135° Split point 45

Type 280-UBM Metric - 135° Split point 45

Type 280-CN CN-TECH™ CRYO/NITRIDE 45

Type 280-UBX 118° Split point 3 - Flats 45

Type 280-VT VORTEX-POINT™ 46

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Silver & Deming 3/4" Shank

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135° Split point - Round Shank 46

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Type 221-PT Titanium Nitride Coated 135° SP. 42

Extra Length

Type XGT-UB 6" 9" 12" 43

Type 200 12" - OAL 9" Flute 43

Type 208 18" - OAL 12" Flute 43

Aircraft Extension

Type 211 6" - OAL Black Oxide NAS 907B . . 44

Type 209-D 6" - OAL Cobalt NAS 907J 44

Type 212 12" - OAL Black Oxide 44

Type 213-D 12" - OAL Cobalt NAS 907J 44

Taper Shank

Type 510 - Regular Shanks 48 - 49

Type 520 - Larger than Standard. 49

Type 500 - Smaller than Standard 49

Technical Reference . . . 51- 53



Jobber Length



HSS HEAVY-DUTY NAS 907B

Type 240-UB

NAS 907B Super Premium - 135° Split Point

- Nitro-Carburized
- Magnum will substantially outperform cobalt drills in work hardening stainless steel and other tough drilling applications.



Type 240-UB

Low temperature stress relief improves lubricity and toughness.

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 05580 | 1/16 | 1-7/8 | 7/8 | 12 |
| 05590 | 5/64 | 2" | 1 | 12 |
| 05600 | 3/32 | 2-1/4 | 1-1/4 | 12 |
| 05610 | 7/64 | 2-5/8 | 1-1/2 | 12 |
| 05620 | 1/8 | 2-3/4 | 1-5/8 | 12 |
| 05630 | 9/64 | 2-7/8 | 1-3/4 | 12 |
| 05640 | 5/32 | 3-1/8 | 2 | 12 |
| 05650 | 11/64 | 3-1/4 | 2-1/8 | 12 |
| 05660 | 3/16 | 3-1/2 | 2-5/16 | 12 |
| 05670 | 13/64 | 3-5/8 | 2-7/16 | 12 |
| 05680 | 7/32 | 3-3/4 | 2-1/2 | 12 |
| 05690 | 15/64 | 3-7/8 | 2-5/8 | 12 |
| 05700 | 1/4 | 4" | 2-3/4 | 12 |
| 05710 | 17/64 | 4-1/8 | 2-7/8 | 12 |
| 05720 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 05730 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 05740 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 05750 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 05760 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 05770 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 05780 | 3/8 | 5" | 3-5/8 | 6 |
| 05790 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 05800 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 05810 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 05820 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 05830 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 05840 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 05850 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 05860 | 1/2 | 6" | 4-1/2 | 6 |
| 22210 | 33/64 | 6-5/8 | 4-13/16 | 1 |
| 22220 | 17/32 | 6-5/8 | 4-13/16 | 1 |
| 22230 | 35/64 | 6-5/8 | 4-13/16 | 1 |
| 22240 | 9/16 | 6-5/8 | 4-13/16 | 1 |
| 22250 | 37/64 | 6-5/8 | 4-13/16 | 1 |
| 22260 | 19/32 | 7-1/8 | 5-3/16 | 1 |
| 22270 | 39/64 | 7-1/8 | 5-3/16 | 1 |
| 22280 | 5/8 | 7-1/8 | 5-3/16 | 1 |
| 22290 | 41/64 | 7-1/8 | 5-3/16 | 1 |
| 22300 | 21/32 | 7-1/8 | 5-3/16 | 1 |
| 22310 | 43/64 | 7-5/8 | 5-5/8 | 1 |
| 22320 | 11/16 | 7-5/8 | 5-5/8 | 1 |
| 22330 | 45/64 | 7-5/8 | 5-5/8 | 1 |
| 22340 | 23/32 | 7-5/8 | 5-5/8 | 1 |
| 22350 | 47/64 | 7-5/8 | 5-5/8 | 1 |
| 22360 | 3/4 | 7-3/8 | 5-5/8 | 1 |

Larger sizes available in 280-UB section

LETTER

| Part # | Letter Size | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-------------|-----------------------|---------------------|---------------|
| 39460 | A | 3-7/8 | 2-5/8 | 12 |
| 39470 | B | 4" | 2-3/4 | 12 |
| 39480 | C | 4" | 2-3/4 | 12 |
| 39490 | D | 4" | 2-3/4 | 12 |
| 39500 | E | 4" | 2-3/4 | 12 |
| 39510 | F | 4-1/8 | 2-7/8 | 12 |
| 39520 | G | 4-1/8 | 2-7/8 | 12 |
| 39530 | H | 4-1/8 | 2-7/8 | 12 |
| 39540 | I | 4-1/8 | 2-7/8 | 12 |
| 39550 | J | 4-1/8 | 2-7/8 | 12 |
| 39560 | K | 4-1/4 | 2-15/16 | 12 |
| 39570 | L | 4-1/4 | 2-15/16 | 12 |
| 39580 | M | 4-3/8 | 3-1/16 | 6 |
| 39590 | N | 4-3/8 | 3-1/16 | 6 |
| 39600 | O | 4-1/2 | 3-3/16 | 6 |
| 39610 | P | 4-5/8 | 3-5/16 | 6 |
| 39620 | Q | 4-3/4 | 3-7/16 | 6 |
| 39630 | R | 4-3/4 | 3-7/16 | 6 |
| 39640 | S | 4-7/8 | 3-1/2 | 6 |

Wire Continued Next Column

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 39650 | T | 4-7/8 | 3-1/2 | 6 |
| 39660 | U | 5" | 3-5/8 | 6 |
| 39670 | V | 5" | 3-5/8 | 6 |
| 39680 | W | 5-1/8 | 3-3/4 | 6 |
| 39690 | X | 5-1/8 | 3-3/4 | 6 |
| 39700 | Y | 5-1/4 | 3-7/8 | 6 |
| 39710 | Z | 5-1/4 | 3-7/8 | 6 |

WIRE

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 38940 | 1 | 3-7/8 | 2-5/8 | 12 |
| 38950 | 2 | 3-7/8 | 2-5/8 | 12 |
| 38960 | 3 | 3-3/4 | 2-1/2 | 12 |
| 38970 | 4 | 3-3/4 | 2-1/2 | 12 |
| 38980 | 5 | 3-3/4 | 2-1/2 | 12 |
| 38990 | 6 | 3-3/4 | 2-1/2 | 12 |
| 39000 | 7 | 3-5/8 | 2-7/16 | 12 |
| 39010 | 8 | 3-5/8 | 2-7/16 | 12 |
| 39020 | 9 | 3-5/8 | 2-7/16 | 12 |
| 39030 | 10 | 3-5/8 | 2-7/16 | 12 |
| 39040 | 11 | 3-1/2 | 2-5/16 | 12 |
| 39050 | 12 | 3-1/2 | 2-5/16 | 12 |
| 39060 | 13 | 3-1/2 | 2-5/16 | 12 |
| 39070 | 14 | 3-3/8 | 2-3/16 | 12 |
| 39080 | 15 | 3-3/8 | 2-3/16 | 12 |
| 39090 | 16 | 3-3/8 | 2-3/16 | 12 |
| 39100 | 17 | 3-3/8 | 2-3/16 | 12 |
| 39110 | 18 | 3-1/4 | 2-1/8 | 12 |
| 39120 | 19 | 3-1/4 | 2-1/8 | 12 |
| 39130 | 20 | 3-1/4 | 2-1/8 | 12 |
| 39140 | 21 | 3-1/4 | 2-1/8 | 12 |
| 39150 | 22 | 3-1/8 | 2" | 12 |
| 39160 | 23 | 3-1/8 | 2" | 12 |
| 39170 | 24 | 3-1/8 | 2" | 12 |
| 39180 | 25 | 3" | 1-7/8 | 12 |
| 39190 | 26 | 3" | 1-7/8 | 12 |
| 39200 | 27 | 3" | 1-7/8 | 12 |
| 39210 | 28 | 2-7/8 | 1-3/4 | 12 |
| 39220 | 29 | 2-7/8 | 1-3/4 | 12 |
| 39230 | 30 | 2-3/4 | 1-5/8 | 12 |
| 92310 | 31 | 2-3/4 | 1-5/8 | 12 |
| 92300 | 32 | 2-3/4 | 1-5/8 | 12 |
| 92290 | 33 | 2-5/8 | 1-1/2 | 12 |
| 92280 | 34 | 2-5/8 | 1-1/2 | 12 |
| 92270 | 35 | 2-5/8 | 1-1/2 | 12 |
| 92260 | 36 | 2-1/2 | 1-7/16 | 12 |
| 92250 | 37 | 2-1/2 | 1-7/16 | 12 |
| 92240 | 38 | 2-1/2 | 1-7/16 | 12 |
| 92230 | 39 | 2-3/8 | 1-3/8 | 12 |
| 92220 | 40 | 2-3/8 | 1-3/8 | 12 |
| 88420 | 41 | 2-3/8 | 1-3/8 | 12 |
| 88410 | 42 | 2-1/4 | 1-1/4 | 12 |
| 88400 | 43 | 2-1/4 | 1-1/4 | 12 |
| 88390 | 44 | 2-1/8 | 1-1/8 | 12 |
| 88380 | 45 | 2-1/8 | 1-1/8 | 12 |
| 88370 | 46 | 2-1/8 | 1-1/8 | 12 |
| 88360 | 47 | 2" | 1" | 12 |
| 88350 | 48 | 2" | 1" | 12 |
| 88340 | 49 | 2" | 1" | 12 |
| 88330 | 50 | 2" | 1" | 12 |
| 88320 | 51 | 2" | 1" | 12 |
| 88310 | 52 | 1-7/8 | 7/8 | 12 |
| 88300 | 53 | 1-7/8 | 7/8 | 12 |
| 88290 | 54 | 1-7/8 | 7/8 | 12 |
| 88280 | 55 | 1-7/8 | 7/8 | 12 |
| 88270 | 56 | 1-3/4 | 3/4 | 12 |
| 88260 | 57 | 1-3/4 | 3/4 | 12 |
| 88250 | 58 | 1-5/8 | 11/16 | 12 |
| 88240 | 59 | 1-5/8 | 11/16 | 12 |
| 88230 | 60 | 1-5/8 | 11/16 | 12 |

HSS CN-TECH NAS 907B & 3/8" REDUCED SHANK

Type 240-CN CN-TECH™ CRYO/NITRIDE 135° Split Point

- Nitride process case hardening resulting in superior tool life and exceptional corrosion resistance.
- Cryogenic treatment at -300° F increases toughness while reducing brittleness.



| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 47032 | 1/16 | 1-7/8 | 7/8 | 12 |
| 47042 | 5/64" | 2" | 1" | 12 |
| 47052 | 3/32 | 2-1/4 | 1-1/4 | 12 |
| 47062 | 7/64 | 2-5/8 | 1-1/2 | 12 |
| 47072 | 1/8 | 2-3/4 | 1-5/8 | 12 |
| 47082 | 9/64 | 2-7/8 | 1-3/4 | 12 |
| 47092 | 5/32" | 3-1/8" | 2" | 12 |
| 47102 | 11/64 | 3-1/4 | 2-1/8 | 12 |
| 47112 | 3/16 | 3-1/2 | 2-5/16 | 12 |
| 47122 | 13/64 | 3-5/8 | 2-7/16 | 12 |
| 47132 | 7/32 | 3-3/4 | 2-1/2 | 12 |
| 47142 | 15/64 | 3-7/8 | 2-5/8 | 12 |
| 47152 | 1/4" | 4" | 2-3/4" | 12 |
| 47162 | 17/64 | 4-1/8 | 2-7/8 | 12 |
| 47172 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 47182 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 47192 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 47202 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 47212 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 47222 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 47232 | 3/8" | 5" | 3-5/8" | 6 |
| 47242 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 47252 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 47262 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 47272 | 7/16" | 5-1/2 | 4-1/16 | 6 |
| 47282 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 47292 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 47302 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 47312 | 1/2" | 6" | 4-1/2" | 6 |

LETTER

| Part # | Letter Size | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-------------|-----------------------|---------------------|---------------|
| 47522 | A | 3-7/8 | 2-5/8 | 12 |
| 47532 | B | 4" | 2-3/4 | 12 |
| 47542 | C | 4" | 2-3/4 | 12 |
| 47552 | D | 4" | 2-3/4 | 12 |
| 47562 | E | 4" | 2-3/4 | 12 |
| 47572 | F | 4-1/8 | 2-7/8 | 12 |
| 47582 | G | 4-1/8 | 2-7/8 | 12 |
| 47592 | H | 4-1/8 | 2-7/8 | 12 |
| 47602 | I | 4-1/8 | 2-7/8 | 12 |
| 47612 | J | 4-1/8 | 2-7/8 | 12 |
| 47622 | K | 4-1/4 | 2-15/16 | 12 |
| 47632 | L | 4-1/4 | 2-15/16 | 12 |
| 47642 | M | 4-3/8 | 3-1/16 | 6 |
| 47652 | N | 4-3/8 | 3-1/16 | 6 |
| 47662 | O | 4-1/2 | 3-3/16 | 6 |
| 47672 | P | 4-5/8 | 3-5/16 | 6 |
| 47682 | Q | 4-3/4 | 3-7/16 | 6 |
| 47692 | R | 4-3/4 | 3-7/16 | 6 |
| 47702 | S | 4-7/8 | 3-1/2 | 6 |
| 47712 | T | 4-7/8 | 3-1/2 | 6 |
| 47722 | U | 5" | 3-5/8 | 6 |
| 47732 | V | 5" | 3-5/8 | 6 |
| 47742 | W | 5-1/8 | 3-3/4 | 6 |
| 47752 | X | 5-1/8 | 3-3/4 | 6 |
| 47762 | Y | 5-1/4 | 3-7/8 | 6 |
| 47772 | Z | 5-1/4 | 3-7/8 | 6 |

WIRE

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 47782 | 1 | 3-7/8 | 2-5/8 | 12 |
| 47792 | 2 | 3-7/8 | 2-5/8 | 12 |
| 47802 | 3 | 3-3/4 | 2-1/2 | 12 |
| 47812 | 4 | 3-3/4 | 2-1/2 | 12 |
| 47822 | 5 | 3-3/4 | 2-1/2 | 12 |
| 47832 | 6 | 3-3/4 | 2-1/2 | 12 |
| 47842 | 7 | 3-5/8 | 2-7/16 | 12 |
| 47852 | 8 | 3-5/8 | 2-7/16 | 12 |
| 47862 | 9 | 3-5/8 | 2-7/16 | 12 |

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 47872 | 10 | 3-5/8 | 2-7/16 | 12 |
| 47882 | 11 | 3-1/2 | 2-5/16 | 12 |
| 47892 | 12 | 3-1/2 | 2-5/16 | 12 |
| 47902 | 13 | 3-1/2 | 2-5/16 | 12 |
| 47912 | 14 | 3-3/8 | 2-3/16 | 12 |
| 47922 | 15 | 3-3/8 | 2-3/16 | 12 |
| 47932 | 16 | 3-3/8 | 2-3/16 | 12 |
| 47942 | 17 | 3-3/8 | 2-3/16 | 12 |
| 47952 | 18 | 3-1/4 | 2-1/8 | 12 |
| 47962 | 19 | 3-1/4 | 2-1/8 | 12 |
| 47972 | 20 | 3-1/4 | 2-1/8 | 12 |
| 47982 | 21 | 3-1/4 | 2-1/8 | 12 |
| 47992 | 22 | 3-1/8 | 2" | 12 |
| 48002 | 23 | 3-1/8 | 2" | 12 |
| 48012 | 24 | 3-1/8 | 2" | 12 |
| 48022 | 25 | 3" | 1-7/8 | 12 |
| 48032 | 26 | 3" | 1-7/8 | 12 |
| 48042 | 27 | 3" | 1-7/8 | 12 |
| 48052 | 28 | 2-7/8 | 1-3/4 | 12 |
| 48062 | 29 | 2-7/8 | 1-3/4 | 12 |
| 48072 | 30 | 2-3/4 | 1-5/8 | 12 |
| 48082 | 31 | 2-3/4 | 1-5/8 | 12 |
| 48092 | 32 | 2-3/4 | 1-5/8 | 12 |
| 48102 | 33 | 2-5/8 | 1-1/2 | 12 |
| 48112 | 34 | 2-5/8 | 1-1/2 | 12 |
| 48122 | 35 | 2-5/8 | 1-1/2 | 12 |
| 48132 | 36 | 2-1/2 | 1-7/16 | 12 |
| 48142 | 37 | 2-1/2 | 1-7/16 | 12 |
| 48152 | 38 | 2-1/2 | 1-7/16 | 12 |
| 48162 | 39 | 2-3/8 | 1-3/8 | 12 |
| 48172 | 40 | 2-3/8 | 1-3/8 | 12 |
| 48182 | 41 | 2-3/8 | 1-3/8 | 12 |
| 48192 | 42 | 2-1/4 | 1-1/4 | 12 |
| 48202 | 43 | 2-1/4 | 1-1/4 | 12 |
| 48212 | 44 | 2-1/8 | 1-1/8 | 12 |
| 48222 | 45 | 2-1/8 | 1-1/8 | 12 |
| 48232 | 46 | 2-1/8 | 1-1/8 | 12 |
| 48242 | 47 | 2" | 1" | 12 |
| 48252 | 48 | 2" | 1" | 12 |
| 48262 | 49 | 2" | 1" | 12 |
| 48272 | 50 | 2" | 1" | 12 |
| 48282 | 51 | 2" | 1" | 12 |
| 48292 | 52 | 1-7/8 | 7/8 | 12 |
| 48302 | 53 | 1-7/8 | 7/8 | 12 |
| 48312 | 54 | 1-7/8 | 7/8 | 12 |
| 48322 | 55 | 1-7/8 | 7/8 | 12 |
| 48332 | 56 | 1-3/4 | 3/4 | 12 |
| 48342 | 57 | 1-3/4 | 3/4 | 12 |
| 48352 | 58 | 1-5/8 | 11/16 | 12 |
| 48362 | 59 | 1-5/8 | 11/16 | 12 |
| 48372 | 60 | 1-5/8 | 11/16 | 12 |

Type 278-UB

3/8" Reduced Shank Magnum Super Premium

- 135° split point for fast penetration and accurate starting without center punch.
- Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance.



Type 278-UB

Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 59200 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 59210 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 59220 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 59230 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 59240 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 59250 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 59260 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 59270 | 1/2 | 6" | 4-1/2 | 6 |
| 59280 | 17/32 | 6" | 4-1/4 | 1 |
| 59290 | 9/16 | 6" | 4-1/4 | 1 |
| 59300 | 19/32 | 6" | 4-1/4 | 1 |
| 59310 | 5/8 | 6" | 4-1/4 | 1 |

These items are also available carded. See Price List Catalog for details.

Jobber Length



NAS 907B - METRIC

Type 643-UB

Ultra Bor Super Premium -
135° Split point, NAS 907B

- 135° split point provides fast penetration and accurate starting without a center punch.
- Withstands substantially higher drilling temperatures while maintaining sharpness.



Type 643-UB

Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications.

METRIC

| Part # | Dia. MM | Overall Length MM | Inches | Flute Length MM | Inches | Qty. per/pack | Part # | Dia. MM | Overall Length MM | Inches | Flute Length MM | Inches | Qty. per/pack |
|--------|---------|-------------------|---------|-----------------|---------|---------------|--------|---------|-------------------|--------|-----------------|---------|---------------|
| 48760 | 0.70 | 32 | 1-1/4 | 10 | 25/64 | 10 | 49270 | 4.00 | 83 | 3-1/4 | 54 | 2-1/8 | 10 |
| 48780 | 0.80 | 35 | 1-3/8 | 13 | 1/2 | 10 | 49280 | 4.10 | 83 | 3-1/4 | 54 | 2-1/8 | 10 |
| 48790 | 0.85 | 38 | 1-1/2 | 16 | 5/8 | 10 | 49290 | 4.20 | 83 | 3-1/4 | 54 | 2-1/8 | 10 |
| 48800 | 0.90 | 38 | 1-1/2 | 16 | 5/8 | 10 | 49300 | 4.30 | 83 | 3-1/4 | 54 | 2-1/8 | 10 |
| 49990 | 0.95 | 38 | 1-1/2 | 16 | 5/8 | 10 | 49310 | 4.40 | 86 | 3-3/8 | 56 | 2-13/64 | 10 |
| 48690 | 0.98 | 38 | 1-1/2 | 16 | 5/8 | 10 | 49320 | 4.50 | 86 | 3-3/8 | 56 | 2-13/64 | 10 |
| 48820 | 1.00 | 41 | 1-5/8 | 17 | 11/16 | 10 | 49330 | 4.60 | 86 | 3-3/8 | 56 | 2-13/64 | 10 |
| 48750 | 1.05 | 41 | 1-5/8 | 17 | 11/16 | 10 | 49340 | 4.70 | 89 | 3-1/2 | 59 | 2-21/64 | 10 |
| 48840 | 1.10 | 44 | 1-3/4 | 19 | 3/4 | 10 | 49350 | 4.80 | 89 | 3-1/2 | 59 | 2-21/64 | 10 |
| 48850 | 1.15 | 44 | 1-3/4 | 19 | 3/4 | 10 | 49360 | 4.90 | 92 | 3-5/8 | 62 | 2-7/16 | 10 |
| 23270 | 1.18 | 44 | 1-3/4 | 19 | 3/4 | 10 | 49370 | 5.00 | 92 | 3-5/8 | 62 | 2-7/16 | 10 |
| 48860 | 1.20 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49380 | 5.10 | 92 | 3-5/8 | 62 | 2-7/16 | 10 |
| 48870 | 1.25 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49390 | 5.20 | 95 | 3-3/4 | 64 | 2-1/2 | 10 |
| 48880 | 1.30 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49400 | 5.30 | 95 | 3-3/4 | 64 | 2-1/2 | 10 |
| 48890 | 1.35 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49410 | 5.40 | 95 | 3-3/4 | 64 | 2-1/2 | 10 |
| 48900 | 1.40 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49420 | 5.50 | 95 | 3-3/4 | 64 | 2-1/2 | 10 |
| 48910 | 1.45 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49430 | 5.60 | 98 | 3-7/8 | 67 | 2-5/8 | 10 |
| 48920 | 1.50 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49440 | 5.70 | 98 | 3-7/8 | 67 | 2-5/8 | 10 |
| 48930 | 1.55 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49450 | 5.80 | 98 | 3-7/8 | 67 | 2-5/8 | 10 |
| 48940 | 1.60 | 48 | 1-7/8 | 22 | 7/8 | 10 | 49460 | 5.90 | 98 | 3-7/8 | 67 | 2-5/8 | 10 |
| 48950 | 1.65 | 51 | 2 | 25 | 1 | 10 | 49470 | 6.00 | 102 | 4 | 70 | 2-3/4 | 10 |
| 48960 | 1.70 | 51 | 2 | 25 | 1 | 10 | 49480 | 6.10 | 102 | 4 | 70 | 2-3/4 | 10 |
| 48970 | 1.75 | 51 | 2 | 25 | 1 | 10 | 49490 | 6.20 | 102 | 4 | 70 | 2-3/4 | 10 |
| 48980 | 1.80 | 51 | 2 | 25 | 1 | 10 | 49500 | 6.30 | 102 | 4 | 70 | 2-3/4 | 10 |
| 49000 | 1.90 | 51 | 2 | 25 | 1 | 10 | 49510 | 6.40 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 49010 | 1.95 | 51 | 2 | 25 | 1 | 10 | 49520 | 6.50 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 49020 | 2.00 | 51 | 2 | 25 | 1 | 10 | 49530 | 6.60 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 49030 | 2.05 | 54 | 2-1/8 | 29 | 1-5/32 | 10 | 49540 | 6.70 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 49040 | 2.10 | 54 | 2-1/8 | 29 | 1-5/32 | 10 | 49550 | 6.80 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 49060 | 2.20 | 57 | 2-1/4 | 32 | 1-1/4 | 10 | 49560 | 6.90 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 49080 | 2.30 | 57 | 2-1/4 | 32 | 1-1/4 | 10 | 49570 | 7.00 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 49100 | 2.40 | 60 | 2-23/64 | 35 | 1-3/8 | 10 | 49580 | 7.10 | 108 | 4-1/4 | 75 | 2-61/64 | 10 |
| 49120 | 2.50 | 60 | 2-23/64 | 35 | 1-3/8 | 10 | 49590 | 7.20 | 108 | 4-1/4 | 75 | 2-61/64 | 10 |
| 49130 | 2.60 | 64 | 2-1/2 | 37 | 1-29/64 | 10 | 49600 | 7.30 | 108 | 4-1/4 | 75 | 2-61/64 | 10 |
| 49140 | 2.70 | 64 | 2-1/2 | 37 | 1-15/32 | 10 | 49610 | 7.40 | 111 | 4-3/8 | 78 | 3 | 10 |
| 49150 | 2.80 | 67 | 2-5/8 | 38 | 1-1/2 | 10 | 49620 | 7.50 | 111 | 4-3/8 | 78 | 3 | 5 |
| 49160 | 2.90 | 70 | 2-3/4 | 41 | 1-5/8 | 10 | 49630 | 7.60 | 111 | 4-3/8 | 78 | 3 | 5 |
| 49170 | 3.00 | 70 | 2-3/4 | 41 | 1-5/8 | 10 | 49640 | 7.70 | 114 | 4-1/2 | 81 | 3-3/16 | 5 |
| 49180 | 3.10 | 70 | 2-3/4 | 41 | 1-5/8 | 10 | 49650 | 7.80 | 114 | 4-1/2 | 81 | 3-3/16 | 5 |
| 49190 | 3.20 | 70 | 2-3/4 | 41 | 1-5/8 | 10 | 49660 | 7.90 | 114 | 4-1/2 | 81 | 3-3/16 | 5 |
| 49200 | 3.30 | 73 | 2-7/8 | 45 | 1-3/4 | 10 | 49670 | 8.00 | 114 | 4-1/2 | 81 | 3-3/16 | 5 |
| 49210 | 3.40 | 73 | 2-7/8 | 45 | 1-3/4 | 10 | 49680 | 8.10 | 117 | 4-9/16 | 84 | 3-5/16 | 5 |
| 49220 | 3.50 | 73 | 2-7/8 | 45 | 1-3/4 | 10 | 49690 | 8.20 | 117 | 4-9/16 | 84 | 3-5/16 | 5 |
| 49230 | 3.60 | 76 | 3 | 48 | 1-7/8 | 10 | 49700 | 8.30 | 117 | 4-9/16 | 84 | 3-5/16 | 5 |
| 49240 | 3.70 | 76 | 3 | 48 | 1-7/8 | 10 | 49710 | 8.40 | 121 | 4-3/4 | 87 | 3-27/64 | 5 |
| 49250 | 3.80 | 76 | 3 | 48 | 1-7/8 | 10 | | | | | | | |
| 49260 | 3.90 | 79 | 3-1/8 | 51 | 2 | 10 | | | | | | | |

Metric sizes continued on page 9

NAS 907B - METRIC & HIGH HELIX FLUTES



Type 643-UB

Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications.

Type 643-UB

Ultra Bor Super Premium
- NAS 907B 135° Split point

- 135° split point provides fast penetration and accurate starting without a center punch.
- Withstands substantially higher drilling temperatures while maintaining sharpness.

METRIC

| Part # | Dia. MM | Overall Length MM | Inches | Flute Length MM | Inches | Qty. per/pack | Part # | Dia. MM | Overall Length MM | Inches | Flute Length MM | Inches | Qty. per/pack |
|--------|---------|-------------------|---------|-----------------|---------|---------------|--------|---------|-------------------|--------|-----------------|---------|---------------|
| 49720 | 8.50 | 121 | 4-3/4 | 87 | 3-27/64 | 5 | 12470 | 10.90 | 140 | 5-1/2 | 103 | 4-1/16 | 5 |
| 49730 | 8.60 | 121 | 4-3/4 | 87 | 3-27/64 | 5 | 49910 | 11.00 | 140 | 5-1/2 | 103 | 4-1/16 | 5 |
| 49740 | 8.70 | 121 | 4-3/4 | 87 | 3-27/64 | 5 | 12480 | 11.10 | 140 | 5-1/2 | 103 | 4-1/16 | 5 |
| 49750 | 8.80 | 124 | 4-7/8 | 89 | 3-1/2 | 5 | 49920 | 11.20 | 143 | 5-5/8 | 106 | 4-7/32 | 5 |
| 49760 | 8.90 | 124 | 4-7/8 | 89 | 3-1/2 | 5 | 50240 | 11.30 | 143 | 5-5/8 | 106 | 4-7/32 | 5 |
| 49770 | 9.00 | 124 | 4-7/8 | 89 | 3-1/2 | 5 | 12490 | 11.40 | 143 | 5-5/8 | 106 | 4-7/32 | 5 |
| 49780 | 9.10 | 124 | 4-7/8 | 89 | 3-1/2 | 5 | 49930 | 11.50 | 143 | 5-5/8 | 106 | 4-7/32 | 5 |
| 49790 | 9.20 | 127 | 5 | 92 | 3-5/8 | 5 | 12500 | 11.60 | 143 | 5-5/8 | 106 | 4-7/32 | 5 |
| 49800 | 9.30 | 127 | 5 | 92 | 3-5/8 | 5 | 50250 | 11.70 | 146 | 5-3/4 | 110 | 4-11/32 | 5 |
| 49810 | 9.40 | 127 | 5 | 92 | 3-5/8 | 5 | 49940 | 11.80 | 146 | 5-3/4 | 110 | 4-11/32 | 5 |
| 49820 | 9.50 | 127 | 5 | 92 | 3-5/8 | 5 | 12520 | 11.90 | 146 | 5-3/4 | 110 | 4-11/32 | 5 |
| 49830 | 9.60 | 130 | 5-1/8 | 95 | 3-3/4 | 5 | 49950 | 12.00 | 149 | 5-7/8 | 111 | 4-3/8 | 5 |
| 49840 | 9.70 | 130 | 5-1/8 | 95 | 3-3/4 | 5 | 12530 | 12.10 | 149 | 5-7/8 | 111 | 4-3/8 | 5 |
| 49850 | 9.80 | 130 | 5-1/8 | 95 | 3-3/4 | 5 | 49960 | 12.20 | 149 | 5-7/8 | 111 | 4-3/8 | 5 |
| 49860 | 9.90 | 130 | 5-1/8 | 95 | 3-3/4 | 5 | 50260 | 12.30 | 149 | 5-7/8 | 111 | 4-3/8 | 5 |
| 49870 | 10.00 | 130 | 5-1/8 | 95 | 3-3/4 | 5 | 12540 | 12.40 | 149 | 5-7/8 | 111 | 4-3/8 | 5 |
| 12450 | 10.10 | 130 | 5-1/8 | 95 | 3-3/4 | 5 | 49970 | 12.50 | 152 | 6 | 114 | 4-1/2 | 5 |
| 49880 | 10.20 | 133 | 5-15/64 | 98 | 3-7/8 | 5 | 12550 | 12.60 | 152 | 6 | 114 | 4-1/2 | 5 |
| 12510 | 10.30 | 133 | 5-15/64 | 98 | 3-7/8 | 5 | 12570 | 12.70 | 152 | 6 | 114 | 4-1/2 | 5 |
| 50220 | 10.40 | 133 | 5-15/64 | 98 | 3-7/8 | 5 | 50270 | 12.80 | 152 | 6 | 114 | 4-1/2 | 5 |
| 49890 | 10.50 | 133 | 5-15/64 | 98 | 3-7/8 | 5 | 12560 | 12.90 | 152 | 6 | 114 | 4-1/2 | 5 |
| 12460 | 10.60 | 137 | 5-3/8 | 100 | 3-15/16 | 5 | 49980 | 13.00 | 152 | 6 | 114 | 4-1/2 | 5 |
| 50230 | 10.70 | 137 | 5-3/8 | 100 | 3-15/16 | 5 | | | | | | | |
| 49900 | 10.80 | 140 | 5-1/2 | 103 | 4-1/16 | 5 | | | | | | | |

Larger sizes in 280-UBM section page 46

HIGH HELIX FLUTES



Type 240-SS

Ultra Bor Super Premium
135° Split Point

- High Helix Flute design allows for increased feed rates.
- 135° split point provides fast penetration and accurate starting without a center punch.
- Recommended for stainless steel, aluminum, brass and all other non-ferrous metals.

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack | Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|--------|-----------------|-----------------------|---------------------|---------------|
| 41301 | 1/16" | 1-7/8 | 7/8 | 12 | 41451 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 41311 | 5/64" | 2" | 1" | 12 | 41461 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 41321 | 3/32" | 2-1/4 | 1-1/4 | 12 | 41471 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 41331 | 7/64" | 2-5/8 | 1-1/2 | 12 | 41481 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 41341 | 1/8" | 2-3/4 | 1-5/8 | 12 | 41491 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 41351 | 9/64" | 2-7/8 | 1-3/4 | 12 | 41501 | 3/8 | 5" | 3-5/8" | 6 |
| 41361 | 5/32" | 3-1/8" | 2" | 12 | 41511 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 41371 | 11/64" | 3-1/4 | 2-1/8 | 12 | 41521 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 41381 | 3/16" | 3-1/2 | 2-5/16 | 12 | 41531 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 41391 | 13/64" | 3-5/8 | 2-7/16 | 12 | 41541 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 41401 | 7/32" | 3-3/4 | 2-1/2 | 12 | 41551 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 41411 | 15/64" | 3-7/8 | 2-5/8 | 12 | 41561 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 41421 | 1/4" | 4" | 2-3/4" | 12 | 41571 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 41431 | 17/64" | 4-1/8 | 2-7/8 | 12 | 41581 | 1/2 | 6" | 4-1/2" | 6 |
| 41441 | 9/32" | 4-1/4 | 2-15/16 | 12 | | | | | |

HSS HEAVY-DUTY NAS 907B

Type 240-A Black Oxide, Type 240-AN Titanium Nitride

135° Split point

- Heavy-duty construction for drilling in tougher materials
- Manufactured from premium high-speed steel
- 135° split point is self-centering for reduce thrust and easier penetration
- Manufactured to **NAS 907B** aerospace specification



Type 240-A

Black Oxide surface finish increases wear resistance and adds lubricity to improve chip flow.



Type 240-AN

Titanium nitride (TiN) coating adds lubricity and hardness, enhancing chip flow, finish hole quality and drill life.

FRACTIONAL

| Type 240-A Black Oxide Part # | Type 240-AN Titanium Nitride Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Type 240-A Black Oxide Qty. per/pack | Type 240-AN Titanium Nitride Qty. per/pack |
|-------------------------------------|-------------------------------------------|--------------------|-----------------------------|---------------------------|--------------------------------------------|--------------------------------------------------|
| 04490 | 97890 | 1/16 | 1-7/8 | 7/8 | 12 | 6 |
| 04500 | 97880 | 5/64 | 2 | 1 | 12 | 6 |
| 04510 | 97870 | 3/32 | 2-1/4 | 1-1/4 | 12 | 6 |
| 04520 | 97860 | 7/64 | 2-5/8 | 1-1/2 | 12 | 6 |
| 04530 | 97850 | 1/8 | 2-3/4 | 1-5/8 | 12 | 6 |
| 04540 | 97840 | 9/64 | 2-7/8 | 1-3/4 | 12 | 6 |
| 04550 | 97830 | 5/32 | 3-1/8 | 2 | 12 | 6 |
| 04560 | 97820 | 11/64 | 3-1/4 | 2-1/8 | 12 | 6 |
| 04570 | 97810 | 3/16 | 3-1/2 | 2-5/16 | 12 | 6 |
| 16600 | 97800 | 13/64 | 3-5/8 | 2-7/16 | 12 | 6 |
| 16610 | 97790 | 7/32 | 3-3/4 | 2-1/2 | 12 | 6 |
| 16620 | 97780 | 15/64 | 3-7/8 | 2-5/8 | 12 | 6 |
| 16630 | 97770 | 1/4 | 4 | 2-3/4 | 12 | 6 |
| 16640 | 97760 | 17/64 | 4-1/8 | 2-7/8 | 12 | 6 |
| 16650 | 97750 | 9/32 | 4-1/4 | 2-15/16 | 12 | 6 |
| 16670 | 97740 | 19/64 | 4-3/8 | 3-1/16 | 6 | 3 |
| 16680 | 97730 | 5/16 | 4-1/2 | 3-3/16 | 6 | 3 |
| 16690 | 97720 | 21/64 | 4-5/8 | 3-5/16 | 6 | 3 |
| 16700 | 97710 | 11/32 | 4-3/4 | 3-7/16 | 6 | 3 |
| 16710 | 97700 | 23/64 | 4-7/8 | 3-1/2 | 6 | 3 |
| 16720 | 97690 | 3/8 | 5 | 3-5/8 | 6 | 3 |
| 16730 | 97680 | 25/64 | 5-1/8 | 3-3/4 | 6 | 3 |
| 16740 | 97670 | 13/32 | 5-1/4 | 3-7/8 | 6 | 3 |
| 16750 | 97660 | 27/64 | 5-3/8 | 3-15/16 | 6 | 3 |
| 16760 | 97650 | 7/16 | 5-1/2 | 4-1/16 | 6 | 3 |
| 16770 | 97640 | 29/64 | 5-5/8 | 4-3/16 | 6 | 3 |
| 16780 | 97630 | 15/32 | 5-3/4 | 4-5/16 | 6 | 3 |
| 16790 | 97620 | 31/64 | 5-7/8 | 4-3/8 | 6 | 3 |
| 16800 | 97610 | 1/2 | 6 | 4-1/2 | 6 | 3 |

LETTER

| Type 240-A Black Oxide Part # | Type 240-AN Titanium Nitride Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Type 240-A Black Oxide Qty. per/pack | Type 240-AN Titanium Nitride Qty. per/pack |
|-------------------------------------|-------------------------------------------|-----------------|-----------------------------|---------------------------|--------------------------------------------|--------------------------------------------------|
| 05300 | 95710 | A | 3-7/8 | 2-5/8 | 12 | 6 |
| 05310 | 95700 | B | 4 | 2-3/4 | 12 | 6 |
| 05320 | 95690 | C | 4 | 2-3/4 | 12 | 6 |
| 05330 | 95680 | D | 4 | 2-3/4 | 12 | 6 |
| 05340 | 95670 | E | 4 | 2-3/4 | 12 | 6 |
| 05350 | 95660 | F | 4-1/8 | 2-7/8 | 12 | 6 |
| 05360 | 95650 | G | 4-1/8 | 2-7/8 | 12 | 6 |
| 05370 | 95640 | H | 4-1/8 | 2-7/8 | 12 | 6 |
| 05380 | 95630 | I | 4-1/8 | 2-7/8 | 12 | 6 |
| 05390 | 95620 | J | 4-1/8 | 2-7/8 | 12 | 6 |
| 05400 | 95610 | K | 4-1/4 | 2-15/16 | 12 | 6 |
| 05410 | 95600 | L | 4-1/4 | 2-15/16 | 12 | 6 |
| 05420 | 95590 | M | 4-3/8 | 3-1/16 | 6 | 3 |
| 05430 | 95580 | N | 4-3/8 | 3-1/16 | 6 | 3 |
| 05440 | 95570 | O | 4-1/2 | 3-3/16 | 6 | 3 |
| 05450 | 95560 | P | 4-5/8 | 3-5/16 | 6 | 3 |
| 05460 | 95550 | Q | 4-3/4 | 3-7/16 | 6 | 3 |
| 05470 | 95540 | R | 4-3/4 | 3-7/16 | 6 | 3 |
| 05480 | 95530 | S | 4-7/8 | 3-1/2 | 6 | 3 |

Letter sizes continued on page 11.

TiN

HSS Twist Drills - Heavy Duty HSS NAS 907B

HSS HEAVY-DUTY NAS 907B

Type 240-A Black Oxide, Type 240-AN Titanium Nitride

135° Split point



Type 240-A

Black Oxide surface finish increases wear resistance and adds lubricity to improve chip flow.



Type 240-AN

Titanium nitride (TiN) coating adds lubricity and hardness, enhancing chip flow, finish hole quality and drill life.

- Heavy-duty construction for drilling in tougher materials
 - Manufactured from premium high-speed steel
- 135° split point is self-centering for reducing thrust and easier penetration
 - Manufactured to **NAS 907B** aerospace specification

LETTER

| Type 240-A Black Oxide Part # | Type 240-AN Titanium Nitride Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Type 240-A Black Oxide Qty. per/pack | Type 240-AN Titanium Nitride Qty. per/pack |
|-------------------------------------|-------------------------------------------|-----------------|-----------------------------|---------------------------|--------------------------------------------|--------------------------------------------------|
| 05490 | 95520 | T | 4-7/8 | 3-1/2 | 6 | 3 |
| 05500 | 95510 | U | 5 | 3-5/8 | 6 | 3 |
| 05510 | 95500 | V | 5 | 3-5/8 | 6 | 3 |
| 05520 | 95490 | W | 5-1/8 | 3-3/4 | 6 | 3 |
| 05530 | 95480 | X | 5-1/8 | 3-3/4 | 6 | 3 |
| 05540 | 95470 | Y | 5-1/4 | 3-7/8 | 6 | 3 |
| 05550 | 95460 | Z | 5-1/4 | 3-7/8 | 6 | 3 |

WIRE

| Type 240-A Black Oxide Part # | Type 240-AN Titanium Nitride Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Type 240-A Black Oxide Qty. per/pack | Type 240-AN Titanium Nitride Qty. per/pack |
|-------------------------------------|-------------------------------------------|-----------------|-----------------------------|---------------------------|--------------------------------------------|--------------------------------------------------|
| 04780 | 98520 | 1 | 3-7/8 | 2-5/8 | 12 | 6 |
| 04790 | 98510 | 2 | 3-7/8 | 2-5/8 | 12 | 6 |
| 04800 | 98500 | 3 | 3-3/4 | 2-1/2 | 12 | 6 |
| 04810 | 98490 | 4 | 3-3/4 | 2-1/2 | 12 | 6 |
| 04820 | 98480 | 5 | 3-3/4 | 2-1/2 | 12 | 6 |
| 04830 | 98470 | 6 | 3-3/4 | 2-1/2 | 12 | 6 |
| 04840 | 98460 | 7 | 3-5/8 | 2-7/16 | 12 | 6 |
| 04850 | 98450 | 8 | 3-5/8 | 2-7/16 | 12 | 6 |
| 04860 | 98440 | 9 | 3-5/8 | 2-7/16 | 12 | 6 |
| 04870 | 98430 | 10 | 3-5/8 | 2-7/16 | 12 | 6 |
| 04880 | 98420 | 11 | 3-1/2 | 2-5/16 | 12 | 6 |
| 04890 | 98410 | 12 | 3-1/2 | 2-5/16 | 12 | 6 |
| 04900 | 98400 | 13 | 3-1/2 | 2-5/16 | 12 | 6 |
| 04910 | 98390 | 14 | 3-3/8 | 2-3/16 | 12 | 6 |
| 04920 | 98380 | 15 | 3-3/8 | 2-3/16 | 12 | 6 |
| 04930 | 98370 | 16 | 3-3/8 | 2-3/16 | 12 | 6 |
| 04940 | 98360 | 17 | 3-3/8 | 2-3/16 | 12 | 6 |
| 04950 | 98350 | 18 | 3-1/4 | 2-1/8 | 12 | 6 |
| 04960 | 98340 | 19 | 3-1/4 | 2-1/8 | 12 | 6 |
| 04970 | 98330 | 20 | 3-1/4 | 2-1/8 | 12 | 6 |
| 04980 | 98320 | 21 | 3-1/4 | 2-1/8 | 12 | 6 |
| 04990 | 98310 | 22 | 3-1/8 | 2 | 12 | 6 |
| 05000 | 98300 | 23 | 3-1/8 | 2 | 12 | 6 |
| 05010 | 98290 | 24 | 3-1/8 | 2 | 12 | 6 |
| 05020 | 98280 | 25 | 3 | 1-7/8 | 12 | 6 |
| 05030 | 98270 | 26 | 3 | 1-7/8 | 12 | 6 |
| 05040 | 98260 | 27 | 3 | 1-7/8 | 12 | 6 |
| 05050 | 98250 | 28 | 2-7/8 | 1-3/4 | 12 | 6 |
| 05060 | 98240 | 29 | 2-7/8 | 1-3/4 | 12 | 6 |
| 05070 | 98230 | 30 | 2-3/4 | 1-5/8 | 12 | 6 |
| 05080 | 98220 | 31 | 2-3/4 | 1-5/8 | 12 | 6 |
| 05090 | 98210 | 32 | 2-3/4 | 1-5/8 | 12 | 6 |
| 05100 | 98200 | 33 | 2-5/8 | 1-1/2 | 12 | 6 |
| 05110 | 98190 | 34 | 2-5/8 | 1-1/2 | 12 | 6 |
| 05120 | 98180 | 35 | 2-5/8 | 1-1/2 | 12 | 6 |
| 05130 | 98170 | 36 | 2-1/2 | 1-7/16 | 12 | 6 |
| 05140 | 98160 | 37 | 2-1/2 | 1-7/16 | 12 | 6 |
| 05150 | 98150 | 38 | 2-1/2 | 1-7/16 | 12 | 6 |
| 05160 | 98140 | 39 | 2-3/8 | 1-3/8 | 12 | 6 |
| 05170 | 98130 | 40 | 2-3/8 | 1-3/8 | 12 | 6 |
| 05180 | 98120 | 41 | 2-3/8 | 1-3/8 | 12 | 6 |
| 05190 | 98110 | 42 | 2-1/4 | 1-1/4 | 12 | 6 |
| 05200 | 98100 | 43 | 2-1/4 | 1-1/4 | 12 | 6 |
| 05210 | 98090 | 44 | 2-1/8 | 1-1/8 | 12 | 6 |
| 05220 | 98080 | 45 | 2-1/8 | 1-1/8 | 12 | 6 |
| 05230 | 98070 | 46 | 2-1/8 | 1-1/8 | 12 | 6 |
| 05240 | 98060 | 47 | 2 | 1 | 12 | 6 |
| 05250 | 98050 | 48 | 2 | 1 | 12 | 6 |
| 05260 | 98040 | 49 | 2 | 1 | 12 | 6 |
| 05270 | 98030 | 50 | 2 | 1 | 12 | 6 |
| 05280 | 98020 | 51 | 2 | 1 | 12 | 6 |
| 05290 | 98010 | 52 | 1-7/8 | 7/8 | 12 | 6 |

HSS HEAVY-DUTY NAS 907B

Type 240-ACN Carbon Nitride Type 240-ALN Aluminum Nitride

- Heavy-duty construction for drilling in tougher materials
- Manufactured from premium high-speed steel
- 135° split point is self-centering for reducing thrust and easier penetration
- Provides exceptional oxidation resistance and extreme hardness
- TiCN is harder and has a lower coefficient of friction than TiN coating.
- Recommended where moderate temperatures are generated.
- Manufactured to **NAS 907B** aerospace specification



TiCN Coating

Titanium carbon nitride (TiCN) coating raises cutting surface hardness greatly increasing resistance to wear.



TiAlN Coating

Titanium aluminum nitride (TiAlN) designed for use in high temperature operations and difficult to machine material

FRACTIONAL

| Type 240- ACN TiCN Coated | Type 240-ALN TiAlN Coated | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|------------------------------|------------------------------|--------------------|-----------------------------|---------------------------|------------------|
| 80002 | 80000 | 1/16 | 1-7/8 | 7/8 | 6 |
| 80012 | 80010 | 5/64 | 2 | 1 | 6 |
| 80022 | 80020 | 3/32 | 2-1/4 | 1-1/4 | 6 |
| 80032 | 80030 | 7/64 | 2-5/8 | 1-1/2 | 6 |
| 80042 | 80040 | 1/8 | 2-3/4 | 1-5/8 | 6 |
| 80052 | 80050 | 9/64 | 2-7/8 | 1-3/4 | 6 |
| 80062 | 80060 | 5/32 | 3-1/8 | 2 | 6 |
| 80072 | 80070 | 11/64 | 3-1/4 | 2-1/8 | 6 |
| 80082 | 80080 | 3/16 | 3-1/2 | 2-5/16 | 6 |
| 80092 | 80090 | 13/64 | 3-5/8 | 2-7/16 | 6 |
| 80102 | 80100 | 7/32 | 3-3/4 | 2-1/2 | 6 |
| 80112 | 80110 | 15/64 | 3-7/8 | 2-5/8 | 6 |
| 80122 | 80120 | 1/4 | 4 | 2-3/4 | 6 |
| 80132 | 80130 | 17/64 | 4-1/8 | 2-7/8 | 6 |
| 80142 | 80140 | 9/32 | 4-1/4 | 2-15/16 | 6 |
| 80152 | 80150 | 19/64 | 4-3/8 | 3-1/16 | 3 |
| 80162 | 80160 | 5/16 | 4-1/2 | 3-3/16 | 3 |
| 80172 | 80170 | 21/64 | 4-5/8 | 3-5/16 | 3 |
| 80182 | 80180 | 11/32 | 4-3/4 | 3-7/16 | 3 |
| 80192 | 80190 | 23/64 | 4-7/8 | 3-1/2 | 3 |
| 80202 | 80200 | 3/8 | 5 | 3-5/8 | 3 |
| 80212 | 80210 | 25/64 | 5-1/8 | 3-3/4 | 3 |
| 80222 | 80220 | 13/32 | 5-1/4 | 3-7/8 | 3 |
| 80232 | 80230 | 27/64 | 5-3/8 | 3-15/16 | 3 |
| 80242 | 80240 | 7/16 | 5-1/2 | 4-1/16 | 3 |
| 80252 | 80250 | 29/64 | 5-5/8 | 4-3/16 | 3 |
| 80262 | 80260 | 15/32 | 5-3/4 | 4-5/16 | 3 |
| 80272 | 80270 | 31/64 | 5-7/8 | 4-3/8 | 3 |
| 80282 | 80280 | 1/2 | 6 | 4-1/2 | 3 |

LETTER

| Type 240- ACN TiCN Coated | Type 240-ALN TiAlN Coated | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|------------------------------|------------------------------|--------------------|-----------------------------|---------------------------|------------------|
| 80292 | 80290 | A | 3-7/8 | 2-5/8 | 6 |
| 80302 | 80300 | B | 4 | 2-3/4 | 6 |
| 80312 | 80310 | C | 4 | 2-3/4 | 6 |
| 80322 | 80320 | D | 4 | 2-3/4 | 6 |
| 80332 | 80330 | E | 4 | 2-3/4 | 6 |
| 80342 | 80340 | F | 4-1/8 | 2-7/8 | 6 |
| 80352 | 80350 | G | 4-1/8 | 2-7/8 | 6 |
| 80362 | 80360 | H | 4-1/8 | 2-7/8 | 6 |
| 80372 | 80370 | I | 4-1/8 | 2-7/8 | 6 |
| 80382 | 80380 | J | 4-1/8 | 2-7/8 | 6 |
| 80392 | 80390 | K | 4-1/4 | 2-15/16 | 6 |
| 80402 | 80400 | L | 4-1/4 | 2-15/16 | 6 |
| 80412 | 80410 | M | 4-3/8 | 3-1/16 | 3 |
| 80422 | 80420 | N | 4-3/8 | 3-1/16 | 3 |
| 80432 | 80430 | O | 4-1/2 | 3-3/16 | 3 |

Letter sizes continued on page 13

TiCN / TiAlN

Twist Drills - HSS Heavy-Duty NAS 907B

HSS HEAVY-DUTY NAS 907B

Type 240-ACN Carbon Nitride , Type 240-ALN Aluminum Nitride



TiCN Coating

Titanium carbon nitride (TiCN) coating raises cutting surface hardness greatly increasing resistance to wear.



TiAlN Coating

Titanium aluminum nitride (TiAlN) designed for use in high temperature operations and difficult to machine material

- Heavy-duty construction for drilling in tougher materials
- Manufactured from premium high-speed steel
- 135° split point is self-centering for reducing thrust and easier penetration
- Provides exceptional oxidation resistance and extreme hardness
- TiCN is harder and has a lower coefficient of friction than TiN coating.
- Recommended where moderate temperatures are generated.
- Manufactured to **NAS 907B** aerospace specification

LETTER

| Type 240- ACN TiCN Coated | Type 240-ALN TiAlN Coated | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/Pack |
|------------------------------|------------------------------|--------------------|-----------------------------|---------------------------|------------------|
| Part # | Part # | | | | |
| 80442 | 80440 | P | 4-5/8 | 3-5/16 | 3 |
| 80452 | 80450 | Q | 4-3/4 | 3-7/16 | 3 |
| 80462 | 80460 | R | 4-3/4 | 3-7/16 | 3 |
| 80472 | 80470 | S | 4-7/8 | 3-1/2 | 3 |
| 80482 | 80480 | T | 4-7/8 | 3-1/2 | 3 |
| 80492 | 80490 | U | 5 | 3-5/8 | 3 |
| 80502 | 80500 | V | 5 | 3-5/8 | 3 |
| 80512 | 80510 | W | 5-1/8 | 3-3/4 | 3 |
| 80522 | 80520 | X | 5-1/8 | 3-3/4 | 3 |
| 80532 | 80530 | Y | 5-1/4 | 3-7/8 | 3 |
| 80542 | 80540 | Z | 5-1/4 | 3-7/8 | 3 |

WIRE

| Type 240- ACN TiCN Coated | Type 240-ALN TiAlN Coated | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/Pack |
|------------------------------|------------------------------|--------------------|-----------------------------|---------------------------|------------------|
| Part # | Part # | | | | |
| 80552 | 80550 | 1 | 3-7/8 | 2-5/8 | 6 |
| 80562 | 80560 | 2 | 3-7/8 | 2-5/8 | 6 |
| 80572 | 80570 | 3 | 3-3/4 | 2-1/2 | 6 |
| 80582 | 80580 | 4 | 3-3/4 | 2-1/2 | 6 |
| 80592 | 80590 | 5 | 3-3/4 | 2-1/2 | 6 |
| 80602 | 80600 | 6 | 3-3/4 | 2-1/2 | 6 |
| 80612 | 80610 | 7 | 3-5/8 | 2-7/16 | 6 |
| 80622 | 80620 | 8 | 3-5/8 | 2-7/16 | 6 |
| 80632 | 80630 | 9 | 3-5/8 | 2-7/16 | 6 |
| 80642 | 80640 | 10 | 3-5/8 | 2-7/16 | 6 |
| 80652 | 80650 | 11 | 3-1/2 | 2-5/16 | 6 |
| 80662 | 80660 | 12 | 3-1/2 | 2-5/16 | 6 |
| 80672 | 80670 | 13 | 3-1/2 | 2-5/16 | 6 |
| 80682 | 80680 | 14 | 3-3/8 | 2-3/16 | 6 |
| 80692 | 80690 | 15 | 3-3/8 | 2-3/16 | 6 |
| 80702 | 80700 | 16 | 3-3/8 | 2-3/16 | 6 |
| 80712 | 80710 | 17 | 3-3/8 | 2-3/16 | 6 |
| 80722 | 80720 | 18 | 3-1/4 | 2-1/8 | 6 |
| 80732 | 80730 | 19 | 3-1/4 | 2-1/8 | 6 |
| 80742 | 80740 | 20 | 3-1/4 | 2-1/8 | 6 |
| 80752 | 80750 | 21 | 3-1/4 | 2-1/8 | 6 |
| 80762 | 80760 | 22 | 3-1/8 | 2 | 6 |
| 80772 | 80770 | 23 | 3-1/8 | 2 | 6 |
| 80782 | 80780 | 24 | 3-1/8 | 2 | 6 |
| 80792 | 80790 | 25 | 3 | 1-7/8 | 6 |
| 80802 | 80800 | 26 | 3 | 1-7/8 | 6 |
| 80812 | 80810 | 27 | 3 | 1-7/8 | 6 |
| 80822 | 80820 | 28 | 2-7/8 | 1-3/4 | 6 |
| 80832 | 80830 | 29 | 2-7/8 | 1-3/4 | 6 |
| 80842 | 80840 | 30 | 2-3/4 | 1-5/8 | 6 |
| 80852 | 80850 | 31 | 2-3/4 | 1-5/8 | 6 |
| 80862 | 80860 | 32 | 2-3/4 | 1-5/8 | 6 |
| 80872 | 80870 | 33 | 2-5/8 | 1-1/2 | 6 |
| 80882 | 80880 | 34 | 2-5/8 | 1-1/2 | 6 |
| 80892 | 80890 | 35 | 2-5/8 | 1-1/2 | 6 |
| 80902 | 80900 | 36 | 2-1/2 | 1-7/16 | 6 |

Wire sizes continued on page 14

HSS HEAVY-DUTY NAS 907B

Type 240-ACN Carbon Nitride Type 240-ALN Aluminum Nitride

- Heavy-duty construction for drilling in tougher materials
- Manufactured from premium high-speed steel
- 135° split point is self-centering for reducing thrust and easier penetration
- Provides exceptional oxidation resistance and extreme hardness
- TiCN is harder and has a lower coefficient of friction than TiN coating.
- Recommended where moderate temperatures are generated.
- Manufactured to **NAS 907B** aerospace specification



TiCN Coating

Titanium carbon nitride (TiCN) coating raises cutting surface hardness greatly increasing resistance to wear.



TiAlN Coating

Titanium aluminum nitride (TiAlN) designed for use in high temperature operations and difficult to machine material

WIRE

| Type 240- ACN TiCN Coated Part # | Type 240-ALN TiAlN Coated Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/Pack |
|----------------------------------------|----------------------------------------|--------------------|-----------------------------|---------------------------|------------------|
| 80912 | 80910 | 37 | 2-1/2 | 1-7/16 | 6 |
| 80922 | 80920 | 38 | 2-1/2 | 1-7/16 | 6 |
| 80932 | 80930 | 39 | 2-3/8 | 1-3/8 | 6 |
| 80942 | 80940 | 40 | 2-3/8 | 1-3/8 | 6 |
| 80952 | 80950 | 41 | 2-3/8 | 1-3/8 | 6 |
| 80962 | 80960 | 42 | 2-1/4 | 1-1/4 | 6 |
| 80972 | 80970 | 43 | 2-1/4 | 1-1/4 | 6 |
| 80982 | 80980 | 44 | 2-1/8 | 1-1/8 | 6 |
| 80992 | 80990 | 45 | 2-1/8 | 1-1/8 | 6 |
| 81002 | 81000 | 46 | 2-1/8 | 1-1/8 | 6 |
| 81012 | 81010 | 47 | 2 | 1 | 6 |
| 81022 | 81020 | 48 | 2 | 1 | 6 |
| 81032 | 81030 | 49 | 2 | 1 | 6 |
| 81042 | 81040 | 50 | 2 | 1 | 6 |
| 81052 | 81050 | 51 | 2 | 1 | 6 |
| 81062 | 81060 | 52 | 1-7/8 | 7/8 | 6 |

TiCN / TiAlN

Twist Drills - HSS Heavy-Duty NAS 907B

GOLDSTRIKE™ & V-LINE HEAVY DUTY

Type 240-GF

Goldstrike™

Premium - 135° Split point

Gold Surface Treated 3-Flats on Shank, 3/16 and Larger

- Heavy-duty 135° split point drills perform well in very demanding applications.
- Ideal for use with hand held drills with key-less chucks.



Type 240-GF

Heavy-duty construction makes it ideal for difficult to drill materials.

Type 248-A

V-Line - Heavy-Duty

Black Oxide 135° Split point

- American made value line drill.
- 135° split point drills are self centering and perform well in harder metals.
- Heavy-duty construction makes this series of drills ideal for the medium to light tensile strength metal drilling applications.



Type 248-A

Designed for the user whose applications are well served without the need for the tighter tolerances of our standard Type 240-A.

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 40490 | 1/16 | 1-7/8 | 7/8 | 12 |
| 40500 | 5/64 | 2 | 1 | 12 |
| 40510 | 3/32 | 2-1/4 | 1-1/4 | 12 |
| 40520 | 7/64 | 2-5/8 | 1-1/2 | 12 |
| 40530 | 1/8 | 2-3/4 | 1-5/8 | 12 |
| 40540 | 9/64 | 2-7/8 | 1-3/4 | 12 |
| 40550 | 5/32 | 3-1/8 | 2 | 12 |
| 40560 | 11/64 | 3-1/4 | 2-1/8 | 12 |
| 40561 | 3/16 | 3-1/2 | 2-5/16 | 12 |
| 40562 | 13/64 | 3-5/8 | 2-7/16 | 12 |
| 40563 | 7/32 | 3-3/4 | 2-1/2 | 12 |
| 40564 | 15/64 | 3-7/8 | 2-5/8 | 12 |
| 40569 | 1/4 | 4 | 2-3/4 | 12 |
| 40571 | 17/64 | 4-1/8 | 2-7/8 | 12 |
| 40572 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 40573 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 40574 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 40579 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 40581 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 40582 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 40583 | 3/8 | 5 | 3-5/8 | 6 |
| 40584 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 40589 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 40591 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 40592 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 40593 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 40594 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 40601 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 40602 | 1/2 | 6 | 4-1/2 | 6 |

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 02782 | 1/16 | 1-7/8 | 7/8 | 12 |
| 02792 | 5/64 | 2 | 1 | 12 |
| 02802 | 3/32 | 2-1/4 | 1-1/4 | 12 |
| 02812 | 7/64 | 2-5/8 | 1-1/2 | 12 |
| 02822 | 1/8 | 2-3/4 | 1-5/8 | 12 |
| 02832 | 9/64 | 2-7/8 | 1-3/4 | 12 |
| 02842 | 5/32 | 3-1/8 | 2 | 12 |
| 02852 | 11/64 | 3-1/4 | 2-1/8 | 12 |
| 02862 | 3/16 | 3-1/2 | 2-5/16 | 12 |
| 02872 | 13/64 | 3-5/8 | 2-7/16 | 12 |
| 02882 | 7/32 | 3-3/4 | 2-1/2 | 12 |
| 02892 | 15/64 | 3-7/8 | 2-5/8 | 12 |
| 02902 | 1/4 | 4 | 2-3/4 | 12 |
| 02912 | 17/64 | 4-1/8 | 2-7/8 | 12 |
| 02922 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 02932 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 02942 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 02952 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 02962 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 02972 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 02982 | 3/8 | 5 | 3-5/8 | 6 |
| 02992 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 03002 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 03012 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 03022 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 03032 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 03042 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 03052 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 03062 | 1/2 | 6 | 4-1/2 | 6 |

Type 240-GFR

GOLDSTRIKE™ Reduced Shank -

135° Split Point with 3/8" Reduced Shank with Flats



3/8" WITH FLATS ON SHANK

| Part # | Description of Sizes | Per Pack | Part # | Description of Sizes | Per Pack |
|--------|----------------------|----------|--------|----------------------|----------|
| 40633 | 25/64 | 6 | 40622 | 29/64 | 6 |
| 40634 | 13/32 | 6 | 40623 | 15/32 | 6 |
| 40639 | 27/64 | 6 | 40624 | 31/64 | 6 |
| 40621 | 7/16 | 6 | 40629 | 1/2 | 6 |

HSS BLACK OXIDE 118° SPLIT POINT NAS 907A

Type 340-A

- 118° split point is self-centering for reduced thrust and easier penetration
- Black oxide finish for increased wear resistance and added lubricity
- Manufactured to **NAS 907A** aerospace specification



Type 340-A

General-purpose geometry with 118° split point for drilling in a wide range of drilling operations and materials.

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 35730 | 1/16 | 1-7/8 | 7/8 | 12 |
| 35740 | 5/64 | 2 | 1 | 12 |
| 35750 | 3/32 | 2-1/4 | 1-1/4 | 12 |
| 35760 | 7/64 | 2-5/8 | 1-1/2 | 12 |
| 35770 | 1/8 | 2-3/4 | 1-5/8 | 12 |
| 35780 | 9/64 | 2-7/8 | 1-3/4 | 12 |
| 35790 | 5/32 | 3-1/8 | 2 | 12 |
| 35800 | 11/64 | 3-1/4 | 2-1/8 | 12 |
| 35810 | 3/16 | 3-1/2 | 2-5/16 | 12 |
| 35820 | 13/64 | 3-5/8 | 2-7/16 | 12 |
| 35830 | 7/32 | 3-3/4 | 2-1/2 | 12 |
| 35840 | 15/64 | 3-7/8 | 2-5/8 | 12 |
| 35850 | 1/4 | 4 | 2-3/4 | 12 |
| 35860 | 17/64 | 4-1/8 | 2-7/8 | 12 |
| 35870 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 35880 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 35890 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 35900 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 35910 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 35920 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 35930 | 3/8 | 5 | 3-5/8 | 6 |
| 35940 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 35950 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 35960 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 35970 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 35980 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 35990 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 36000 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 36010 | 1/2 | 6 | 4-1/2 | 6 |

LETTER

| Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|--------------|-----------------------|---------------------|---------------|
| 82750 | A | 3-7/8 | 2-5/8 | 12 |
| 82760 | B | 4 | 2-3/4 | 12 |
| 82770 | C | 4 | 2-3/4 | 12 |
| 82780 | D | 4 | 2-3/4 | 12 |
| 82790 | E | 4 | 2-3/4 | 12 |
| 82800 | F | 4-1/8 | 2-7/8 | 12 |
| 82810 | G | 4-1/8 | 2-7/8 | 12 |
| 82820 | H | 4-1/8 | 2-7/8 | 12 |
| 82830 | I | 4-1/8 | 2-7/8 | 12 |
| 82840 | J | 4-1/8 | 2-7/8 | 12 |
| 82850 | K | 4-1/4 | 2-15/16 | 12 |
| 82860 | L | 4-1/4 | 2-15/16 | 12 |
| 82870 | M | 4-3/8 | 3-1/16 | 6 |
| 82880 | N | 4-3/8 | 3-1/16 | 6 |
| 82890 | O | 4-1/2 | 3-3/16 | 6 |
| 82900 | P | 4-5/8 | 3-5/16 | 6 |
| 82910 | Q | 4-3/4 | 3-7/16 | 6 |
| 82920 | R | 4-3/4 | 3-7/16 | 6 |
| 82930 | S | 4-7/8 | 3-1/2 | 6 |
| 82940 | T | 4-7/8 | 3-1/2 | 6 |
| 82950 | U | 5 | 3-5/8 | 6 |
| 82960 | V | 5 | 3-5/8 | 6 |
| 82970 | W | 5-1/8 | 3-3/4 | 6 |
| 82980 | X | 5-1/8 | 3-3/4 | 6 |
| 82990 | Y | 5-1/4 | 3-7/8 | 6 |
| 83000 | Z | 5-1/4 | 3-7/8 | 6 |

WIRE

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 66710 | 1 | 3-7/8 | 2-5/8 | 12 |
| 57280 | 2 | 3-7/8 | 2-5/8 | 12 |
| 66700 | 3 | 3-3/4 | 2-1/2 | 12 |
| 57370 | 4 | 3-3/4 | 2-1/2 | 12 |
| 95430 | 5 | 3-3/4 | 2-1/2 | 12 |
| 66690 | 6 | 3-3/4 | 2-1/2 | 12 |
| 66680 | 7 | 3-5/8 | 2-7/16 | 12 |
| 66770 | 8 | 3-5/8 | 2-7/16 | 12 |
| 66760 | 9 | 3-5/8 | 2-7/16 | 12 |
| 92630 | 10 | 3-5/8 | 2-7/16 | 12 |
| 66670 | 11 | 3-1/2 | 2-5/16 | 12 |
| 66220 | 12 | 3-1/2 | 2-5/16 | 12 |
| 92640 | 13 | 3-1/2 | 2-5/16 | 12 |
| 66660 | 14 | 3-3/8 | 2-3/16 | 12 |
| 66650 | 15 | 3-3/8 | 2-3/16 | 12 |
| 66640 | 16 | 3-3/8 | 2-3/16 | 12 |
| 57290 | 17 | 3-3/8 | 2-3/16 | 12 |
| 66810 | 18 | 3-1/4 | 2-1/8 | 12 |
| 57550 | 19 | 3-1/4 | 2-1/8 | 12 |
| 66630 | 20 | 3-1/4 | 2-1/8 | 12 |
| 66620 | 21 | 3-1/4 | 2-1/8 | 12 |

| Part # | Overall Wire Sizes | Flute Length Inches | Length Inches | Qty. per/pack |
|--------|--------------------|---------------------|---------------|---------------|
| 57630 | 22 | 3-1/8 | 2 | 12 |
| 66610 | 23 | 3-1/8 | 2 | 12 |
| 66720 | 24 | 3-1/8 | 2 | 12 |
| 57360 | 25 | 3 | 1-7/8 | 12 |
| 66600 | 26 | 3 | 1-7/8 | 12 |
| 66750 | 27 | 3 | 1-7/8 | 12 |
| 57700 | 28 | 2-7/8 | 1-3/4 | 12 |
| 66590 | 29 | 2-7/8 | 1-3/4 | 12 |
| 95420 | 30 | 2-3/4 | 1-5/8 | 12 |
| 66800 | 31 | 2-3/4 | 1-5/8 | 12 |
| 66350 | 32 | 2-3/4 | 1-5/8 | 12 |
| 66580 | 33 | 2-5/8 | 1-1/2 | 12 |
| 66740 | 34 | 2-5/8 | 1-1/2 | 12 |
| 57350 | 35 | 2-5/8 | 1-1/2 | 12 |
| 66570 | 36 | 2-1/2 | 1-7/16 | 12 |
| 66560 | 37 | 2-1/2 | 1-7/16 | 12 |
| 66550 | 38 | 2-1/2 | 1-7/16 | 12 |
| 57560 | 39 | 2-3/8 | 1-3/8 | 12 |
| 66540 | 40 | 2-3/8 | 1-3/8 | 12 |

Twist Drills - HSS Black Oxide 118° NAS 907A

GENERAL PURPOSE & TITANIUM NITRIDE

Type 240, Type 240-B, Type 240-BN Titanium Nitride 118° Point



Type 240

Black Oxide surface finish increases wear resistance and adds lubricity to improve chip flow.



Type 240-B

Recommended for non-ferrous metals, wood and plastic.



Type 240-BN

Performs well in mild drilling applications with abrasive wear characteristics.

- Widely used in general purpose applications
- Designed for a wide range of operating conditions and materials

FRACTIONAL

| Black Oxide Type 240 Part # | Bright Type 240-B Part # | Titanium Nitride Type 240-BN Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Black Oxide / Bright Type 240 / Type 240-B Qty. per/Pack | Titanium Nitride Type 240-BN Qty. per/Pack |
|-----------------------------------|--------------------------------|-------------------------------------------|--------------------|-----------------------------|---------------------------|----------------------------------------------------------------|--------------------------------------------------|
| 01000 | 02750 | 97920 | 1/64 | 3/4 | 3/16 | 12 | 6 |
| 01010 | 02760 | 97910 | 1/32 | 1-3/8 | 1/2 | 12 | 6 |
| 01020 | 02770 | 97900 | 3/64 | 1-3/4 | 3/4 | 12 | 6 |
| 01030 | 02780 | 22570 | 1/16 | 1-7/8 | 7/8 | 12 | 6 |
| 01040 | 02790 | 22580 | 5/64 | 2 | 1 | 12 | 6 |
| 01050 | 02800 | 22590 | 3/32 | 2-1/4 | 1-1/4 | 12 | 6 |
| 01060 | 02810 | 22600 | 7/64 | 2-5/8 | 1-1/2 | 12 | 6 |
| 01070 | 02820 | 22610 | 1/8 | 2-3/4 | 1-5/8 | 12 | 6 |
| 01080 | 02830 | 22620 | 9/64 | 2-7/8 | 1-3/4 | 12 | 6 |
| 01090 | 02840 | 22630 | 5/32 | 3-1/8 | 2 | 12 | 6 |
| 01100 | 02850 | 22640 | 11/64 | 3-1/4 | 2-1/8 | 12 | 6 |
| 01110 | 02860 | 22650 | 3/16 | 3-1/2 | 2-5/16 | 12 | 6 |
| 05930 | 16870 | 22660 | 13/64 | 3-5/8 | 2-7/16 | 12 | 6 |
| 05940 | 16880 | 22670 | 7/32 | 3-3/4 | 2-1/2 | 12 | 6 |
| 05950 | 16890 | 22680 | 15/64 | 3-7/8 | 2-5/8 | 12 | 6 |
| 05960 | 16900 | 22690 | 1/4 | 4 | 2-3/4 | 12 | 6 |
| 05970 | 16910 | 22700 | 17/64 | 4-1/8 | 2-7/8 | 12 | 6 |
| 05980 | 16920 | 22710 | 9/32 | 4-1/4 | 2-15/16 | 12 | 6 |
| 05990 | 16930 | 22720 | 19/64 | 4-3/8 | 3-1/16 | 6 | 3 |
| 06000 | 16940 | 22730 | 5/16 | 4-1/2 | 3-3/16 | 6 | 3 |
| 06010 | 16950 | 22740 | 21/64 | 4-5/8 | 3-5/16 | 6 | 3 |
| 06020 | 16960 | 22750 | 11/32 | 4-3/4 | 3-7/16 | 6 | 3 |
| 06030 | 16970 | 22760 | 23/64 | 4-7/8 | 3-1/2 | 6 | 3 |
| 06040 | 16980 | 22770 | 3/8 | 5 | 3-5/8 | 6 | 3 |
| 06050 | 16990 | 22780 | 25/64 | 5-1/8 | 3-3/4 | 6 | 3 |
| 06060 | 17000 | 22790 | 13/32 | 5-1/4 | 3-7/8 | 6 | 3 |
| 06070 | 17010 | 22800 | 27/64 | 5-3/8 | 3-15/16 | 6 | 3 |
| 06080 | 17020 | 22810 | 7/16 | 5-1/2 | 4-1/16 | 6 | 3 |
| 06090 | 17030 | 22820 | 29/64 | 5-5/8 | 4-3/16 | 6 | 3 |
| 06100 | 17040 | 22830 | 15/32 | 5-3/4 | 4-5/16 | 6 | 3 |
| 06110 | 17050 | 22840 | 31/64 | 5-7/8 | 4-3/8 | 6 | 3 |
| 06120 | 17060 | 22850 | 1/2 | 6 | 4-1/2 | 6 | 3 |
| 01320 | 48370 | 32500 | 33/64 | 6-5/8 | 4-13/16 | 1 | 1 |
| 01330 | 48380 | 32510 | 17/32 | 6-5/8 | 4-13/16 | 1 | 1 |
| 01340 | 48390 | 32520 | 35/64 | 6-5/8 | 4-13/16 | 1 | 1 |
| 01350 | 48400 | 32530 | 9/16 | 6-5/8 | 4-13/16 | 1 | 1 |
| 01360 | 48410 | 32540 | 37/64 | 6-5/8 | 4-13/16 | 1 | 1 |
| 01370 | 48420 | 32550 | 19/32 | 7-1/8 | 5-3/16 | 1 | 1 |
| 01380 | 48430 | 32560 | 39/64 | 7-1/8 | 5-3/16 | 1 | 1 |
| 01390 | 48440 | 32570 | 5/8 | 7-1/8 | 5-3/16 | 1 | 1 |
| 01400 | 48450 | 32580 | 41/64 | 7-1/8 | 5-3/16 | 1 | 1 |
| 01410 | 48460 | 32590 | 21/32 | 7-1/8 | 5-3/16 | 1 | 1 |
| 01420 | 48470 | 32600 | 43/64 | 7-5/8 | 5-5/8 | 1 | 1 |
| 01430 | 48480 | 32610 | 11/16 | 7-5/8 | 5-5/8 | 1 | 1 |
| 12370 | 48730 | 32650 | 3/4 | 7-5/8 | 5-5/8 | 1 | 1 |

Letter sizes continued on page 18

GENERAL PURPOSE & TITANIUM NITRIDE

Type 240, Type 240-B, Type 240-BN Titanium Nitride

118° Point

- Widely used in general purpose applications.
- Designed for a wide range of operating conditions and materials.



Type 240

Black Oxide surface finish increases wear resistance and adds lubricity to improve chip flow.



Type 240-B

It is recommended for non-ferrous metals, wood and plastic.



Type 240-BN

Performs well in mild drilling applications with abrasive wear characteristics.

LETTER

| Black Oxide Type 240 Part # | Bright Type 240-B Part # | Titanium Nitride Type 240-BN Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Black Oxide / Bright Type 240 / Type 240-B Qty. per/Pack | Titanium Nitride Type 240-BN Qty. per/Pack |
|-----------------------------------|--------------------------------|-------------------------------------------|-----------------|-----------------------------|---------------------------|----------------------------------------------------------------|--------------------------------------------------|
| 02410 | 04160 | 22890 | A | 3-7/8 | 2-5/8 | 12 | 6 |
| 02420 | 04170 | 22900 | B | 4 | 2-3/4 | 12 | 6 |
| 02430 | 04180 | 22910 | C | 4 | 2-3/4 | 12 | 6 |
| 02440 | 04190 | 22920 | D | 4 | 2-3/4 | 12 | 6 |
| 02450 | 04200 | 22930 | E | 4 | 2-3/4 | 12 | 6 |
| 02460 | 04210 | 22940 | F | 4-1/8 | 2-7/8 | 12 | 6 |
| 02470 | 04220 | 22950 | G | 4-1/8 | 2-7/8 | 12 | 6 |
| 02480 | 04230 | 22960 | H | 4-1/8 | 2-7/8 | 12 | 6 |
| 02490 | 04240 | 22970 | I | 4-1/8 | 2-7/8 | 12 | 6 |
| 02500 | 04250 | 22980 | J | 4-1/8 | 2-7/8 | 12 | 6 |
| 02510 | 04260 | 22990 | K | 4-1/4 | 2-15/16 | 12 | 6 |
| 02520 | 04270 | 23000 | L | 4-1/4 | 2-15/16 | 12 | 6 |
| 02530 | 04280 | 23010 | M | 4-3/8 | 3-1/16 | 6 | 3 |
| 02540 | 04290 | 23020 | N | 4-3/8 | 3-1/16 | 6 | 3 |
| 02550 | 04300 | 23030 | O | 4-1/2 | 3-3/16 | 6 | 3 |
| 02560 | 04310 | 23040 | P | 4-5/8 | 3-5/16 | 6 | 3 |
| 02570 | 04320 | 23050 | Q | 4-3/4 | 3-7/16 | 6 | 3 |
| 02580 | 04330 | 23060 | R | 4-3/4 | 3-7/16 | 6 | 3 |
| 02590 | 04340 | 23070 | S | 4-7/8 | 3-1/2 | 6 | 3 |
| 02600 | 04350 | 23080 | T | 4-7/8 | 3-1/2 | 6 | 3 |
| 02610 | 04360 | 23090 | U | 5 | 3-5/8 | 6 | 3 |
| 02620 | 04370 | 23100 | V | 5 | 3-5/8 | 6 | 3 |
| 02630 | 04380 | 23110 | W | 5-1/8 | 3-3/4 | 6 | 3 |
| 02640 | 04390 | 23120 | X | 5-1/8 | 3-3/4 | 6 | 3 |
| 02650 | 04400 | 23130 | Y | 5-1/4 | 3-7/8 | 6 | 3 |
| 02660 | 04410 | 23140 | Z | 5-1/4 | 3-7/8 | 6 | 3 |

WIRE

| Black Oxide Type 240 Part # | Bright Type 240-B Part # | Titanium Nitride Type 240-BN Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Black Oxide / Bright Type 240 / Type 240-B Qty. per/Pack | Titanium Nitride Type 240-BN Qty. per/Pack |
|-----------------------------------|--------------------------------|-------------------------------------------|---------------|-----------------------------|---------------------------|----------------------------------------------------------------|--------------------------------------------------|
| 01440 | 03190 | 47790 | 1 | 3-7/8 | 2-5/8 | 12 | 6 |
| 01450 | 03200 | 47800 | 2 | 3-7/8 | 2-5/8 | 12 | 6 |
| 01460 | 03210 | 47810 | 3 | 3-3/4 | 2-1/2 | 12 | 6 |
| 01470 | 03220 | 47820 | 4 | 3-3/4 | 2-1/2 | 12 | 6 |
| 01480 | 03230 | 47830 | 5 | 3-3/4 | 2-1/2 | 12 | 6 |
| 01490 | 03240 | 47840 | 6 | 3-3/4 | 2-1/2 | 12 | 6 |
| 01500 | 03250 | 47850 | 7 | 3-5/8 | 2-7/16 | 12 | 6 |

Wire sizes continued on page 19

TiN

Twist Drills - General Purpose & TiN Coated

GENERAL PURPOSE & TITANIUM NITRIDE

Type 240, Type 240-B, Type 240-BN Titanium Nitride

118° Point



Type 240

Black Oxide surface finish increases wear resistance and adds lubricity to improve chip flow.



Type 240-B

It is recommended for non-ferrous metals, wood and plastic.



Type 240-BN

Performs well in mild drilling applications with abrasive wear characteristics.

- Widely used in general purpose applications
- Designed for a wide range of operating conditions and materials

WIRE

| Black Oxide Type 240 Part # | Bright Type 240-B Part # | Titanium Nitride Type 240-BN Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Black Oxide / Bright Type 240 / Type 240-B Qty. per/Pack | Titanium Nitride Type 240-BN Qty. per/Pack |
|-----------------------------------|--------------------------------|-------------------------------------------|---------------|-----------------------------|---------------------------|----------------------------------------------------------------|--------------------------------------------------|
| 01510 | 03260 | 47860 | 8 | 3-5/8 | 2-7/16 | 12 | 6 |
| 01520 | 03270 | 47870 | 9 | 3-5/8 | 2-7/16 | 12 | 6 |
| 01530 | 03280 | 47880 | 10 | 3-5/8 | 2-7/16 | 12 | 6 |
| 01540 | 03290 | 47890 | 11 | 3-1/2 | 2-5/16 | 12 | 6 |
| 01550 | 03300 | 47900 | 12 | 3-1/2 | 2-5/16 | 12 | 6 |
| 01560 | 03310 | 47910 | 13 | 3-1/2 | 2-5/16 | 12 | 6 |
| 01570 | 03320 | 47920 | 14 | 3-3/8 | 2-3/16 | 12 | 6 |
| 01580 | 03330 | 47930 | 15 | 3-3/8 | 2-3/16 | 12 | 6 |
| 01590 | 03340 | 47940 | 16 | 3-3/8 | 2-3/16 | 12 | 6 |
| 01600 | 03350 | 47950 | 17 | 3-3/8 | 2-3/16 | 12 | 6 |
| 01610 | 03360 | 47960 | 18 | 3-1/4 | 2-1/8 | 12 | 6 |
| 01620 | 03370 | 47970 | 19 | 3-1/4 | 2-1/8 | 12 | 6 |
| 01630 | 03380 | 47980 | 20 | 3-1/4 | 2-1/8 | 12 | 6 |
| 01640 | 03390 | 47990 | 21 | 3-1/4 | 2-1/8 | 12 | 6 |
| 01650 | 03400 | 48000 | 22 | 3-1/8 | 2 | 12 | 6 |
| 01660 | 03410 | 48010 | 23 | 3-1/8 | 2 | 12 | 6 |
| 01670 | 03420 | 48020 | 24 | 3-1/8 | 2 | 12 | 6 |
| 01680 | 03430 | 48030 | 25 | 3 | 1-7/8 | 12 | 6 |
| 01690 | 03440 | 48040 | 26 | 3 | 1-7/8 | 12 | 6 |
| 01700 | 03450 | 48050 | 27 | 3 | 1-7/8 | 12 | 6 |
| 01710 | 03460 | 48060 | 28 | 2-7/8 | 1-3/4 | 12 | 6 |
| 01720 | 03470 | 48070 | 29 | 2-7/8 | 1-3/4 | 12 | 6 |
| 01730 | 03480 | 48080 | 30 | 2-3/4 | 1-5/8 | 12 | 6 |
| 01740 | 03490 | 48090 | 31 | 2-3/4 | 1-5/8 | 12 | 6 |
| 01750 | 03500 | 48100 | 32 | 2-3/4 | 1-5/8 | 12 | 6 |
| 01760 | 03510 | 48110 | 33 | 2-5/8 | 1-1/2 | 12 | 6 |
| 01770 | 03520 | 48120 | 34 | 2-5/8 | 1-1/2 | 12 | 6 |
| 01780 | 03530 | 48130 | 35 | 2-5/8 | 1-1/2 | 12 | 6 |
| 01790 | 03540 | 48140 | 36 | 2-1/2 | 1-7/16 | 12 | 6 |
| 01800 | 03550 | 48150 | 37 | 2-1/2 | 1-7/16 | 12 | 6 |
| 01810 | 03560 | 48160 | 38 | 2-1/2 | 1-7/16 | 12 | 6 |
| 01820 | 03570 | 48170 | 39 | 2-3/8 | 1-3/8 | 12 | 6 |
| 01830 | 03580 | 48180 | 40 | 2-3/8 | 1-3/8 | 12 | 6 |
| 01840 | 03590 | 48190 | 41 | 2-3/8 | 1-3/8 | 12 | 6 |
| 01850 | 03600 | 48200 | 42 | 2-1/4 | 1-1/4 | 12 | 6 |
| 01860 | 03610 | 48210 | 43 | 2-1/4 | 1-1/4 | 12 | 6 |
| 01870 | 03620 | 48220 | 44 | 2-1/8 | 1-1/8 | 12 | 6 |
| 01880 | 03630 | 48230 | 45 | 2-1/8 | 1-1/8 | 12 | 6 |
| 01890 | 03640 | 48240 | 46 | 2-1/8 | 1-1/8 | 12 | 6 |
| 01900 | 03650 | 48250 | 47 | 2 | 1 | 12 | 6 |
| 01910 | 03660 | 48260 | 48 | 2 | 1 | 12 | 6 |
| 01920 | 03670 | 48270 | 49 | 2 | 1 | 12 | 6 |
| 01930 | 03680 | 48280 | 50 | 2 | 1 | 12 | 6 |
| 01940 | 03690 | 48290 | 51 | 2 | 1 | 12 | 6 |

Wire sizes continued on page 20

TiN

Twist Drills - General Purpose & TiN Coated

GENERAL PURPOSE & TITANIUM NITRIDE

Type 240, Type 240-B, Type 240-BN Titanium Nitride 118° Point

- Widely used in general purpose applications.
- Designed for a wide range of operating conditions and materials.



Type 240

Black Oxide surface finish increases wear resistance and adds lubricity to improve chip flow.



Type 240-B

It is recommended for non-ferrous metals, wood and plastic.



Type 240-BN

Performs well in mild drilling applications with abrasive wear characteristics.

WIRE

| Black Oxide Type 240 Part # | Bright Type 240-B Part # | Titanium Nitride Type 240-BN Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Black Oxide / Bright Type 240 / Type 240-B Qty. per/Pack | Titanium Nitride Type 240-BN Qty. per/Pack |
|-----------------------------------|--------------------------------|-------------------------------------------|---------------|-----------------------------|---------------------------|----------------------------------------------------------------|--------------------------------------------------|
| 01950 | 03700 | 48300 | 52 | 1-7/8 | 7/8 | 12 | 6 |
| 01960 | 03710 | 98000 | 53 | 1-7/8 | 7/8 | 12 | 6 |
| 01970 | 03720 | 97990 | 54 | 1-7/8 | 7/8 | 12 | 6 |
| 01980 | 03730 | 97980 | 55 | 1-7/8 | 7/8 | 12 | 6 |
| 01990 | 03740 | 97970 | 56 | 1-3/4 | 3/4 | 12 | 6 |
| 02000 | 03750 | 97960 | 57 | 1-3/4 | 3/4 | 12 | 6 |
| 02010 | 03760 | 97950 | 58 | 1-5/8 | 11/16 | 12 | 6 |
| 02020 | 03770 | 97940 | 59 | 1-5/8 | 11/16 | 12 | 6 |
| 02030 | 03780 | 97930 | 60 | 1-5/8 | 11/16 | 12 | 6 |
| 02040 | 03790 | 81200 | 61 | 1-5/8 | 11/16 | 12 | ---- |
| 02050 | 03800 | 81210 | 62 | 1-1/2 | 5/8 | 12 | ---- |
| 02060 | 03810 | 81220 | 63 | 1-1/2 | 5/8 | 12 | ---- |
| 02070 | 03820 | 81230 | 64 | 1-1/2 | 5/8 | 12 | ---- |
| 02080 | 03830 | 81240 | 65 | 1-1/2 | 5/8 | 12 | ---- |
| 02090 | 03840 | 81250 | 66 | 1-3/8 | 1/2 | 12 | ---- |
| 02100 | 03850 | 81260 | 67 | 1-3/8 | 1/2 | 12 | ---- |
| 02110 | 03860 | 81270 | 68 | 1-3/8 | 1/2 | 12 | ---- |
| 02120 | 03870 | 81280 | 69 | 1-3/8 | 1/2 | 12 | ---- |
| 02130 | 03880 | 81290 | 70 | 1-1/4 | 3/8 | 12 | ---- |
| 02140 | 03890 | 81300 | 71 | 1-1/4 | 3/8 | 12 | ---- |
| 02150 | 03900 | 81310 | 72 | 1-1/8 | 5/16 | 12 | ---- |
| 02160 | 03910 | 81320 | 73 | 1-1/8 | 5/16 | 12 | ---- |
| 02170 | 03920 | 81330 | 74 | 1 | 1/4 | 12 | ---- |
| 02180 | 03930 | 81340 | 75 | 1 | 1/4 | 12 | ---- |
| 02190 | 03940 | 81350 | 76 | 7/8 | 3/16 | 12 | ---- |
| 02200 | 03950 | 81360 | 77 | 7/8 | 3/16 | 12 | ---- |
| 02210 | 03960 | 81370 | 78 | 7/8 | 3/16 | 12 | ---- |
| 02220 | 03970 | 81380 | 79 | 3/4 | 1/8 | 12 | ---- |
| 02230 | 03980 | 81390 | 80 | 3/4 | 1/8 | 12 | ---- |
| ---- | 03990 | ---- | 81 | 3/4 | 1/8 | 12 | ---- |
| ---- | 04000 | ---- | 82 | 3/4 | 1/8 | 12 | ---- |
| ---- | 04010 | ---- | 83 | 3/4 | 1/8 | 12 | ---- |
| ---- | 04020 | ---- | 84 | 3/4 | 3/32 | 12 | ---- |
| ---- | 04030 | ---- | 85 | 3/4 | 3/32 | 12 | ---- |

Wire sizes continued on page 21

TiN

Twist Drills - General Purpose & TiN Coated

GENERAL PURPOSE & TITANIUM NITRIDE

Type 240, Type 240-B, Type 240-BN Titanium Nitride

118° Point



Type 240

Black Oxide surface finish increases wear resistance and adds lubricity to improve chip flow.



Type 240-B

It is recommended for non-ferrous metals, wood and plastic.



Type 240-BN

Performs well in mild drilling applications with strong abrasive wear characteristics.

- Widely used in general purpose applications.
- Designed for a wide range of operating conditions and materials.

WIRE

| Black Oxide Type 240 Part # | Bright Type 240-B Part # | Titanium Nitride Type 240-BN Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Black Oxide / Bright Type 240 / Type 240-B Qty. per/Pack | Titanium Nitride Type 240-BN Qty. per/Pack |
|-----------------------------------|--------------------------------|-------------------------------------------|---------------|-----------------------------|---------------------------|----------------------------------------------------------------|--------------------------------------------------|
| ---- | 04040 | ---- | 86 | 3/4 | 3/32 | 12 | ---- |
| ---- | 04050 | ---- | 87 | 3/4 | 3/32 | 12 | ---- |
| ---- | 04060 | ---- | 88 | 3/4 | 5/64 | 12 | ---- |
| ---- | 04070 | ---- | 89 | 3/4 | 5/64 | 12 | ---- |
| ---- | 04080 | ---- | 90 | 3/4 | 5/64 | 12 | ---- |

Type 248

V-line - General Purpose Black Oxide, 118° point

- American made value line drill
- These general purpose 118° point HSS drills are ideal for a wide variety of light tensile strength metal drilling applications.



- This series is designed for the user whose applications are well served without the need for the tighter tolerances of our standard Type 240.

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack | Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|--------------------|-----------------------------|---------------------------|------------------|--------|--------------------|-----------------------------|---------------------------|------------------|
| 02783 | 1/16 | 1-7/8 | 7/8 | 12 | 02923 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 02793 | 5/64 | 2 | 1 | 12 | 02933 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 02803 | 3/32 | 2-1/4 | 1-1/4 | 12 | 02943 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 02813 | 7/64 | 2-5/8 | 1-1/2 | 12 | 02953 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 02823 | 1/8 | 2-3/4 | 1-5/8 | 12 | 02963 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 02833 | 9/64 | 2-7/8 | 1-3/4 | 12 | 02973 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 02843 | 5/32 | 3-1/8 | 2 | 12 | 02983 | 3/8 | 5 | 3-5/8 | 6 |
| 02853 | 11/64 | 3-1/4 | 2-1/8 | 12 | 02993 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 02863 | 3/16 | 3-1/2 | 2-5/16 | 12 | 03003 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 02873 | 13/64 | 3-5/8 | 2-7/16 | 12 | 03013 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 02883 | 7/32 | 3-3/4 | 2-1/2 | 12 | 03023 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 02893 | 15/64 | 3-7/8 | 2-5/8 | 12 | 03033 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 02903 | 1/4 | 4 | 2-3/4 | 12 | 03043 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 02913 | 17/64 | 4-1/8 | 2-7/8 | 12 | 03053 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| | | | | | 03063 | 1/2 | 6 | 4-1/2 | 6 |

GENERAL PURPOSE - BLACK OXIDE & BRIGHT FINISH

Type 643 - METRIC

118° Point General Purpose - Black Oxide

- Widely used in general purpose applications
- Designed for a wide range of operating conditions and materials

Type 643-W - METRIC

118° Point General Purpose - Bright Finish

- This 118° point, high-speed steel drill performs well in a wide variety of drilling applications.
- It is recommended for non-ferrous metals, wood and plastics.



METRIC

| Type 643 Part # | Type 643-W Part # | Dia. MM | Overall Length MM | Overall Length Inches | Flute Length MM | Flute Length Inches | Qty. per/pack |
|-----------------|-------------------|---------|-------------------|-----------------------|-----------------|---------------------|---------------|
| 20630 | 17160 | .75 | 35 | 1-3/8 | 13 | 1/2 | 10 |
| 20640 | 17070 | .80 | 35 | 1-3/8 | 13 | 1/2 | 10 |
| 20650 | 17080 | .85 | 38 | 1-1/2 | 16 | 5/8 | 10 |
| 20660 | 29020 | .90 | 38 | 1-1/2 | 16 | 5/8 | 10 |
| 20670 | 29030 | .95 | 38 | 1-1/2 | 16 | 5/8 | 10 |
| 20680 | 29040 | 1.00 | 41 | 1-5/8 | 17 | 11/16 | 10 |
| 20690 | 29050 | 1.05 | 41 | 1-5/8 | 17 | 11/16 | 10 |
| 20700 | 29060 | 1.10 | 44 | 1-3/4 | 19 | 3/4 | 10 |
| 20710 | 17100 | 1.15 | 44 | 1-3/4 | 19 | 3/4 | 10 |
| 20720 | 29070 | 1.20 | 48 | 1-7/8 | 22 | 7/8 | 10 |
| 20730 | 17150 | 1.25 | 48 | 1-7/8 | 22 | 7/8 | 10 |
| 20740 | 29080 | 1.30 | 48 | 1-7/8 | 22 | 7/8 | 10 |
| 20750 | 29090 | 1.35 | 48 | 1-7/8 | 22 | 7/8 | 10 |
| 20760 | 29100 | 1.40 | 48 | 1-7/8 | 22 | 7/8 | 10 |
| 20780 | 17110 | 1.50 | 48 | 1-7/8 | 22 | 7/8 | 10 |
| 20800 | 29110 | 1.60 | 48 | 1-7/8 | 22 | 7/8 | 10 |
| 20820 | 29010 | 1.70 | 51 | 2 | 25 | 1 | 10 |
| 20830 | 17120 | 1.75 | 51 | 2 | 25 | 1 | 10 |
| 20840 | 17130 | 1.80 | 51 | 2 | 25 | 1 | 10 |
| 20860 | 29120 | 1.90 | 51 | 2 | 25 | 1 | 10 |
| 20880 | 20881 | 2.00 | 51 | 2 | 25 | 1 | 10 |
| 20980 | 20981 | 2.50 | 60 | 2-23/64 | 35 | 1-3/8 | 10 |
| 21040 | 21041 | 3.00 | 70 | 2-3/4 | 41 | 1-5/8 | 10 |
| 21110 | 21111 | 3.50 | 73 | 2-7/8 | 45 | 1-3/4 | 10 |
| 21170 | 21171 | 4.00 | 83 | 3-1/4 | 54 | 2-1/8 | 10 |
| 21230 | 21231 | 4.50 | 86 | 3-3/8 | 56 | 2-13/64 | 10 |
| 21290 | 21291 | 5.00 | 92 | 3-5/8 | 62 | 2-7/16 | 10 |
| 21350 | 21351 | 5.50 | 95 | 3-3/4 | 64 | 2-1/2 | 10 |
| 21410 | 21411 | 6.00 | 102 | 4 | 70 | 2-3/4 | 10 |
| 21470 | 21471 | 6.50 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 21530 | 21531 | 7.00 | 105 | 4-1/8 | 73 | 2-7/8 | 10 |
| 21590 | 21591 | 7.50 | 111 | 4-3/8 | 78 | 3 | 5 |
| 21650 | 21651 | 8.00 | 114 | 4-1/2 | 81 | 3-3/16 | 5 |
| 21710 | 21711 | 8.50 | 121 | 4-3/4 | 87 | 3-27/64 | 5 |
| 21770 | 21771 | 9.00 | 124 | 4-7/8 | 89 | 3-1/2 | 5 |
| 21830 | 21831 | 9.50 | 127 | 5 | 92 | 3-5/8 | 5 |
| 21890 | 21891 | 10.00 | 130 | 5-1/8 | 95 | 3-3/4 | 5 |
| 21900 | 21901 | 10.50 | 133 | 5-15/64 | 98 | 3-7/8 | 5 |
| 21910 | 21911 | 11.00 | 140 | 5-1/2 | 103 | 4-1/16 | 5 |
| 21920 | 21921 | 11.50 | 143 | 5-5/8 | 106 | 4-7/32 | 5 |
| 21930 | 21931 | 12.00 | 149 | 5-7/8 | 111 | 4-3/8 | 5 |
| 21940 | 21941 | 12.50 | 152 | 6 | 114 | 4-1/2 | 5 |
| 21950 | 21951 | 13.00 | 152 | 6 | 114 | 4-1/2 | 5 |

METRIC

Twist Drills - General Purpose Black Oxide & Bright Finish

1/4" & 3/8" REDUCED SHANK

Type 275

General Purpose 118° point - Bright Finish
1/4" Reduced Shank - Shorter than Jobber Length

- Shorter than Jobber length increases rigidity and improves drilling performance.
- Designed for use in portable air and electric drilling equipment with 1/4" chucks.



FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 28800 | 17/64 | 3-1/2 | 1-7/8 | 12 |
| 28810 | 9/32 | 3-19/32 | 1-31/32 | 12 |
| 28820 | 19/64 | 3-23/32 | 2-1/16 | 6 |
| 28830 | 5/16 | 3-27/32 | 2-3/16 | 6 |
| 28840 | 21/64 | 4 | 2-9/32 | 6 |
| 28850 | 11/32 | 4-1/32 | 2-11/32 | 6 |
| 28860 | 23/64 | 4-5/32 | 2-15/32 | 6 |
| 28870 | 3/8 | 4-1/4 | 2-9/16 | 6 |
| 28880 | 25/64 | 4-11/32 | 2-5/8 | 6 |
| 28890 | 13/32 | 4-15/32 | 2-3/4 | 6 |
| 28900 | 27/64 | 4-9/16 | 2-27/32 | 6 |
| 28910 | 7/16 | 4-11/16 | 2-15/16 | 6 |
| 28920 | 29/64 | 4-25/32 | 3-1/32 | 6 |
| 28930 | 15/32 | 4-7/8 | 3-1/8 | 6 |
| 28940 | 31/64 | 5 | 3-7/32 | 6 |
| 28950 | 1/2 | 5 | 3-7/32 | 6 |

These items are also available cased.
See Price List Catalog for details.

Type 278

General Purpose 118° point - Bright Finish
3/8" Reduced Shank - Jobber Length

- General purpose 118° point HSS drill is designed for use in portable air or electric drilling equipment with 3/8" chucks.

NOTE: Surface treated flutes on sizes larger than 1/2"



FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 59570 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 59580 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 59590 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 59500 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 59600 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 59510 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 59610 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 59520 | 1/2 | 6 | 4-1/2 | 6 |
| 59530 | 17/32 | 6 | 4-1/4 | 1 |
| 59540 | 9/16 | 6 | 4-1/4 | 1 |
| 59550 | 19/32 | 6 | 4-1/4 | 1 |
| 59560 | 5/8 | 6 | 4-1/4 | 1 |

These items are also available cased.
See Price List Catalog for details.

FAST SPIRAL HIGH HELIX

Type 240-F

Fast Spiral High Helix - 118° Point Bright Finish



- HSS drill performs well in deep hole drilling of low tensile strength material such as aluminum, zinc, copper, wood, refrigeration die castings, auto hardware & epoxy based plastics.
- Use to drill free machining steels, brass & bronze.

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 06550 | 1/32 | 1-3/8 | 1/2 | 12 |
| 06560 | 3/64 | 1-3/4 | 3/4 | 12 |
| 06570 | 1/16 | 1-7/8 | 7/8 | 12 |
| 06580 | 5/64 | 2 | 1 | 12 |
| 06590 | 3/32 | 2-1/4 | 1-1/4 | 12 |
| 06600 | 7/64 | 2-5/8 | 1-1/2 | 12 |
| 06610 | 1/8 | 2-3/4 | 1-5/8 | 12 |
| 06620 | 9/64 | 2-7/8 | 1-3/4 | 12 |
| 06630 | 5/32 | 3-1/8 | 2 | 12 |
| 06640 | 11/64 | 3-1/4 | 2-1/8 | 12 |
| 06650 | 3/16 | 3-1/2 | 2-5/16 | 12 |
| 06660 | 13/64 | 3-5/8 | 2-7/16 | 12 |
| 06670 | 7/32 | 3-3/4 | 2-1/2 | 12 |
| 06680 | 15/64 | 3-7/8 | 2-5/8 | 12 |
| 06690 | 1/4 | 4 | 2-3/4 | 12 |
| 06700 | 17/64 | 4-1/8 | 2-7/8 | 12 |
| 06710 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 06720 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 06730 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 06740 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 06750 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 06760 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 06770 | 3/8 | 5 | 3-5/8 | 6 |
| 06780 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 06790 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 06800 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 06810 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 06820 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 06830 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 06840 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 06850 | 1/2 | 6 | 4-1/2 | 6 |

LETTER

| Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|--------------|-----------------------|---------------------|---------------|
| 07660 | A | 3-7/8 | 2-5/8 | 12 |
| 07670 | B | 4 | 2-3/4 | 12 |
| 07680 | C | 4 | 2-3/4 | 12 |
| 07690 | D | 4 | 2-3/4 | 12 |
| 07700 | E | 4 | 2-3/4 | 12 |
| 07710 | F | 4-1/8 | 2-7/8 | 12 |
| 07720 | G | 4-1/8 | 2-7/8 | 12 |
| 07730 | H | 4-1/8 | 2-7/8 | 12 |
| 07740 | I | 4-1/8 | 2-7/8 | 12 |
| 07750 | J | 4-1/8 | 2-7/8 | 12 |
| 07760 | K | 4-1/4 | 2-15/16 | 12 |
| 07770 | L | 4-1/4 | 2-15/16 | 12 |
| 07780 | M | 4-3/8 | 3-1/16 | 6 |
| 07790 | N | 4-3/8 | 3-1/16 | 6 |
| 07800 | O | 4-1/2 | 3-3/16 | 6 |
| 07810 | P | 4-5/8 | 3-5/16 | 6 |
| 07820 | Q | 4-3/4 | 3-7/16 | 6 |
| 07830 | R | 4-3/4 | 3-7/16 | 6 |
| 07840 | S | 4-7/8 | 3-1/2 | 6 |
| 07850 | T | 4-7/8 | 3-1/2 | 6 |
| 07860 | U | 5 | 3-5/8 | 6 |
| 07870 | V | 5 | 3-5/8 | 6 |
| 07880 | W | 5-1/8 | 3-3/4 | 6 |
| 07890 | X | 5-1/8 | 3-3/4 | 6 |
| 07900 | Y | 5-1/4 | 3-7/8 | 6 |
| 07910 | Z | 5-1/4 | 3-7/8 | 6 |

WIRE

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 06860 | 1 | 3-7/8 | 2-5/8 | 12 |
| 06870 | 2 | 3-7/8 | 2-5/8 | 12 |
| 06880 | 3 | 3-3/4 | 2-1/2 | 12 |
| 06890 | 4 | 3-3/4 | 2-1/2 | 12 |
| 06900 | 5 | 3-3/4 | 2-1/2 | 12 |
| 06910 | 6 | 3-3/4 | 2-1/2 | 12 |
| 06920 | 7 | 3-5/8 | 2-7/16 | 12 |
| 06930 | 8 | 3-5/8 | 2-7/16 | 12 |
| 06940 | 9 | 3-5/8 | 2-7/16 | 12 |
| 06950 | 10 | 3-5/8 | 2-7/16 | 12 |
| 06960 | 11 | 3-1/2 | 2-5/16 | 12 |
| 06970 | 12 | 3-1/2 | 2-5/16 | 12 |
| 06980 | 13 | 3-1/2 | 2-5/16 | 12 |
| 06990 | 14 | 3-3/8 | 2-3/16 | 12 |
| 07000 | 15 | 3-3/8 | 2-3/16 | 12 |
| 07010 | 16 | 3-3/8 | 2-3/16 | 12 |
| 07020 | 17 | 3-3/8 | 2-3/16 | 12 |
| 07030 | 18 | 3-1/4 | 2-1/8 | 12 |
| 07040 | 19 | 3-1/4 | 2-1/8 | 12 |
| 07050 | 20 | 3-1/4 | 2-1/8 | 12 |
| 07060 | 21 | 3-1/4 | 2-1/8 | 12 |
| 07070 | 22 | 3-1/8 | 2 | 12 |
| 07080 | 23 | 3-1/8 | 2 | 12 |
| 07090 | 24 | 3-1/8 | 2 | 12 |
| 07100 | 25 | 3 | 1-7/8 | 12 |
| 07110 | 26 | 3 | 1-7/8 | 12 |
| 07120 | 27 | 3 | 1-7/8 | 12 |
| 07130 | 28 | 2-7/8 | 1-3/4 | 12 |
| 07140 | 29 | 2-7/8 | 1-3/4 | 12 |
| 07150 | 30 | 2-3/4 | 1-5/8 | 12 |
| 07160 | 31 | 2-3/4 | 1-5/8 | 12 |
| 07170 | 32 | 2-3/4 | 1-5/8 | 12 |
| 07180 | 33 | 2-5/8 | 1-1/2 | 12 |
| 07190 | 34 | 2-5/8 | 1-1/2 | 12 |
| 07200 | 35 | 2-5/8 | 1-1/2 | 12 |
| 07210 | 36 | 2-1/2 | 1-7/16 | 12 |
| 07220 | 37 | 2-1/2 | 1-7/16 | 12 |
| 07230 | 38 | 2-1/2 | 1-7/16 | 12 |
| 07240 | 39 | 2-3/8 | 1-3/8 | 12 |
| 07250 | 40 | 2-3/8 | 1-3/8 | 12 |
| 07260 | 41 | 2-3/8 | 1-3/8 | 12 |
| 07270 | 42 | 2-1/4 | 1-1/4 | 12 |
| 07280 | 43 | 2-1/4 | 1-1/4 | 12 |
| 07290 | 44 | 2-1/8 | 1-1/8 | 12 |
| 07300 | 45 | 2-1/8 | 1-1/8 | 12 |
| 07310 | 46 | 2-1/8 | 1-1/8 | 12 |
| 07320 | 47 | 2 | 1 | 12 |
| 07330 | 48 | 2 | 1 | 12 |
| 07340 | 49 | 2 | 1 | 12 |
| 07350 | 50 | 2 | 1 | 12 |
| 07360 | 51 | 2 | 1 | 12 |
| 07370 | 52 | 1-7/8 | 7/8 | 12 |
| 07380 | 53 | 1-7/8 | 7/8 | 12 |
| 07390 | 54 | 1-7/8 | 7/8 | 12 |
| 07400 | 55 | 1-7/8 | 7/8 | 12 |
| 07410 | 56 | 1-3/4 | 3/4 | 12 |
| 07420 | 57 | 1-3/4 | 3/4 | 12 |
| 07430 | 58 | 1-5/8 | 5/8 | 12 |
| 07440 | 59 | 1-5/8 | 5/8 | 12 |
| 07450 | 60 | 1-5/8 | 5/8 | 12 |

HEAVY-DUTY & TITANIUM NITRIDE PARABOLIC FLUTE

Type 240-P

135° Split Point - Black Oxide

- Parabolic flute drills are designed to allow deep hole drilling without frequent drill removal to clear chips.
- Parabolic flute drills perform best in low to medium tensile strength materials.



Type 240-PT Titanium Nitride

135° Split Point

- Parabolic flute drills are designed to allow deep hole drilling without frequent drill removal to clear chips.
- Exceptional high performance drill with the super hard TiN coating extends tool life 500% or more in very abrasive drilling applications.



| Type 240-P Black Oxide | | FRACTIONAL | | | Type 240-P Black Oxide | Type 240-PT TiN Coated |
|---------------------------|--------|--------------------|--------------------------|------------------------|---------------------------|---------------------------|
| Part # | Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/Pack | Qty. per/Pack |
| 36800 | 37870 | 1/16 | 1-7/8 | 7/8 | 12 | 6 |
| 36810 | 37880 | 5/64 | 2 | 1 | 12 | 6 |
| 36820 | 37890 | 3/32 | 2-1/4 | 1-1/4 | 12 | 6 |
| 36830 | 37900 | 7/64 | 2-5/8 | 1-1/2 | 12 | 6 |
| 36840 | 37910 | 1/8 | 2-3/4 | 1-5/8 | 12 | 6 |
| 36850 | 37920 | 9/64 | 2-7/8 | 1-3/4 | 12 | 6 |
| 36860 | 37930 | 5/32 | 3-1/8 | 2 | 12 | 6 |
| 36870 | 37940 | 11/64 | 3-1/4 | 2-1/8 | 12 | 6 |
| 36880 | 37950 | 3/16 | 3-1/2 | 2-5/16 | 12 | 6 |
| 36890 | 37960 | 13/64 | 3-5/8 | 2-7/16 | 12 | 6 |
| 36900 | 37970 | 7/32 | 3-3/4 | 2-1/2 | 12 | 6 |
| 36910 | 37980 | 15/64 | 3-7/8 | 2-5/8 | 12 | 6 |
| 36920 | 37990 | 1/4 | 4 | 2-3/4 | 12 | 6 |
| 36930 | 38000 | 17/64 | 4-1/8 | 2-7/8 | 12 | 6 |
| 36940 | 38010 | 9/32 | 4-1/4 | 2-15/16 | 12 | 6 |
| 36950 | 38020 | 19/64 | 4-3/8 | 3-1/16 | 6 | 3 |
| 36960 | 38030 | 5/16 | 4-1/2 | 3-3/16 | 6 | 3 |
| 36970 | 38040 | 21/64 | 4-5/8 | 3-5/16 | 6 | 3 |
| 36980 | 38050 | 11/32 | 4-3/4 | 3-7/16 | 6 | 3 |
| 36990 | 38060 | 23/64 | 4-7/8 | 3-1/2 | 6 | 3 |
| 37000 | 38070 | 3/8 | 5 | 3-5/8 | 6 | 3 |
| 37010 | 38080 | 25/64 | 5-1/8 | 3-3/4 | 6 | 3 |
| 37020 | 38090 | 13/32 | 5-1/4 | 3-7/8 | 6 | 3 |
| 37030 | 38100 | 27/64 | 5-3/8 | 3-15/16 | 6 | 3 |
| 37040 | 38110 | 7/16 | 5-1/2 | 4-1/16 | 6 | 3 |
| 37050 | 38120 | 29/64 | 5-5/8 | 4-3/16 | 6 | 3 |
| 37060 | 38130 | 15/32 | 5-3/4 | 4-5/16 | 6 | 3 |
| 37070 | 38140 | 31/64 | 5-7/8 | 4-3/8 | 6 | 3 |
| 37080 | 38150 | 1/2 | 6 | 4-1/2 | 6 | 3 |

| Type 240-P Black Oxide | | WIRE | | | Type 240-P Black Oxide | Type 240-PT TiN Coated |
|---------------------------|--------|---------------|--------------------------|------------------------|---------------------------|---------------------------|
| Part # | Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/Pack | Qty. per/Pack |
| 68161 | 68162 | 1 | 3-7/8 | 2-5/8 | 12 | 6 |
| 68171 | 68172 | 2 | 3-7/8 | 2-5/8 | 12 | 6 |
| 38171 | 38172 | 3 | 3-3/4 | 2-1/2 | 12 | 6 |
| 68181 | 68182 | 4 | 3-3/4 | 2-1/2 | 12 | 6 |
| 68191 | 68192 | 5 | 3-3/4 | 2-1/2 | 12 | 6 |
| 68201 | 68202 | 6 | 3-3/4 | 2-1/2 | 12 | 6 |
| 58421 | 58422 | 7 | 3-5/8 | 2-7/16 | 12 | 6 |
| 68211 | 68212 | 8 | 3-5/8 | 2-7/16 | 12 | 6 |
| 68221 | 68222 | 9 | 3-5/8 | 2-7/16 | 12 | 6 |
| 68231 | 68232 | 10 | 3-5/8 | 2-7/16 | 12 | 6 |
| 68241 | 68242 | 11 | 3-1/2 | 2-5/16 | 12 | 6 |
| 68251 | 68252 | 12 | 3-1/2 | 2-5/16 | 12 | 6 |
| 68261 | 68262 | 13 | 3-1/2 | 2-5/16 | 12 | 6 |
| 68271 | 68272 | 14 | 3-3/8 | 2-3/16 | 12 | 6 |
| 68281 | 68282 | 15 | 3-3/8 | 2-3/16 | 12 | 6 |
| 68291 | 68292 | 16 | 3-3/8 | 2-3/16 | 12 | 6 |

Wire sizes continued on page 26

TiN

Twist Drills - Heavy-Duty & TiN Coated Parabolic Flute

HEAVY-DUTY & TITANIUM NITRIDE PARABOLIC FLUTE

Type 240-P

135° Split Point - Black Oxide



Type 240-PT Titanium Nitride

135° Split Point - TiN Coated



TiN

Twist Drills - Parabolic & TiN Coated Parabolic Flutes

| Type 240-P Black Oxide | | WIRE | | | Type 240-P Black Oxide | |
|---------------------------|--------|------------|-----------------------|---------------------|---------------------------|---------------|
| Part # | Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/Pack | Qty. per/Pack |
| 68301 | 68302 | 17 | 3-3/8 | 2-3/16 | 12 | 6 |
| 58591 | 58592 | 18 | 3-1/4 | 2-1/8 | 12 | 6 |
| 68311 | 68312 | 19 | 3-1/4 | 2-1/8 | 12 | 6 |
| 58381 | 58382 | 20 | 3-1/4 | 2-1/8 | 12 | 6 |
| 58721 | 58722 | 21 | 3-1/4 | 2-1/8 | 12 | 6 |
| 68321 | 68322 | 22 | 3-1/8 | 2 | 12 | 6 |
| 68331 | 68332 | 23 | 3-1/8 | 2 | 12 | 6 |
| 68341 | 68342 | 24 | 3-1/8 | 2 | 12 | 6 |
| 58901 | 58902 | 25 | 3 | 1-7/8 | 12 | 6 |
| 68351 | 68352 | 26 | 3 | 1-7/8 | 12 | 6 |
| 68361 | 68362 | 27 | 3 | 1-7/8 | 12 | 6 |
| 68371 | 68372 | 28 | 2-7/8 | 1-3/4 | 12 | 6 |
| 37321 | 37322 | 29 | 2-7/8 | 1-3/4 | 12 | 6 |
| 68381 | 68382 | 30 | 2-3/4 | 1-5/8 | 12 | 6 |
| 68391 | 68392 | 31 | 2-3/4 | 1-5/8 | 12 | 6 |
| 68401 | 68402 | 32 | 2-3/4 | 1-5/8 | 12 | 6 |
| 58441 | 58442 | 33 | 2-5/8 | 1-1/2 | 12 | 6 |
| 68411 | 68412 | 34 | 2-5/8 | 1-1/2 | 12 | 6 |
| 68421 | 68422 | 35 | 2-5/8 | 1-1/2 | 12 | 6 |
| 58581 | 58582 | 36 | 2-1/2 | 1-7/16 | 12 | 6 |
| 37721 | 37722 | 37 | 2-1/2 | 1-7/16 | 12 | 6 |
| 68431 | 68432 | 38 | 2-1/2 | 1-7/16 | 12 | 6 |
| 58451 | 58452 | 39 | 2-3/8 | 1-3/8 | 12 | 6 |
| 38321 | 38322 | 40 | 2-3/8 | 1-3/8 | 12 | 6 |

| Type 240-P Black Oxide | | LETTER | | | Type 240-P Black Oxide | |
|---------------------------|--------|--------------|-----------------------|---------------------|---------------------------|---------------|
| Part # | Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Qty. per/Pack | Qty. per/Pack |
| 70880 | 58372 | A | 3-7/8 | 2-5/8 | 12 | 6 |
| 70890 | 58402 | B | 4 | 2-3/4 | 12 | 6 |
| 70900 | 58412 | C | 4 | 2-3/4 | 12 | 6 |
| 70910 | 58462 | D | 4 | 2-3/4 | 12 | 6 |
| 71950 | 58472 | E | 4 | 2-3/4 | 12 | 6 |
| 58481 | 58482 | F | 4-1/8 | 2-7/8 | 12 | 6 |
| 70920 | 58492 | G | 4-1/8 | 2-7/8 | 12 | 6 |
| 70930 | 58512 | H | 4-1/8 | 2-7/8 | 12 | 6 |
| 70940 | 58532 | I | 4-1/8 | 2-7/8 | 12 | 6 |
| 70950 | 58542 | J | 4-1/8 | 2-7/8 | 12 | 6 |
| 71960 | 58552 | K | 4-1/4 | 2-15/16 | 12 | 6 |
| 70960 | 58562 | L | 4-1/4 | 2-15/16 | 12 | 6 |
| 70970 | 58572 | M | 4-3/8 | 3-1/16 | 6 | 3 |
| 70980 | 58602 | N | 4-3/8 | 3-1/16 | 6 | 3 |
| 70990 | 58612 | O | 4-1/2 | 3-3/16 | 6 | 3 |
| 71000 | 58622 | P | 4-5/8 | 3-5/16 | 6 | 3 |
| 71010 | 58632 | Q | 4-3/4 | 3-7/16 | 6 | 3 |
| 71020 | 58642 | R | 4-3/4 | 3-7/16 | 6 | 3 |
| 71030 | 58652 | S | 4-7/8 | 3-1/2 | 6 | 3 |
| 71040 | 58662 | T | 4-7/8 | 3-1/2 | 6 | 3 |
| 71050 | 58672 | U | 5 | 3-5/8 | 6 | 3 |
| 71060 | 58732 | V | 5 | 3-5/8 | 6 | 3 |
| 71070 | 58682 | W | 5-1/8 | 3-3/4 | 6 | 3 |
| 72000 | 58692 | X | 5-1/8 | 3-3/4 | 6 | 3 |
| 71080 | 58702 | Y | 5-1/4 | 3-7/8 | 6 | 3 |
| 71090 | 58712 | Z | 5-1/4 | 3-7/8 | 6 | 3 |

AUTOMOTIVE SERIES TANGED DRIVE

Type 230



Automotive Series Tanged Drive
118° Point General Purpose - Black Oxide

- Tang drive used with A.S.A. split sleeve drill drivers

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 13300 | 1/8 | 2-3/4 | 1-5/8 | 12 |
| 13360 | 9/64 | 2-7/8 | 1-3/4 | 12 |
| 13400 | 5/32 | 3-1/8 | 2 | 12 |
| 13440 | 11/64 | 3-1/4 | 2-1/8 | 12 |
| 13490 | 3/16 | 3-1/2 | 2-5/16 | 12 |
| 13540 | 13/64 | 3-5/8 | 2-7/16 | 12 |
| 13570 | 7/32 | 3-3/4 | 2-1/2 | 12 |
| 13600 | 15/64 | 3-7/8 | 2-5/8 | 12 |
| 13630 | 1/4 | 4 | 2-3/4 | 12 |
| 13670 | 17/64 | 4-1/8 | 2-7/8 | 12 |
| 13700 | 9/32 | 4-1/4 | 2-15/16 | 12 |
| 13730 | 19/64 | 4-3/8 | 3-1/16 | 6 |
| 13760 | 5/16 | 4-1/2 | 3-3/16 | 6 |
| 13790 | 21/64 | 4-5/8 | 3-5/16 | 6 |
| 13820 | 11/32 | 4-3/4 | 3-7/16 | 6 |
| 13850 | 23/64 | 4-7/8 | 3-1/2 | 6 |
| 13870 | 3/8 | 5 | 3-5/8 | 6 |
| 13890 | 25/64 | 5-1/8 | 3-3/4 | 6 |
| 13910 | 13/32 | 5-1/4 | 3-7/8 | 6 |
| 13920 | 27/64 | 5-3/8 | 3-15/16 | 6 |
| 13930 | 7/16 | 5-1/2 | 4-1/16 | 6 |
| 13940 | 29/64 | 5-5/8 | 4-3/16 | 6 |
| 13950 | 15/32 | 5-3/4 | 4-5/16 | 6 |
| 13960 | 31/64 | 5-7/8 | 4-3/8 | 6 |
| 13970 | 1/2 | 6 | 4-1/2 | 6 |
| 13980 | 33/64 | 6-5/8 | 4-13/16 | 1 |
| 13990 | 17/32 | 6-5/8 | 4-13/16 | 1 |
| 14000 | 35/64 | 6-5/8 | 4-13/16 | 1 |
| 14010 | 9/16 | 6-5/8 | 4-13/16 | 1 |
| 14020 | 37/64 | 6-5/8 | 4-13/16 | 1 |
| 14030 | 19/32 | 7-1/8 | 5-3/16 | 1 |
| 14040 | 39/64 | 7-1/8 | 5-3/16 | 1 |
| 14050 | 5/8 | 7-1/8 | 5-3/16 | 1 |
| 14060 | 41/64 | 7-1/8 | 5-3/16 | 1 |
| 14070 | 21/32 | 7-1/8 | 5-3/16 | 1 |
| 14080 | 43/64 | 7-5/8 | 5-5/8 | 1 |
| 14090 | 11/16 | 7-5/8 | 5-5/8 | 1 |

Twist Drills - Automotive Series Tanged Drive

Mechanic Length



HSS 3/8" REDUCED SHANK & CAD-HD SERIES

Type 250-UB

Ultra Bor Super Premium
3-Flats on Shank - 135° Split Point

- Special Hi-Molybdenum tool steel.
- 135° split point for fast penetration and accurate starting without center punch.
- Precision ground point, flutes, body, clearance and drill diameter for the ultimate in accuracy and performance.
- Body and clearance are gold surface treated for maximum lubricity.
- Flats on shank give positive chuck-grip (3/16" and Larger).



3 - FLATS ON SHANK

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 22860 | 1/16 | 1-7/8 | 7/8 | 12 |
| 22870 | 5/64 | 2 | 1 | 12 |
| 22880 | 3/32 | 2-1/4 | 1-1/4 | 12 |
| 86950 | 7/64 | 2-3/8 | 1-5/16 | 12 |
| 86960 | 1/8 | 2-1/2 | 1-7/16 | 12 |
| 86970 | 9/64 | 2-5/8 | 1-9/16 | 12 |
| 86980 | 5/32 | 2-3/4 | 1-11/16 | 12 |
| 86990 | 11/64 | 2-7/8 | 1-13/16 | 12 |
| 87000 | 3/16 | 3 | 1-7/8 | 12 |
| 87010 | 13/64 | 3-1/8 | 1-15/16 | 12 |
| 87020 | 7/32 | 3-1/4 | 2 | 12 |
| 87030 | 15/64 | 3-3/8 | 2-1/16 | 12 |
| 87040 | 1/4 | 3-1/2 | 2 | 12 |
| 87050 | 17/64 | 3-5/8 | 2-1/8 | 12 |
| 87060 | 9/32 | 3-3/4 | 2-1/4 | 12 |
| 87070 | 19/64 | 3-7/8 | 2-3/8 | 6 |
| 87080 | 5/16 | 4 | 2-1/2 | 6 |
| 87090 | 21/64 | 4-1/16 | 2-9/16 | 6 |
| 87100 | 11/32 | 4-1/8 | 2-5/8 | 6 |
| 87110 | 23/64 | 4-3/16 | 2-11/16 | 6 |
| 87120 | 3/8 | 4-1/4 | 2-11/16 | 6 |
| 87130 | 25/64 | 4-5/16 | 2-3/4 | 6 |
| 87140 | 13/32 | 4-3/8 | 2-13/16 | 6 |
| 87150 | 27/64 | 4-7/16 | 2-7/8 | 6 |
| 87160 | 7/16 | 4-1/2 | 2-15/16 | 6 |
| 87170 | 29/64 | 4-5/8 | 3 | 6 |
| 87180 | 15/32 | 4-3/4 | 3-1/8 | 6 |
| 87190 | 31/64 | 4-7/8 | 3-1/4 | 6 |
| 87200 | 1/2 | 5 | 3-3/8 | 6 |

These items are also available carded.
See Price List Catalog for details.

Type 258-UB

Ultra Bor Super Premium - 135° Split Point
3-Flats on Shank - 3/8" Reduced Shank

- Reduced shank with flats for positive chuck grip.



3 - FLATS ON SHANK - 3/8" SHANK

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 81560 | 13/32 | 4-3/8 | 2-13/16 | 6 |
| 81570 | 27/64 | 4-7/16 | 2-7/8 | 6 |
| 81580 | 7/16 | 4-1/2 | 2-15/16 | 6 |
| 81590 | 29/64 | 4-5/8 | 3 | 6 |
| 81600 | 15/32 | 4-3/4 | 3-1/8 | 6 |
| 81610 | 31/64 | 4-7/8 | 3-1/4 | 6 |
| 81620 | 1/2 | 5 | 3-3/8 | 6 |

25/64 250-UB drills with flats will fit a 3/8" chuck without reducing the shank diameter

These items are also available carded. See Price List Catalog for details.

Type 241-A

V-line, CAD-HD Series -
Black Oxide 135° Split Point

- American made value line drill
- New advances in drill making technology have allowed us to make an excellent drill for the very price sensitive portions of the business.
- The black surface treatment prevents chip welding and increases abrasion resistance.



| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 04492 | 1/16 | 1-7/8 | 7/8" | 12 |
| 04502 | 5/64 | 2 | 1" | 12 |
| 04512 | 3/32 | 2-1/4 | 1-1/4" | 12 |
| 04522 | 7/64 | 2-3/8 | 1-1/4" | 12 |
| 04532 | 1/8 | 2-1/2 | 1-5/16" | 12 |
| 04542 | 9/64 | 2-5/8 | 1-3/8" | 12 |
| 04552 | 5/32 | 2-3/4 | 1-7/16" | 12 |
| 04562 | 11/64 | 2-7/8 | 1-1/2" | 12 |
| 04572 | 3/16 | 2 | 1-9/16" | 12 |
| 04582 | 13/64 | 3-1/8 | 1-5/8" | 12 |
| 04592 | 7/32 | 3-1/4 | 1-11/16" | 12 |
| 04602 | 15/64 | 3-3/8 | 1-3/4" | 12 |
| 04612 | 1/4 | 3-1/2 | 1-13/16" | 12 |
| 04622 | 17/64 | 3-5/8 | 1-7/8" | 12 |
| 04632 | 9/32 | 3-3/4 | 1-15/16" | 12 |
| 04642 | 19/64 | 3-7/8 | 2" | 6 |
| 04652 | 5/16 | 4 | 2-1/16" | 6 |
| 04662 | 21/64 | 4-1/16 | 2-1/8" | 6 |
| 04672 | 11/32 | 4-1/8 | 2-3/16" | 6 |
| 04682 | 23/64 | 4-3/16 | 2-3/16" | 6 |
| 04692 | 3/8 | 4-1/4 | 2-3/16" | 6 |
| 04702 | 25/64 | 4-5/16 | 2-1/4" | 6 |
| 04712 | 13/32 | 4-3/8 | 2-1/4" | 6 |
| 04722 | 27/64 | 4-7/16 | 2-5/16" | 6 |
| 04732 | 7/16 | 4-1/2 | 2-3/8" | 6 |
| 04742 | 29/64 | 4-5/8 | 2-3/8" | 6 |
| 04752 | 15/32 | 4-3/4 | 2-7/16" | 6 |
| 04762 | 31/64 | 4-7/8 | 2-1/2" | 6 |
| 04772 | 1/2 | 5 | 2-9/16" | 6 |



HEX SHANK - 1/4" QUICK RELEASE

Type QR-UB

Ultra Bor Super Premium Quick Release Drills - 135° Split Point

- A mechanic length with a quick release shank
 - Special Hi-Molybdenum tool steel.
- 135° split point for fast penetration and accurate starting without center punch.
- Body and clearance are gold treated for maximum lubricity.
- Specially designed for hand held drill and impact tools.
 - Recommended use in work hardening grades of stainless steel and other hard metal drill applications.



QR-UB 1/4" HEX SHANK

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 34501 | 1/16 | 2-5/8 | 7/8 | 6 |
| 34521 | 3/32 | 3 | 1-1/4 | 6 |
| 34541 | 1/8 | 3-1/4 | 1-7/16 | 6 |
| 34561 | 5/32 | 3-1/2 | 1-11/16 | 6 |
| 34581 | 3/16 | 3-3/4 | 1-7/8 | 6 |
| 34611 | 7/32 | 4" | 2" | 6 |
| 34631 | 1/4 | 4-1/4 | 2" | 6 |
| 34651 | 9/32 | 3-13/16 | 2-1/4 | 6 |
| 34671 | 5/16 | 4" | 2-1/2 | 3 |
| 34691 | 11/32 | 4-7/32 | 2-5/8 | 3 |
| 34711 | 3/8 | 4-1/4 | 2-11/16 | 3 |
| 34731 | 13/32 | 4-1/2 | 2-13/16 | 3 |
| 34751 | 7/16 | 4-1/2 | 2-15/16 | 3 |
| 34771 | 15/32 | 4-7/8 | 3-1/8 | 3 |
| 34791 | 1/2 | 5" | 3-3/8 | 3 |

34801 Quick Release Adapter

CARDED QR-UB 1/4" HEX SHANK

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 34507 | 1/16 | 2-5/8 | 7/8 | 2 |
| 34527 | 3/32 | 3 | 1-1/4 | 2 |
| 34547 | 1/8 | 3-1/4 | 1-7/16 | 2 |
| 34567 | 5/32 | 3-1/2 | 1-11/16 | 2 |
| 34587 | 3/16 | 3-3/4 | 1-7/8 | 2 |
| 34617 | 7/32 | 4" | 2" | 1 |
| 34637 | 1/4 | 4-1/4 | 2" | 1 |
| 34657 | 9/32 | 3-13/16 | 2-1/4 | 1 |
| 34677 | 5/16 | 4" | 2-1/2 | 1 |
| 34697 | 11/32 | 4-7/32 | 2-5/8 | 1 |
| 34717 | 3/8 | 4-1/4 | 2-11/16 | 1 |
| 34737 | 13/32 | 4-1/2 | 2-13/16 | 1 |
| 34757 | 7/16 | 4-1/2 | 2-15/16 | 1 |
| 34777 | 15/32 | 4-7/8 | 3-1/8 | 1 |
| 34797 | 1/2 | 5" | 3-3/8 | 1 |

34807 Quick Release Adapter

TYPE QR-UB EXTENSIONS

- One handed operation – Simply push your PTA into the extension and it will automatically load and lock the accessory.
- Patented All Hex connection system will hold any 1/4" hex shape including, Power Groove and Notched product
- Patented All Hex connection system holds the accessory without any wobble or play. Tight fit for a professional feel.
- **Made in the USA.**
- **Not intended for Impact Tools.**



| Part # | Size | Qty. per/pack |
|--------|-----------------------------|---------------|
| 34821 | 3" Quick release Extension | 1 |
| 34831 | 6" Quick release Extension | 1 |
| 34841 | 12" Quick release Extension | 1 |

SETS HEX SHANK - 1/4" QUICK RELEASE



QR-12 SET HARD CASE - INDEX

| Part # | Description of Sizes | Qty of each |
|--------|--------------------------------------------------------------------------------------|-------------|
| 34811 | 1/16, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8, 7/16, 1/2 & Quick Release Adapter | 1 |



QR-16 SET SOFT POUCH - INDEX

| Part # | Description of Sizes | Qty of each |
|--------|-----------------------------------------------------------------------------------------------------------------|-------------|
| 34812 | 1/16, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4, 9/32, 5/16, 11/32, 3/8, 13/32, 7/16, 15/32, 1/2 & Quick Release Adapter | 1 |

QR-7A - SOFT POUCH INDEX

| Part # | Description of Sizes | Qty of each |
|--------|----------------------------------------|-------------|
| 34803 | 1/16, 3/32, 1/8, 5/32, 3/16, 7/32, 1/4 | 1 |

QR-7B SET SOFT POUCH - INDEX

| Part # | Description of Sizes | Qty of each |
|--------|--------------------------------------|-------------|
| 34804 | 1/8, 3/16, 1/4, 5/16, 3/8, 7/16, 1/2 | 1 |

M42 COBALT-TITANIUM NITRIDE & TITANIUM ALUMINUM NITRIDE NAS 907J

Type 240-D -M42 Cobalt, Type 240-DN -Titanium Nitride
Type 240-AND -Titanium Aluminum Nitride

135° Split Point - M42 Cobalt - NAS 907J

- Manufactured from M42 HSS containing 8% cobalt which increases high red hardness.
- Cobalt drills require rigidly held positive feed drilling equipment.
- Titanium Aluminum Nitride can be used in machining stainless steel, nickel based and titanium alloys, not recommended for aluminum.
- Manufactured to NAS 907J specifications.



Type 240-D

Use to drill hard, tough metals, free machining stainless steel, titanium alloys and certain abrasive plastics.



Type 240-DN

Titanium nitride for lubricity, and extended tool life.



Type 240-AND

Titanium aluminum nitride designed for use where extreme temperatures are found, allows for increased machining speeds up to 200%.

FRACTIONAL

| 240-D Part# | 240-DN Part# | 240-AND Part# | Overall Diameter Inches | Flute Length Inches | Length Inches | 240-D Qty. per/Pk | 240-DN/240-AND Qty. per/Pk |
|-------------|--------------|---------------|-------------------------|---------------------|---------------|-------------------|----------------------------|
| 08000 | ----- | ----- | 3/64 | 1-3/4 | 3/4 | 12 | 6 |
| 08010 | 79600 | 80003 | 1/16 | 1-7/8 | 7/8 | 12 | 6 |
| 08020 | 79610 | 80013 | 5/64 | 2" | 1" | 12 | 6 |
| 08030 | 79620 | 80023 | 3/32 | 2-1/4 | 1-1/4 | 12 | 6 |
| 08040 | 79630 | 80033 | 7/64 | 2-5/8 | 1-1/2 | 12 | 6 |
| 08050 | 79640 | 80043 | 1/8 | 2-3/4 | 1-5/8 | 12 | 6 |
| 08060 | 79650 | 80053 | 9/64 | 2-7/8 | 1-3/4 | 12 | 6 |
| 08070 | 79660 | 80063 | 5/32 | 3-1/8 | 2" | 12 | 6 |
| 08080 | 79670 | 80073 | 11/64 | 3-1/4 | 2-1/8 | 12 | 6 |
| 08090 | 79680 | 80083 | 3/16 | 3-1/2 | 2-5/16 | 12 | 6 |
| 08100 | 79690 | 80093 | 13/64 | 3-5/8 | 2-7/16 | 12 | 6 |
| 08110 | 79700 | 80103 | 7/32 | 3-3/4 | 2-1/2 | 12 | 6 |
| 08120 | 79710 | 80113 | 15/64 | 3-7/8 | 2-5/8 | 12 | 6 |
| 08130 | 79720 | 80123 | 1/4 | 4" | 2-3/4 | 12 | 6 |
| 08140 | 79730 | 80133 | 17/64 | 4-1/8 | 2-7/8 | 12 | 6 |
| 08150 | 79740 | 80143 | 9/32 | 4-1/4 | 2-15/16 | 12 | 6 |
| 08160 | 79750 | 80153 | 19/64 | 4-3/8 | 3-1/16 | 6 | 3 |
| 08170 | 79760 | 80163 | 5/16 | 4-1/2 | 3-3/16 | 6 | 3 |
| 08180 | 79770 | 80173 | 21/64 | 4-5/8 | 3-5/16 | 6 | 3 |
| 08190 | 79780 | 80183 | 11/32 | 4-3/4 | 3-7/16 | 6 | 3 |
| 08200 | 79790 | 80193 | 23/64 | 4-7/8 | 3-1/2 | 6 | 3 |
| 08210 | 79800 | 80203 | 3/8 | 5" | 3-5/8 | 6 | 3 |
| 08220 | 79810 | 80213 | 25/64 | 5-1/8 | 3-3/4 | 6 | 3 |
| 08230 | 79820 | 80223 | 13/32 | 5-1/4 | 3-7/8 | 6 | 3 |
| 08240 | 79830 | 80233 | 27/64 | 5-3/8 | 3-15/16 | 6 | 3 |
| 08250 | 79840 | 80243 | 7/16 | 5-1/2 | 4-1/16 | 6 | 3 |
| 08260 | 79850 | 80253 | 29/64 | 5-5/8 | 4-3/16 | 6 | 3 |
| 08270 | 79860 | 80263 | 15/32 | 5-3/4 | 4-5/16 | 6 | 3 |
| 08280 | 79870 | 80273 | 31/64 | 5-7/8 | 4-3/8 | 6 | 3 |
| 08290 | 79880 | 80283 | 1/2 | 6" | 4-1/2 | 6 | 3 |

LETTER

| 240-D Part# | 240-DN Part# | 240-AND Part# | Letter Sizes | Overall Length Inches | Flute Length Inches | 240-D Qty. per/Pk | 240-DN/240-AND Qty. per/Pk |
|-------------|--------------|---------------|--------------|-----------------------|---------------------|-------------------|----------------------------|
| 08940 | 79320 | 80293 | A | 3-7/8 | 2-5/8 | 12 | 6 |
| 08950 | 79330 | 80303 | B | 4" | 2-3/4 | 12 | 6 |
| 08960 | 79340 | 80313 | C | 4" | 2-3/4 | 12 | 6 |
| 08970 | 79350 | 80323 | D | 4" | 2-3/4 | 12 | 6 |
| 08980 | 79360 | 80333 | E | 4" | 2-3/4 | 12 | 6 |
| 08990 | 79370 | 80343 | F | 4-1/8 | 2-7/8 | 12 | 6 |
| 09000 | 79380 | 80353 | G | 4-1/8 | 2-7/8 | 12 | 6 |
| 09010 | 79390 | 80363 | H | 4-1/8 | 2-7/8 | 12 | 6 |
| 09020 | 79400 | 80373 | I | 4-1/8 | 2-7/8 | 12 | 6 |
| 09030 | 79410 | 80383 | J | 4-1/8 | 2-7/8 | 12 | 6 |
| 09040 | 79420 | 80393 | K | 4-1/4 | 2-15/16 | 12 | 6 |
| 09050 | 79430 | 80403 | L | 4-1/4 | 2-15/16 | 12 | 6 |
| 09060 | 79440 | 80413 | M | 4-3/8 | 3-3/16 | 6 | 3 |
| 09070 | 79450 | 80423 | N | 4-3/8 | 3-1/16 | 6 | 3 |
| 09080 | 79460 | 80433 | O | 4-1/2 | 3-3/16 | 6 | 3 |
| 09090 | 79470 | 80443 | P | 4-5/8 | 3-5/16 | 6 | 3 |
| 09100 | 79480 | 80453 | Q | 4-3/4 | 3-7/16 | 6 | 3 |
| 09110 | 79490 | 80463 | R | 4-3/4 | 3-7/16 | 6 | 3 |
| 09120 | 79500 | 80473 | S | 4-7/8 | 3-1/2 | 6 | 3 |
| 09130 | 79510 | 80483 | T | 4-7/8 | 3-1/2 | 6 | 3 |
| 09140 | 79520 | 80493 | U | 5" | 3-5/8 | 6 | 3 |
| 09150 | 79530 | 80503 | V | 5" | 3-5/8 | 6 | 3 |
| 09160 | 79540 | 80513 | W | 5-1/8 | 3-3/4 | 6 | 3 |
| 09170 | 79550 | 80523 | X | 5-1/8 | 3-3/4 | 6 | 3 |
| 09180 | 79560 | 80533 | Y | 5-1/4 | 3-7/8 | 6 | 3 |
| 09190 | 79570 | 80543 | Z | 5-1/4 | 3-7/8 | 6 | 3 |

WIRE

| 240-D Part# | 240-DN Part# | 240-AND Part# | Wire Sizes | Overall Diameter Inches | Flute Length Inches | 240-D Qty. per/Pk | 240-DN/240-AND Qty. per/Pk |
|-------------|--------------|---------------|------------|-------------------------|---------------------|-------------------|----------------------------|
| 08300 | 77001 | 80553 | 1 | 3-7/8 | 2-5/8 | 12 | 6 |
| 08310 | 77011 | 80563 | 2 | 3-7/8 | 2-5/5 | 12 | 6 |
| 08320 | 77021 | 80573 | 3 | 3-3/4 | 2-1/2 | 12 | 6 |
| 08330 | 77031 | 80583 | 4 | 3-3/4 | 2-1/2 | 12 | 6 |
| 08340 | 77041 | 80593 | 5 | 3-3/4 | 2-1/2 | 12 | 6 |
| 08350 | 77051 | 80603 | 6 | 3-3/4 | 2-1/2 | 12 | 6 |
| 08360 | 77061 | 80613 | 7 | 3-5/8 | 2-7/16 | 12 | 6 |
| 08370 | 77071 | 80623 | 8 | 3-5/8 | 2-7/16 | 12 | 6 |

Wire sizes continued next Column

WIRE

| 240-D Part# | 240-DN Part# | 240-AND Part# | Wire Sizes | Overall Diameter Inches | Flute Length Inches | 240-D Qty. per/Pk | 240-DN/240-AND Qty. per/Pk |
|-------------|--------------|---------------|------------|-------------------------|---------------------|-------------------|----------------------------|
| 08380 | 77081 | 80633 | 9 | 3-5/8 | 2-7/16 | 12 | 6 |
| 08390 | 77091 | 80643 | 10 | 3-5/8 | 2-7/16 | 12 | 6 |
| 08400 | 77101 | 80653 | 11 | 3-1/2 | 2-5/16 | 12 | 6 |
| 08410 | 77111 | 80663 | 12 | 3-1/2 | 2-5/16 | 12 | 6 |
| 08420 | 77121 | 80673 | 13 | 3-1/2 | 2-5/16 | 12 | 6 |
| 08430 | 77131 | 80683 | 14 | 3-3/8 | 2-3/16 | 12 | 6 |
| 08440 | 77141 | 80693 | 15 | 3-3/8 | 2-3/16 | 12 | 6 |
| 08450 | 77151 | 80703 | 16 | 3-3/8 | 2-3/16 | 12 | 6 |
| 08460 | 77161 | 80713 | 17 | 3-3/8 | 2-3/16 | 12 | 6 |
| 08470 | 77171 | 80723 | 18 | 3-1/4 | 2-1/8 | 12 | 6 |
| 08480 | 77181 | 80733 | 19 | 3-1/4 | 2-1/8 | 12 | 6 |
| 08490 | 77191 | 80743 | 20 | 3-1/4 | 2-1/8 | 12 | 6 |
| 08500 | 77201 | 80753 | 21 | 3-1/4 | 2-1/8 | 12 | 6 |
| 08510 | 77211 | 80763 | 22 | 3-1/8 | 2" | 12 | 6 |
| 08520 | 77221 | 80773 | 23 | 3-1/8 | 2" | 12 | 6 |
| 08530 | 77231 | 80783 | 24 | 3-1/8 | 2" | 12 | 6 |
| 08540 | 77241 | 80793 | 25 | 3" | 1-7/8 | 12 | 6 |
| 08550 | 77251 | 80803 | 26 | 3" | 1-7/8 | 12 | 6 |
| 08560 | 77261 | 80813 | 27 | 3" | 1-7/8 | 12 | 6 |
| 08570 | 77271 | 80823 | 28 | 2-7/8 | 1-3/4 | 12 | 6 |
| 08580 | 77281 | 80833 | 29 | 2-7/8 | 1-3/4 | 12 | 6 |
| 08590 | 77291 | 80843 | 30 | 2-3/4 | 1-5/8 | 12 | 6 |
| 08600 | 77301 | 80853 | 31 | 2-3/4 | 1-5/8 | 12 | 6 |
| 08610 | 77311 | 80863 | 32 | 2-3/4 | 1-5/8 | 12 | 6 |
| 08620 | 77321 | 80873 | 33 | 2-5/8 | 1-1/2 | 12 | 6 |
| 08630 | 77331 | 80883 | 34 | 2-5/8 | 1-1/2 | 12 | 6 |
| 08640 | 77341 | 80893 | 35 | 2-5/8 | 1-1/2 | 12 | 6 |
| 08650 | 77351 | 80903 | 36 | 2-1/2 | 1-7/16 | 12 | 6 |
| 08660 | 77361 | 80913 | 37 | 2-1/2 | 1-7/16 | 12 | 6 |
| 08670 | 77371 | 80923 | 38 | 2-1/2 | 1-7/16 | 12 | 6 |
| 08680 | 77381 | 80933 | 39 | 2-3/8 | 1-3/8 | 12 | 6 |
| 08690 | 77391 | 80943 | 40 | 2-3/8 | 1-3/8 | 12 | 6 |
| 08700 | 77401 | 80953 | 41 | 2-3/8 | 1-3/8 | 12 | 6 |
| 08710 | 77411 | 80963 | 42 | 2-1/4 | 1-1/4 | 12 | 6 |
| 08720 | 77421 | 80973 | 43 | 2-1/4 | 1-1/4 | 12 | 6 |
| 08730 | 77431 | 80983 | 44 | 2-1/8 | 1-1/8 | 12 | 6 |
| 08740 | 77441 | 80993 | 45 | 2-1/8 | 1-1/8 | 12 | 6 |
| 08750 | 77451 | 81003 | 46 | 2-1/8 | 1-1/8 | 12 | 6 |
| 08760 | 77461 | 81013 | 47 | 2" | 1" | 12 | 6 |
| 08770 | 77471 | 81023 | 48 | 2" | 1" | 12 | 6 |
| 08780 | 77481 | 81033 | 49 | 2" | 1" | 12 | 6 |
| 08790 | 77491 | 81043 | 50 | 2" | 1" | 12 | 6 |
| 08800 | 77501 | 81053 | 51 | 2" | 1" | 12 | 6 |
| 08810 | 77511 | 81063 | 52 | 1-7/8 | 7/8 | 12 | 6 |
| 08820 | 77521 | 81073 | 53 | 1-7/8 | 7/8 | 12 | 6 |
| 08830 | 77531 | 81083 | 54 | 1-7/8 | 7/8 | 12 | 6 |
| 08840 | 77541 | 81093 | 55 | 1-7/8 | 7/8 | 12 | 6 |
| 08850 | 77551 | 81103 | 56 | 1-3/4 | 3/4 | 12 | 6 |
| 08860 | 77561 | 81113 | 57 | 1-3/4 | 3/4 | 12 | 6 |
| 08870 | 77571 | 81123 | 58 | 1-5/8 | 11/16 | 12 | 6 |
| 08880 | 77581 | 81133 | 59 | 1-5/8 | 11/16 | 12 | 6 |
| 08890 | 77591 | 81143 | 60 | 1-5/8 | 11/16 | 12 | 6 |
| 08900 | ----- | ----- | 61 | 1-5/8 | 11/16 | 12 | 6 |
| 08910 | ----- | ----- | 62 | 1-1/2 | 5/8 | 12 | 6 |
| 08921 | ----- | ----- | 63 | 1-1/2 | 5/8 | 12 | 6 |
| 08931 | ----- | ----- | 64 | 1-1/2 | 5/8 | 12 | 6 |
| 08941 | ----- | ----- | 65 | 1-1/2 | 5/8 | 12 | 6 |
| 08951 | ----- | ----- | 66 | 1-3/8 | 1/2 | 12 | 6 |
| 08961 | ----- | ----- | 67 | 1-3/8 | 1/2 | 12 | 6 |
| 08971 | ----- | ----- | 68 | 1-3/8 | 1/2 | 12 | 6 |
| 08981 | ----- | ----- | 69 | 1-3/8 | 1/2 | 12 | 6 |
| 08991 | ----- | ----- | 70 | 1-1/4 | 3/8 | 12 | 6 |
| 09001 | ----- | ----- | 71 | 1-1/4 | 3/8 | 12 | 6 |
| 09011 | ----- | ----- | 72 | 1-1/8 | 5/16 | 12 | 6 |
| 09021 | ----- | ----- | 73 | 1-1/8 | 5/16 | 12 | 6 |
| 09031 | ----- | ----- | 74 | 1" | 1/4" | 12 | 6 |
| 09041 | ----- | ----- | 75 | 1" | 1/4" | 12 | 6 |
| 09051 | ----- | ----- | 76 | 7/8 | 3/16 | 12 | 6 |
| 09061 | ----- | ----- | 77 | 7/8 | 3/16 | 12 | 6 |
| 09071 | ----- | ----- | 78 | 7/8 | 3/16 | 12 | 6 |
| 09081 | ----- | ----- | 79 | 3/4 | 3/16 | 12 | 6 |
| 09091 | ----- | ----- | 80 | 3/4 | 3/16 | 12 | 6 |

TiAIN

TiN

Twist Drills - M42 Cobalt Titanium Nitride/Titanium Aluminum Nitride NAS 907-J

M42 COBALT NAS 907J

Type 643-D

135° Split Point - M42 Cobalt - NAS 907J



- Manufactured from M42 high speed steel containing 8% cobalt which increases high hot hardness.
- Cobalt drills require rigidly held positive feed drilling equipment.
- Manufactured to NAS 907J specifications.

METRIC

| Part # | Overall Length | | Flute Length | | Qty. per/pack |
|--------|----------------|------------|--------------|---------|---------------|
| | MM | MM Inches | MM | Inches | |
| 27050 | 0.90 | 38 1-1/2 | 16 | 5/8 | 10 |
| 27060 | 0.95 | 38 1-1/2 | 16 | 5/8 | 10 |
| 27070 | 1.00 | 41 1-5/8 | 17 | 11/16 | 10 |
| 27090 | 1.10 | 44 1-3/4 | 19 | 3/4 | 10 |
| 27080 | 1.05 | 41 1-5/8 | 17 | 11/16 | 10 |
| 27100 | 1.20 | 48 1-7/8 | 22 | 7/8 | 10 |
| 27110 | 1.30 | 48 1-7/8 | 22 | 7/8 | 10 |
| 08831 | 1.40 | 48 1-7/8 | 22 | 7/8 | 10 |
| 27130 | 1.50 | 48 1-7/8 | 22 | 7/8 | 10 |
| 27140 | 1.60 | 48 1-7/8 | 22 | 7/8 | 10 |
| 27150 | 1.70 | 51 2 | 25 | 1 | 10 |
| 27160 | 1.80 | 51 2 | 25 | 1 | 10 |
| 27170 | 1.90 | 51 2 | 25 | 1 | 10 |
| 26460 | 2.00 | 51 2 | 25 | 1 | 10 |
| 26940 | 2.05 | 54 2-1/8 | 25 | 1-5/32 | 10 |
| 26470 | 2.10 | 54 2-1/8 | 29 | 1-5/32 | 10 |
| 26480 | 2.20 | 57 2-1/4 | 32 | 1-1/4 | 10 |
| 26490 | 2.30 | 57 2-1/4 | 32 | 1-1/4 | 10 |
| 26500 | 2.40 | 60 2-23/64 | 35 | 1-3/8 | 10 |
| 26510 | 2.50 | 60 2-23/64 | 35 | 1-3/8 | 10 |
| 26520 | 2.60 | 64 2-1/2 | 37 | 1-29/64 | 10 |
| 26530 | 2.70 | 64 2-1/2 | 37 | 1-15/32 | 10 |
| 26540 | 2.80 | 67 2-5/8 | 38 | 1-1/2 | 10 |
| 26550 | 2.90 | 70 2-3/4 | 41 | 1-5/8 | 10 |
| 26560 | 3.00 | 70 2-3/4 | 41 | 1-5/8 | 10 |
| 26570 | 3.10 | 70 2-3/4 | 41 | 1-5/8 | 10 |
| 26580 | 3.20 | 70 2-3/4 | 41 | 1-5/8 | 10 |
| 26590 | 3.30 | 73 2-7/8 | 45 | 1-3/4 | 10 |
| 26600 | 3.40 | 73 2-7/8 | 45 | 1-3/4 | 10 |
| 26610 | 3.50 | 73 2-7/8 | 45 | 1-3/4 | 10 |
| 26620 | 3.60 | 76 3 | 48 | 1-7/8 | 10 |
| 26630 | 3.70 | 76 3 | 48 | 1-7/8 | 10 |
| 26640 | 3.80 | 76 3 | 48 | 1-7/8 | 10 |
| 26650 | 3.90 | 79 3-1/8 | 51 | 2 | 10 |
| 26660 | 4.00 | 83 3-1/4 | 54 | 2-1/8 | 10 |
| 26670 | 4.10 | 83 3-1/4 | 54 | 2-1/8 | 10 |
| 26680 | 4.20 | 83 3-1/4 | 54 | 2-1/8 | 10 |
| 26690 | 4.30 | 83 3-1/4 | 54 | 2-1/8 | 10 |
| 34570 | 4.40 | 86 3-3/8 | 56 | 2-13/64 | 10 |
| 26700 | 4.50 | 86 3-3/8 | 56 | 2-13/64 | 10 |
| 26710 | 4.60 | 86 3-3/8 | 56 | 2-13/64 | 10 |
| 26720 | 4.70 | 89 3-1/2 | 59 | 2-21/64 | 10 |
| 26730 | 4.80 | 89 3-1/2 | 59 | 2-21/64 | 10 |
| 26740 | 4.90 | 92 3-5/8 | 62 | 2-7/16 | 10 |
| 26750 | 5.00 | 92 3-5/8 | 62 | 2-7/16 | 10 |
| 33960 | 5.10 | 92 3-5/8 | 62 | 2-7/16 | 10 |
| 33970 | 5.20 | 95 3-3/4 | 64 | 2-1/2 | 10 |
| 33980 | 5.30 | 95 3-3/4 | 64 | 2-1/2 | 10 |
| 33990 | 5.40 | 95 3-3/4 | 64 | 2-1/2 | 10 |
| 34000 | 5.50 | 95 3-3/4 | 64 | 2-1/2 | 10 |
| 34010 | 5.60 | 98 3-7/8 | 67 | 2-5/8 | 10 |
| 34020 | 5.70 | 98 3-7/8 | 67 | 2-5/8 | 10 |
| 34030 | 5.80 | 98 3-7/8 | 67 | 2-5/8 | 10 |
| 34040 | 5.90 | 98 3-7/8 | 67 | 2-5/8 | 10 |
| 34050 | 6.00 | 102 4 | 70 | 2-3/4 | 10 |
| 34060 | 6.10 | 102 4 | 70 | 2-3/4 | 10 |
| 34070 | 6.20 | 102 4 | 70 | 2-3/4 | 10 |
| 34080 | 6.30 | 102 4 | 70 | 2-3/4 | 10 |
| 34090 | 6.40 | 105 4-1/8 | 73 | 2-7/8 | 10 |
| 34100 | 6.50 | 105 4-1/8 | 73 | 2-7/8 | 10 |
| 34110 | 6.60 | 105 4-1/8 | 73 | 2-7/8 | 10 |
| 34120 | 6.70 | 105 4-1/8 | 73 | 2-7/8 | 10 |
| 34130 | 6.80 | 105 4-1/8 | 73 | 2-7/8 | 10 |

| Part # | Overall Length | | Flute Length | | Qty. per/pack |
|--------|----------------|-------------|--------------|---------|---------------|
| | MM | MM Inches | MM | Inches | |
| 34140 | 6.90 | 105 4-1/8 | 73 | 2-7/8 | 10 |
| 34150 | 7.00 | 105 4-1/8 | 73 | 2-7/8 | 10 |
| 34160 | 7.10 | 108 4-1/4 | 75 | 2-61/64 | 10 |
| 34170 | 7.20 | 108 4-1/4 | 75 | 2-61/64 | 10 |
| 34180 | 7.30 | 108 4-1/4 | 75 | 2-61/64 | 10 |
| 34190 | 7.40 | 111 4-3/8 | 78 | 3 | 10 |
| 34200 | 7.50 | 111 4-3/8 | 78 | 3 | 5 |
| 34210 | 7.60 | 111 4-3/8 | 78 | 3 | 5 |
| 34220 | 7.70 | 114 4-1/2 | 81 | 3-3/16 | 5 |
| 34230 | 7.80 | 114 4-1/2 | 81 | 3-3/16 | 5 |
| 34240 | 7.90 | 114 4-1/2 | 81 | 3-3/16 | 5 |
| 34250 | 8.00 | 114 4-1/2 | 81 | 3-3/16 | 5 |
| 34260 | 8.10 | 117 4-9/16 | 84 | 3-5/16 | 5 |
| 34270 | 8.20 | 117 4-9/16 | 84 | 3-5/16 | 5 |
| 34280 | 8.30 | 117 4-9/16 | 84 | 3-5/16 | 5 |
| 34290 | 8.40 | 121 4-3/4 | 87 | 3-27/64 | 5 |
| 34300 | 8.50 | 121 4-3/4 | 87 | 3-27/64 | 5 |
| 34310 | 8.60 | 121 4-3/4 | 87 | 3-27/64 | 5 |
| 34320 | 8.70 | 121 4-3/4 | 87 | 3-27/64 | 5 |
| 34330 | 8.80 | 124 4-7/8 | 89 | 3-1/2 | 5 |
| 34340 | 8.90 | 124 4-7/8 | 89 | 3-1/2 | 5 |
| 34350 | 9.00 | 124 4-7/8 | 89 | 3-1/2 | 5 |
| 34360 | 9.10 | 124 4-7/8 | 89 | 3-1/2 | 5 |
| 34370 | 9.20 | 127 5" | 92 | 3-5/8 | 5 |
| 34380 | 9.30 | 127 5" | 92 | 3-5/8 | 5 |
| 34390 | 9.40 | 127 5" | 92 | 3-5/8 | 5 |
| 34400 | 9.50 | 127 5" | 92 | 3-5/8 | 5 |
| 34410 | 9.60 | 130 5-1/8 | 95 | 3-3/4 | 5 |
| 34420 | 9.70 | 130 5-1/8 | 95 | 3-3/4 | 5 |
| 34430 | 9.80 | 130 5-1/8 | 95 | 3-3/4 | 5 |
| 34440 | 9.90 | 130 5-1/8 | 95 | 3-3/4 | 5 |
| 34450 | 10.00 | 130 5-1/8 | 95 | 3-3/4 | 5 |
| 34452 | 10.10 | 133 5-15/64 | 98 | 3-7/8 | 5 |
| 34460 | 10.20 | 133 5-15/64 | 98 | 3-7/8 | 5 |
| 34461 | 10.30 | 133 5-15/64 | 98 | 3-7/8 | 5 |
| 34462 | 10.40 | 133 5-1/4 | 98 | 3-7/8 | 5 |
| 34470 | 10.50 | 133 5-15/64 | 98 | 3-7/8 | 5 |
| 34472 | 10.60 | 136 5-3/8 | 100 | 3-15/16 | 5 |
| 34512 | 10.70 | 136 5-3/8 | 100 | 3-15/16 | 5 |
| 34480 | 10.80 | 140 5-1/2 | 103 | 4-1/16 | 5 |
| 34482 | 10.90 | 140 5-1/2 | 103 | 4-1/16 | 5 |
| 34490 | 11.00 | 140 5-1/2 | 103 | 4-1/16 | 5 |
| 34492 | 11.10 | 140 5-1/2 | 103 | 4-1/16 | 5 |
| 34500 | 11.20 | 143 5-5/8 | 106 | 4-7/32 | 5 |
| 34502 | 11.30 | 143 5-5/8 | 106 | 4-7/32 | 5 |
| 34504 | 11.40 | 143 5-5/8 | 106 | 4-7/32 | 5 |
| 34510 | 11.50 | 143 5-5/8 | 106 | 4-7/32 | 5 |
| 34514 | 11.60 | 146 5-3/4 | 110 | 4-11/32 | 5 |
| 34519 | 11.70 | 146 5-3/4 | 110 | 4-11/32 | 5 |
| 34520 | 11.80 | 146 5-3/4 | 110 | 4-11/32 | 5 |
| 34522 | 11.90 | 146 5-3/4 | 109 | 4-5/16 | 5 |
| 34530 | 12.00 | 149 5-7/8 | 111 | 4-3/8 | 5 |
| 34532 | 12.10 | 149 5-7/8 | 111 | 4-3/8 | 5 |
| 34540 | 12.20 | 149 5-7/8 | 111 | 4-3/8 | 5 |
| 34542 | 12.30 | 149 5-7/8 | 111 | 4-3/8 | 5 |
| 34544 | 12.40 | 152 6" | 114 | 4-1/2 | 5 |
| 34550 | 12.50 | 152 6" | 114 | 4-1/2 | 5 |
| 34552 | 12.60 | 152 6" | 114 | 4-1/2 | 5 |
| 34580 | 12.70 | 152 6" | 114 | 4-1/2 | 5 |
| 34590 | 12.80 | 152 6" | 114 | 4-1/2 | 5 |
| 34980 | 12.90 | 152 6" | 114 | 4-1/2 | 5 |
| 34560 | 13.00 | 152 6" | 114 | 4-1/2 | 5 |

METRIC

Twist Drills - M42 Cobalt NAS 907-J

HSS M42 COBALT DIN 338

Type XGT-J

DIN 338 Length - 135° Split Point

M-42 Cobalt High Speed Steel

- Gyroidal Torsion flute and wide land construction yields exceptional performance in deep hole drilling.
- Recommended for a wide range of steels, castings and other hard metal drilling applications.
- Cobalt steel is abrasion and heat resistant.
- Allows deep hole drilling without drill retraction.

* M2 Titanium Nitride sizes 1.00 - 1.59mm



Type XGT-J

Heavy duty wide land parabolic.

METRIC

Twist Drills - HSS M42 Cobalt DIN 338

METRIC

| Part # | Dia. MM | Frac/Wire/Letter | Overall Length | | Flute Length | | Qty. per/pack |
|--------|---------|------------------|----------------|---------|--------------|---------|---------------|
| | | | MM | Inches | MM | Inches | |
| *00200 | 1.00 | | 41 | 1 5/8 | 17 | 11/16 | 10 |
| *00201 | 1.02 | 60 | 41 | 1 5/8 | 17 | 11/16 | 10 |
| *00202 | 1.04 | 59 | 41 | 1 5/8 | 17 | 11/16 | 10 |
| *00203 | 1.05 | | 41 | 1 5/8 | 17 | 11/16 | 10 |
| *00204 | 1.07 | 58 | 41 | 1 5/8 | 17 | 11/16 | 10 |
| *00210 | 1.09 | 57 | 44 | 1 3/4 | 19 | 3/4 | 10 |
| *00211 | 1.10 | | 44 | 1 3/4 | 19 | 3/4 | 10 |
| *00212 | 1.15 | | 44 | 1 3/4 | 19 | 3/4 | 10 |
| *00213 | 1.18 | 56 | 44 | 1 3/4 | 19 | 3/4 | 10 |
| *00214 | 1.19 | 3/64 | 44 | 1 3/4 | 19 | 3/4 | 10 |
| *00220 | 1.20 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00221 | 1.25 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00222 | 1.30 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00223 | 1.32 | 55 | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00224 | 1.35 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00230 | 1.40 | 54 | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00232 | 1.45 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00233 | 1.50 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00234 | 1.51 | 53 | 48 | 1 7/8 | 22 | 7/8 | 10 |
| *00240 | 1.55 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| 00241 | 1.59 | 1/16 | 48 | 1 7/8 | 22 | 7/8 | 10 |
| 00242 | 1.60 | | 48 | 1 7/8 | 22 | 7/8 | 10 |
| 00243 | 1.61 | 52 | 48 | 1 7/8 | 22 | 7/8 | 10 |
| 00244 | 1.65 | | 51 | 2 | 25 | 1 | 10 |
| 00250 | 1.70 | 51 | 51 | 2 | 25 | 1 | 10 |
| 00252 | 1.75 | | 51 | 2 | 25 | 1 | 10 |
| 00253 | 1.78 | 50 | 51 | 2 | 25 | 1 | 10 |
| 00254 | 1.80 | | 51 | 2 | 25 | 1 | 10 |
| 00260 | 1.85 | 49 | 51 | 2 | 25 | 1 | 10 |
| 00262 | 1.90 | | 51 | 2 | 25 | 1 | 10 |
| 00263 | 1.93 | 48 | 51 | 2 | 25 | 1 | 10 |
| 00264 | 1.95 | | 51 | 2 | 25 | 1 | 10 |
| 00270 | 1.98 | 5/64 | 51 | 2 | 25 | 1 | 10 |
| 00271 | 1.99 | 47 | 51 | 2 | 25 | 1 | 10 |
| 00272 | 2.00 | | 51 | 2 | 25 | 1 | 10 |
| 00273 | 2.05 | | 54 | 2 1/8 | 29 | 1 5/32 | 10 |
| 00274 | 2.06 | 46 | 54 | 2 1/8 | 29 | 1 5/32 | 10 |
| 00280 | 2.08 | 45 | 54 | 2 1/8 | 29 | 1 5/32 | 10 |
| 00281 | 2.10 | | 54 | 2 1/8 | 29 | 1 5/32 | 10 |
| 00282 | 2.15 | | 54 | 2 1/8 | 29 | 1 5/32 | 10 |
| 00283 | 2.18 | 44 | 54 | 2 1/8 | 29 | 1 5/32 | 10 |
| 00284 | 2.20 | | 57 | 2 1/4 | 32 | 1 1/4 | 10 |
| 00290 | 2.25 | | 57 | 2 1/4 | 32 | 1 1/4 | 10 |
| 00291 | 2.26 | 43 | 57 | 2 1/4 | 32 | 1 1/4 | 10 |
| 00292 | 2.30 | | 57 | 2 1/4 | 32 | 1 1/4 | 10 |
| 00293 | 2.35 | | 57 | 2 1/4 | 32 | 1 1/4 | 10 |
| 00294 | 2.37 | 42 | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00300 | 2.38 | 3/32 | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00301 | 2.40 | | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00302 | 2.44 | 41 | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00303 | 2.45 | | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00304 | 2.49 | 40 | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00310 | 2.50 | | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00311 | 2.53 | 39 | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00231 | 2.55 | | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00312 | 2.58 | 38 | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00313 | 2.60 | | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00314 | 2.64 | 37 | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00251 | 2.65 | | 57 | 2 1/4 | 30 | 1 3/16 | 10 |
| 00320 | 2.70 | | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00321 | 2.71 | 36 | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00261 | 2.75 | | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00322 | 2.78 | 7/64 | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00323 | 2.79 | 35 | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00324 | 2.80 | | 61 | 2 13/32 | 33 | 1 19/64 | 10 |

| Part # | Dia. MM | Frac/Wire/Letter | Overall Length | | Flute Length | | Qty. per/pack |
|--------|---------|------------------|----------------|---------|--------------|---------|---------------|
| | | | MM | Inches | MM | Inches | |
| 00330 | 2.82 | 34 | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00360 | 2.85 | | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00331 | 2.87 | 33 | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00332 | 2.90 | | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00333 | 2.95 | 32 | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00334 | 3.00 | | 61 | 2 13/32 | 33 | 1 19/64 | 10 |
| 00340 | 3.05 | 31 | 65 | 2 9/16 | 36 | 1 7/16 | 10 |
| 00341 | 3.10 | | 65 | 2 9/16 | 36 | 1 7/16 | 10 |
| 00342 | 3.17 | 1/8 | 65 | 2 9/16 | 36 | 1 7/16 | 10 |
| 00343 | 3.20 | | 65 | 2 9/16 | 36 | 1 7/16 | 10 |
| 00371 | 3.25 | | 65 | 2 9/16 | 36 | 1 7/16 | 10 |
| 00344 | 3.26 | 30 | 65 | 2 9/16 | 36 | 1 7/16 | 10 |
| 00350 | 3.30 | | 65 | 2 9/16 | 36 | 1 7/16 | 10 |
| 00351 | 3.40 | | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00352 | 3.45 | 29 | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00353 | 3.50 | | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00354 | 3.57 | 9/64-28 | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00361 | 3.60 | | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00362 | 3.66 | 27 | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00363 | 3.70 | | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00364 | 3.73 | 26 | 70 | 2 3/4 | 39 | 1 17/32 | 10 |
| 00370 | 3.80 | 25 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00372 | 3.86 | 24 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00373 | 3.90 | | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00374 | 3.91 | 23 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00380 | 3.97 | 5/32 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00381 | 3.99 | 22 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00382 | 4.00 | | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00383 | 4.04 | 21 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00384 | 4.09 | 20 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00390 | 4.10 | | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00391 | 4.15 | | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00392 | 4.20 | | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00393 | 4.22 | 19 | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00480 | 4.25 | | 75 | 2 15/16 | 43 | 1 11/16 | 10 |
| 00394 | 4.30 | | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00680 | 4.31 | 18 | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00400 | 4.37 | 11/64 | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00401 | 4.39 | 17 | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00402 | 4.40 | | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00403 | 4.50 | 16 | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00404 | 4.55 | | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00410 | 4.57 | 15 | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00411 | 4.60 | | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00412 | 4.62 | 14 | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00413 | 4.70 | 13 | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00414 | 4.75 | | 80 | 3 5/32 | 47 | 1 27/32 | 10 |
| 00420 | 4.76 | 3/16 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00421 | 4.80 | 12 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00423 | 4.85 | 11 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00424 | 4.90 | | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00430 | 4.91 | 10 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00431 | 4.98 | 9 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00432 | 5.00 | | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00433 | 5.05 | 8 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00434 | 5.10 | | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00440 | 5.11 | 7 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00441 | 5.16 | 13/64 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00442 | 5.18 | 6 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00443 | 5.20 | | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00444 | 5.22 | 5 | 86 | 3 3/8 | 52 | 2 1/16 | 10 |
| 00481 | 5.25 | | 86 | 3 3/8 | 52 | 2 7/32 | 10 |
| 00450 | 5.30 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00451 | 5.31 | 4 | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00452 | 5.40 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00453 | 5.41 | 3 | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00454 | 5.50 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00460 | 5.56 | 7/32 | 93 | 3 21/32 | 57 | 2 7/32 | 10 |

Metric sizes continued on page 33

HSS M42 COBALT DIN 338

Type XGT-J METRIC

DIN 338 Length - 135° Split Point
M-42 Cobalt High-Speed Steel

METRIC

| Part # | Dia. MM | Frac/Wire/Letter | Overall Length | | Flute Length | | Qty. per/pack |
|--------|---------|------------------|----------------|---------|--------------|---------|---------------|
| | | | MM | Inches | MM | Inches | |
| 00461 | 5.60 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00462 | 5.61 | 2 | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00463 | 5.70 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00482 | 5.75 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00464 | 5.79 | 1 | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00470 | 5.80 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00471 | 5.90 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00472 | 5.94 | A | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00473 | 5.95 | 15/64 | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00474 | 6.00 | | 93 | 3 21/32 | 57 | 2 7/32 | 10 |
| 00483 | 6.05 | B | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00484 | 6.10 | | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00490 | 6.15 | C | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00491 | 6.20 | | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00492 | 6.25 | D | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00493 | 6.30 | | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00494 | 6.35 | 1/4-E | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00500 | 6.40 | | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00501 | 6.50 | | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00502 | 6.53 | F | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00503 | 6.60 | | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00504 | 6.63 | G | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00510 | 6.70 | | 101 | 3 31/32 | 63 | 2 15/32 | 10 |
| 00511 | 6.75 | 17/64-H | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00513 | 6.80 | | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00514 | 6.90 | I | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00520 | 7.00 | | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00521 | 7.04 | J | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00522 | 7.10 | | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00524 | 7.14 | 9/32-K | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00530 | 7.20 | | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00531 | 7.30 | | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00532 | 7.37 | L | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00533 | 7.40 | | 109 | 4 9/32 | 69 | 2 23/32 | 10 |
| 00540 | 7.50 | M | 109 | 4 9/32 | 69 | 2 23/32 | 5 |
| 00541 | 7.54 | 19/64 | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00542 | 7.60 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00543 | 7.67 | N | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00544 | 7.70 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00550 | 7.80 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00551 | 7.90 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00552 | 7.94 | 5/16 | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00553 | 8.00 | O | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00554 | 8.03 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00560 | 8.10 | P | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00561 | 8.20 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00562 | 8.30 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00563 | 8.33 | 21/64 | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00564 | 8.40 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00570 | 8.43 | Q | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00571 | 8.50 | | 117 | 4 19/32 | 75 | 2 15/16 | 5 |
| 00572 | 8.60 | R | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00573 | 8.70 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00574 | 8.73 | 11/32 | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00580 | 8.80 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00581 | 8.84 | S | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00582 | 8.90 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00583 | 9.00 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00584 | 9.10 | T | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00590 | 9.13 | 23/64 | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00591 | 9.20 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00592 | 9.30 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00593 | 9.35 | U | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00594 | 9.40 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00600 | 9.50 | | 125 | 4 29/32 | 81 | 3 3/16 | 5 |
| 00601 | 9.52 | 3/8 | 125 | 4 29/32 | 87 | 3 7/16 | 5 |
| 00602 | 9.58 | V | 125 | 4 29/32 | 87 | 3 7/16 | 5 |
| 00603 | 9.60 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00604 | 9.70 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00610 | 9.80 | W | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00611 | 9.90 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00612 | 9.92 | 25/64 | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00613 | 10.00 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |

| Part # | Dia. MM | Frac/Wire/Letter | Overall Length | | Flute Length | | Qty. per/pack |
|--------|---------|------------------|----------------|---------|--------------|---------|---------------|
| | | | MM | Inches | MM | Inches | |
| 00614 | 10.08 | X | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00620 | 10.10 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00621 | 10.20 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00622 | 10.26 | Y | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00623 | 10.30 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00624 | 10.32 | 13/32 | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00630 | 10.40 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00631 | 10.50 | Z | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00632 | 10.60 | | 133 | 5 1/4 | 87 | 3 7/16 | 5 |
| 00633 | 10.70 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00634 | 10.72 | 27/64 | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00640 | 10.80 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00641 | 10.90 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00642 | 11.00 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00643 | 11.10 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00644 | 11.11 | 7/16 | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00650 | 11.20 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00651 | 11.30 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00652 | 11.40 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00653 | 11.50 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00654 | 11.51 | 29/64 | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00660 | 11.60 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00661 | 11.70 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00662 | 11.75 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00663 | 11.80 | | 142 | 5 19/32 | 94 | 3 11/16 | 5 |
| 00664 | 11.91 | 15/32 | 151 | 5 15/16 | 101 | 3 31/32 | 5 |
| 00670 | 12.00 | | 151 | 5 15/16 | 101 | 3 31/32 | 5 |
| 00671 | 12.30 | 31/64 | 151 | 5 15/16 | 101 | 3 31/32 | 5 |
| 00672 | 12.50 | | 151 | 5 15/16 | 101 | 3 31/32 | 5 |
| 00673 | 12.70 | 1/2 | 151 | 5 15/16 | 101 | 3 31/32 | 5 |
| 00674 | 13.00 | | 151 | 5 15/16 | 101 | 3 31/32 | 5 |

HSS M42 COBALT DIN 338

Type XGT-JN TiN Titanium Nitride

DIN 338 Length - 135° Split Point M-42 Cobalt



| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| | | | | |
| 38613 | 5/64 | 2 | 1 | 10 |
| 38623 | 3/32 | 2-1/4 | 1-3/16 | 10 |
| 38633 | 7/64 | 2-13/32 | 1-19/64 | 10 |
| 38643 | 1/8 | 2-9/16 | 1-7/16 | 10 |
| 38653 | 9/64 | 2-3/4 | 1-17/32 | 10 |
| 38663 | 5/32 | 2-15/16 | 1-11/16 | 10 |
| 38673 | 11/64 | 3-5/32 | 1-27/32 | 10 |
| 38683 | 3/16 | 3-3/8 | 2-1/16 | 10 |
| 38693 | 13/64 | 3-1/8 | 2-1/16 | 10 |
| 38703 | 7/32 | 3-21/32 | 2-7/32 | 10 |
| 38713 | 15/64 | 3-21/32 | 2-7/32 | 10 |
| 38723 | 1/4 | 3-31/32 | 2-15/32 | 10 |
| 38733 | 17/64 | 4-9/32 | 2-23/32 | 10 |
| 38743 | 9/32 | 4-9/32 | 2-23/32 | 10 |
| 38753 | 19/64 | 4-19/32 | 2-15/16 | 5 |
| 38763 | 5/16 | 4-19/32 | 2-15/16 | 5 |
| 38773 | 21/64 | 4-19/32 | 2-15/16 | 5 |
| 38783 | 11/32 | 4-29/32 | 3-3/16 | 5 |
| 38793 | 23/64 | 4-29/32 | 3-3/16 | 5 |
| 38803 | 3/8 | 4-29/32 | 3-7/16 | 5 |
| 38813 | 25/64 | 5-1/4 | 3-7/16 | 5 |
| 38823 | 13/32 | 5-1/4 | 3-7/16 | 5 |
| 38833 | 27/64 | 5-19/32 | 3-11/16 | 5 |
| 38843 | 7/16 | 5-19/32 | 3-11/16 | 5 |
| 38853 | 29/64 | 5-19/32 | 3-11/16 | 5 |
| 38863 | 15/32 | 5-15/16 | 3-31/32 | 5 |
| 38873 | 31/64 | 5-15/16 | 3-31/32 | 5 |
| 38883 | 1/2 | 5-15/16 | 3-31/32 | 5 |

Screw Machine Length



Super Premium

Screw Machine Length - NAS 907C Super Premium

NAS 907C - SCREW MACHINE

Type 260-UB

Ultra Bor Super Premium,
NAS 907C 135° Split Point

- Special Hi-Moybdenum tool steel.
- Gold surface treated body and clearance for maximum lubricity.
- Heavy-duty construction, 135° split point, no center punch needed - will not walk.
- Recommended for work hardening grades of stainless steel and other hard metal drilling applications.



FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 87710 | 1/16 | 1-5/8 | 5/8 | 12 |
| 87720 | 5/64 | 1-11/16 | 11/16 | 12 |
| 87730 | 3/32 | 1-3/4 | 3/4 | 12 |
| 87740 | 7/64 | 1-13/16 | 13/16 | 12 |
| 87750 | 1/8 | 1-7/8 | 7/8 | 12 |
| 87760 | 9/64 | 1-15/16 | 15/16 | 12 |
| 87770 | 5/32 | 2-1/16 | 1 | 12 |
| 87780 | 11/64 | 2-1/8 | 1-1/16 | 12 |
| 87790 | 3/16 | 2-3/16 | 1-1/8 | 12 |
| 87800 | 13/64 | 2-1/4 | 1-3/16 | 12 |
| 87810 | 7/32 | 2-3/8 | 1-1/4 | 12 |
| 87820 | 15/64 | 2-7/16 | 1-5/16 | 12 |
| 87830 | 1/4 | 2-1/2 | 1-3/8 | 12 |
| 87840 | 17/64 | 2-5/8 | 1-7/16 | 12 |
| 87850 | 9/32 | 2-11/16 | 1-1/2 | 12 |
| 87860 | 19/64 | 2-3/4 | 1-9/16 | 6 |
| 87870 | 5/16 | 2-13/16 | 1-5/8 | 6 |
| 87880 | 21/64 | 2-15/16 | 1-11/16 | 6 |
| 87890 | 11/32 | 3 | 1-11/16 | 6 |
| 87900 | 23/64 | 3-1/16 | 1-3/4 | 6 |
| 87910 | 3/8 | 3-1/8 | 1-13/16 | 6 |
| 87920 | 25/64 | 3-1/4 | 1-7/8 | 6 |
| 87930 | 13/32 | 3-5/16 | 1-15/16 | 6 |
| 87940 | 27/64 | 3-3/8 | 2 | 6 |
| 87950 | 7/16 | 3-7/16 | 2-1/16 | 6 |
| 87960 | 29/64 | 3-9/16 | 2-1/8 | 6 |
| 87970 | 15/32 | 3-5/8 | 2-1/8 | 6 |
| 87980 | 31/64 | 3-11/16 | 2-3/16 | 6 |
| 87990 | 1/2 | 3-3/4 | 2-1/4 | 6 |
| 88000 | 33/64 | 3-7/8 | 2-3/8 | 1 |
| 88010 | 17/32 | 3-7/8 | 2-3/8 | 1 |
| 88020 | 35/64 | 4 | 2-1/2 | 1 |
| 88030 | 9/16 | 4 | 2-1/2 | 1 |
| 88040 | 37/64 | 4-1/8 | 2-5/8 | 1 |
| 88050 | 19/32 | 4-1/8 | 2-5/8 | 1 |
| 88060 | 39/64 | 4-1/4 | 2-3/4 | 1 |
| 88070 | 5/8 | 4-1/4 | 2-3/4 | 1 |
| 88080 | 41/64 | 4-1/2 | 2-7/8 | 1 |
| 88090 | 21/32 | 4-1/2 | 2-7/8 | 1 |
| 89210 | 43/64 | 4-1/2 | 2-7/8 | 1 |
| 89220 | 11/16 | 4-1/2 | 2-7/8 | 1 |
| 89230 | 45/64 | 4-3/4 | 3 | 1 |
| 89240 | 23/32 | 4-3/4 | 3 | 1 |
| 89250 | 47/64 | 5 | 3-1/8 | 1 |
| 89260 | 3/4 | 5 | 3-1/8 | 1 |

WIRE

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 87600 | 1 | 2-7/16 | 1-5/16 | 12 |
| 87590 | 2 | 2-7/16 | 1-5/16 | 12 |
| 87580 | 3 | 2-3/8 | 1-1/4 | 12 |
| 87570 | 4 | 2-3/8 | 1-1/4 | 12 |
| 87560 | 5 | 2-3/8 | 1-1/4 | 12 |
| 87550 | 6 | 2-3/8 | 1-1/4 | 12 |
| 87540 | 7 | 2-1/4 | 1-3/16 | 12 |
| 87530 | 8 | 2-1/4 | 1-3/16 | 12 |
| 87520 | 9 | 2-1/4 | 1-3/16 | 12 |
| 87510 | 10 | 2-1/4 | 1-3/16 | 12 |
| 87500 | 11 | 2-1/4 | 1-3/16 | 12 |
| 87490 | 12 | 2-1/4 | 1-3/16 | 12 |
| 87480 | 13 | 2-3/16 | 1-1/8 | 12 |
| 87470 | 14 | 2-3/16 | 1-1/8 | 12 |
| 87460 | 15 | 2-3/16 | 1-1/8 | 12 |
| 87450 | 16 | 2-3/16 | 1-1/8 | 12 |
| 87440 | 17 | 2-3/16 | 1-1/8 | 12 |
| 87430 | 18 | 2-1/8 | 1-1/16 | 12 |
| 87420 | 19 | 2-1/8 | 1-1/16 | 12 |
| 87410 | 20 | 2-1/8 | 1-1/16 | 12 |
| 87400 | 21 | 2-1/8 | 1-1/16 | 12 |
| 87390 | 22 | 2-1/8 | 1-1/16 | 12 |
| 87380 | 23 | 2-1/16 | 1 | 12 |
| 87370 | 24 | 2-1/16 | 1 | 12 |
| 87360 | 25 | 2-1/16 | 1 | 12 |
| 87350 | 26 | 2-1/16 | 1 | 12 |
| 87340 | 27 | 2-1/16 | 1 | 12 |
| 87330 | 28 | 1-15/16 | 15/16 | 12 |
| 87320 | 29 | 1-15/16 | 15/16 | 12 |
| 87310 | 30 | 1-15/16 | 15/16 | 12 |
| 87300 | 31 | 1-7/8 | 7-8 | 12 |
| 87290 | 32 | 1-7/8 | 7-8 | 12 |
| 87280 | 33 | 1-7/8 | 7-8 | 12 |
| 87270 | 34 | 1-7/8 | 7-8 | 12 |
| 87260 | 35 | 1-7/8 | 7-8 | 12 |
| 87250 | 36 | 1-13/16 | 13/16 | 12 |
| 87240 | 37 | 1-13/16 | 13/16 | 12 |
| 87230 | 38 | 1-13/16 | 13/16 | 12 |
| 87220 | 39 | 1-13/16 | 13/16 | 12 |
| 87210 | 40 | 1-13/16 | 13/16 | 12 |
| 23360 | 41 | 1-13/16 | 13/16 | 12 |
| 23370 | 42 | 1-3/4 | 3/4 | 12 |
| 23380 | 43 | 1-3/4 | 3/4 | 12 |
| 23390 | 44 | 1-3/4 | 3/4 | 12 |
| 23400 | 45 | 1-3/4 | 3/4 | 12 |
| 23410 | 46 | 1-3/4 | 3/4 | 12 |
| 23420 | 47 | 1-3/4 | 3/4 | 12 |
| 23430 | 48 | 1-11/16 | 11/16 | 12 |
| 23440 | 49 | 1-11/16 | 11/16 | 12 |
| 23450 | 50 | 1-11/16 | 11/16 | 12 |
| 23460 | 51 | 1-11/16 | 11/16 | 12 |
| 23470 | 52 | 1-11/16 | 11/16 | 12 |
| 23480 | 53 | 1-5/8 | 5/8 | 12 |
| 23490 | 54 | 1-5/8 | 5/8 | 12 |
| 23500 | 55 | 1-5/8 | 5/8 | 12 |
| 23510 | 56 | 1-3/8 | 1/2 | 12 |
| 23520 | 57 | 1-3/8 | 1/2 | 12 |
| 23530 | 58 | 1-3/8 | 1/2 | 12 |
| 23540 | 59 | 1-3/8 | 1/2 | 12 |
| 23550 | 60 | 1-3/8 | 1/2 | 12 |

Letter sizes continued on page 35

NAS 907C - SCREW MACHINE

Type 260-UB

Ultra Bor Super Premium,
NAS 907C 135° Split Point

- Special Hi-Moybdenum tool steel.
- Gold surface treated body and clearance for maximum lubricity.
- Heavy-duty construction, 135° split point, no center punch needed - will not walk.
- Recommended for work hardening grades of stainless steel and other hard metal drilling applications.



LETTER

| Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|--------------|-----------------------|---------------------|---------------|
| 23601 | A | 2-7/16 | 1-5/16 | 12 |
| 23611 | B | 2-1/2 | 1-3/8 | 12 |
| 23621 | C | 2-1/2 | 1-3/8 | 12 |
| 23631 | D | 2-1/2 | 1-3/8 | 12 |
| 23641 | E | 2-1/2 | 1-3/8 | 12 |
| 23651 | F | 2-5/8 | 1-7/16 | 12 |
| 23661 | G | 2-5/8 | 1-7/16 | 12 |
| 23671 | H | 2-11/16 | 1-1/2 | 12 |
| 23681 | I | 2-11/16 | 1-1/2 | 12 |
| 23691 | J | 2-11/16 | 1-1/2 | 12 |
| 23701 | K | 2-11/16 | 1-1/2 | 12 |
| 23711 | L | 2-3/4 | 1-9/16 | 12 |
| 23721 | M | 2-3/4 | 1-9/16 | 6 |
| 23731 | N | 2-13/16 | 1-5/8 | 6 |
| 23741 | O | 2-15/16 | 1-11/16 | 6 |
| 23751 | P | 2-15/16 | 1-11/16 | 6 |
| 23761 | Q | 3 | 1-11/16 | 6 |
| 23771 | R | 3 | 1-11/16 | 6 |
| 23781 | S | 3-1/16 | 1-3/4 | 6 |
| 23791 | T | 3-1/16 | 1-3/4 | 6 |
| 23801 | U | 3-1/8 | 1-13/16 | 6 |
| 23811 | V | 3-1/4 | 1-7/8 | 6 |
| 23821 | W | 3-1/4 | 1-7/8 | 6 |
| 23831 | X | 3-5/16 | 1-15/16 | 6 |
| 23841 | Y | 3-5/16 | 1-15/16 | 6 |
| 23851 | Z | 3-3/8 | 2 | 6 |

M42 COBALT - TiN & TITANIUM ALUMINUM NITRIDE SCREW MACHINE

Type 260-D - M42 Cobalt, Type 260-DN - Titanium

Nitride, Type 260-AND - Titanium Aluminum Nitride 135° Split Point - M42 Cobalt Steel

- Manufactured from M42 HSS contains 8% Cobalt increasing hot hardness.
- High hot hardness of cobalt permits speeds 30% over regular high-speed steel drills.
- Titanium Aluminum Nitride can be used in machining stainless steel, nickel based and titanium alloys, not recommended for aluminum.



Type 260-D

Use to drill hard, tough metals, free machining stainless steel, titanium alloys and certain abrasive plastics.



Type 260-DN

TiN coating for lubricity, abrasion resistance extended tool life.



Type 260-AND

Titanium aluminum nitride designed for use where extreme temperatures are found, allows for increased machining speeds up to 200%.

| 260-D Part # | 260-DN TiN Part# | 260-AND TiAlN Part# | Overall Dia. Inches | Flute Length Inches | Length Inches | 260-D Qty. per/Pk | 260-DN / 260-AND Qty. per/Pk |
|--------------|------------------|---------------------|---------------------|---------------------|---------------|-------------------|------------------------------|
| 39800 | 81800 | 37103 | 1/16 | 1-5/8 | 5/8 | 12 | 6 |
| 39810 | 81810 | 37113 | 5/64 | 1-11/16 | 11/16 | 12 | 6 |
| 39820 | 81820 | 37123 | 3/32 | 1-3/4 | 3/4 | 12 | 6 |
| 39830 | 81830 | 37133 | 7/64 | 1-13/16 | 13/16 | 12 | 6 |
| 39840 | 81840 | 37143 | 1/8" | 1-7/8 | 7/8 | 12 | 6 |
| 39850 | 81850 | 37153 | 9/64 | 1-15/16 | 15/16 | 12 | 6 |
| 39860 | 81860 | 37163 | 5/32 | 2-1/16 | 1 | 12 | 6 |
| 39870 | 81870 | 37173 | 11/64 | 2-1/8 | 1-1/16 | 12 | 6 |
| 39880 | 81880 | 37183 | 3/16 | 2-3/16 | 1-1/8 | 12 | 6 |
| 39890 | 81890 | 37193 | 13/64 | 2-1/4 | 1-3/16 | 12 | 6 |
| 39900 | 81900 | 37203 | 7/32 | 2-3/8 | 1-1/4 | 12 | 6 |
| 39910 | 81910 | 37213 | 15/64 | 2-7/16 | 1-5/16 | 12 | 6 |
| 39920 | 81920 | 37223 | 1/4" | 2-1/2 | 1-3/8 | 12 | 6 |
| 39930 | 81930 | 37233 | 17/64 | 2-5/8 | 1-7/16 | 12 | 6 |
| 39940 | 81940 | 37243 | 9/32 | 2-11/16 | 1-1/2 | 12 | 6 |
| 39950 | 81950 | 37253 | 19/64 | 2-3/4 | 1-9/16 | 6 | 3 |
| 39960 | 81960 | 37263 | 5/16 | 2-13/16 | 1-5/8 | 6 | 3 |
| 39970 | 81970 | 37273 | 21/64 | 2-15/16 | 1-11/16 | 6 | 3 |
| 39980 | 81980 | 37283 | 11/32 | 3 | 1-11/16 | 6 | 3 |
| 39990 | 81990 | 37293 | 23/64 | 3-1/16 | 1-3/4 | 6 | 3 |
| 40000 | 82000 | 37303 | 3/8" | 3-1/8 | 1-13/16 | 6 | 3 |
| 40010 | 82010 | 37313 | 25/64 | 3-1/4 | 1-7/8 | 6 | 3 |
| 40020 | 82020 | 37323 | 13/32 | 3-5/16 | 1-15/16 | 6 | 3 |
| 40030 | 82030 | 37333 | 27/64 | 3-3/8 | 2 | 6 | 3 |
| 40040 | 82040 | 37343 | 7/16" | 3-7/16 | 2-1/16 | 6 | 3 |
| 40050 | 82050 | 37353 | 29/64 | 3-9/16 | 2-1/8 | 6 | 3 |
| 40060 | 82060 | 37363 | 15/32 | 3-5/8 | 2-1/8 | 6 | 3 |
| 40070 | 82070 | 37373 | 31/64 | 3-11/16 | 2-3/16 | 6 | 3 |
| 40080 | 82080 | 37383 | 1/2" | 3-3/4 | 2-1/4 | 6 | 3 |
| 51630 | ---- | ---- | 33/64 | 3-7/8 | 2-3/8 | 1 | -- |
| 51640 | ---- | ---- | 17/32 | 3-7/8 | 2-3/8 | 1 | -- |
| 51650 | ---- | ---- | 35/64 | 4 | 2-1/2 | 1 | -- |
| 51660 | ---- | ---- | 9/16 | 4 | 2-1/2 | 1 | -- |
| 51670 | ---- | ---- | 37/64 | 4-1/8 | 2-5/8 | 1 | -- |
| 51680 | ---- | ---- | 19/32 | 4-1/8 | 2-5/8 | 1 | -- |
| 51690 | ---- | ---- | 39/64 | 4-1/4 | 2-3/4 | 1 | -- |
| 51700 | ---- | ---- | 5/8" | 4-1/4 | 2-3/4 | 1 | -- |
| 51710 | ---- | ---- | 41/64 | 4-1/2 | 2-7/8 | 1 | -- |
| 51720 | ---- | ---- | 21/32 | 4-1/2 | 2-7/8 | 1 | -- |
| 51730 | ---- | ---- | 43/64 | 4-1/2 | 2-7/8 | 1 | -- |
| 51740 | ---- | ---- | 11/16 | 4-1/2 | 2-7/8 | 1 | -- |
| 51750 | ---- | ---- | 45/64 | 4-3/4 | 3 | 1 | -- |
| 51760 | ---- | ---- | 23/32 | 4-3/4 | 3 | 1 | -- |
| 51770 | ---- | ---- | 47/64 | 5 | 3-1/8 | 1 | -- |
| 51780 | ---- | ---- | 3/4" | 5 | 3-1/8 | 1 | -- |

Screw Machine Length



Super Premium

M42 COBALT - TiN & TITANIUM ALUMINUM NITRIDE SCREW MACHINE

Type 260-D - M42 Cobalt

135° Split Point - M42 Cobalt Steel

- Manufactured from M42 HSS contains 8% Cobalt increasing hot hardness.
- High hot hardness of cobalt permits speeds 30% over regular high-speed steel drills.
- Titanium Aluminum Nitride can be used in machining stainless steel, nickel based and titanium alloys, not recommended for aluminum.

WIRE

| Type 260-D Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|-------------------|-----------------|-----------------------|---------------------|---------------|
| 40090 | 1 | 2-7/16 | 1-5/16 | 12 |
| 40100 | 2 | 2-7/16 | 1-5/16 | 12 |
| 40110 | 3 | 2-3/8 | 1-1/4 | 12 |
| 40120 | 4 | 2-3/8 | 1-1/4 | 12 |
| 40130 | 5 | 2-3/8 | 1-1/4 | 12 |
| 40140 | 6 | 2-3/8 | 1-1/4 | 12 |
| 40150 | 7 | 2-1/4 | 1-3/16 | 12 |
| 40160 | 8 | 2-1/4 | 1-3/16 | 12 |
| 40170 | 9 | 2-1/4 | 1-3/16 | 12 |
| 40180 | 10 | 2-1/4 | 1-3/16 | 12 |
| 40190 | 11 | 2-1/4 | 1-3/16 | 12 |
| 40200 | 12 | 2-1/4 | 1-3/16 | 12 |
| 40210 | 13 | 2-3/16 | 1-1/8 | 12 |
| 40220 | 14 | 2-3/16 | 1-1/8 | 12 |
| 40230 | 15 | 2-3/16 | 1-1/8 | 12 |
| 40240 | 16 | 2-3/16 | 1-1/8 | 12 |
| 40250 | 17 | 2-3/16 | 1-1/8 | 12 |
| 40260 | 18 | 2-1/8 | 1-1/16 | 12 |
| 40270 | 19 | 2-1/8 | 1-1/16 | 12 |
| 40280 | 20 | 2-1/8 | 1-1/16 | 12 |
| 40290 | 21 | 2-1/8 | 1-1/16 | 12 |
| 40300 | 22 | 2-1/8 | 1-1/16 | 12 |
| 40310 | 23 | 2-1/16 | 1 | 12 |
| 40320 | 24 | 2-1/16 | 1 | 12 |
| 40330 | 25 | 2-1/16 | 1 | 12 |
| 40340 | 26 | 2-1/16 | 1 | 12 |
| 40350 | 27 | 2-1/16 | 1 | 12 |
| 40360 | 28 | 1-15/16 | 15/16 | 12 |
| 40370 | 29 | 1-15/16 | 15/16 | 12 |
| 40380 | 30 | 1-15/16 | 15/16 | 12 |
| 40390 | 31 | 1-7/8 | 7/8 | 12 |
| 40400 | 32 | 1-7/8 | 7/8 | 12 |
| 40410 | 33 | 1-7/8 | 7/8 | 12 |
| 40420 | 34 | 1-7/8 | 7/8 | 12 |
| 40430 | 35 | 1-7/8 | 7/8 | 12 |
| 40440 | 36 | 1-13/16 | 13/16 | 12 |
| 40450 | 37 | 1-13/16 | 13/16 | 12 |
| 40460 | 38 | 1-13/16 | 13/16 | 12 |
| 40470 | 39 | 1-13/16 | 13/16 | 12 |
| 40480 | 40 | 1-13/16 | 13/16 | 12 |
| 42410 | 41 | 1-13/16 | 13/16 | 12 |
| 42420 | 42 | 1-3/4 | 3/4 | 12 |
| 42430 | 43 | 1-3/4 | 3/4 | 12 |
| 42440 | 44 | 1-3/4 | 3/4 | 12 |
| 42450 | 45 | 1-3/4 | 3/4 | 12 |
| 42460 | 46 | 1-3/4 | 3/4 | 12 |
| 42470 | 47 | 1-3/4 | 3/4 | 12 |
| 42480 | 48 | 1-11/16 | 11/16 | 12 |
| 42490 | 49 | 1-11/16 | 11/16 | 12 |
| 42500 | 50 | 1-11/16 | 11/16 | 12 |
| 42510 | 51 | 1-11/16 | 11/16 | 12 |
| 42520 | 52 | 1-11/16 | 11/16 | 12 |
| 42530 | 53 | 1-5/8 | 5/8 | 12 |
| 42540 | 54 | 1-5/8 | 5/8 | 12 |
| 42550 | 55 | 1-5/8 | 5/8 | 12 |
| 42560 | 56 | 1-3/8 | 1/2 | 12 |
| 42570 | 57 | 1-3/8 | 1/2 | 12 |
| 42580 | 58 | 1-3/8 | 1/2 | 12 |
| 42590 | 59 | 1-3/8 | 1/2 | 12 |
| 42600 | 60 | 1-3/8 | 1/2 | 12 |

HEAVY-DUTY 1/4" REDUCED SHANK

Type 260-QT

1/4" Reduced Shank - Heavy-Duty Surfaced Treated, 135° Split Point

- This HSS drill is recommended for "punch" drilling in hard, tough sheet metal applications where quick and accurately located holes are required.



TYPE 260-QT 1/4" REDUCED SHANK

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 22410 | 17/64 | 2-5/8 | 1-7/16 | 12 |
| 22420 | 9/32 | 2-11/16 | 1-1/2 | 12 |
| 22430 | 19/64 | 2-3/4 | 1-9/16 | 6 |
| 22440 | 5/16 | 2-13/16 | 1-5/8 | 6 |
| 22450 | 21/64 | 2-15/16 | 1-11/16 | 6 |
| 22460 | 11/32 | 3 | 1-11/16 | 6 |
| 22470 | 23/64 | 3-1/16 | 1-3/4 | 6 |
| 22480 | 3/8 | 3-1/8 | 1-13/16 | 6 |
| 22490 | 25/64 | 3-1/4 | 1-7/8 | 6 |
| 22500 | 13/32 | 3-5/16 | 1-15/16 | 6 |
| 22510 | 27/64 | 3-3/8 | 2 | 6 |
| 22520 | 7/16 | 3-7/16 | 2-1/16 | 6 |
| 22530 | 29/64 | 3-9/16 | 2-1/8 | 6 |
| 22540 | 15/32 | 3-5/8 | 2-1/8 | 6 |
| 22550 | 31/64 | 3-11/16 | 2-3/16 | 6 |
| 22560 | 1/2 | 3-3/4 | 2-1/4 | 6 |



Product Tips

NEED A TAPPING LUBE?

High Performance Ultra S/P™ will do the job!

Found on page 106

Screw Machine - M42 Cobalt Heavy-Duty 1/4" Reduced Shank

Screw Machine Length

TITANIUM NITRIDE, BRIGHT FINISHED NAS 907C HEAVY-DUTY



Type 260-T

Sturdy drill for use in portable power drilling.



Type 260-TW

Bright finish accurate centering, fast penetration.



Type 260-TN

TiN coating provides a super hard surface with high lubricity.

NOTE: * TiN Coated Package Quantity

(6 qty. - 1/16 thru 9/32 A-L #1 - 60) (3 qty. - 19/64 - 1/2")

FRACTIONAL

| Type Part # | Type *260-TN Part # | Type 260-TW Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|-------------|---------------------|--------------------|-----------------|-----------------------|---------------------|---------------|
| 25560 | 97600 | 52240 | 1/16 | 1-5/8 | 5/8 | 12 |
| 25570 | 97590 | 52250 | 5/64 | 1-11/16 | 11/16 | 12 |
| 25580 | 97580 | 52260 | 3/32 | 1-3/4 | 3/4 | 12 |
| 25590 | 97570 | 52270 | 7/64 | 1-13/16 | 13/16 | 12 |
| 25600 | 97560 | 52280 | 1/8 | 1-7/8 | 7/8 | 12 |
| 25610 | 97550 | 52290 | 9/64 | 1-15/16 | 15/16 | 12 |
| 25620 | 97540 | 52300 | 5/32 | 2-1/16 | 1 | 12 |
| 25630 | 97530 | 52310 | 11/64 | 2-1/8 | 1-1/16 | 12 |
| 25640 | 97520 | 52320 | 3/16 | 2-3/16 | 1-1/8 | 12 |
| 06190 | 97510 | 52330 | 13/64 | 2-1/4 | 1-3/16 | 12 |
| 06200 | 97500 | 52340 | 7/32 | 2-3/8 | 1-1/4 | 12 |
| 06210 | 97490 | 52350 | 15/64 | 2-7/16 | 1-5/16 | 12 |
| 06220 | 97480 | 52360 | 1/4 | 2-1/2 | 1-3/8 | 12 |
| 06230 | 97470 | 52370 | 17/64 | 2-5/8 | 1-7/16 | 12 |
| 06240 | 97460 | 52380 | 9/32 | 2-11/16 | 1-1/2 | 12 |
| 06250 | 97450 | 52390 | 19/64 | 2-3/4 | 1-9/16 | 6 |
| 06260 | 97440 | 52400 | 5/16 | 2-13/16 | 1-5/8 | 6 |
| 06270 | 97430 | 52410 | 21/64 | 2-15/16 | 1-11/16 | 6 |
| 06280 | 97420 | 52420 | 11/32 | 3 | 1-11/16 | 6 |
| 06290 | 97410 | 52430 | 23/64 | 3-1/16 | 1-3/4 | 6 |
| 06300 | 97400 | 52440 | 3/8 | 3-1/8 | 1-13/16 | 6 |
| 06310 | 97390 | 52450 | 25/64 | 3-1/4 | 1-7/8 | 6 |
| 06320 | 97380 | 52460 | 13/32 | 3-5/16 | 1-15/16 | 6 |
| 06330 | 97370 | 52470 | 27/64 | 3-3/8 | 2 | 6 |
| 06340 | 97360 | 52480 | 7/16 | 3-7/16 | 2-1/16 | 6 |
| 06350 | 97350 | 52490 | 29/64 | 3-9/16 | 2-1/8 | 6 |
| 06360 | 97340 | 52500 | 15/32 | 3-5/8 | 2-1/8 | 6 |
| 06370 | 97330 | 52510 | 31/64 | 3-11/16 | 2-3/16 | 6 |
| 06380 | 97320 | 52520 | 1/2 | 3-3/4 | 2-1/4 | 6 |

For Letter Sizes use Type 260-UB page 35

NOTE: * TiN Coated Package Quantity

(6 qty. - 1/16 thru 9/32 A-L #1 - 60) (3 qty. - 19/64 - 1/2")

WIRE

| Type Part # | Type *260-TN Part # | Type 260-TW Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|-------------|---------------------|--------------------|------------|-----------------------|---------------------|---------------|
| 25850 | 96670 | 52530 | 1 | 2-7/16 | 1-5/16 | 12 |
| 25860 | 96660 | 52540 | 2 | 2-7/16 | 1-5/16 | 12 |
| 25870 | 96650 | 52550 | 3 | 2-3/8 | 1-1/4 | 12 |
| 25880 | 96640 | 52560 | 4 | 2-3/8 | 1-1/4 | 12 |
| 25890 | 96630 | 52570 | 5 | 2-3/8 | 1-1/4 | 12 |
| 25900 | 96620 | 52580 | 6 | 2-3/8 | 1-1/4 | 12 |
| 25910 | 96610 | 52590 | 7 | 2-1/4 | 1-3/16 | 12 |
| 25920 | 96600 | 52600 | 8 | 2-1/4 | 1-3/16 | 12 |
| 25930 | 96590 | 52610 | 9 | 2-1/4 | 1-3/16 | 12 |

Type 260-T, Type 260-TN, Type 260-TW NAS 907C Heavy-Duty 135° Split Point

- A sturdy drill for use in portable power drilling.
- Accurate centering, fast penetration. Ideal for thin metal work.
- Sizes smaller than #52 are not split pointed.

NOTE: For letter sizes, see 260-UB page 36

NOTE: * TiN Coated Package Quantity

(6 qty. - 1/16 thru 9/32 A-L #1 - 60) (3 qty. - 19/64 - 1/2")

WIRE - CONTINUED

| Type Part # | Type *260-TN Part # | Type 260-TW Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|-------------|---------------------|--------------------|------------|-----------------------|---------------------|---------------|
| 25940 | 96580 | 52620 | 10 | 2-1/4 | 1-3/16 | 12 |
| 25960 | 96570 | 52630 | 11 | 2-1/4 | 1-3/16 | 12 |
| 25970 | 96560 | 52640 | 12 | 2-1/4 | 1-3/16 | 12 |
| 25980 | 96550 | 52650 | 13 | 2-3/16 | 1-1/8 | 12 |
| 25990 | 96540 | 52660 | 14 | 2-3/16 | 1-1/8 | 12 |
| 26000 | 96530 | 52670 | 15 | 2-3/16 | 1-1/8 | 12 |
| 26010 | 96520 | 52680 | 16 | 2-3/16 | 1-1/8 | 12 |
| 26020 | 96510 | 52690 | 17 | 2-3/16 | 1-1/8 | 12 |
| 26030 | 96500 | 52700 | 18 | 2-1/8 | 1-1/16 | 12 |
| 26040 | 96490 | 52710 | 19 | 2-1/8 | 1-1/16 | 12 |
| 26050 | 96480 | 52720 | 20 | 2-1/8 | 1-1/16 | 12 |
| 26060 | 96470 | 52730 | 21 | 2-1/8 | 1-1/16 | 12 |
| 26070 | 96460 | 52740 | 22 | 2-1/8 | 1-1/16 | 12 |
| 26080 | 96450 | 52750 | 23 | 2-1/16 | 1 | 12 |
| 26090 | 96440 | 52760 | 24 | 2-1/16 | 1 | 12 |
| 26100 | 96430 | 52770 | 25 | 2-1/16 | 1 | 12 |
| 26110 | 96420 | 52780 | 26 | 2-1/16 | 1 | 12 |
| 26120 | 96410 | 52790 | 27 | 2-1/16 | 1 | 12 |
| 26130 | 96400 | 52800 | 28 | 1-15/16 | 15/16 | 12 |
| 26140 | 96390 | 52810 | 29 | 1-15/16 | 15/16 | 12 |
| 26150 | 96380 | 52820 | 30 | 1-15/16 | 15/16 | 12 |
| 26160 | 96370 | 52830 | 31 | 1-7/8 | 7/8 | 12 |
| 26170 | 96360 | 52840 | 32 | 1-7/8 | 7/8 | 12 |
| 26180 | 96350 | 52850 | 33 | 1-7/8 | 7/8 | 12 |
| 26190 | 96340 | 52860 | 34 | 1-7/8 | 7/8 | 12 |
| 26200 | 96330 | 52870 | 35 | 1-7/8 | 7/8 | 12 |
| 26210 | 96320 | 52880 | 36 | 1-13/16 | 13/16 | 12 |
| 26220 | 96310 | 52890 | 37 | 1-13/16 | 13/16 | 12 |
| 26230 | 96300 | 52900 | 38 | 1-13/16 | 13/16 | 12 |
| 26240 | 96290 | 52910 | 39 | 1-13/16 | 13/16 | 12 |
| 26250 | 96280 | 52920 | 40 | 1-13/16 | 13/16 | 12 |
| 26260 | 96270 | 52930 | 41 | 1-13/16 | 13/16 | 12 |
| 26270 | 96260 | 52940 | 42 | 1-3/4 | 3/4 | 12 |
| 26280 | 96250 | 52950 | 43 | 1-3/4 | 3/4 | 12 |
| 26290 | 96240 | 52960 | 44 | 1-3/4 | 3/4 | 12 |
| 26300 | 96230 | 52970 | 45 | 1-3/4 | 3/4 | 12 |
| 26310 | 96220 | 52980 | 46 | 1-3/4 | 3/4 | 12 |
| 26320 | 96210 | 52990 | 47 | 1-3/4 | 3/4 | 12 |
| 26330 | 96200 | 53000 | 48 | 1-11/16 | 11/16 | 12 |
| 26340 | 96190 | 53010 | 49 | 1-11/16 | 11/16 | 12 |
| 26350 | 96180 | 53020 | 50 | 1-11/16 | 11/16 | 12 |
| 26360 | 96170 | 53030 | 51 | 1-11/16 | 11/16 | 12 |
| 26370 | 96160 | 53040 | 52 | 1-11/16 | 11/16 | 12 |
| 26380 | 96150 | 53050 | 53 | 1-5/8 | 5/8 | 12 |
| 26390 | 96140 | 53060 | 54 | 1-5/8 | 5/8 | 12 |
| 26400 | 96130 | 53070 | 55 | 1-5/8 | 5/8 | 12 |
| 26410 | 96120 | 53080 | 56 | 1-3/8 | 1/2 | 12 |
| 26420 | 96110 | 53090 | 57 | 1-3/8 | 1/2 | 12 |
| 26430 | 96100 | 53100 | 58 | 1-3/8 | 1/2 | 12 |
| 26440 | 96090 | 53110 | 59 | 1-3/8 | 1/2 | 12 |
| 26450 | 96080 | 53120 | 60 | 1-3/8 | 1/2 | 12 |

Screw Machine Length



HSS SCREW MACHINE

Type 260 & Type 260-BN Titanium Nitride
118° Point - High-Speed Steel - General Purpose,

Bright-Flute thru 3/4" diameter.
Surface treated flutes over 1" diameter.

- Can be used for all screw machine qualified to run in all applications.
- This drill is designed for ease of penetration and to facilitate chip removal in tough, hard materials.
- May also be used in portable drilling equipment.
Drill sizes over 1-1/16" have a reduced shank.



Type 260

The short length of drill and flute makes this an especially rigid drill for greater drilling accuracy.



Type 260-BN

Performs well in mild drilling applications with abrasive wear characteristics.

FRACTIONAL

| 260 Part # | 260-BN Part # | 260-BN TiN Coated | Diameter Inches | Overall Length Inches | Flute Length Inches | 260 Qty. per/pack | 260-BN Qty. per/pack |
|------------|---------------|-------------------|-----------------|-----------------------|---------------------|-------------------|----------------------|
| 23860 | ----- | ----- | 3/64 | 1-3/8 | 1/2 | 12 | ----- |
| 23870 | 01501 | ----- | 1/16 | 1-5/8 | 5/8 | 12 | 6 |
| 23880 | 01511 | ----- | 5/64 | 1-11/16 | 11/16 | 12 | 6 |
| 23890 | 01521 | ----- | 3/32 | 1-3/4 | 3/4 | 12 | 6 |
| 23900 | 01531 | ----- | 7/64 | 1-13/16 | 13/16 | 12 | 6 |
| 23910 | 01541 | ----- | 1/8 | 1-7/8 | 7/8 | 12 | 6 |
| 23920 | 01551 | ----- | 9/64 | 1-15/16 | 15/16 | 12 | 6 |
| 23930 | 01561 | ----- | 5/32 | 2-1/16 | 1 | 12 | 6 |
| 23940 | 01571 | ----- | 11/64 | 2-1/8 | 1-1/16 | 12 | 6 |
| 23950 | 01581 | ----- | 3/16 | 2-3/16 | 1-1/8 | 12 | 6 |
| 23960 | 01591 | ----- | 13/64 | 2-1/4 | 1-3/16 | 12 | 6 |
| 23970 | 01601 | ----- | 7/32 | 2-3/8 | 1-1/4 | 12 | 6 |
| 23980 | 01611 | ----- | 15/64 | 2-7/16 | 1-5/16 | 12 | 6 |
| 23990 | 01621 | ----- | 1/4 | 2-1/2 | 1-3/8 | 12 | 6 |
| 24000 | 01631 | ----- | 17/64 | 2-5/8 | 1-7/16 | 12 | 6 |
| 24010 | 01641 | ----- | 9/32 | 2-11/16 | 1-1/2 | 12 | 6 |
| 24020 | 01651 | ----- | 19/64 | 2-3/4 | 1-9/16 | 6 | 3 |
| 24030 | 01661 | ----- | 5/16 | 2-13/16 | 1-5/8 | 6 | 3 |
| 24040 | 01671 | ----- | 21/64 | 2-15/16 | 1-11/16 | 6 | 3 |
| 24050 | 01681 | ----- | 11/32 | 3 | 1-11/16 | 6 | 3 |
| 24060 | 01691 | ----- | 23/64 | 3-1/16 | 1-3/4 | 6 | 3 |
| 24070 | 01701 | ----- | 3/8 | 3-1/8 | 1-13/16 | 6 | 3 |
| 24080 | 01711 | ----- | 25/64 | 3-1/4 | 1-7/8 | 6 | 3 |
| 24090 | 01721 | ----- | 13/32 | 3-5/16 | 1-15/16 | 6 | 3 |
| 24100 | 01731 | ----- | 27/64 | 3-3/8 | 2 | 6 | 3 |
| 24110 | 01741 | ----- | 7/16 | 3-7/16 | 2-1/16 | 6 | 3 |
| 24120 | 01751 | ----- | 29/64 | 3-9/16 | 2-1/8 | 6 | 3 |
| 24130 | 01761 | ----- | 15/32 | 3-5/8 | 2-1/8 | 6 | 3 |
| 24140 | 01771 | ----- | 31/64 | 3-11/16 | 2-3/16 | 6 | 3 |
| 24150 | 01781 | ----- | 1/2 | 3-3/4 | 2-1/4 | 6 | 3 |
| 24160 | ----- | ----- | 33/64 | 3-7/8 | 2-3/8 | 1 | ----- |
| 24170 | ----- | ----- | 17/32 | 3-7/8 | 2-3/8 | 1 | ----- |
| 24180 | ----- | ----- | 35/64 | 4 | 2-1/2 | 1 | ----- |
| 24190 | ----- | ----- | 9/16 | 4 | 2-1/2 | 1 | ----- |
| 24200 | ----- | ----- | 37/64 | 4-1/8 | 2-5/8 | 1 | ----- |
| 24210 | ----- | ----- | 19/32 | 4-1/8 | 2-5/8 | 1 | ----- |
| 24220 | ----- | ----- | 39/64 | 4-1/4 | 2-3/4 | 1 | ----- |
| 24230 | ----- | ----- | 5/8 | 4-1/4 | 2-3/4 | 1 | ----- |
| 24240 | ----- | ----- | 41/64 | 4-1/2 | 2-7/8 | 1 | ----- |
| 24250 | ----- | ----- | 21/32 | 4-1/2 | 2-7/8 | 1 | ----- |
| 24260 | ----- | ----- | 43/64 | 4-1/2 | 2-7/8 | 1 | ----- |
| 24270 | ----- | ----- | 11/16 | 4-1/2 | 2-7/8 | 1 | ----- |
| 24280 | ----- | ----- | 45/64 | 4-3/4 | 3 | 1 | ----- |
| 24290 | ----- | ----- | 23/32 | 4-3/4 | 3 | 1 | ----- |
| 24300 | ----- | ----- | 47/64 | 5 | 3-1/8 | 1 | ----- |
| 24310 | ----- | ----- | 3/4 | 5 | 3-1/8 | 1 | ----- |
| 24320 | ----- | ----- | 49/64 | 5-1/8 | 3-1/4 | 1 | ----- |
| 24330 | ----- | ----- | 25/32 | 5-1/8 | 3-1/4 | 1 | ----- |

FRACTIONAL

| 260 Part # | 260-BN Part # | 260-BN TiN Coated | Diameter Inches | Overall Length Inches | Flute Length Inches | 260 Qty. per/pack | 260-BN Qty. per/pack |
|------------|---------------|-------------------|-----------------|-----------------------|---------------------|-------------------|----------------------|
| 24340 | ----- | ----- | 51/64 | 5-1/4 | 3-3/8 | 1 | ----- |
| 24350 | ----- | ----- | 13/16 | 5-1/4 | 3-3/8 | 1 | ----- |
| 24360 | ----- | ----- | 53/64 | 5-3/8 | 3-1/2 | 1 | ----- |
| 24370 | ----- | ----- | 27/32 | 5-3/8 | 3-1/2 | 1 | ----- |
| 24380 | ----- | ----- | 55/64 | 5-3/8 | 3-1/2 | 1 | ----- |
| 24390 | ----- | ----- | 7/8 | 5-3/8 | 3-1/2 | 1 | ----- |
| 24400 | ----- | ----- | 57/64 | 5-5/8 | 3-5/8 | 1 | ----- |
| 24410 | ----- | ----- | 29/32 | 5-5/8 | 3-5/8 | 1 | ----- |
| 24420 | ----- | ----- | 59/64 | 5-3/4 | 3-3/4 | 1 | ----- |
| 24430 | ----- | ----- | 15/16 | 5-3/4 | 3-3/4 | 1 | ----- |
| 24440 | ----- | ----- | 61/64 | 5-7/8 | 3-7/8 | 1 | ----- |
| 24450 | ----- | ----- | 31/32 | 5-7/8 | 3-7/8 | 1 | ----- |
| 24460 | ----- | ----- | 63/64 | 6 | 4 | 1 | ----- |
| 24470 | ----- | ----- | 1" | 6 | 4 | 1 | ----- |
| 24480 | ----- | ----- | 1-1/16 | 6-1/4 | 4 | 1 | ----- |
| 24490 | ----- | ----- | 1-1/8 | 6-3/8 | 4 | 1 | ----- |
| 24500 | ----- | ----- | 1-3/16 | 6-5/8 | 4-1/4 | 1 | ----- |
| 24510 | ----- | ----- | 1-1/4 | 6-3/4 | 4-3/8 | 1 | ----- |
| 24520 | ----- | ----- | 1-5/16 | 7 | 4-3/8 | 1 | ----- |
| 24530 | ----- | ----- | 1-3/8 | 7-1/8 | 4-1/2 | 1 | ----- |
| 24540 | ----- | ----- | 1-7/16 | 7-3/8 | 4-3/4 | 1 | ----- |
| 24550 | ----- | ----- | 1-1/2 | 7-1/2 | 4-7/8 | 1 | ----- |
| 24560 | ----- | ----- | 1-9/16 | 7-3/4 | 4-7/8 | 1 | ----- |
| 24570 | ----- | ----- | 1-5/8 | 7-3/4 | 4-7/8 | 1 | ----- |
| 24580 | ----- | ----- | 1-11/16 | 8 | 5-1/8 | 1 | ----- |
| 24590 | ----- | ----- | 1-3/4 | 8 | 5-1/8 | 1 | ----- |
| 24600 | ----- | ----- | 1-13/16 | 8-1/4 | 5-3/8 | 1 | ----- |
| 24610 | ----- | ----- | 1-7/8 | 8-1/4 | 5-3/8 | 1 | ----- |
| 24620 | ----- | ----- | 1-15/16 | 8-1/2 | 5-5/8 | 1 | ----- |
| 24630 | ----- | ----- | 2" | 8-1/2 | 5-5/8 | 1 | ----- |

Wire, Letter sizes continued on page 39

| Drill Size | Shank Diameter |
|--------------------|----------------|
| 1-1/16" to 1-1/4" | 1" |
| 1- 5/16" to 1-1/2" | 1-1/4" |
| 1-9/16" to 2" | 1-1/2" |



Type 260

The short length of drill and flute makes this an especially rigid drill for greater drilling accuracy.



Type 260-BN

Performs well in mild drilling applications with abrasive wear characteristics.

HSS SCREW MACHINE

Type 260, Type 260-BN Titanium Nitride
High-Speed Steel - General Purpose - 118° Point

- The short length of drill and flute makes this an especially rigid drill for greater drilling accuracy.
- May also be used in portable drilling equipment.

WIRE

| 260 Part # | 260-BN Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | 260 Qty. per/pack | 260-BN Qty. per/pack |
|------------|---------------|------------|-----------------------|---------------------|-------------------|----------------------|
| 24640 | 24643 | 1 | 2-7/16 | 1-5/16 | 12 | 6 |
| 24650 | 24653 | 2 | 2-7/16 | 1-5/16 | 12 | 6 |
| 24660 | 24663 | 3 | 2-3/8 | 1-1/4 | 12 | 6 |
| 24670 | 24673 | 4 | 2-3/8 | 1-1/4 | 12 | 6 |
| 24680 | 24683 | 5 | 2-3/8 | 1-1/4 | 12 | 6 |
| 24690 | 24693 | 6 | 2-3/8 | 1-1/4 | 12 | 6 |
| 24700 | 24703 | 7 | 2-1/4 | 1-3/16 | 12 | 6 |
| 24710 | 24713 | 8 | 2-1/4 | 1-3/16 | 12 | 6 |
| 24720 | 24723 | 9 | 2-1/4 | 1-3/16 | 12 | 6 |
| 24730 | 24733 | 10 | 2-1/4 | 1-3/16 | 12 | 6 |
| 24740 | 24743 | 11 | 2-1/4 | 1-3/16 | 12 | 6 |
| 24750 | 24753 | 12 | 2-1/4 | 1-3/16 | 12 | 6 |
| 24760 | 24763 | 13 | 2-3/16 | 1-1/8 | 12 | 6 |
| 24770 | 24773 | 14 | 2-3/16 | 1-1/8 | 12 | 6 |
| 24780 | 24783 | 15 | 2-3/16 | 1-1/8 | 12 | 6 |
| 24790 | 24793 | 16 | 2-3/16 | 1-1/8 | 12 | 6 |
| 24800 | 24803 | 17 | 2-3/16 | 1-1/8 | 12 | 6 |
| 24810 | 24813 | 18 | 2-1/8 | 1-1/16 | 12 | 6 |
| 24820 | 24823 | 19 | 2-1/8 | 1-1/16 | 12 | 6 |
| 24830 | 24833 | 20 | 2-1/8 | 1-1/16 | 12 | 6 |
| 24840 | 24843 | 21 | 2-1/8 | 1-1/16 | 12 | 6 |
| 24850 | 24853 | 22 | 2-1/8 | 1-1/16 | 12 | 6 |
| 24860 | 24863 | 23 | 2-1/16 | 1 | 12 | 6 |
| 24870 | 24873 | 24 | 2-1/16 | 1 | 12 | 6 |
| 24880 | 24883 | 25 | 2-1/16 | 1 | 12 | 6 |
| 24890 | 24893 | 26 | 2-1/16 | 1 | 12 | 6 |
| 24900 | 24903 | 27 | 2-1/16 | 1 | 12 | 6 |
| 24910 | 24913 | 28 | 1-15/16 | 15/16 | 12 | 6 |
| 24920 | 24923 | 29 | 1-15/16 | 15/16 | 12 | 6 |
| 24930 | 24933 | 30 | 1-15/16 | 15/16 | 12 | 6 |
| 24940 | 24943 | 31 | 1-7/8 | 7/8 | 12 | 6 |
| 24950 | 24953 | 32 | 1-7/8 | 7/8 | 12 | 6 |
| 24960 | 24963 | 33 | 1-7/8 | 7/8 | 12 | 6 |
| 24970 | 24973 | 34 | 1-7/8 | 7/8 | 12 | 6 |
| 24980 | 24983 | 35 | 1-7/8 | 7/8 | 12 | 6 |
| 24990 | 24993 | 36 | 1-13/16 | 13/16 | 12 | 6 |
| 25000 | 25003 | 37 | 1-13/16 | 13/16 | 12 | 6 |
| 25010 | 25013 | 38 | 1-13/16 | 13/16 | 12 | 6 |
| 25020 | 25023 | 39 | 1-13/16 | 13/16 | 12 | 6 |
| 25030 | 25033 | 40 | 1-13/16 | 13/16 | 12 | 6 |
| 25040 | 25043 | 41 | 1-13/16 | 13/16 | 12 | 6 |
| 25050 | 25053 | 42 | 1-3/4 | 3/4 | 12 | 6 |
| 25060 | 25063 | 43 | 1-3/4 | 3/4 | 12 | 6 |
| 25070 | 25073 | 44 | 1-3/4 | 3/4 | 12 | 6 |
| 25080 | 25083 | 45 | 1-3/4 | 3/4 | 12 | 6 |
| 25090 | 25093 | 46 | 1-3/4 | 3/4 | 12 | 6 |
| 25100 | 25103 | 47 | 1-3/4 | 3/4 | 12 | 6 |
| 25110 | 25113 | 48 | 1-11/16 | 11/16 | 12 | 6 |
| 25120 | 25123 | 49 | 1-11/16 | 11/16 | 12 | 6 |
| 25130 | 25133 | 50 | 1-11/16 | 11/16 | 12 | 6 |
| 25140 | 25143 | 51 | 1-11/16 | 11/16 | 12 | 6 |
| 25150 | 25153 | 52 | 1-11/16 | 11/16 | 12 | 6 |
| 25160 | 25163 | 53 | 1-5/8 | 5/8 | 12 | 6 |
| 25170 | 25173 | 54 | 1-5/8 | 5/8 | 12 | 6 |
| 25180 | 25183 | 55 | 1-5/8 | 5/8 | 12 | 6 |
| 25190 | 25193 | 56 | 1-3/8 | 1/2 | 12 | 6 |
| 25200 | 25203 | 57 | 1-3/8 | 1/2 | 12 | 6 |
| 25210 | 25213 | 58 | 1-3/8 | 1/2 | 12 | 6 |
| 25220 | 25223 | 59 | 1-3/8 | 1/2 | 12 | 6 |
| 25230 | 25233 | 60 | 1-3/8 | 1/2 | 12 | 6 |

LETTER

| 260 Part # | 260-BN Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | 260 Qty. per/pack | 260-BN Qty. per/pack |
|------------|---------------|--------------|-----------------------|---------------------|-------------------|----------------------|
| 23600 | ----- | A | 2-7/16 | 1-5/16 | 12 | ----- |
| 23610 | ----- | B | 2-1/2 | 1-3/8 | 12 | ----- |
| 23620 | ----- | C | 2-1/2 | 1-3/8 | 12 | ----- |
| 23630 | ----- | D | 2-1/2 | 1-3/8 | 12 | ----- |
| 23640 | ----- | E | 2-1/2 | 1-3/8 | 12 | ----- |
| 23650 | ----- | F | 2-5/8 | 1-7/16 | 12 | ----- |
| 23660 | ----- | G | 2-5/8 | 1-7/16 | 12 | ----- |
| 23670 | ----- | H | 2-11/16 | 1-1/2 | 12 | ----- |
| 23680 | ----- | I | 2-11/16 | 1-1/2 | 12 | ----- |
| 23690 | ----- | J | 2-11/16 | 1-1/2 | 12 | ----- |
| 23700 | ----- | K | 2-11/16 | 1-1/2 | 12 | ----- |
| 23710 | ----- | L | 2-3/4 | 1-9/16 | 12 | ----- |
| 23720 | ----- | M | 2-3/4 | 1-9/16 | 6 | ----- |
| 23730 | ----- | N | 2-13/16 | 1-5/8 | 6 | ----- |
| 23740 | ----- | O | 2-15/16 | 1-11/16 | 6 | ----- |
| 23750 | ----- | P | 2-15/16 | 1-11/16 | 6 | ----- |
| 23760 | ----- | Q | 3 | 1-11/16 | 6 | ----- |
| 23770 | ----- | R | 3 | 1-11/16 | 6 | ----- |
| 23780 | ----- | S | 3-1/16 | 1-3/4 | 6 | ----- |
| 23790 | ----- | T | 3-1/16 | 1-3/4 | 6 | ----- |
| 23800 | ----- | U | 3-1/8 | 1-13/16 | 6 | ----- |
| 23810 | ----- | V | 3-1/4 | 1-7/8 | 6 | ----- |
| 23820 | ----- | W | 3-1/4 | 1-7/8 | 6 | ----- |
| 23830 | ----- | X | 3-5/16 | 1-15/16 | 6 | ----- |
| 23840 | ----- | Y | 3-5/16 | 1-15/16 | 6 | ----- |
| 23850 | ----- | Z | 3-3/8 | 2 | 6 | ----- |

HSS TAPER LENGTH

Type 210

High-Speed Steel 118° Point



- Bright finish to 1" diameter.
- General purpose 118° point, recommended for mild drilling applications where longer than jobber length drills are required.

Surface treated flutes from 1-1/64" to 1" diameter.

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 10490 | 3/64 | 2-1/4 | 1-1/8 | 12 |
| 10500 | 1/16 | 3 | 1-3/4 | 12 |
| 10510 | 5/64 | 3-3/4 | 2 | 12 |
| 10520 | 3/32 | 4-1/4 | 2-1/4 | 12 |
| 10530 | 7/64 | 4-5/8 | 2-1/2 | 12 |
| 10540 | 1/8 | 5-1/8 | 2-3/4 | 12 |
| 10550 | 9/64 | 5-3/8 | 3 | 12 |
| 10560 | 5/32 | 5-3/8 | 3 | 12 |
| 10570 | 11/64 | 5-3/4 | 3-3/8 | 12 |
| 10580 | 3/16 | 5-3/4 | 3-3/8 | 12 |
| 10590 | 13/64 | 6 | 3-5/8 | 12 |
| 10600 | 7/32 | 6 | 3-5/8 | 12 |
| 10610 | 15/64 | 6-1/8 | 3-3/4 | 12 |
| 10620 | 1/4 | 6-1/8 | 3-3/4 | 12 |
| 10630 | 17/64 | 6-1/4 | 3-7/8 | 12 |
| 10640 | 9/32 | 6-1/4 | 3-7/8 | 12 |
| 10650 | 19/64 | 6-3/8 | 4 | 6 |
| 10660 | 5/16 | 6-3/8 | 4 | 6 |
| 10670 | 21/64 | 6-1/2 | 4-1/8 | 6 |
| 10680 | 11/32 | 6-1/2 | 4-1/8 | 6 |
| 10690 | 23/64 | 6-3/4 | 4-1/4 | 6 |
| 10700 | 3/8 | 6-3/4 | 4-1/4 | 6 |
| 10710 | 25/64 | 7 | 4-3/8 | 1 |
| 10720 | 13/32 | 7 | 4-3/8 | 1 |
| 10730 | 27/64 | 7-1/4 | 4-5/8 | 1 |
| 10740 | 7/16 | 7-1/4 | 4-5/8 | 1 |
| 10750 | 29/64 | 7-1/2 | 4-3/4 | 1 |
| 10760 | 15/32 | 7-1/2 | 4-3/4 | 1 |
| 10770 | 31/64 | 7-3/4 | 4-3/4 | 1 |
| 10780 | 1/2 | 7-3/4 | 4-3/4 | 1 |
| 10790 | 33/64 | 8 | 4-3/4 | 1 |
| 10800 | 17/32 | 8 | 4-3/4 | 1 |
| 10810 | 35/64 | 8-1/4 | 4-7/8 | 1 |
| 10820 | 9/16 | 8-1/4 | 4-7/8 | 1 |
| 10830 | 37/64 | 8-3/4 | 4-7/8 | 1 |
| 10840 | 19/32 | 8-3/4 | 4-7/8 | 1 |
| 10850 | 39/64 | 8-3/4 | 4-7/8 | 1 |
| 10860 | 5/8 | 8-3/4 | 4-7/8 | 1 |
| 10870 | 41/64 | 9 | 5-1/8 | 1 |
| 10880 | 21/32 | 9 | 5-1/8 | 1 |
| 10890 | 43/64 | 9-1/4 | 5-3/8 | 1 |
| 10900 | 11/16 | 9-1/4 | 5-3/8 | 1 |
| 10910 | 45/64 | 9-1/2 | 5-5/8 | 1 |
| 10920 | 23/32 | 9-1/2 | 5-5/8 | 1 |
| 10930 | 47/64 | 9-3/4 | 5-7/8 | 1 |
| 10940 | 3/4 | 9-3/4 | 5-7/8 | 1 |
| 10950 | 49/64 | 9-7/8 | 6 | 1 |
| 10960 | 25/32 | 9-7/8 | 6 | 1 |
| 10970 | 51/64 | 10 | 6-1/8 | 1 |
| 10980 | 13/16 | 10 | 6-1/8 | 1 |
| 10990 | 53/64 | 10 | 6-1/8 | 1 |
| 11000 | 27/32 | 10 | 6-1/8 | 1 |
| 11010 | 55/64 | 10 | 6-1/8 | 1 |
| 11020 | 7/8 | 10 | 6-1/8 | 1 |
| 11030 | 57/64 | 10 | 6-1/8 | 1 |
| 11040 | 29/32 | 10 | 6-1/8 | 1 |
| 11050 | 59/64 | 10-3/4 | 6-1/8 | 1 |

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 11060 | 15/16 | 10-3/4 | 6-1/8 | 1 |
| 11070 | 61/64 | 11 | 6-3/8 | 1 |
| 11080 | 31/32 | 11 | 6-3/8 | 1 |
| 11090 | 63/64 | 11 | 6-3/8 | 1 |
| 11100 | 1" | 11 | 6-3/8 | 1 |
| 11110 | 1-1/64 | 11-1/8 | 6-1/2 | 1 |
| 11120 | 1-1/32 | 11-1/8 | 6-1/2 | 1 |
| 11130 | 1-3/64 | 11-1/4 | 6-5/8 | 1 |
| 11140 | 1-1/16 | 11-1/4 | 6-5/8 | 1 |
| 11150 | 1-5/64 | 11-1/2 | 6-7/8 | 1 |
| 11160 | 1-3/32 | 11-1/2 | 6-7/8 | 1 |
| 11170 | 1-7/64 | 11-3/4 | 7-1/8 | 1 |
| 11180 | 1-1/8 | 11-3/4 | 7-1/8 | 1 |
| 11190 | 1-9/64 | 11-7/8 | 7-1/4 | 1 |
| 11200 | 1-5/32 | 11-7/8 | 7-1/4 | 1 |
| 11210 | 1-11/64 | 12 | 7-3/8 | 1 |
| 11220 | 1-3/16 | 12 | 7-3/8 | 1 |
| 11230 | 1-13/64 | 12-1/8 | 7-1/2 | 1 |
| 11240 | 1-7/32 | 12-1/8 | 7-1/2 | 1 |
| 11250 | 1-15/64 | 12-1/2 | 7-7/8 | 1 |
| 11260 | 1-1/4 | 12-1/2 | 7-7/8 | 1 |
| 11270 | 1-9/32 | 14-1/8 | 8-1/2 | 1 |
| 11280 | 1-5/16 | 14-1/4 | 8-5/8 | 1 |
| 11290 | 1-11/32 | 14-3/8 | 8-3/4 | 1 |
| 11300 | 1-3/8 | 14-1/2 | 8-7/8 | 1 |
| 11310 | 1-13/32 | 14-5/8 | 9 | 1 |
| 11320 | 1-7/16 | 14-3/4 | 9-1/8 | 1 |
| 11330 | 1-15/32 | 14-7/8 | 9-1/4 | 1 |
| 11340 | 1-1/2 | 15 | 9-3/8 | 1 |
| 11350 | 1-9/16 | 15-1/4 | 9-5/8 | 1 |
| 11360 | 1-5/8 | 15-5/8 | 9-7/8 | 1 |
| 11370 | 1-3/4 | 16-1/4 | 10-1/2 | 1 |

WIRE

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 11640 | 1 | 6-1/8 | 3-3/4 | 12 |
| 11650 | 2 | 6-1/8 | 3-3/4 | 12 |
| 11660 | 3 | 6 | 3-5/8 | 12 |
| 11670 | 4 | 6 | 3-5/8 | 12 |
| 11680 | 5 | 6 | 3-5/8 | 12 |
| 11690 | 6 | 6 | 3-5/8 | 12 |
| 11700 | 7 | 6 | 3-5/8 | 12 |
| 11710 | 8 | 6 | 3-5/8 | 12 |
| 11720 | 9 | 6 | 3-5/8 | 12 |
| 11730 | 10 | 6 | 3-5/8 | 12 |
| 11740 | 11 | 6 | 3-5/8 | 12 |
| 11750 | 12 | 6 | 3-5/8 | 12 |
| 11760 | 13 | 5-3/4 | 3-3/8 | 12 |
| 11770 | 14 | 5-3/4 | 3-3/8 | 12 |
| 11780 | 15 | 5-3/4 | 3-3/8 | 12 |
| 11790 | 16 | 5-3/4 | 3-3/8 | 12 |
| 11800 | 17 | 5-3/4 | 3-3/8 | 12 |
| 11810 | 18 | 5-3/4 | 3-3/8 | 12 |
| 11820 | 19 | 5-3/4 | 3-3/8 | 12 |

Wire & Letter sizes continued on page 41

HSS TAPER LENGTH & AUTOMOTIVE TANG DRIVE

Type 210 - High-Speed Steel 118° Point

Type 220

Automotive Series - Tang Drive

High-Speed Steel - General Purpose, 118° Point

- Tanged and surface treated. When used with A.S.A. split sleeve drill drivers, these drills serve as economical substitutes for taper shank drills.



WIRE

| Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------------|---------------|
| 11830 | 20 | 5-3/4 | 3-3/8 | 12 |
| 11840 | 21 | 5-3/4 | 3-3/8 | 12 |
| 11850 | 22 | 5-3/4 | 3-3/8 | 12 |
| 11860 | 23 | 5-3/8 | 3 | 12 |
| 11870 | 24 | 5-3/8 | 3 | 12 |
| 11880 | 25 | 5-3/8 | 3 | 12 |
| 11890 | 26 | 5-3/8 | 3 | 12 |
| 11900 | 27 | 5-3/8 | 3 | 12 |
| 11910 | 28 | 5-3/8 | 3 | 12 |
| 11920 | 29 | 5-3/8 | 3 | 12 |
| 11930 | 30 | 5-3/8 | 3 | 12 |
| 11940 | 31 | 5-1/8 | 2-3/4 | 12 |
| 11950 | 32 | 5-1/8 | 2-3/4 | 12 |
| 11960 | 33 | 5-1/8 | 2-3/4 | 12 |
| 11970 | 34 | 5-1/8 | 2-3/4 | 12 |
| 11980 | 35 | 5-1/8 | 2-3/4 | 12 |
| 11990 | 36 | 4-5/8 | 2-1/2 | 12 |
| 12000 | 37 | 4-5/8 | 2-1/2 | 12 |
| 12010 | 38 | 4-5/8 | 2-1/2 | 12 |
| 12020 | 39 | 4-5/8 | 2-1/2 | 12 |
| 12030 | 40 | 4-5/8 | 2-1/2 | 12 |
| 12040 | 41 | 4-5/8 | 2-1/2 | 12 |
| 12050 | 42 | 4-1/4 | 2-1/4 | 12 |
| 12060 | 43 | 4-1/4 | 2-1/4 | 12 |
| 12070 | 44 | 4-1/4 | 2-1/4 | 12 |
| 12080 | 45 | 4-1/4 | 2-1/4 | 12 |
| 12090 | 46 | 4-1/4 | 2-1/4 | 12 |
| 12100 | 47 | 4-1/4 | 2-1/4 | 12 |
| 12110 | 48 | 3-3/4 | 2 | 12 |
| 12120 | 49 | 3-3/4 | 2 | 12 |
| 12130 | 50 | 3-3/4 | 2 | 12 |
| 12140 | 51 | 3-3/4 | 2 | 12 |
| 12150 | 52 | 3-3/4 | 2 | 12 |
| 12160 | 53 | 3 | 1-3/4 | 12 |
| 12170 | 54 | 3 | 1-3/4 | 12 |
| 12180 | 55 | 3 | 1-3/4 | 12 |
| 12190 | 56 | 2-1/4 | 1-1/8 | 12 |
| 12200 | 57 | 2-1/4 | 1-1/8 | 12 |
| 12210 | 58 | 2-1/4 | 1-1/8 | 12 |
| 12220 | 59 | 2-1/4 | 1-1/8 | 12 |
| 12230 | 60 | 2-1/4 | 1-1/8 | 12 |

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 12870 | 1/8 | 5-1/8 | 2-3/4 | 12 |
| 12880 | 9/64 | 5-3/8 | 3 | 12 |
| 12890 | 5/32 | 5-3/8 | 3 | 12 |
| 12900 | 11/64 | 5-3/4 | 3-3/8 | 12 |
| 12910 | 3/16 | 5-3/4 | 3-3/8 | 12 |
| 12920 | 13/64 | 6 | 3-5/8 | 12 |
| 12930 | 7/32 | 6 | 3-5/8 | 12 |
| 12940 | 15/64 | 6-1/8 | 3-3/4 | 12 |
| 12950 | 1/4 | 6-1/8 | 3-3/4 | 12 |
| 12960 | 17/64 | 6-1/4 | 3-7/8 | 12 |
| 12970 | 9/32 | 6-1/4 | 3-7/8 | 12 |
| 12980 | 19/64 | 6-3/8 | 4 | 6 |
| 12990 | 5/16 | 6-3/8 | 4 | 6 |
| 13000 | 21/64 | 6-1/2 | 4-1/8 | 6 |
| 13010 | 11/32 | 6-1/2 | 4-1/8 | 6 |
| 13020 | 23/64 | 6-3/4 | 4-1/4 | 6 |
| 13030 | 3/8 | 6-3/4 | 4-1/4 | 6 |
| 13040 | 25/64 | 7 | 4-3/8 | 1 |
| 13050 | 13/32 | 7 | 4-3/8 | 1 |
| 13060 | 27/64 | 7-1/4 | 4-5/8 | 1 |
| 13070 | 7/16 | 7-1/4 | 4-5/8 | 1 |
| 13080 | 29/64 | 7-1/2 | 4-3/4 | 1 |
| 13090 | 15/32 | 7-1/2 | 4-3/4 | 1 |
| 13100 | 31/64 | 7-3/4 | 4-3/4 | 1 |
| 13110 | 1/2 | 7-3/4 | 4-3/4 | 1 |
| 13120 | 33/64 | 8 | 4-3/4 | 1 |
| 13130 | 17/32 | 8 | 4-3/4 | 1 |
| 13140 | 35/64 | 8-1/4 | 4-7/8 | 1 |
| 13150 | 9/16 | 8-1/4 | 4-7/8 | 1 |
| 13160 | 37/64 | 8-3/4 | 4-7/8 | 1 |
| 13170 | 19/32 | 8-3/4 | 4-7/8 | 1 |
| 13180 | 39/64 | 8-3/4 | 4-7/8 | 1 |
| 13190 | 5/8 | 8-3/4 | 4-7/8 | 1 |
| 13200 | 41/64 | 9 | 5-1/8 | 1 |
| 13240 | 21/32 | 9 | 5-1/8 | 1 |
| 13220 | 43/64 | 9-1/4 | 5-3/8 | 1 |
| 13230 | 11/16 | 9-1/4 | 5-3/8 | 1 |
| 72530 | 47/64 | 9-3/4 | 5-7/8 | 1 |
| 72540 | 3/4 | 9-3/4 | 5-7/8 | 1 |

LETTER

| Part # | Letter Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|--------------|-----------------------|---------------------|---------------|
| 11380 | A | 6-1/8 | 3-3/4 | 12 |
| 11390 | B | 6-1/8 | 3-3/4 | 12 |
| 11400 | C | 6-1/8 | 3-3/4 | 12 |
| 11410 | D | 6-1/8 | 3-3/4 | 12 |
| 11420 | E | 6-1/8 | 3-3/4 | 12 |
| 11430 | F | 6-1/4 | 3-7/8 | 12 |
| 11440 | G | 6-1/4 | 3-7/8 | 12 |
| 11450 | H | 6-1/4 | 3-7/8 | 12 |
| 11460 | I | 6-1/4 | 3-7/8 | 12 |
| 11470 | J | 6-1/4 | 3-7/8 | 12 |
| 11480 | K | 6-1/4 | 3-7/8 | 12 |
| 11490 | L | 6-3/8 | 4 | 12 |
| 11500 | M | 6-3/8 | 4 | 6 |
| 11510 | N | 6-3/8 | 4 | 6 |
| 11520 | O | 6-1/2 | 4-1/8 | 6 |
| 11530 | P | 6-1/2 | 4-1/8 | 6 |
| 11540 | Q | 6-1/2 | 4-1/8 | 6 |
| 11550 | R | 6-1/2 | 4-1/8 | 6 |
| 11560 | S | 6-3/4 | 4-1/4 | 6 |
| 11570 | T | 6-3/4 | 4-1/4 | 6 |
| 11580 | U | 6-3/4 | 4-1/4 | 6 |
| 11590 | V | 7 | 4-3/8 | 1 |
| 11600 | W | 7 | 4-3/8 | 1 |
| 11610 | X | 7 | 4-3/8 | 1 |
| 11620 | Y | 7 | 4-3/8 | 1 |
| 11630 | Z | 7-1/4 | 4-5/8 | 1 |

HEAVY DUTY PARABOLIC

Type 221-PT

Heavy-Duty - Parabolic Flute -Taper Length
Titanium Nitride - Tang Drive 135° Split Point

- This high performance drill combines the superior wear resistance of Titanium Nitride coating, and the deep hole drilling advantages of parabolic flutes.
- The exceptional qualities of these drills can provide high productivity and extended tool life when compared to uncoated high-speed steel.



FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 34600 | 1/8 | 5-1/8 | 3-3/8 | 6 |
| 34610 | 9/64 | 5-3/8 | 3-5/8 | 6 |
| 34620 | 5/32 | 5-3/8 | 3-3-4 | 6 |
| 34630 | 11/64 | 5-3/4 | 4-1/8 | 6 |
| 34640 | 3/16 | 5-3/4 | 4-1/8 | 6 |
| 34650 | 13/64 | 6 | 4-3/8 | 6 |
| 34660 | 7/32 | 6 | 4-3/8 | 6 |
| 34670 | 15/64 | 6-1/8 | 4-13/16 | 6 |
| 34680 | 1/4 | 6-1/8 | 4-13/16 | 6 |
| 34690 | 17/64 | 6-1/4 | 5 | 6 |
| 34700 | 9/32 | 6-1/4 | 5- | 6 |
| 34710 | 19/64 | 6-3/8 | 5-1/8 | 3 |
| 34720 | 5/16 | 6-3/8 | 5-1/8 | 3 |
| 34730 | 21/64 | 6-1/2 | 5-1/4 | 3 |
| 34740 | 11/32 | 6-1/2 | 5-1/4 | 3 |
| 34750 | 23/64 | 6-3/4 | 5-3/8 | 3 |
| 34760 | 3/8 | 6-3/4 | 5-3/8 | 3 |
| 34770 | 25/64 | 7 | 5-5/8 | 1 |
| 34780 | 13/32 | 7 | 5-5/8 | 1 |
| 34790 | 27/64 | 7-1/4 | 5-11/16 | 1 |
| 34800 | 7/16 | 7-1/4 | 5-11/16 | 1 |
| 34810 | 29/64 | 7-1/2 | 5-3/4 | 1 |
| 34820 | 15/32 | 7-1/2 | 5-3/4 | 1 |
| 34830 | 31/64 | 7-3/4 | 5-3/4 | 1 |
| 34840 | 1/2 | 7-3/4 | 5-3/4 | 1 |

Type 221-P

Heavy-Duty - Parabolic Flute Taper Length
135° Split Point - Tang Drive - Black Oxide

- Parabolic flute drills are designed to eliminate the need for frequent drill retraction when deep hole drilling in low to medium tensile strength materials.
- The split point and heavy-duty design provide superior performance by permitting higher feed rates and continuous drilling of deep holes.



FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 35320 | 1/8 | 5-1/8 | 3-3/8 | 12 |
| 35330 | 9/64 | 5-3/8 | 3-5/8 | 12 |
| 35340 | 5/32 | 5-3/8 | 3-3-4 | 12 |
| 35350 | 11/64 | 5-3/4 | 4-1/8 | 12 |
| 35360 | 3/16 | 5-3/4 | 4-1/8 | 12 |
| 35370 | 13/64 | 6 | 4-3/8 | 12 |
| 35380 | 7/32 | 6 | 4-3/8 | 12 |
| 35390 | 15/64 | 6-1/8 | 4-13/16 | 12 |
| 35400 | 1/4 | 6-1/8 | 4-13/16 | 12 |
| 35410 | 17/64 | 6-1/4 | 5 | 12 |
| 35420 | 9/32 | 6-1/4 | 5 | 12 |
| 35430 | 19/64 | 6-3/8 | 5-1/8 | 6 |
| 35440 | 5/16 | 6-3/8 | 5-1/8 | 6 |
| 35450 | 21/64 | 6-1/2 | 5-1/4 | 6 |
| 35460 | 11/32 | 6-1/2 | 5-1/4 | 6 |
| 35470 | 23/64 | 6-3/4 | 5-3/8 | 6 |
| 35480 | 3/8 | 6-3/4 | 5-3/8 | 6 |
| 35490 | 25/64 | 7 | 5-5/8 | 1 |
| 35500 | 13/32 | 7 | 5-5/8 | 1 |
| 35510 | 27/64 | 7-1/4 | 5-11/16 | 1 |
| 35520 | 7/16 | 7-1/4 | 5-11/16 | 1 |
| 35530 | 29/64 | 7-1/2 | 5-3/4 | 1 |
| 35540 | 15/32 | 7-1/2 | 5-3/4 | 1 |
| 35550 | 31/64 | 7-3/4 | 5-3/4 | 1 |
| 35560 | 1/2 | 7-3/4 | 5-3/4 | 1 |

EXTRA LENGTH DRILLS & LONGBOY DRILLS

Type XGT-UB

Heavy Duty 135° Split Point -- 6" - 9" - 12"

- Gyroidal Torsion flute and wide land construction yield exceptional performance in deep hole drilling applications.
- Recommended for work hardening grades of stainless steel and other hard metal drilling operations.
- Will drill 12 or more diameters deep without drill removal to clear chips. Feed rates may be twice that of standard drills.



FRACTIONAL

| Part # | Size | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|----------|-----------------------|---------------------|---------------|
| 39240 | 1/8x6 | 6 | 4 | 3 |
| 39250 | #29x6 | 6 | 4 | 3 |
| 39260 | 9/64x6 | 6 | 4 | 3 |
| 39270 | 5/32x6 | 6 | 4 | 3 |
| 39280 | 11/64x6 | 6 | 4 | 3 |
| 39300 | 3/16x6 | 6 | 4 | 3 |
| 39310 | #10x6 | 6 | 4 | 3 |
| 39320 | 13/64x6 | 6 | 4 | 3 |
| 39330 | 7/32x6 | 6 | 4 | 3 |
| 39340 | #1x6 | 6 | 4 | 3 |
| 39350 | 15/64x6 | 6 | 4 | 3 |
| 39360 | 1/4x6 | 6 | 4 | 3 |
| 39370 | "F"x6 | 6 | 4 | 3 |
| 39380 | 9/32x6 | 6 | 4 | 3 |
| 39390 | 5/16x6 | 6 | 4 | 3 |
| 39400 | 11/32x6 | 6 | 4 | 3 |
| 39410 | 3/8x6 | 6 | 4 | 1 |
| 39420 | 13/32x6 | 6 | 4 | 1 |
| 39430 | 7/16x6 | 6 | 4 | 1 |
| 39440 | 1/2x6 | 6 | 4 | 1 |
| 40780 | 1/8x9 | 9 | 6 | 1 |
| 40890 | 9/64 | 9 | 6 | 1 |
| 40790 | 5/32x9 | 9 | 6 | 1 |
| 53140 | 11/64 | 9 | 6 | 1 |
| 40800 | 3/16x9 | 9 | 6 | 1 |
| 53160 | 13/64 | 9 | 6 | 1 |
| 40810 | 7/32x9 | 9 | 6 | 1 |
| 53180 | 15/64 | 9 | 6 | 1 |
| 40820 | 1/4x9 | 9 | 6 | 1 |
| 40830 | 9/32x9 | 9 | 6 | 1 |
| 40840 | 5/16x9 | 9 | 6 | 1 |
| 40850 | 11/32x9 | 9 | 6 | 1 |
| 40860 | 3/8x9 | 9 | 6 | 1 |
| 40870 | 7/16x9 | 9 | 6 | 1 |
| 40880 | 1/2x9 | 9 | 6 | 1 |
| 43050 | 1/8x12 | 12 | 9 | 1 |
| 53130 | 9/64 | 12 | 9 | 1 |
| 43060 | 5/32x12 | 12 | 9 | 1 |
| 53150 | 11/64 | 12 | 9 | 1 |
| 43070 | 3/16x12 | 12 | 9 | 1 |
| 53170 | 13/64 | 12 | 9 | 1 |
| 43080 | 7/32x12 | 12 | 9 | 1 |
| 53190 | 15/64 | 12 | 9 | 1 |
| 43090 | 1/4x12 | 12 | 9 | 1 |
| 43100 | 9/32x12 | 12 | 9 | 1 |
| 43110 | 5/16x12 | 12 | 9 | 1 |
| 43120 | 11/32x12 | 12 | 9 | 1 |
| 43130 | 3/8x12 | 12 | 9 | 1 |
| 43140 | 7/16x12 | 12 | 9 | 1 |
| 43150 | 1/2x12 | 12 | 9 | 1 |

Type 200 & 208

Longboy Drills Bright Finish - 12" & 18"

- General purpose 118° point high-speed steel drill recommended for a wide range of deep hole drilling applications.



TYPE 200 12" LONGBOY

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 27200 | 1/8 | 12 | 9 | 1 |
| 27210 | 9/64 | 12 | 9 | 1 |
| 27220 | 5/32 | 12 | 9 | 1 |
| 27230 | 11/64 | 12 | 9 | 1 |
| 27240 | 3/16 | 12 | 9 | 1 |
| 27250 | 13/64 | 12 | 9 | 1 |
| 27260 | 7/32 | 12 | 9 | 1 |
| 27270 | 15/64 | 12 | 9 | 1 |
| 27280 | 1/4 | 12 | 9 | 1 |
| 27290 | 17/64 | 12 | 9 | 1 |
| 27300 | 9/32 | 12 | 9 | 1 |
| 27310 | 19/64 | 12 | 9 | 1 |
| 27320 | 5/16 | 12 | 9 | 1 |
| 27330 | 21/64 | 12 | 9 | 1 |
| 27340 | 11/32 | 12 | 9 | 1 |
| 27350 | 23/64 | 12 | 9 | 1 |
| 27360 | 3/8 | 12 | 9 | 1 |
| 27370 | 25/64 | 12 | 9 | 1 |
| 27380 | 13/32 | 12 | 9 | 1 |
| 27390 | 27/64 | 12 | 9 | 1 |
| 27400 | 7/16 | 12 | 9 | 1 |
| 27410 | 29/64 | 12 | 9 | 1 |
| 27420 | 15/32 | 12 | 9 | 1 |
| 27430 | 31/64 | 12 | 9 | 1 |
| 27440 | 1/2 | 12 | 9 | 1 |
| 27450 | 17/32 | 12 | 9 | 1 |
| 27460 | 9/16 | 12 | 9 | 1 |
| 27470 | 19/32 | 12 | 9 | 1 |
| 27480 | 5/8 | 12 | 9 | 1 |
| 27490 | 11/16 | 12 | 9 | 1 |
| 27500 | 3/4 | 12 | 9 | 1 |

TYPE 208 18" LONGBOY

| Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------------|---------------|
| 27600 | 3/16 | 18 | 10 | 1 |
| 27610 | 7/32 | 18 | 10 | 1 |
| 27620 | 1/4 | 18 | 12 | 1 |
| 27630 | 9/32 | 18 | 12 | 1 |
| 27640 | 5/16 | 18 | 12 | 1 |
| 27650 | 11/32 | 18 | 12 | 1 |
| 27660 | 3/8 | 18 | 12 | 1 |
| 27670 | 13/32 | 18 | 12 | 1 |
| 27680 | 7/16 | 18 | 12 | 1 |
| 27690 | 15/32 | 18 | 12 | 1 |
| 27700 | 1/2 | 18 | 12 | 1 |
| 27710 | 17/32 | 18 | 12 | 1 |
| 27720 | 9/16 | 18 | 12 | 1 |
| 27730 | 19/32 | 18 | 12 | 1 |
| 27740 | 5/8 | 18 | 12 | 1 |

6" & 12" AIRCRAFT TYPE NAS 907B & NAS 907J EXTENSION DRILLS

Heavy-duty 135° split point high-speed steel drill used for drilling holes in hard to reach places.

Type 211 - NAS 907B

6" HSS Aircraft, 135° Split Point
Solid Construction, Black Oxide

Type 209-D - NAS 907J

6" M42 Cobalt, 135° Split Point
Solid Construction



Type 211 - NAS 907B

The black oxide treatment prevents chip welding and increases abrasion resistance.



Type 209-D - NAS 907J

M42 Cobalt steel increases heat and abrasion resistance.

Type 212

12" HSS Aircraft, 135° Split Point
Black Oxide

Type 213-D - NAS 907J

12" M42 Cobalt, 135° Split Point
Solid Construction



Type 212 - NAS 907B

The black oxide treatment prevents chip welding and increases abrasion resistance.



Type 213-D - NAS 907J

M42 Cobalt steel increases heat and abrasion resistance.

| 211 Black Oxide Part # | 209-D Cobalt Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|------------------------------|---------------------------|--------------------|-----------------------------|---------------------------|------------------|
| 68170 | ----- | 1/16 | 6 | 7/8 | 6 |
| 68180 | ----- | 5/64 | 6 | 1 | 6 |
| 68470 | 65090 | 3/32 | 6 | 1-1/4 | 6 |
| 68490 | 65100 | 7/64 | 6 | 1-1/2 | 6 |
| 68500 | 65110 | 1/8 | 6 | 1-5/8 | 6 |
| 68510 | 65120 | 9/64 | 6 | 1-3/4 | 6 |
| 68520 | 65130 | 5/32 | 6 | 2 | 6 |
| 68530 | 65140 | 11/64 | 6 | 2-1/8 | 6 |
| 68540 | 65150 | 3/16 | 6 | 2-5/16 | 6 |
| 68550 | 65160 | 13/64 | 6 | 2-7/16 | 6 |
| 68560 | 65170 | 7/32 | 6 | 2-1/2 | 6 |
| 68570 | 65180 | 15/64 | 6 | 2-5/8 | 6 |
| 68580 | 65190 | 1/4 | 6 | 2-3/4 | 6 |
| 68190 | ----- | 9/32 | 6 | 2-15/16 | 6 |
| 68200 | ----- | 11/32 | 6 | 3-7/16 | 6 |
| 68450 | ----- | 21/64 | 6 | 3-5/16 | 6 |
| 68760 | ----- | 5/16 | 6 | 3-3/16 | 6 |
| 68770 | ----- | 3/8 | 6 | 3-5/8 | 6 |
| 68780 | ----- | 7/16 | 6 | 4-1/16 | 6 |
| 68790 | ----- | 1/2 | 6 | 4-1/2 | 6 |

WIRE

| 211 Black Oxide Part # | 209-D Cobalt Part # | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|------------------------------|---------------------------|---------------|-----------------------------|---------------------------|------------------|
| 68590 | 65200 | 1 | 6 | 2-5/8 | 6 |
| 37400 | 65210 | 2 | 6 | 2-5/8 | 6 |
| 68330 | ----- | 5 | 6 | 2-1/2 | 6 |
| 68600 | 65220 | 10 | 6 | 2-7/16 | 6 |
| 68610 | 65230 | 11 | 6 | 2-5/16 | 6 |
| 68350 | ----- | 19 | 6 | 2-1/8 | 6 |
| 68620 | 65240 | 20 | 6 | 2-1/8 | 6 |
| 68630 | 65250 | 21 | 6 | 2-1/8 | 6 |
| 68370 | ----- | 25 | 6 | 1-7/8 | 6 |
| 68640 | 65260 | 29 | 6 | 1-3/4 | 6 |
| 68650 | 65270 | 30 | 6 | 1-5/8 | 6 |
| 37490 | 65280 | 40 | 6 | 1-3/8 | 6 |

| 212 Black Oxide Part # | 213-D Cobalt Part # | Diameter Inches | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|------------------------------|---------------------------|--------------------|-----------------------------|---------------------------|------------------|
| 02710 | ----- | 1/16 | 12 | 7/8 | 1 |
| 02720 | ----- | 5/64 | 12 | 1 | 1 |
| 02730 | 61790 | 3/32 | 12 | 1-1/4 | 1 |
| 02740 | 61800 | 7/64 | 12 | 1-1/2 | 1 |
| 68800 | 61810 | 1/8 | 12 | 1-5/8 | 1 |
| 68810 | 61820 | 9/64 | 12 | 1-3/4 | 1 |
| 68820 | 61830 | 5/32 | 12 | 2 | 1 |
| 68830 | 61840 | 11/64 | 12 | 2-1/8 | 1 |
| 68840 | 61850 | 3/16 | 12 | 2-5/16 | 1 |
| 68850 | 61860 | 13/64 | 12 | 2-7/16 | 1 |
| 68860 | 61870 | 7/32 | 12 | 2-1/2 | 1 |
| 68870 | 61880 | 15/64 | 12 | 2-5/8 | 1 |
| 68880 | 61890 | 1/4 | 12 | 2-3/4 | 1 |
| 68890 | ----- | 17/64 | 12 | 2-7/8 | 1 |
| 68900 | ----- | 9/32 | 12 | 2-15/16 | 1 |
| 68910 | ----- | 19/64 | 12 | 3-1/16 | 1 |
| 68920 | ----- | 5/16 | 12 | 3-3/16 | 1 |
| 68930 | ----- | 21/64 | 12 | 3-5/16 | 1 |
| 68940 | ----- | 11/32 | 12 | 3-7/16 | 1 |
| 68950 | ----- | 23/64 | 12 | 3-1/2 | 1 |
| 68960 | ----- | 3/8 | 12 | 3-5/8 | 1 |
| 68970 | ----- | 25/64 | 12 | 3-3/4 | 1 |
| 68980 | ----- | 13/32 | 12 | 3-7/8 | 1 |
| 68990 | ----- | 27/64 | 12 | 3-15/16 | 1 |
| 69000 | ----- | 7/16 | 12 | 4-1/16 | 1 |
| 69010 | ----- | 29/64 | 12 | 4-3/16 | 1 |
| 69020 | ----- | 15/32 | 12 | 4-5/16 | 1 |
| 69030 | ----- | 31/64 | 12 | 4-3/8 | 1 |
| 69040 | ----- | 1/2 | 12 | 4-1/2 | 1 |

WIRE

| 212 Black Oxide Part # | 213-D Cobalt Part# | Wire Sizes | Overall Length Inches | Flute Length Inches | Qty. per/pack |
|------------------------------|--------------------------|---------------|-----------------------------|---------------------------|------------------|
| 69050 | 61900 | 1 | 12 | 2-5/8 | 1 |
| ----- | 61910 | 2 | 12 | 2-5/8 | 1 |
| 02400 | ----- | 5 | 12 | 2-5/8 | 1 |
| 69060 | 61920 | 10 | 12 | 2-7/16 | 1 |
| 69070 | 61930 | 11 | 12 | 2-5/16 | 1 |
| 69080 | 61940 | 20 | 12 | 2-1/8 | 1 |
| 69090 | 61950 | 21 | 12 | 2-1/8 | 1 |
| 69100 | 61960 | 29 | 12 | 1-3/4 | 1 |
| 69110 | 61970 | 30 | 12 | 1-5/8 | 1 |
| 02370 | 61980 | 40 | 12 | 1-3/8 | 1 |

6" & 12" Aircraft - Type NAS 907B / NAS 907J

PREMIUM & CN-TECH™ 1/2" REDUCED SHANK - SILVER & DEMING

Type 280-UB

1/2" Reduced Shank
3-Flats on Shank
Heavy-Duty,
135° Split Point

- Special Hi-Molybdenum tool steel.
- One piece solid construction.
- Sizes greater than 1", 118° split pt.
- Use in work hardening grades of stainless steel and other hard metal drilling applications.

Type 280-UBX

1/2" Reduced Shank
Premium, Silver & Deming
3 - Flats on Shank
118° Split Point

- M2 High speed steel.
- Precision ground point, flutes, body and clearance.
- 118° split point for superior general purpose drilling in metal, wood and plastic.

Type 280-CN

CN-TECH™ CRYO/NITRIDE

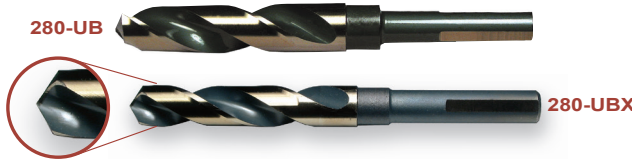
1/2" Reduced Shank 135° Split Point

- Nitride coating creates a case hardened surface that is resistant to rust, heat and extends tool life.
- Cryogenic treatment at -300° F increases toughness while reducing brittleness.



Type 280-CN

Nitride process case hardening resulting in superior tool life and exceptional corrosion resistance.



| 280-AG Part# | 280-AGX Part# | Diameter Inches | Overall Length Inches | Qty. per/pack |
|--------------|---------------|-----------------|-----------------------|---------------|
| 29550 | 74001 | 33/64 | 6 | 1 |
| 29560 | 74011 | 17/32 | 6 | 1 |
| 29570 | 74021 | 35/64 | 6 | 1 |
| 29580 | 74031 | 9/16 | 6 | 1 |
| 29590 | 74041 | 37/64 | 6 | 1 |
| 29600 | 74051 | 19/32 | 6 | 1 |
| 29610 | 74061 | 39/64 | 6 | 1 |
| 29620 | 74071 | 5/8" | 6 | 1 |
| 29630 | 74081 | 41/64 | 6 | 1 |
| 29640 | 74091 | 21/32 | 6 | 1 |
| 29650 | 74101 | 43/64 | 6 | 1 |
| 29660 | 74111 | 11/16 | 6 | 1 |
| 29670 | 74121 | 45/64 | 6 | 1 |
| 29680 | 74131 | 23/32 | 6 | 1 |
| 29690 | 74141 | 47/64 | 6 | 1 |
| 29700 | 74151 | 3/4" | 6 | 1 |
| 29710 | 74161 | 49/64 | 6 | 1 |
| 29720 | 74171 | 25/32 | 6 | 1 |
| 29730 | 74181 | 51/64 | 6 | 1 |
| 29740 | 74191 | 13/16 | 6 | 1 |
| 29750 | 74201 | 53/64 | 6 | 1 |
| 29760 | 74211 | 27/32 | 6 | 1 |
| 29770 | 74221 | 55/64 | 6 | 1 |
| 29780 | 74231 | 7/8" | 6 | 1 |
| 29790 | 74241 | 57/64 | 6 | 1 |
| 29800 | 74251 | 29/32 | 6 | 1 |
| 29810 | 74261 | 59/64 | 6 | 1 |
| 29820 | 74271 | 15/16 | 6 | 1 |
| 29830 | 74281 | 61/64 | 6 | 1 |
| 29840 | 74291 | 31/32 | 6 | 1 |
| 29850 | 74301 | 63/64 | 6 | 1 |
| 29860 | 74311 | 1" | 6 | 1 |
| 29870 | ---- | 1-1/32 | 6 | 1 |
| 29880 | 74321 | 1-1/16 | 6 | 1 |
| 29890 | ---- | 1-3/32 | 6 | 1 |
| 29900 | 74331 | 1-1/8 | 6 | 1 |
| 29910 | 74341 | 1-5/32 | 6 | 1 |
| 29920 | 74351 | 1-3/16 | 6 | 1 |
| 29930 | ---- | 1-7/32 | 6 | 1 |
| 29940 | 74361 | 1-1/4" | 6 | 1 |
| 29950 | ---- | 1-5/16 | 6 | 1 |
| 29960 | ---- | 1-3/8 | 6 | 1 |
| 29970 | ---- | 1-7/16 | 6 | 1 |
| 29980 | ---- | 1-1/2" | 6 | 1 |

Sets

| Part # | 9/16, 5/8, 3/4, 1" | Qty of ea. |
|----------------|------------------------------|------------|
| 12250 S&D-4SP | 1/2" Shank - Silver & Deming | 1 |
| 74771 S&D-4UBX | 1/2" Shank - Silver & Deming | 1 |

| Part # | 8 Pc. 9/16" - 1" by 16ths | Qty of ea. |
|----------------|------------------------------|------------|
| 92400 S&D-8SP | 1/2" Shank - Silver & Deming | 1 |
| 74781 S&D-8UBX | 1/2" Shank - Silver & Deming | 1 |

FRACTIONAL

| Part # | Diameter Inches | Overall Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------|
| 30003 | 33/64" | 6 | 1 |
| 30013 | 17/32 | 6 | 1 |
| 30023 | 35/64 | 6 | 1 |
| 30033 | 9/16" | 6 | 1 |
| 30043 | 37/64 | 6 | 1 |
| 30053 | 19/32 | 6 | 1 |
| 30063 | 39/64 | 6 | 1 |
| 30073 | 5/8" | 6 | 1 |
| 30083 | 41/64 | 6 | 1 |
| 30093 | 21/32 | 6 | 1 |
| 30103 | 43/64 | 6 | 1 |
| 30113 | 11/16 | 6 | 1 |
| 30123 | 45/64 | 6 | 1 |
| 30133 | 23/32 | 6 | 1 |
| 30143 | 47/64 | 6 | 1 |
| 30153 | 3/4" | 6 | 1 |
| 30163 | 49/64 | 6 | 1 |
| 30173 | 25/32 | 6 | 1 |
| 30183 | 51/64 | 6 | 1 |
| 30193 | 13/16 | 6 | 1 |
| 30203 | 53/64 | 6 | 1 |
| 30213 | 27/32 | 6 | 1 |
| 30223 | 55/64 | 6 | 1 |
| 30233 | 7/8" | 6 | 1 |
| 30243 | 57/64 | 6 | 1 |
| 30253 | 29/32 | 6 | 1 |
| 30263 | 59/64 | 6 | 1 |
| 30273 | 15/16 | 6 | 1 |
| 30283 | 61/64 | 6 | 1 |
| 30293 | 31/32 | 6 | 1 |
| 30303 | 63/64 | 6 | 1 |
| 30313 | 1" | 6 | 1 |

Sets

| Part # | 4 Pc. 9/16, 5/8, 3/4, 1" | Qty of ea. |
|---------------|-------------------------------------------------------|------------|
| 30323 S&D-4CN | CN-TECH™ CRYO/NITRIDE 1/2" Shank - Silver & Deming | 1 |

| Part # | 8 Pc. 9/16 - 1" by 16ths | Qty of ea. |
|---------------|-------------------------------------------------------|------------|
| 30333 S&D-8CN | CN-TECH™ CRYO/NITRIDE 1/2" Shank - Silver & Deming | 1 |

| Part # | 13 Pc. 3 ea.(9/16" & 5/8") 2 ea.(3/4" 11/16", 13/16", 7/8", 15/16", 1" | Qty of ea. |
|----------------|------------------------------------------------------------------------|------------|
| 30343 S&D-13CN | CN-TECH™ CRYO/NITRIDE 1/2" Shank - Silver & Deming | 1 |

| Part # | 33 Pc. 1/2 - 1" by 64ths | Qty of ea. |
|----------------|-------------------------------------------------------|------------|
| 30353 S&D-33CN | CN-TECH™ CRYO/NITRIDE 1/2" Shank - Silver & Deming | 1 |

Reduced Shank



VORTEX-POINT™, METRIC -1/2" & 3/4" REDUCED SHANK SILVER & DEMING

Type 280-UBM - METRIC

1/2" Reduced Shank Silver & Deming
135° Split Point, 3-Flats on Shank

- Special Hi-Molybdenum tool steel.
- One piece solid construction
- Sizes greater than 1" 118° split point.
- Body and clearance are gold surface treated for maximum lubricity.
- **Recommended** for use in work hardening grades of stainless steel and other hard metal drilling applications.



METRIC

| Part # | Dia. MM | OAL Inches | Part # | Dia. MM | OAL Inches |
|--------|---------|------------|--------|---------|------------|
| 25500 | 14.0 | 6 | 25520 | 20.0 | 6 |
| 25501 | 14.5 | 6 | 25521 | 20.5 | 6 |
| 25502 | 15.0 | 6 | 25522 | 21.0 | 6 |
| 25541 | 15.5 | 6 | 25523 | 21.5 | 6 |
| 25504 | 16.0 | 6 | 25524 | 22.0 | 6 |
| 25542 | 16.5 | 6 | 25529 | 22.5 | 6 |
| 25510 | 17.0 | 6 | 25530 | 23.0 | 6 |
| 25511 | 17.5 | 6 | 25531 | 23.5 | 6 |
| 25512 | 18.0 | 6 | 25532 | 24.0 | 6 |
| 25543 | 18.5 | 6 | 25549 | 24.5 | 6 |
| 25514 | 19.0 | 6 | 25534 | 25.0 | 6 |
| 25544 | 19.5 | 6 | | | |

Qty. per package 1

Qty. per package 1

Type 280-VT



1/2" Shank Silver & Deming
135° Split point - 3-Flats on Shank

- Unique tip geometry reduces heat generation & cutting tool wear increasing tool life.
- Easily enlarges existing holes without damaging the point.
- Stay sharp up to 4X longer compared to conventional and other specialty tip design.
- **Recommended** for Cast iron, Brass, Sheet metal, Plastic, Mild steel, Copper, Hardened steel.



| Part # | Diameter Inches | Overall Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------|
| 26033 | 9/16" | 6 | 1 |
| 26073 | 5/8" | 6 | 1 |
| 26113 | 11/16 | 6 | 1 |
| 26153 | 3/4" | 6 | 1 |
| 26193 | 13/16 | 6 | 1 |
| 26233 | 7/8" | 6 | 1 |
| 26273 | 15/16 | 6 | 1 |
| 26313 | 1" | 6 | 1 |

Sets

4 Pc.

| Part # | 9/16, 5/8, 3/4, 1" | Qty of ea. |
|---------------|-----------------------------------------------|------------|
| 26443 S&D-4VT | VORTEX-POINT™ 1/2" Shank - Silver & Deming | 1 |

8 Pc.

| Part # | 9/16 - 1" by 16ths | Qty of ea. |
|---------------|-----------------------------------------------|------------|
| 26473 S&D-8VT | VORTEX-POINT™ 1/2" Shank - Silver & Deming | 1 |

Type 280

1/2" Reduced Shank Silver & Deming
118° point - General Purpose

- This general purpose 118° point high-speed steel drill is recommended for use in drilling equipment with 1/2" chucks.
- Type 280 drills may be used in power applications such as drill presses where a short rigid drill is required.



| Part # | Diameter Inches | Overall Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------|
| 29130 | 33/64" | 6 | 1 |
| 29140 | 17/32 | 6 | 1 |
| 29150 | 35/64 | 6 | 1 |
| 29160 | 9/16" | 6 | 1 |
| 29170 | 37/64 | 6 | 1 |
| 29180 | 19/32 | 6 | 1 |
| 29190 | 39/64 | 6 | 1 |
| 29200 | 5/8" | 6 | 1 |
| 29210 | 41/64 | 6 | 1 |
| 29220 | 21/32 | 6 | 1 |
| 29230 | 43/64 | 6 | 1 |
| 29240 | 11/16 | 6 | 1 |
| 29250 | 45/64 | 6 | 1 |
| 29260 | 23/32 | 6 | 1 |
| 29270 | 47/64 | 6 | 1 |
| 29280 | 3/4" | 6 | 1 |
| 29290 | 49/64 | 6 | 1 |
| 29300 | 25/32 | 6 | 1 |
| 29310 | 51/64 | 6 | 1 |
| 29320 | 13/16 | 6 | 1 |
| 29330 | 53/64 | 6 | 1 |
| 29340 | 27/32 | 6 | 1 |
| 29350 | 55/64 | 6 | 1 |
| 29360 | 7/8" | 6 | 1 |
| 29370 | 57/64 | 6 | 1 |
| 29380 | 29/32 | 6 | 1 |
| 29390 | 59/64 | 6 | 1 |
| 29400 | 15/16 | 6 | 1 |
| 29410 | 61/64 | 6 | 1 |
| 29420 | 31/32 | 6 | 1 |
| 29430 | 63/64 | 6 | 1 |
| 29440 | 1" | 6 | 1 |
| 29450 | 1-1/16 | 6 | 1 |
| 29460 | 1-1/8 | 6 | 1 |
| 29470 | 1-5/32 | 6 | 1 |
| 29480 | 1-3/16 | 6 | 1 |
| 29490 | 1-1/4 | 6 | 1 |
| 29540 | 1-47/64 | 6 | 1 |

Type 281-UB

3/4" Reduced Shank Silver & Deming
Magnum Super Premium - 135° Split Point

- These are high performance, close tolerance, tight run out spec.
- Tools designed for drilling with Bridgeport style or other production machines with 3/4" chucks.
- Recommended for use in work hardening grades of stainless steel and other hard metal drilling applications.



| Part # | Diameter Inches | Flute Length Inches | Overall Length Inches | Qty. per/pack |
|--------|-----------------|---------------------|-----------------------|---------------|
| 29741 | 13/16 | 3-1/4 | 5-1/2 | 1 |
| 29781 | 7/8 | 3-1/4 | 5-1/2 | 1 |
| 29821 | 15/16 | 3-1/4 | 5-1/2 | 1 |
| 29861 | 1 | 3-1/4 | 5-1/2 | 1 |
| 29901 | 1-1/8 | 3-1/2 | 5-27/32 | 1 |
| 29941 | 1-1/4 | 3-1/2 | 5-7/8 | 1 |
| 29961 | 1-3/8 | 3-1/2 | 5-29/32 | 1 |
| 29981 | 1-1/2 | 3-1/2 | 5-15/16 | 1 |

SILVER & DEMING - 1/2" REDUCED SHANK

Type 280-MRO

Maintenance Length - 1/2" Reduced Shank
135° Split Point 3-Flats on Shank Surfaced
Treated Flutes

- The 280-MRO is a shorter (5") tougher version of our very popular 1/2" reduced shank product.
- Designed specifically for the needs of the MRO market, the 280-MRO has a 135° split point to insure fast hole starts without drill walking.
- The three flats on the shank insure positive chucking with out slippage.



FRACTIONAL

| Part # | Size / Inches | Overall Length | Qty. per/pack |
|--------|---------------|----------------|---------------|
| 54291 | 33/64 | 5 | 1 |
| 54300 | 17/32 | 5 | 1 |
| 54301 | 35/64 | 5 | 1 |
| 54310 | 9/16 | 5 | 1 |
| 54311 | 37/64 | 5 | 1 |
| 54320 | 19/32 | 5 | 1 |
| 54321 | 39/64 | 5 | 1 |
| 54330 | 5/8" | 5 | 1 |
| 54331 | 41/64 | 5 | 1 |
| 54340 | 21/32 | 5 | 1 |
| 54341 | 43/64 | 5 | 1 |
| 54350 | 11/16 | 5 | 1 |
| 54351 | 45/64 | 5 | 1 |
| 54360 | 23/32 | 5 | 1 |
| 54361 | 47/64 | 5 | 1 |
| 54370 | 3/4" | 5 | 1 |
| 54371 | 49/64 | 5 | 1 |
| 54380 | 25/32 | 5 | 1 |
| 54381 | 51/64 | 5 | 1 |
| 54390 | 13/16 | 5 | 1 |
| 54391 | 53/64 | 5 | 1 |
| 54400 | 27/32 | 5 | 1 |
| 54401 | 55/64 | 5 | 1 |
| 54410 | 7/8" | 5 | 1 |
| 54411 | 57/64 | 5 | 1 |
| 54420 | 29/32 | 5 | 1 |
| 54421 | 59/64 | 5 | 1 |
| 54430 | 15/16 | 5 | 1 |
| 54431 | 61/64 | 5 | 1 |
| 54440 | 31/32 | 5 | 1 |
| 54441 | 63/64 | 5 | 1 |
| 54450 | 1" | 5 | 1 |

Set - Type 280-MRO

4 Pc.

| Part # | 9/16, 5/8, 3/4, 1" | Qty of each |
|-------------|----------------------------|-------------|
| 54520 S&D-4 | 1/2" Shank-Silver & Deming | 1 |

Type 280-D

1/2" Reduced Shank Silver & Deming
Super High-Speed - M42 Cobalt

- Heavy-duty 135° split point with gold finish for use in drilling hard tough metals, free machining stainless steel, high temperature alloys, titanium and certain plastics.
- High red hot hardness of cobalt steel permits speeds 30% higher than regular high speed steel drills.
- Cobalt drills require rigidly held, positive feed drilling equipment.



| Part # | Diameter Inches | Overall Length Inches | Qty. per/pack |
|--------|-----------------|-----------------------|---------------|
| 29131 | 33/64 | 6 | 1 |
| 29141 | 17/32 | 6 | 1 |
| 29151 | 35/64 | 6 | 1 |
| 29161 | 9/16 | 6 | 1 |
| 29171 | 37/64 | 6 | 1 |
| 29181 | 19/32 | 6 | 1 |
| 29191 | 39/64 | 6 | 1 |
| 29201 | 5/8 | 6 | 1 |
| 29211 | 41/64 | 6 | 1 |
| 29221 | 21/32 | 6 | 1 |
| 29231 | 43/64 | 6 | 1 |
| 29241 | 11/16 | 6 | 1 |
| 29251 | 45/64 | 6 | 1 |
| 29261 | 23/32 | 6 | 1 |
| 29271 | 47/64 | 6 | 1 |
| 29281 | 3/4 | 6 | 1 |
| 29291 | 49/64 | 6 | 1 |
| 29331 | 25/32 | 6 | 1 |
| 29311 | 51/64 | 6 | 1 |
| 29321 | 13/16 | 6 | 1 |
| 29301 | 53/64 | 6 | 1 |
| 29341 | 27/32 | 6 | 1 |
| 29351 | 55/64 | 6 | 1 |
| 29361 | 7/8 | 6 | 1 |
| 29371 | 57/64 | 6 | 1 |
| 29381 | 29/32 | 6 | 1 |
| 29391 | 59/64 | 6 | 1 |
| 29401 | 15/16 | 6 | 1 |
| 29411 | 61/64 | 6 | 1 |
| 29421 | 31/32 | 6 | 1 |
| 29431 | 63/64 | 6 | 1 |
| 29441 | 1" | 6 | 1 |

Sets - Type 280-D

4 Pc.

| Part # | 9/16, 5/8, 3/4, 1" | Qty of each |
|--------------|-----------------------------|-------------|
| 29551 S&D-4D | M42 Cobalt 135° Split point | 1 |

8 Pc.

| Part # | 9/16 - 1" by 16ths | Qty of each |
|--------------|-----------------------------|-------------|
| 29571 S&D-8D | M42 Cobalt 135° Split point | 1 |

Type EXT

Silver & Deming - Extension

- Includes an "Allen Wrench"
• COO-CHINA



| Part # | Bore/Shank | Diameter | Overall Length | Extension Length | Qty. per/pack |
|--------|------------|----------|----------------|------------------|---------------|
| 62730 | 1/2" | 7/8" | 7-1/2" | 6 in. | 1 |

Silver & Deming - 1/2" Reduced Shank Cobalt / Maintenance Length

HSS TAPER SHANK - STANDARD

Type 510

High-Speed Steel 118° Point Taper Shank
Regular Shank - Black Oxide Flutes & Clearance

- Taper shank drills are made to fit tapered holders.
- Precision ground flutes, clearance and point.
- Designed to perform well under a wide variety of conditions in a wide range of materials.
- Made in the U.S.A.



FRACTIONAL

| Part # | Diameter Inches | Decimal Equivalent Inches | Taper Shank | Overall Length Inches | Flute Length Inches |
|--------|-----------------|---------------------------|-------------|-----------------------|---------------------|
| 14150 | 1/8 | .1250 | 1 | 5-1/8 | 1-7/8 |
| 14160 | 9/64 | .1406 | 1 | 5-3/8 | 2-1/8 |
| 14170 | 5/32 | .1562 | 1 | 5-3/8 | 2-1/8 |
| 14180 | 11/64 | .1719 | 1 | 5-3/4 | 2-1/2 |
| 14190 | 3/16 | .1875 | 1 | 5-3/4 | 2-1/2 |
| 14200 | 13/64 | .2031 | 1 | 6 | 2-3/4 |
| 14210 | 7/32 | .2188 | 1 | 6 | 2-3/4 |
| 14220 | 15/64 | .2344 | 1 | 6-1/8 | 2-7/8 |
| 14230 | 1/4 | .2500 | 1 | 6-1/8 | 2-7/8 |
| 14240 | 17/64 | .2656 | 1 | 6-1/4 | 3 |
| 14250 | 9/32 | .2812 | 1 | 6-1/4 | 3 |
| 14260 | 19/64 | .2969 | 1 | 6-3/8 | 3-1/8 |
| 14270 | 5/16 | .3125 | 1 | 6-3/8 | 3-1/8 |
| 14280 | 21/64 | .3281 | 1 | 6-1/2 | 3-1/4 |
| 14290 | 11/32 | .3438 | 1 | 6-1/2 | 3-1/4 |
| 14300 | 23/64 | .3594 | 1 | 6-3/4 | 3-1/2 |
| 14310 | 3/8 | .3750 | 1 | 6-3/4 | 3-1/2 |
| 14320 | 25/64 | .3906 | 1 | 7 | 3-5/8 |
| 14330 | 13/32 | .4062 | 1 | 7 | 3-5/8 |
| 14340 | 27/64 | .4219 | 1 | 7-1/4 | 3-7/8 |
| 14350 | 7/16 | .4375 | 1 | 7-1/4 | 3-7/8 |
| 14360 | 29/64 | .4531 | 1 | 7-1/2 | 4-1/8 |
| 14370 | 15/32 | .4688 | 1 | 7-1/2 | 4-1/8 |
| 14380 | 31/64 | .4844 | 2 | 8-1/4 | 4-3/8 |
| 14390 | 1/2 | .5000 | 2 | 8-1/4 | 4-3/8 |
| 14400 | 33/64 | .5156 | 2 | 8-1/2 | 4-5/8 |
| 14410 | 17/32 | .5312 | 2 | 8-1/2 | 4-5/8 |
| 14420 | 35/64 | .5469 | 2 | 8-3/4 | 4-7/8 |
| 14430 | 9/16 | .5625 | 2 | 8-3/4 | 4-7/8 |
| 14440 | 37/64 | .5781 | 2 | 8-3/4 | 4-7/8 |
| 14450 | 19/32 | .5938 | 2 | 8-3/4 | 4-7/8 |
| 14460 | 39/64 | .6094 | 2 | 8-3/4 | 4-7/8 |
| 14470 | 5/8 | .6250 | 2 | 8-3/4 | 4-7/8 |
| 14480 | 41/64 | .6406 | 2 | 9 | 5-1/8 |
| 14490 | 21/32 | .6562 | 2 | 9 | 5-1/8 |
| 14500 | 43/64 | .6719 | 2 | 9-1/4 | 5-3/8 |
| 14510 | 11/16 | .6875 | 2 | 9-1/4 | 5-3/8 |
| 14520 | 45/64 | .7031 | 2 | 9-1/2 | 5-5/8 |
| 14530 | 23/32 | .7188 | 2 | 9-1/2 | 5-5/8 |
| 14540 | 47/64 | .7344 | 2 | 9-3/4 | 5-7/8 |
| 14550 | 3/4 | .7500 | 2 | 9-3/4 | 5-7/8 |
| 14560 | 49/64 | .7656 | 2 | 9-7/8 | 6 |
| 14570 | 25/32 | .7812 | 2 | 9-7/8 | 6 |
| 14580 | 51/64 | .7969 | 3 | 10-3/4 | 6-1/8 |
| 14590 | 13/16 | .8125 | 3 | 10-3/4 | 6-1/8 |
| 14600 | 53/64 | .8281 | 3 | 10-3/4 | 6-1/8 |
| 14610 | 27/32 | .8438 | 3 | 10-3/4 | 6-1/8 |
| 14620 | 55/64 | .8594 | 3 | 10-3/4 | 6-1/8 |
| 14630 | 7/8 | .8750 | 3 | 10-3/4 | 6-1/8 |
| 14640 | 57/64 | .8906 | 3 | 10-3/4 | 6-1/8 |
| 14650 | 29/32 | .9062 | 3 | 10-3/4 | 6-1/8 |
| 14660 | 59/64 | .9219 | 3 | 10-3/4 | 6-1/8 |
| 14670 | 15/16 | .9375 | 3 | 10-3/4 | 6-1/8 |
| 14680 | 61/64 | .9531 | 3 | 11 | 6-3/8 |
| 14690 | 31/32 | .9688 | 3 | 11 | 6-3/8 |
| 14700 | 63/64 | .9844 | 3 | 11 | 6-3/8 |
| 14710 | 1" | 1.0000 | 3 | 11 | 6-3/8 |
| 14720 | 1-1/64 | 1.0156 | 3 | 11-1/8 | 6-1/2 |

FRACTIONAL

| Part # | Diameter Inches | Decimal Equivalent Inches | Taper Shank | Overall Length Inches | Flute Length Inches |
|--------|-----------------|---------------------------|-------------|-----------------------|---------------------|
| 14730 | 1-1/32 | 1.0312 | 3 | 11-1/8 | 6-1/2 |
| 14740 | 1-3/64 | 1.0469 | 3 | 11-1/4 | 6-5/8 |
| 14750 | 1-1/16 | 1.0625 | 3 | 11-1/4 | 6-5/8 |
| 14760 | 1-5/64 | 1.0781 | 4 | 12-1/2 | 6-7/8 |
| 14770 | 1-3/32 | 1.0938 | 4 | 12-1/2 | 6-7/8 |
| 14780 | 1-7/64 | 1.1094 | 4 | 12-3/4 | 7-1/8 |
| 14790 | 1-1/8 | 1.1250 | 4 | 12-3/4 | 7-1/8 |
| 14800 | 1-9/64 | 1.1406 | 4 | 12-7/8 | 7-1/4 |
| 14810 | 1-5/32 | 1.1562 | 4 | 12-7/8 | 7-1/4 |
| 14820 | 1-11/64 | 1.1719 | 4 | 13 | 7-3/8 |
| 14830 | 1-3/16 | 1.1875 | 4 | 13 | 7-3/8 |
| 14840 | 1-13/64 | 1.2031 | 4 | 13-1/8 | 7-1/2 |
| 14850 | 1-7/32 | 1.2188 | 4 | 13-1/8 | 7-1/2 |
| 14860 | 1-15/64 | 1.2344 | 4 | 13-1/2 | 7-7/8 |
| 14870 | 1-1/4 | 1.2500 | 4 | 13-1/2 | 7-7/8 |
| 14880 | 1-17/64 | 1.2656 | 4 | 14-1/8 | 8-1/2 |
| 14890 | 1-9/32 | 1.2812 | 4 | 14-1/8 | 8-1/2 |
| 14900 | 1-19/64 | 1.2969 | 4 | 14-1/4 | 8-5/8 |
| 14910 | 1-5/16 | 1.3125 | 4 | 14-1/4 | 8-5/8 |
| 14920 | 1-21/64 | 1.3281 | 4 | 14-3/8 | 8-3/4 |
| 14930 | 1-11/32 | 1.3438 | 4 | 14-3/8 | 8-3/4 |
| 14940 | 1-23/64 | 1.3594 | 4 | 14-1/2 | 8-7/8 |
| 14950 | 1-3/8 | 1.3750 | 4 | 14-1/2 | 8-7/8 |
| 14960 | 1-25/64 | 1.3906 | 4 | 14-5/8 | 9 |
| 14970 | 1-13/32 | 1.4062 | 4 | 14-5/8 | 9 |
| 14980 | 1-27/64 | 1.4219 | 4 | 14-3/4 | 9-1/8 |
| 14990 | 1-7/16 | 1.4375 | 4 | 14-3/4 | 9-1/8 |
| 15000 | 1-29/64 | 1.4531 | 4 | 14-7/8 | 9-1/4 |
| 15010 | 1-15/32 | 1.4688 | 4 | 14-7/8 | 9-1/4 |
| 15020 | 1-31/64 | 1.4844 | 4 | 15 | 9-3/8 |
| 15030 | 1-1/2 | 1.5000 | 4 | 15 | 9-3/8 |
| 15040 | 1-17/32 | 1.5312 | 5 | 16-3/8 | 9-3/8 |
| 15050 | 1-9/16 | 1.5625 | 5 | 16-5/8 | 9-5/8 |
| 15060 | 1-19/32 | 1.5938 | 5 | 16-7/8 | 9-7/8 |
| 15070 | 1-5/8 | 1.6250 | 5 | 17 | 10 |
| 15080 | 1-21/32 | 1.6562 | 5 | 17-1/8 | 10-1/8 |
| 15090 | 1-11/16 | 1.6875 | 5 | 17-1/8 | 10-1/8 |
| 15100 | 1-23/32 | 1.7188 | 5 | 17-1/8 | 10-1/8 |
| 15110 | 1-3/4 | 1.7500 | 5 | 17-1/8 | 10-1/8 |
| 15120 | 1-25/32 | 1.7812 | 5 | 17-1/8 | 10-1/8 |
| 15130 | 1-13/16 | 1.8125 | 5 | 17-1/8 | 10-1/8 |
| 15140 | 1-27/32 | 1.8438 | 5 | 17-1/8 | 10-1/8 |
| 15150 | 1-7/8 | 1.8750 | 5 | 17-3/8 | 10-3/8 |
| 15160 | 1-29/32 | 1.9062 | 5 | 17-3/8 | 10-3/8 |
| 15170 | 1-15/16 | 1.9375 | 5 | 17-3/8 | 10-3/8 |
| 15180 | 1-31/32 | 1.9688 | 5 | 17-3/8 | 10-3/8 |
| 15190 | 2" | 2.0000 | 5 | 17-3/8 | 10-3/8 |
| 15200 | 2-1/32 | 2.0312 | 5 | 17-3/8 | 10-3/8 |
| 15210 | 2-1/16 | 2.0625 | 5 | 17-3/8 | 10-1/4 |
| 15220 | 2-3/32 | 2.0938 | 5 | 17-3/8 | 10-1/4 |
| 15230 | 2-1/8 | 2.1250 | 5 | 17-3/8 | 10-1/4 |
| 15240 | 2-5/32 | 2.1562 | 5 | 17-3/8 | 10-1/4 |
| 15250 | 2-3/16 | 2.1875 | 5 | 17-3/8 | 10-1/4 |
| 15260 | 2-7/32 | 2.2188 | 5 | 17-3/8 | 10-1/8 |
| 15270 | 2-1/4 | 2.2500 | 5 | 17-3/8 | 10-1/8 |
| 15280 | 2-5/16 | 2.3125 | 5 | 17-3/8 | 10-1/8 |
| 15290 | 2-3/8 | 2.3750 | 5 | 17-3/8 | 10-1/8 |
| 15300 | 2-7/16 | 2.4375 | 5 | 18-3/4 | 11-1/4 |
| 15310 | 2-1/2 | 2.5000 | 5 | 18-3/4 | 11-1/4 |

Letter sizes continued page 49

Taper Shank

HSS TAPER SHANK - REGULAR

Type 510

High-Speed Steel Taper Shank Regular Shank - Black Oxide

LETTER

| Part # | Letter Size | Decimal Equivalent Inches | Taper Shank | Overall Length Inches | Flute Length Inches |
|--------|-------------|---------------------------|-------------|-----------------------|---------------------|
| 15700 | A | .234 | 1 | 6-1/8 | 2-7/8 |
| 15710 | B | .238 | 1 | 6-1/8 | 2-7/8 |
| 15720 | C | .242 | 1 | 6-1/8 | 2-7/8 |
| 15730 | D | .246 | 1 | 6-1/8 | 2-7/8 |
| 15740 | E | .250 | 1 | 6-1/8 | 2-7/8 |
| 15750 | F | .257 | 1 | 6-1/4 | 3 |
| 15760 | G | .261 | 1 | 6-1/4 | 3 |
| 15770 | H | .266 | 1 | 6-1/4 | 3 |
| 15780 | I | .272 | 1 | 6-1/4 | 3 |
| 15790 | J | .277 | 1 | 6-1/4 | 3 |
| 15800 | K | .281 | 1 | 6-1/4 | 3 |
| 15810 | L | .290 | 1 | 6-3/8 | 3-1/8 |
| 15820 | M | .295 | 1 | 6-3/8 | 3-1/8 |
| 15830 | N | .302 | 1 | 6-3/8 | 3-1/8 |
| 15840 | O | .316 | 1 | 6-1/2 | 3-1/4 |
| 15850 | P | .323 | 1 | 6-1/2 | 3-1/4 |
| 15860 | Q | .332 | 1 | 6-1/2 | 3-1/4 |
| 15870 | R | .339 | 1 | 6-1/2 | 3-1/4 |
| 15880 | S | .348 | 1 | 6-3/4 | 3-1/2 |
| 15890 | T | .358 | 1 | 6-3/4 | 3-1/2 |
| 15900 | U | .368 | 1 | 6-3/4 | 3-1/2 |
| 15910 | V | .377 | 1 | 7 | 3-5/8 |
| 15920 | W | .386 | 1 | 7 | 3-5/8 |
| 15930 | X | .397 | 1 | 7 | 3-5/8 |
| 15940 | Y | .404 | 1 | 7 | 3-5/8 |
| 15950 | Z | .413 | 1 | 7-1/4 | 3-7/8 |

Type 520

High-Speed Steel Taper Shank - Shank Larger than Regular - Black Oxide

- Taper shank drills are made to fit tapered holders.
- They are designed to perform well under a variety of normal conditions in a wide range of materials.
- Packaged individually.



FRACTIONAL

| Part # | Diameter Inches | Decimal Equivalent Inches | Taper Shank | Overall Length Inches | Flute Length Inches |
|--------|-----------------|---------------------------|-------------|-----------------------|---------------------|
| 15450 | 3/8 | .3750 | 2 | 7-3/8 | 3-1/2 |
| 15460 | 25/64 | .3906 | 2 | 7-1/2 | 3-5/8 |
| 15470 | 13/32 | .4062 | 2 | 7-1/2 | 3-5/8 |
| 15480 | 27/64 | .4219 | 2 | 7-3/4 | 3-7/8 |
| 15490 | 7/16 | .4375 | 2 | 7-3/4 | 3-7/8 |
| 15500 | 29/64 | .4531 | 2 | 8 | 4-1/8 |
| 15510 | 15/32 | .4688 | 2 | 8 | 4-1/8 |
| 15520 | 41/64 | .6406 | 3 | 9-3/4 | 5-1/8 |
| 15530 | 21/32 | .6262 | 3 | 9-3/4 | 5-1/8 |
| 15540 | 43/64 | .6719 | 3 | 10 | 5-3/8 |
| 15550 | 11/16 | .6875 | 3 | 10 | 5-3/8 |
| 15560 | 45/64 | .7031 | 3 | 10-1/4 | 5-5/8 |
| 15570 | 23/32 | .7188 | 3 | 10-1/4 | 5-5/8 |
| 15580 | 47/64 | .7344 | 3 | 10-1/2 | 5-7/8 |
| 15590 | 3/4 | .7500 | 3 | 10-1/2 | 5-7/8 |
| 15600 | 49/64 | .7656 | 3 | 10-5/8 | 6 |
| 15610 | 25/32 | .7812 | 3 | 10-5/8 | 6 |
| 15620 | 1" | 1.0000 | 4 | 12 | 6-3/8 |
| 15630 | 1-1/32 | 1.0312 | 4 | 12-1/8 | 6-1/2 |
| 15640 | 1-1/16 | 1.0625 | 4 | 12-1/4 | 6-5/8 |

Type 500

High-Speed Steel Taper Shank - Shank Smaller than Standard - Black Oxide

- Taper shank drills are made to fit tapered holders.
- They are designed to perform well under a variety of normal conditions in a wide range of materials.
- Packaged individually.



FRACTIONAL

| Part # | Diameter Inches | Decimal Equivalent Inches | Taper Shank | Overall Length Inches | Flute Length Inches |
|--------|-----------------|---------------------------|-------------|-----------------------|---------------------|
| 16050 | 31/64 | .4844 | 1 | 7-3/4 | 4-3/8 |
| 16060 | 1/2 | .5000 | 1 | 7-3/4 | 4-3/8 |
| 16070 | 33/64 | .5156 | 1 | 8 | 4-5/8 |
| 16080 | 17/32 | .5312 | 1 | 8 | 4-5/8 |
| 16090 | 35/64 | .5469 | 1 | 8-1/4 | 4-7/8 |
| 16100 | 9/16 | .5625 | 1 | 8-1/4 | 4-7/8 |
| 16110 | 51/64 | .7969 | 2 | 10 | 6-1/8 |
| 16120 | 13/16 | .8125 | 2 | 10 | 6-1/8 |
| 16130 | 53/64 | .8281 | 2 | 10 | 6-1/8 |
| 16140 | 27/32 | .8438 | 2 | 10 | 6-1/8 |
| 16150 | 55/64 | .8594 | 2 | 10 | 6-1/8 |
| 16160 | 7/8 | .8750 | 2 | 10 | 6-1/8 |
| 16170 | 57/64 | .8906 | 2 | 10 | 6-1/8 |
| 16180 | 29/32 | .9062 | 2 | 10 | 6-1/8 |
| 16190 | 1-5/64 | 1.0781 | 3 | 11-1/2 | 6-7/8 |
| 16200 | 1-3/32 | 1.0938 | 3 | 11-1/2 | 6-7/8 |
| 16210 | 1-7/64 | 1.1094 | 3 | 11-3/4 | 7-1/8 |
| 16220 | 1-1/8 | 1.1250 | 3 | 11-3/4 | 7-1/8 |
| 16230 | 1-9/64 | 1.1406 | 3 | 11-7/8 | 7-1/4 |
| 16240 | 1-5/32 | 1.1562 | 3 | 11-7/8 | 7-1/4 |
| 16250 | 1-11/64 | 1.1719 | 3 | 12 | 7-3/8 |
| 16260 | 1-3/16 | 1.1875 | 3 | 12 | 7-3/8 |
| 16270 | 1-13/64 | 1.2031 | 3 | 12-1/8 | 7-1/2 |
| 16280 | 1-7/32 | 1.2188 | 3 | 12-1/8 | 7-1/2 |
| 16290 | 1-15/64 | 1.2344 | 3 | 12-1/2 | 7-7/8 |
| 16300 | 1-1/4 | 1.2500 | 3 | 12-1/2 | 7-7/8 |
| 16320 | 1-17/32 | 1.5312 | 4 | 15 | 9-3/8 |
| 16340 | 1-9/16 | 1.5625 | 4 | 15-1/4 | 9-5/8 |
| 16360 | 1-19/32 | 1.5938 | 4 | 15-1/2 | 9-7/8 |
| 16380 | 1-5/8 | 1.6250 | 4 | 15-5/8 | 10 |
| 16400 | 1-21/32 | 1.6562 | 4 | 15-3/4 | 10-1/8 |
| 16420 | 1-11/16 | 1.6875 | 4 | 15-3/4 | 10-1/8 |
| 16440 | 1-23/32 | 1.7188 | 4 | 15-3/4 | 10-1/8 |
| 16460 | 1-3/4 | 1.7500 | 4 | 16-1/4 | 10-3/8 |
| 16470 | 1-25/32 | 1.7812 | 4 | 16-1/4 | 10-3/8 |
| 16480 | 1-13/16 | 1.8125 | 4 | 16-1/4 | 10-3/8 |
| 16490 | 1-27/32 | 1.8438 | 4 | 16-1/4 | 10-3/8 |
| 16500 | 1-7/8 | 1.8750 | 4 | 16-1/2 | 10-1/2 |
| 16510 | 1-29/32 | 1.9062 | 4 | 16-1/2 | 10-1/2 |
| 16520 | 1-15/16 | 1.9375 | 4 | 16-5/8 | 10-5/8 |
| 16530 | 1-31/32 | 1.9688 | 4 | 16-5/8 | 10-5/8 |
| 16540 | 2" | 2.0000 | 4 | 16-5/8 | 10-5/8 |

DRILL BLANK

Type 240-DB

Jobber Length

Hardened and Ground - Bright Finish

- Fully hardened drill blanks typically used as hole size and bushing gauges.
- May also be used as guide pins for die sets.

Tolerances: +.0000 -.0005 thru 1/4" +.0000 -.0007 over 1/4

FRACTIONAL

| Part # | Diameter Inches | OAL Inches | Qty. per/pack |
|--------|-----------------|------------|---------------|
| 02769 | 1/32 | 1-3/8 | 12 |
| 02779 | 3/64 | 1-3/4 | 12 |
| 02789 | 1/16 | 1-7/8 | 12 |
| 02799 | 5/64 | 2 | 12 |
| 02809 | 3/32 | 2-1/4 | 12 |
| 02819 | 7/64 | 2-5/8 | 12 |
| 02829 | 1/8 | 2-3/4 | 12 |
| 02839 | 9/64 | 2-7/8 | 12 |
| 02849 | 5/32 | 3-1/8 | 12 |
| 02859 | 11/64 | 3-1/4 | 12 |
| 02869 | 3/16 | 3-1/2 | 12 |
| 02879 | 13/64 | 3-5/8 | 12 |
| 02889 | 7/32 | 3-3/4 | 12 |
| 02899 | 15/64 | 3-7/8 | 12 |
| 02909 | 1/4 | 4 | 12 |
| 16919 | 17/64 | 4-1/8 | 12 |
| 16929 | 9/32 | 4-1/4 | 12 |
| 16939 | 19/64 | 4-3/8 | 6 |
| 16949 | 5/16 | 4-1/2 | 6 |
| 16959 | 21/64 | 4-5/8 | 6 |
| 16969 | 11/32 | 4-3/4 | 6 |
| 16979 | 23/64 | 4-7/8 | 6 |
| 16989 | 3/8 | 5 | 6 |
| 16999 | 25/64 | 5-1/8 | 6 |
| 17009 | 13/32 | 5-1/4 | 6 |
| 17019 | 27/64 | 5-3/8 | 6 |
| 17029 | 7/16 | 5-1/2 | 6 |
| 17039 | 29/64 | 5-5/8 | 6 |
| 17049 | 15/32 | 5-3/4 | 6 |
| 17059 | 31/64 | 5-7/8 | 6 |
| 17069 | 1/2 | 6 | 6 |

LETTER

| Part # | Letter Sizes | Qty. per/pack |
|--------|--------------|---------------|
| 02419 | A | 12 |
| 02429 | B | 12 |
| 02439 | C | 12 |
| 02449 | D | 12 |
| 02459 | E | 12 |
| 02469 | F | 12 |
| 02479 | G | 12 |
| 02489 | H | 12 |
| 02499 | I | 12 |
| 02509 | J | 12 |
| 02519 | K | 12 |
| 02529 | L | 12 |
| 02539 | M | 6 |
| 02549 | N | 6 |
| 02559 | O | 6 |
| 02569 | P | 6 |
| 02579 | Q | 6 |
| 02589 | R | 6 |
| 02599 | S | 6 |
| 02609 | T | 6 |
| 02619 | U | 6 |
| 02629 | V | 6 |
| 02639 | W | 6 |
| 02649 | X | 6 |
| 02659 | Y | 6 |
| 26960 | Z | 6 |

WIRE

| Part # | Wire Sizes | Overall Length Inches | Qty. per/pack |
|--------|------------|-----------------------|---------------|
| 03199 | 1 | 3-7/8 | 12 |
| 03209 | 2 | 3-7/8 | 12 |
| 03219 | 3 | 3-3/4 | 12 |
| 03229 | 4 | 3-3/4 | 12 |
| 03239 | 5 | 3-3/4 | 12 |
| 03249 | 6 | 3-3/4 | 12 |
| 03259 | 7 | 3-5/8 | 12 |
| 03269 | 8 | 3-5/8 | 12 |
| 03279 | 9 | 3-5/8 | 12 |
| 03289 | 10 | 3-5/8 | 12 |
| 03299 | 11 | 3-1/2 | 12 |
| 03309 | 12 | 3-1/2 | 12 |
| 03319 | 13 | 3-1/2 | 12 |
| 03329 | 14 | 3-3/8 | 12 |
| 03339 | 15 | 3-3/8 | 12 |
| 03349 | 16 | 3-3/8 | 12 |
| 03359 | 17 | 3-3/8 | 12 |
| 03369 | 18 | 3-1/4 | 12 |
| 03379 | 19 | 3-1/4 | 12 |
| 03389 | 20 | 3-1/4 | 12 |
| 03399 | 21 | 3-1/4 | 12 |
| 03409 | 22 | 3-1/8 | 12 |
| 03419 | 23 | 3-1/8 | 12 |
| 03429 | 24 | 3-1/8 | 12 |
| 03439 | 25 | 3 | 12 |
| 03449 | 26 | 3 | 12 |
| 03459 | 27 | 3 | 12 |
| 03469 | 28 | 2-7/8 | 12 |
| 03479 | 29 | 2-7/8 | 12 |
| 03489 | 30 | 2-3/4 | 12 |
| 03499 | 31 | 2-3/4 | 12 |
| 03509 | 32 | 2-3/4 | 12 |
| 03519 | 33 | 2-5/8 | 12 |
| 03529 | 34 | 2-5/8 | 12 |
| 03539 | 35 | 2-5/8 | 12 |
| 03549 | 36 | 2-1/2 | 12 |
| 03559 | 37 | 2-1/2 | 12 |
| 03569 | 38 | 2-1/2 | 12 |
| 03579 | 39 | 2-3/8 | 12 |
| 03589 | 40 | 2-3/8 | 12 |
| 03599 | 41 | 2-3/8 | 12 |
| 03609 | 42 | 2-1/4 | 12 |
| 03619 | 43 | 2-1/4 | 12 |
| 03629 | 44 | 2-1/8 | 12 |
| 03639 | 45 | 2-1/8 | 12 |
| 03649 | 46 | 2-1/8 | 12 |
| 03659 | 47 | 2 | 12 |
| 03669 | 48 | 2 | 12 |
| 03679 | 49 | 2 | 12 |
| 03689 | 50 | 2 | 12 |
| 03699 | 51 | 2 | 12 |
| 03709 | 52 | 1-7/8 | 12 |
| 03719 | 53 | 1-7/8 | 12 |
| 03729 | 54 | 1-7/8 | 12 |
| 03739 | 55 | 1-7/8 | 12 |
| 03749 | 56 | 1-3/4 | 12 |
| 03759 | 57 | 1-3/4 | 12 |
| 03769 | 58 | 1-5/8 | 12 |
| 03779 | 59 | 1-5/8 | 12 |
| 03789 | 60 | 1-5/8 | 12 |
| 03799 | 61 | 1-5/8 | 12 |
| 03809 | 62 | 1-1/2 | 12 |
| 03819 | 63 | 1-1/2 | 12 |
| 03829 | 64 | 1-1/2 | 12 |
| 03839 | 65 | 1-1/2 | 12 |
| 03849 | 66 | 1-3/8 | 12 |
| 03859 | 67 | 1-3/8 | 12 |
| 03869 | 68 | 1-3/8 | 12 |
| 03879 | 69 | 1-3/8 | 12 |
| 03889 | 70 | 1-1/4 | 12 |
| 03899 | 71 | 1-1/4 | 12 |
| 03919 | 72 | 1-1/8 | 12 |
| 03929 | 73 | 1-1/8 | 12 |
| 03939 | 74 | 1 | 12 |
| 03949 | 75 | 1 | 12 |
| 03959 | 76 | 7/8 | 12 |
| 03969 | 77 | 7/8 | 12 |
| 03979 | 78 | 7/8 | 12 |
| 03989 | 79 | 3/4 | 12 |
| 03999 | 80 | 3/4 | 12 |

Technical Reference

Decimal Equivalent & Tap Drill Sizes Chart

| Drill Size | Decimal | Drill Size | Decimal | Drill Size | Decimal | Drill Size | Decimal | Drill Size | Decimal |
|------------|---------|------------|---------|------------|---------|------------|---------|------------|---------|
| 00.10 | .0039 | 54 | .0550 | 25 | .1495 | H | .2660 | 29/64 | .4531 |
| 97 | .0059 | 01.40 | .0551 | 03.80 | .1498 | 06.80 | .2677 | 11.80 | .4646 |
| 96 | .0063 | 01.45 | .0571 | 24 | .1520 | 06.90 | .2717 | 15/32 | .4688 |
| 95 | .0067 | 01.50 | .0591 | 03.90 | .1535 | I | .2720 | 12.00 | .4724 |
| 94 | .0071 | 53 | .0595 | 23 | .1540 | 07.00 | .2756 | 12.20 | .4803 |
| 93 | .0075 | 01.55 | .0610 | 5/32 | .1562 | J | .2770 | 31/64 | .4844 |
| 92 | .0079 | 1/16 | .0625 | 22 | .1570 | 07.10 | .2795 | 12.50 | .4921 |
| 00.20 | .0079 | 01.60 | .0630 | 04.00 | .1575 | K | .2810 | 1/2 | .5000 |
| 91 | .0083 | 52 | .0635 | 21 | .1590 | 9/32 | .2812 | 13.00 | .5118 |
| 90 | .0087 | 01.65 | .0650 | 20 | .1610 | 07.20 | .2835 | 33/64 | .5156 |
| 89 | .0091 | 01.70 | .0669 | 04.10 | .1614 | 07.30 | .2874 | 17/32 | .5312 |
| 88 | .0095 | 51 | .0670 | 04.20 | .1654 | L | .2900 | 13.50 | .5315 |
| 87 | .0100 | 01.75 | .0689 | 19 | .1660 | 07.40 | .2913 | 35/64 | .5469 |
| 86 | .0105 | 50 | .0700 | 04.30 | .1693 | M | .2950 | 14.00 | .5512 |
| 85 | .0110 | 01.80 | .0709 | 18 | .1695 | 07.50 | .2953 | 9/16 | .5625 |
| 84 | .0115 | 01.85 | .0728 | 11/64 | .1719 | 19/64 | .2969 | 14.50 | .5709 |
| 00.30 | .0118 | 49 | .0730 | 17 | .1730 | 07.60 | .2992 | 37/64 | .5781 |
| 83 | .0120 | 01.90 | .0748 | 04.40 | .1732 | N | .3020 | 15.00 | .5908 |
| 82 | .0125 | 48 | .0760 | 16 | .1770 | 07.70 | .3031 | 19/32 | .5938 |
| 81 | .0130 | 01.95 | .0768 | 04.50 | .1772 | 07.80 | .3071 | 39/64 | .6094 |
| 80 | .0135 | 5/64 | .0781 | 15 | .1800 | 07.90 | .3110 | 15.50 | .6102 |
| 00.35 | .0138 | 47 | .0785 | 04.60 | .1811 | 5/16 | .3125 | 5/8 | .6250 |
| 79 | .0145 | 02.00 | .0787 | 14 | .1820 | 08.00 | .3150 | 16.00 | .6299 |
| 1/64 | .0156 | 02.05 | .0807 | 13 | .1850 | O | .3160 | 41/64 | .6406 |
| 00.40 | .0157 | 46 | .0810 | 04.70 | .1850 | 08.10 | .3189 | 16.50 | .6496 |
| 78 | .0160 | 45 | .0820 | 3/16 | .1875 | 08.20 | .3228 | 21/32 | .6562 |
| 00.45 | .0177 | 02.10 | .0827 | 12 | .1890 | P | .3230 | 17.00 | .6693 |
| 77 | .0180 | 02.15 | .0846 | 04.80 | .1890 | 08.30 | .3268 | 43/64 | .6719 |
| 00.50 | .0197 | 44 | .0860 | 11 | .1910 | 21/64 | .3281 | 11/16 | .6875 |
| 76 | .0200 | 02.20 | .0866 | 04.90 | .1929 | 08.40 | .3307 | 17.50 | .6890 |
| 75 | .0210 | 02.25 | .0886 | 10 | .1935 | Q | .3320 | 45/64 | .7031 |
| 00.55 | .0217 | 43 | .0890 | 9 | .1960 | 08.50 | .3346 | 18.00 | .7087 |
| 74 | .0225 | 02.30 | .0906 | 05.00 | .1969 | 08.60 | .3386 | 23/32 | .7188 |
| 00.60 | .0236 | 02.35 | .0925 | 8 | .1990 | R | .3390 | 18.50 | .7283 |
| 73 | .0240 | 42 | .0935 | 05.10 | .2008 | 08.70 | .3425 | 47/64 | .7344 |
| 72 | .0250 | 3/32 | .0938 | 7 | .2010 | 11/32 | .3438 | 19.00 | .7480 |
| 00.65 | .0256 | 02.40 | .0945 | 13/64 | .2031 | 08.80 | .3465 | 3/4 | .7500 |
| 71 | .0260 | 41 | .0960 | 6 | .2040 | S | .3480 | 49/64 | .7656 |
| 00.70 | .0276 | 02.45 | .0965 | 05.20 | .2047 | 08.90 | .3504 | 19.50 | .7677 |
| 70 | .0280 | 40 | .0980 | 5 | .2055 | 09.00 | .3543 | 25/32 | .7812 |
| 69 | .0292 | 02.50 | .0984 | 05.30 | .2087 | T | .3580 | 20.00 | .7874 |
| 00.75 | .0295 | 39 | .0995 | 4 | .2090 | 09.10 | .3583 | 51/64 | .7969 |
| 68 | .0310 | 38 | .1015 | 05.40 | .2126 | 23/64 | .3594 | 20.50 | .8071 |
| 1/32 | .0312 | 02.60 | .1024 | 3 | .2130 | 09.20 | .3622 | 13/16 | .8125 |
| 00.80 | .0315 | 37 | .1040 | 05.50 | .2165 | 09.30 | .3661 | 21.00 | .8268 |
| 67 | .0320 | 02.70 | .1063 | 7/32 | .2188 | U | .3680 | 53/64 | .8281 |
| 66 | .0330 | 36 | .1065 | 05.60 | .2205 | 09.40 | .3701 | 27/32 | .8438 |
| 00.85 | .0335 | 7/64 | .1094 | 2 | .2210 | 09.50 | .3740 | 21.50 | .8485 |
| 65 | .0350 | 35 | .1100 | 05.70 | .2244 | 3/8 | .3750 | 55/64 | .8594 |
| 00.90 | .0354 | 02.80 | .1102 | 1 | .2280 | V | .3770 | 22.00 | .8681 |
| 64 | .0360 | 34 | .1110 | 05.80 | .2283 | 09.60 | .3780 | 7/8 | .8750 |
| 63 | .0370 | 33 | .1130 | 05.90 | .2323 | 09.70 | .3819 | 22.50 | .8858 |
| 00.95 | .0374 | 02.90 | .1142 | A | .2340 | 09.80 | .3858 | 57/64 | .8906 |
| 62 | .0380 | 32 | .1160 | 15/64 | .2344 | W | .3860 | 23.00 | .9055 |
| 61 | .0390 | 03.00 | .1181 | 06.00 | .2382 | 09.90 | .3898 | 29/32 | .9052 |
| 01.00 | .0394 | 31 | .1200 | B | .2380 | 25/64 | .3906 | 59/64 | .9219 |
| 60 | .0400 | 03.10 | .1220 | 06.10 | .2402 | 10.00 | .3937 | 23.50 | .9252 |
| 59 | .0410 | 1/8 | .1250 | C | .2420 | X | .3970 | 15/16 | .9375 |
| 01.05 | .0413 | 03.20 | .1260 | 06.20 | .2441 | 10.20 | .4016 | 24.00 | .9449 |
| 58 | .0420 | 30 | .1285 | D | .2460 | Y | .4040 | 61/64 | .9531 |
| 57 | .0430 | 03.30 | .1299 | 06.30 | .2480 | 10.30 | .4055 | 24.50 | .9646 |
| 01.10 | .0433 | 03.40 | .1339 | 1/4 | .2500 | 13/32 | .4062 | 31/32 | .9688 |
| 01.15 | .0453 | 29 | .1360 | E | .2500 | Z | .4130 | 25.00 | .9843 |
| 56 | .0465 | 03.50 | .1378 | 06.40 | .2520 | 10.50 | .4134 | 63/64 | .9844 |
| 3/64 | .0469 | 28 | .1405 | 06.50 | .2559 | 27/64 | .4219 | 1 | 1.0000 |
| 01.20 | .0472 | 9/64 | .1406 | F | .2570 | 10.80 | .4252 | | |
| 01.25 | .0492 | 03.60 | .1417 | 06.60 | .2598 | 11.00 | .4331 | | |
| 01.30 | .0512 | 27 | .1440 | G | .2610 | 7/16 | .4375 | | |
| 55 | .0520 | 03.70 | .1457 | 06.70 | .2638 | 11.20 | .4409 | | |
| 01.35 | .0531 | 26 | .1470 | 17/64 | .2656 | 11.50 | .4528 | | |

Technical Reference - Decimal Equivalent

| TAP DRILL SIZES | | | | | | | |
|-----------------|-------|----------|-------|-----------|-------|---------|-------|
| Thread | Drill | Thread | Drill | Thread | Drill | Thread | Drill |
| D30 | 3/64 | 5-32 | 35 | M3.0-1.25 | H | M16-2 | 14.0M |
| M1.5-35 | 1.25M | 5-40 | 33 | 5/16-24 | I | 5/8-11 | 17/32 |
| 1-64 | 54 | M3.5-5 | 2.90M | M3.0-1 | 7.0M | M16-1.5 | 14.5M |
| M1.8-35 | 1.45M | M4.0-7 | 3.30M | 3/8-16 | 5/16 | 5/8-10 | 37/64 |
| 1-72 | 53 | 3-32 | 29 | 3/8-24 | Q | M13-2.5 | 16.5M |
| M2.0-4 | 1.60M | 3-36 | 29 | M10-1.5 | 3.5M | M13-1.5 | 16.5M |
| 2-36 | 51 | M4.5-7.5 | 26 | M10-1.25 | 11/32 | 3/4-10 | 21/32 |
| M2.2-4.5 | 1.75M | 10-24 | 25 | 7/16-14 | U | 3/4-16 | 11/16 |
| 2-64 | 50 | 10-32 | 21 | 7/16-20 | 25/64 | M20-2.5 | 17.5M |
| 3-48 | 47 | M5.0-3 | 4.20M | M12-1.75 | Y | M20-1.5 | 18.5M |
| M2.5-4.5 | 2.05M | 12-24 | 16 | 1/2-13 | 27/64 | 7/8-9 | 49/64 |
| 3-56 | 45 | 12-28 | 14 | M12-1.25 | 10.3M | M22-2.5 | 19.5M |
| 4-40 | 43 | M5.0-1 | 5.0M | V2-20 | 23/64 | M22-1.5 | 20.5M |
| 4-48 | 42 | V4-20 | 7 | M14-2 | 12.0M | 7/8-14 | 13/16 |
| M3.0-5 | 2.50M | V4-28 | 3 | 9/16-12 | 31/64 | M24-3 | 21.0M |
| 5-40 | 39 | M7.0-1 | 6.0M | M14-1.5 | 12.5M | M24-2 | 22.0M |
| 5-44 | 37 | 5/16-13 | F | 9/16-13 | 33/64 | 1-3 | 7/8 |
| | | | | | | 1-12 | 59/64 |
| | | | | | | 1-14 | 15/16 |

Drill Feed & Speeds

Different drilling conditions make it impossible to develop any rigid rules for feeds and speeds. The following tables contain guidelines which can be utilized when drilling standard materials. Also, the following "rules of thumb" can be used to determine proper feeds and speeds for drilling ferrous materials (note: varying conditions can easily require adjustments).

Feed equals .001" per revolution for every 1/16" of drill diameter, plus or minus .001" on the total.

Speed equals 80 surface feet per minute in 100 Brinell hardness material and the speed should be reduced 10 surface feet per minute for each additional 50 points Brinell hardness.

Feed and speed rates should be reduced up to 45 - 50 % when drilling holes deeper than 4 drill diameters.

Recommended Feeds

| RECOMMENDED FEEDS FOR VARIOUS DIAMETER DRILLS | |
|--------------------------------------------------|-------------------------------|
| Diameter of Drill—Inches | Feed inches per Revolution |
| Under 1/8 | .001 to .003 |
| 1/8 to 1/4 | .002 to .006 |
| 1/4 to 1/2 | .004 to .010 |
| 1/2 to 1 | .007 to .015 |
| 1 inch and over | .015 to .025 |

NOTE: It is best to start with a moderate speed and feed, increasing either one, or both, after observing the action and condition of the drill.

Recommended Speeds

| RECOMMENDED SPEEDS FOR STANDARD MATERIALS WITH H.S.S. DRILLS | |
|-----------------------------------------------------------------|----------------------------|
| Material | Recommended Speed (sfm) |
| Aluminum and its Alloys | 200—300 |
| Brass and Bronze (ordinary) | 150—300 |
| Bronze (High Tensile) | 70—150 |
| Die Castings (Zinc Base) | 300—400 |
| Iron—Cast (soft) | 75—125 |
| Cast (medium hard) | 50—100 |
| Hard Chilled | 10—20 |
| Malleable | 80—90 |
| Magnesium and its Alloys | 250—400 |
| Monel Metal or High-Nickel Steel | 30—50 |
| Plastics or Similar Materials | 100—300 |
| Steel— | |
| Mild .2 carbon to .3 carbon | 80—110 |
| Steel .4 carbon to .5 carbon | 70—80 |
| Tool 1.2 carbon | 50—60 |
| Forgings | 40—50 |
| Alloy—300 to 400 Brinell | 20—30 |
| High Tensile (Heat Treated) | |
| 35 to 40 Rockwell "C" | 30—40 |
| 40 to 45 Rockwell "C" | 25—35 |
| 45 to 50 Rockwell "C" | 15—25 |
| 50 to 55 Rockwell "C" | 7—15 |
| Stainless Steel | |
| Free Machining Grades | 30—80 |
| Work Hardening Grades | 15—50 |
| Titanium Alloy Sheet | 50—60 |
| Titanium Alloys | |
| Ti-75A (Commercially Pure) | 50—60 |
| RS-120 | 40—60 |
| Ti-150A | 40—50 |
| Ti-140A | 30—40 |
| RC-130B | 30—40 |
| MST 6A1-4 Va. | 20—35 |
| MST 3A1-5 Cr. | 10—20 |

Formulas

1. R.P.M. = (3.8197 / Drill Diameter) x S.F.M.
2. S.F.M. = (0.2618 x Drill Diameter) x R.P.M.
3. I.P.M. = I.P.R. (feed) x R.P.M. (speed)
4. Machine Time (seconds) = (60 x Feed minus Stroke) / I.P.M.

R.P.M. = Revolutions Per Minute

I.P.R. = Inches Per Revolution

S.F.M. = Surface Feet Per Minute

Feed Stroke = Drill Depth + 1/3

I.P.M. = Inches Per Minute

Car Reamer = 1/2 Speed of Drill

Cutting Speed

| DRILL SIZE | CUTTING SPEED — FEET PER MINUTE | | | | | |
|---------------|---------------------------------|------|-------|--------|-------|-------|
| | | | | | | |
| | 20 | 40 | 60 | 80 | 100 | |
| | REVOLUTIONS | | PER | MINUTE | | (000) |
| 1/64 | 4.89 | 9.78 | 14.78 | 19.72 | 24.45 | |
| 1/16 | 1.22 | 2.44 | 3.70 | 4.93 | 6.11 | |
| 1/8 | .61 | 1.22 | 1.83 | 2.44 | 3.06 | |
| 3/16 | .41 | .82 | 1.23 | 1.63 | 2.04 | |
| 1/4 | .30 | .61 | .92 | 1.22 | 1.53 | |
| 5/16 | .24 | .49 | .74 | .98 | 1.22 | |
| 3/8 | .20 | .41 | .61 | .81 | 1.02 | |
| 7/16 | .18 | .35 | .52 | .70 | .87 | |
| 1/2 | .15 | .31 | .46 | .61 | .76 | |
| 9/16 | .14 | .27 | .41 | .54 | .68 | |
| 5/8 | .12 | .24 | .37 | .49 | .61 | |
| 11/16 | .11 | .22 | .34 | .45 | .56 | |
| 3/4 | .10 | .20 | .31 | .41 | .51 | |
| 13/16 | .09 | .19 | .28 | .38 | .47 | |
| 7/8 | .09 | .18 | .26 | .35 | .44 | |
| 15/16 | .08 | .16 | .25 | .33 | .41 | |
| 1 | .08 | .15 | .23 | .30 | .38 | |

| PROBLEM | CAUSE | CORRECTION |
|------------------------------|--------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| BROKEN DRILL | 1. Flutes clogged with chips, drill binds in hole (common in deep holes) | —Use drill with wider flutes and/or faster helix angle —Consider polished flutes —Withdraw drill at regular intervals to clear chips —If chips are not broken up, consider heavier feeds—or a chip breaker design |
| | 2. Drill binding due to worn outer corners | —Repoint or replace drill —Check for excessive speed, inadequate or incorrect coolant, excessive run out as drill enters work |
| | 3. Work insecurely held | —Use adequate holding or clamping devices |
| | 4. Excessive feed | —Reduce feed |
| | 5. Improper point | —Check for correct lip clearance —Use proper type of drill and point for the application |
| | 6. Drill is dull | —Replace before dulling occurs. Check feeds, speeds, and No. 5 for premature dulling |
| BROKEN TANG | 1. Shank or socket damaged | —Repair or replace |
| | 2. Drill not properly seated in socket | —Check for positive, secure fit |
| CHIPS NOT BREAKING UP | 1. Insufficient feed | —Increase feed |
| | 2. Improper style of drill and/or point | —Consider use of chip-breaker design drill and/or chip-breaker point grind |
| DAMAGED POINT | 1. Using hard object to tap drill into socket | —Use soft lead, brass, plastic, etc. hammer |
| | 2. Dropping, mishandling drill | —Handle with care |
| OVERSIZE HOLE | 1. Drill point off center | —Repoint accurately or replace with properly pointed drill |
| | 2. Machine spindle not rigid or not running true | —Repair if possible; consider use of bushing |
| | 3. Work piece loose and/or vibrating | —Tighten and hold securely |
| ROUGH HOLE | 1. Incorrect point grind and/or dull drill | —Repoint or replace with properly pointed drill |
| | 2. Excessive feed | —Reduce feed |
| | 3. Incorrect or insufficient coolant | —Correct and adjust |
| POOR TOOL LIFE | 1. Coolant not reaching drill point or insufficient or incorrect coolant | —Correct and adjust |
| | 2. Speed too high and/or feed too low | —Review and adjust |
| | 3. Wrong type of point and/or drill for application | —Review requirements and conditions |
| WEB SPLITS | 1. Insufficient lip clearance | —Repoint or replace with properly pointed drill |
| | 2. Point thinned too much | —Repoint or replace with properly pointed drill |
| | 3. Excessive feed | —Reduce feed |
| CHIPPED LIPS | 1. Excessive lip clearance and/or heel relief | —Repoint or replace with properly pointed drill |
| BROKEN OUTER CORNERS | 1. Insufficient or incorrect coolant | —Correct and adjust |
| | 2. Excessive speed | —Reduce speed |
| | 3. Scale, hard spots encountered in material | —No final remedy if this condition is prevalent; lower feeds and speeds may help |