



CUTTING TOOL SOLUTIONS DESIGNED TO HELP YOU WORK BETTER

DRILL BITS | TAPS | DIES | CARBIDE BURRS | ANNULAR CUTTERS
TCT HOLE CUTTERS | MAGNETIC DRILLS | REAMERS | END MILLS
COUNTERSINKS | CUTTING FLUIDS & LUBRICANTS



COMPLETE TOOLING SOLUTIONS FOR TODAY'S TOUGH DEMANDS

Since 1952, WALTER Surface Technologies has been providing metalworking solutions to professionals with the ultimate goal of helping them work better. Our solutions help organizations lower their overall cost while improving the safety and efficiency of their metalworking processes.

With the addition of the DRILLCO and TRIUMPH brands, WALTER expands on its tooling and drilling lines to complement our existing high-end metalworking product solutions to serve a wider variety of markets. DRILLCO and TRIUMPH bring unparalleled product expertise, complemented by a state-of-the-art manufacturing facility of high-quality cutting tools.

With over 13,000 items in our family of cutting tools & drilling products, the WALTER, DRILLCO, and TRIUMPH tooling portfolio offer's a complete array of solutions for heavy-duty and general-purpose hole making. With three production facilities in the US and one in Canada, we are committed to providing high quality cutting tools that meet the demands of today's metalworking and construction industries.

With a combined history of over 180 years across our 3 tooling brands, we have helped thousands of customers save time and money. We continue to develop new innovative solutions and programs designed to improve safety and increase productivity.



Product Demonstration

Our team is trained to listen and provide innovative solutions that answer your specific needs. With our mobile product demonstration trucks, WALTER's team can easily go to your facility and help make your drilling and other processes more efficient.

We can also help reduce both product spend and overall production costs.



The Money Maker Guarantee

WALTER's money maker guarantee certifies that all WALTER, DRILLCO and TRIUMPH products are designed, manufactured and sold with our total commitment in saving time, lasting longer and making money for you. Your total satisfaction is paramount to us, which is why we will reimburse you for your original purchase price*. That is our guarantee.

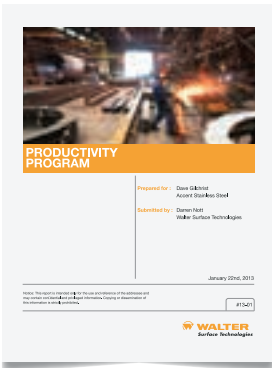
* Walter will reimburse up to \$1000 via free products if you are not completely satisfied.



Safety Seminars and Industry Training

Because health and safety are top priority

As an addition to WALTER's value-added services, we offer FREE Safety Seminars to encourage a safer work environment. WALTER works with you to customize the perfect training for your team. We provide hands-on training at our fully-equipped campus or directly in your plant, so your team can innovate and operate safely. While training, you will work with our professional Product Management Team.



Productivity Reports

Working to positively impact your business

WALTER will assist in optimizing your workflow and cost savings by analyzing your cutting tooling usages and work processes through our Bucket Program. Based on our analysis, we will be able to make recommendations on how you can improve efficiency, reduce cutting tool costs, improve productivity and encourage safer working habits, maximizing every dollar spent on consumables.

Chemical Audits and Process Optimization

Increased productivity and safety through professional audits

WALTER technicians analyze your contaminants, lubrication and cleaning processes and recommend ways to improve efficiency and productivity. We provide a detailed cost analysis report to help you make informed decisions. Our representatives are trained professionals ready to listen. They make suggestions, demonstrate products, and let you see for yourself how well WALTER products work. Chemical audits help consolidate product requirements and optimize inventory.



OUR STAR PRODUCTS

Nitro[®] Drills

Heavy-duty HSS drills with Black & Gold surface treatment

Manufactured from a premium grade of M2 high speed steel these drills are designed for use in stainless steel and other hard metal drilling.

Details on pages 37, 38



Nitro[®] Safety Reamers

Protects against the danger of a falling reamer

Ideal for use with air impact tools, two NE040 magnets are placed in the hex nut to reduce the risk of the reamer falling out of the socket while in use.

Details on page 238



Quick Shank SST[™] Drill Bits Set

The fastest and most efficient

The proven original SST[™] drill bit, made with M35 cobalt blend, is designed with an exclusive quick shank that ensures fast and secure tightening inside any keyed or keyless chucks.

Details on page 32



Thunderbit[®] Jobber Drills

Increased strength and better resistance to breakage

Heavy-duty drill core guarantees increased strength and reduced breakage. The unique spiral flute design improves chip ejection and coolant flow to the point.

Details on pages 44, 45



Carbide Burrs

Fast material removal and longest life

High performance carbide burrs are made with the highest grade of tungsten carbide and are manufactured with the highest degree of accuracy for perfect concentricity and balance.

Details on page 188



Annular Cutters

Fast, efficient and consistent core cutting

A variety of annular core cutters that are guaranteed to outperform. Made from specially formulated high speed steel and coatings, they stay cooler leading to longer tool life!

Details on page 202



ICECUT[™] Magnetic Drilling Units

Most reliable and versatile designs

A variety of powerful machines allow you to tackle any drilling operation with ease. ACCUDRILL torque meter and the lubrication system integrated on the motorhead allows you to safely and easily cut larger diameter holes.

Details on page 218



COOLCUT[™] Cutting Fluid

High performance metal lubricants

A ready-to-use, non-toxic & biodegradable metal cutting lubricant that stands up to pressure and heat to reduce tool wear and prevent tool breakage.

Details on page 261



ICECUT 250 AUTO™ Magnetic Drill

Continuous automatic feed

Designed with user productivity in mind, the autofeed setting assures consistent, replicable results, as well as reduced cutter breakage. Multiple units can be used safely by one operator.

Details on page 225



ICECUT 200PM™ Magnetic Drill

Permanent magnet base

Designed with user safety in mind, it features a permanent magnet base. The base operates and keeps hold even during power interruption on the worksite.

Details on page 224



TCT Hole Cutter

Ultra-hard teeth

Tungsten Carbide Tipped (TCT) Hole Cutters are a cost-effective alternative to bi-metal hole saws. Designed for drilling large diameter holes in both ferrous and non-ferrous materials. Excellent performance and portability makes them ideal for a wide range of trade professionals.

Details on pages 216, 217



8950 Multi-Step Drills

Up to 13 Diameters with 1 Tool

Multi-Step drill bits are the easiest and fastest way to cut or enlarge holes in sheet metal and other materials up to 5/32" thick

Details on page 126



Step Reamers

Clean, burr free holes in seconds

Makes enlarging existing holes easy and with consistent quality. Ream various diameter holes into steel plate up to a 1/2" thick. Realign badly misaligned holes to allow for proper fastener clearance.

Details on page 233

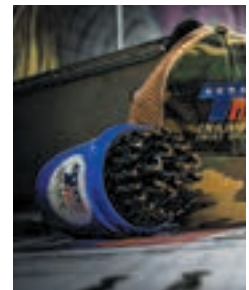


Thunderbit+

Expanding the range

Improves on our already excellent performing Thunderbit jobber drill by adding 3-flat shanks. This reduces slippage in the drill chuck when drilling in hand-held operations.

Details on pages 46, 47



Diamond Tipped Core Bit

Smooth cut with no broken edges

Coated with high quality diamond they are specially design for drilling holes through hard materials with high precision. Perfect for accurate holes in: glass, sea glass, beach glass, fused glass, stone, rock, ceramic, porcelain and tiles.

Details on page 125



SAFETY FIRST

Tips on the Safest and Most Effective Use of Cutting Tools*



- ▷ Disconnect the power tool prior to changing cutting tools.
- ▷ Keep cutting tools sharp and clean to prevent injuries and for best performance.
- ▷ Inspect the cutting tool for any sign of damage. Do not use if damaged.
- ▷ Mounting: Use only approved mounting hardware for the cutting tools. The chuck must center the cutting tool securely and provide the required support.
- ▷ Use mounting straps or a permanent magnet design when using a magnetic drill vertically. This prevents it from falling during power interruptions.
- ▷ When possible, drilling guards should be used to protect the operator.
- ▷ Always wear eye protection. Wear head, hand, ear and dust inhalation protection as needed.
- ▷ Practice safe working methods: always secure the workpiece being drilled to prevent movement, hold the tool firmly, avoid cluttered and badly lit work areas.
- ▷ Ensure adequate protection of other workers in the vicinity.
- ▷ Do not use cutting tools over their rated capacity, follow manufacturer's instructions.
- ▷ Service power tools regularly and according to manufacturer's instructions to keep them in good working condition and maintain their performance. Do not use if damaged.

Safest and Most Effective Work Methods

Pro Tips: Maximize Drilling Efficiency

Select the proper feed rate.

It will impact the rate of material removal, power requirements, and surface finish.

$$\text{SFM} = \text{D} \times \text{RPM} \times .262$$

SFM = Surface Feet per Minute
D = Drill Diameter

Use the correct RPM speed

it has the greatest influence on performance.

$$\text{RPM} = \frac{\text{SFM} \times 3.82}{\text{D}}$$

Reduce friction, prevent tool wear and breakage

by using cutting lubricants. Increase up to 5 times the life of your tools with COOLCUT™ Cutting Lubricants

Remember this rule:

Small diameter bits =
High speed, low feed

Large diameter bits =
Low speed, high feed

Safety Seminar

* Walter offers free in-plant safety seminars to promote the safe use of cutting tools.

Reserve your safety seminar today by calling: **1-866-592-5837**.

For more information, visit walter.com/safety

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General Purpose Drills



Jobber Drills High Speed Steel

Black Oxide
For low to medium tensile strength materials

Type	Series	Catalog page reference
118° Conventional Point	200A	19
	240A	20
	280A	21



Jobber Drills High Speed Steel

Bright Finish
For aluminum and other non-ferrous materials

Type	Series	Catalog page reference
118° Conventional Point	200B	19
	240B	20
	280B	22



Jobber Drills High Speed Steel

Black Oxide
For low to medium tensile strength materials

Type	Series	Catalog page reference
118° Conventional Point	100SE, 180SE	23



Jobber Drills High Speed Steel

Black Oxide
For low to medium tensile strength materials

Type	Series	Catalog page reference
118° Conventional Point	T1B, BP1B, T2B	24, 25
	T3B	



Jobber Drills High Speed Steel

Bright Finish
For aluminum and other non-ferrous materials

Type	Series	Catalog page reference
118° Conventional Point	T1, BP1, T2, T3	26, 27, 28
	MM1	
3/8" Reduced Shank	T8, BP8	28



Left Hand Jobber Length Drills High Speed Steel

Bright Finish
For removal of broken screws and bolts

Type	Series	Catalog page reference
118° Conventional Point	200LH	31



Left Hand Jobber Length Drills High Speed Steel

Bright Finish
For removal of broken screws and bolts

Type	Series	Catalog page reference
118° Conventional Point	T1L	30



Taper Shank / Taper Length Drills



Taper Shank Drills High Speed Steel

Black Oxide
For general purpose use in a wide range of materials

Type	Series	Catalog page reference
118° Conventional Point / Taper Shank	1400	107
	1450, 1475	108



Taper Length Drills High Speed Steel

Black Oxide
For general purpose use in a wide range of materials

Type	Series	Catalog page reference
118° Conventional Point / Straight Shank	900	87



Heavy-Duty Drills



Jobber Drills

Cobalt

Bronze Finish For hand held tools in mild steel		
Type	Series	Catalog page reference
118° Split Point SST™	01-A	32



Jobber Drills



High Speed Steel

Black & Gold Finish Exceptional performance in most materials		
Type	Series	Catalog page reference
135° Split Point	400N, 440N, 480N	37, 38
3/8" Reduced Shank Drills	1035N	39



Jobber Drills



High Speed Steel

Black & Gold Finish Heavy-duty core guarantees increased strength and better resistance to breakage		
Type	Series	Catalog page reference
135° Split Point 3/8" Reduced Shank	T8HD, BP8HD	43



Jobber Drills

High Speed Steel

Black & Gold Finish Ideal for both hand held and CNC Operations		
Type	Series	Catalog page reference
140° Split Point 3-Flat shank	400F	50



Jobber Drills

High Speed Steel

Black Oxide For better performance on low to medium tensile strength materials		
Type	Series	Catalog page reference
135° Split Point	400A, 440A	33
	480A	34



Jobber Drills

High Speed Steel

Black & Gold Finish Heavy-duty construction affords efficient portable drilling in medium strength alloy materials		
Type	Series	Catalog page reference
135° Split Point	400E	40
	480E, 800	41, 42



Jobber Drills



High Speed Steel

Black & Gold Finish Heavy-duty core guarantees increased strength and better resistance to breakage, with a 3-flat shank		
Type	Series	Catalog page reference
135° Split Point 3-Flat Shank	T1HD+, T2HD+, T3HD+, MM1HD+, BP1HD+	46, 47



Jobber Drills

High Speed Steel

TiN Coating Combines a super hard TiN coating with the heavy-duty Thunderbit core to guarantee increased strength and longer tool life		
Type	Series	Catalog page reference
135° Split Point	T1HDG	51



Jobber Drills

High Speed Steel

Black Oxide Heavy-duty construction affords efficient portable drilling in medium strength alloy materials		
Type	Series	Catalog page reference
135° Split Point	T1D, T2D, T3D	35, 36



Jobber Drills



High Speed Steel

Black & Gold Finish Heavy-duty core guarantees increased strength and better resistance to breakage		
Type	Series	Catalog page reference
135° Split Point	T1HD, T2HD, T3HD, MM1HD, BP1HD	44, 45



Jobber Drills



High Speed Steel

Black & Gold finish Heavy-duty construction affords efficient portable drilling in medium strength alloy materials		
Type	Series	Catalog page reference
135° Split Point	T101D, T102D, T103D	48, 49



Jobber Drills

High Speed Steel

TiN Coating A super hard TiN coating to guarantee increased lubricity and longer tool life		
Type	Series	Catalog page reference
135° Split Point	450T	52, 53



Heavy-Duty Drills



Jobber Drills Cobalt

Bronze Finish
For tough materials such as stainless steel, titanium high temperature and high strength alloys

Type	Series	Catalog page reference
135° Split Point	500, 540, 580	54, 55
	500E, 580E	56



Jobber Drills Cobalt



Bronze Finish
Heavy-duty Thunderbit core and cobalt base material for high performance drilling in tough materials

Type	Series	Catalog page reference
135° Split Point	T1HDC	57



Jobber Drills Cobalt

Bronze Finish
For tough materials such as stainless steel, titanium high temperature and high strength alloys

Type	Series	Catalog page reference
135° Split Point	T1C, BP1C, T2C, T3C	58, 59



Jobber Drills Cobalt

Bronze Finish
Stainless steel, titanium, high tensile steels and other hard materials

Type	Series	Catalog page reference
135° Split Point SST, SST+	01-A, 01-B, 01-C, 01-D	60, 61, 62



Jobber Drills Carbide Tip

Bright Finish
For use in drilling cast iron, cast steel, bronze, hard copper, aluminium and hard non-ferrous materials

Type	Series	Catalog page reference
118° Split Point	600, 680	110



Mechanics Length Drills



Mechanics Length High Speed Steel



Black & Gold Finish
Exceptional performance in most materials

Type	Series	Catalog page reference
135° Split Point with 3-Flats	350N	70



Mechanics Length High Speed Steel

Black & Gold Oxide
Mechanics length drills are shorter for increased rigidity and strength especially in hand held drilling operations

Type	Series	Catalog page reference
135° Split Point	T1M, BP1M	71



Reduced Shank Mechanics Length High Speed Steel



Black & Gold Finish
Mechanics length drills are shorter for increased rigidity and strength especially in hand held drilling operations

Type	Series	Catalog page reference
135° Split Point	1045N	72



Screw Machine Length Drills



Screw Machine High Speed Steel

Black Oxide
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
135° Split Point Straight Shank	300A	73
	340A	74
	380A, 300E	75



Screw Machine High Speed Steel

Black Oxide
Screw machine drills are shorter for increased rigidity and strength

Type	Series	Catalog page reference
135° Split Point	T4, T5	76
Black & Gold Finish	T4HD	78

THUNDERBIT®



Screw Machine High Speed Steel



Black & Gold Finish
Screw machine drills are shorter for increased rigidity and strength

Type	Series	Catalog page reference
135° Split Point	300N	77



Screw Machine Cobalt

Bronze Finish
Screw machine drills are shorter for increased rigidity and strength. Cobalt for added strength

Type	Series	Catalog page reference
135° Split Point	300C, 380C	79



Screw Machine Cobalt

Bronze Finish
Stainless steel, titanium, high tensile steels and other hard materials

Type	Series	Catalog page reference
135° Split Point SST+	01-H, 01-J	80, 81



Screw Machine Cobalt

Bronze Finish
Screw machine drills are shorter for increased rigidity and strength

Type	Series	Catalog page reference
135° Split Point	T4C	83



Left Hand Screw Machine Cobalt

Bronze Finish
For super abrasive resistance in tough metals

Type	Series	Catalog page reference
135° Split Point, 3-Flat Shank	300LH	84



Double-Ended Drills



Double-Ended Drills High Speed Steel

Black Oxide
Double the life thanks to flutes and cutting edges on both ends

Type	Series	Catalog page reference
135° Split Point	330	85



Double-Ended Drills High Speed Steel

Black Oxide
Double the life thanks to flutes and cutting edges on both ends

Type	Series	Catalog page reference
135° Split Point	TSM8	85



Double-Ended Drills Cobalt

Bronze Treatment
For thin gauge and sheet metal. Double the life thanks to flutes and cutting edges on both ends

Type	Series	Catalog page reference
135° Split Point	01-K	86



Aircraft Extension Drills



Aircraft Extension Drills

High Speed Steel

Black Oxide
Long drills with jobbers length flutes for drilling holes in hard to reach places

Type	Series	Catalog page reference
135° Split Point Aircraft Extension 6" & 12"	1100, 1180	88
	1200, 1280	90



Aircraft Extension Drills

High Speed Steel

Black Oxide
Long drills with jobbers length flutes for drilling holes in hard to reach places

Type	Series	Catalog page reference
135° Split Point Aircraft Extension 6"	T6HH, BP6HH, T6WW	89
	T12HH, BP12HH, 12WW	91



Aircraft Extension Drills

Cobalt

Bronze Finish
Long drills with jobbers length flutes for drilling holes in hard to reach places

Type	Series	Catalog page reference
135° Split Point	1100C, 1180C	92
	1200C, 1280C	93



Extra Length Drills



Extra Length Drills

High Speed Steel

Black Oxide
For deep hole drilling in a wide range of material

Type	Series	Catalog page reference
118° Split Point 8"	1308	94
118° Split Point 12"	1312, 1312R	94
118° Split Point 18"	1318, 1318R	95



Extra Length Drills

High Speed Steel

Bright Finish
For deep hole drilling in a wide range of material

Type	Series	Catalog page reference
118° Split Point 12"	T1290	95
118° Split Point 18"	T1813	95



S&D Drills



S&D Drills

High Speed Steel

Bright and Black Finish
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
118° Point 1/2" Reduced Shank	1000A, 1000F	96
3-Flats Reduced Shank	1000E	97



S&D Drills

High Speed Steel



Black & Gold Finish
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
118° Split Point 1/2" Reduced Shank with 3-Flats	1000N	98
135° Split Point 3-Flats Reduced Shank	1000EF	99



S&D Drills

High Speed Steel



Black & Gold Oxide
For medium to high tensile strength Materials

Type	Series	Catalog page reference
118° Split Point 1/2" Reduced Shank with 3-Flats	T9FHD	100



S&D Drills & HEX Shank Drills



S&D Drills

High Speed Steel

Black Oxide
For low to medium tensile strength materials

Type	Series	Catalog page reference
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118° Split Point 1/2" Reduced Shank with 3-Flats	T9F, T9	100, 101
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S&D Drills

Cobalt

Black & Gold oxide
For low to medium tensile strength materials

Type	Series	Catalog page reference
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118° Split Point	T9C	104
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S&D Drills

Cobalt

Black & Gold Finish
For tough, high tensile strength materials

Type	Series	Catalog page reference
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135° Split Point	1000C	102
Bronze Finish	1000EC	105



HEX Drills

High Speed Steel



Black & Gold Oxide
1/4" hex shank for HEX or adjustable power tool chucks, added strength due to Thunderbit geometry

Type	Series	Catalog page reference
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135° Self-Centering Split Point	HEXT4HD	109
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S&D Drills

Cobalt

Bronze Treatment
For high tensile steel, fits in a 3/8" chuck

Type	Series	Catalog page reference
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135° 3/8" Reduced Shank	01-R	103
135° 1/2" Reduced Shank	01-M	103



HEX Drills

High Speed Steel

Black Oxide
1/4" hex shank for HEX or adjustable power tool chucks

Type	Series	Catalog page reference
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135° Self-Centering Split Point	HEXT4	109
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Solid Carbide Drills



Jobber Length Drills

Solid Carbide

Bright Finish
For use in drilling abrasive materials such as cast iron, non-ferrous alloys, high silicon aluminum, hard rubber, and Plexiglas

Type	Series	Catalog page reference
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118° Point	700	111, 112
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3-Flute

Solid Carbide

Bright Finish
For titanium, cast iron, low alloy steel, and high silicon aluminum applications

Type	Series	Catalog page reference
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150° Point	730	117
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Straight Flute Drills

Solid Carbide

Bright Finish
For use in drilling difficult materials (up to Rc 60) including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless-steel weldments

Type	Series	Catalog page reference
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140° Split Point	710	113, 114
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Spade Drills

Solid Carbide

Bright Finish
Perform well in hard to machine materials (up to Rc 60), high strength alloys, plastic, and glass

Type	Series	Catalog page reference
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118° Point	750	118
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Screw Machine

Solid Carbide

Bright Finish
Slow helix 135° split point provides ease of penetration and increases edge strength

Type	Series	Catalog page reference
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Slow Helix 135° Split Point	720	115, 116
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Combined Drill & Countersink

Solid Carbide

Bright Finish
Ideal for drilling and countersinking in difficult materials

Type	Series	Catalog page reference
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60° Angle	3500C	118
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Masonry Drills



Masonry Drills

Carbide Tip

Gold & Silver Finish

For used in drilling drill concrete, natural stone, aerated concrete, masonry, brick, block, and lime sandstone

Type	Series	Catalog page reference
Straight Shank	1600N	119



Masonry Drills

Carbide Tip

Black & Gold Tipped

Combine a rotation and percussion that helps the drill achieve a cutting and grinding action at the same time

Type	Series	Catalog page reference
Rotary Percussion & Hammer Drilling, Round Shank	1600A	119



Masonry Drills

Carbide Tip

Bright Finish

Short head to flute entrance allows debris to quickly channel down the flute for faster drilling progress

Type	Series	Catalog page reference
SDS Plus	1700A, 1700B (in bulk)	120



Rebar Cutters

Carbide Tip

Bright Finish

Perfect solution for drilling through concrete embedded rebar

Type	Series	Catalog page reference
Micro SDS+ or 3-Flat Shank	1760, 1770	121
Head Only	1780	121



Masonry Drills

Carbide Tip

Bright Finish

Designed for longer life when drilling in concrete

Type	Series	Catalog page reference
SDS Plus Dura-Tip	1720, 1720B (in bulk)	122



Masonry Drills

Carbide Tip

Bright Finish

Designed for longer life in concrete and reinforced concrete applications

Type	Series	Catalog page reference
SDS Max	1740	122



Masonry Drills

Carbide Tip

Black with Gold Tip Finish

Type	Series	Catalog page reference
TAPCON® Screw Type Anchor Bits	1800A, 1800E	123



Masonry Drills

Carbide Tip

Bright Finish

Type	Series	Catalog page reference
TAPCON® SDS-HEX Type Screw Anchor Drills	1750	123



Hammer Drill Tools

Series	Catalog page reference
1850, 1860	124



Miscellaneous Drills



Miscellaneous Drills		
Series	Description	Catalog page reference
1840	Glass, Tile, & Ceramics Bits	123
1900E	Ship Auger Bits	128
1950E	Paddle Bits	128
3500	Combined Drill & Countersink, HSS, 60° Angle, Plain Type	129
3500E	Combined Drill & Countersink, HSS, 60° Angle, Plain & Bell Type	129
3575E	Combined Drill & Countersink, HSS, 60° Angle, Long Length Series	130
400P	Pilot Drill for Holesaws, Bright, 118° Point	130
8900	Multi-Step Drill for Sheet Metal	126
8950	Multi-Step Drills	126
9000E	Screw Extractors	131

Miscellaneous Drills		
Series	Description	Catalog page reference
TG7	Diamond Tipped Core bits	125

Miscellaneous Drills		
Series	Description	Catalog page reference
01-W	Multi-Step Drill Bits	127

Drill Accessories		
Series	Description	Catalog page reference
1420	Hardened Drill Sleeve, Regular Length	132
1440	Hardened Drill Sleeve, Extension Length	132
1470	Drill Drifts	132
-	Drill Gauges	132



DRILL BETTER

With over 6,000 items in our family of drilling products, the Walter, Drillco, and Triumph lines of drill bits have you covered. One source. Multiple Solutions.

Up to 50% faster drilling than competition in stainless steel*

Three brands synonymous with unparalleled performance in their respective categories. Our drills are designed for use in a wide range of application material groups from mild steel to difficult to machine stainless steel.



BENEFITS

- ▷ Drill multiple materials with one tool
- ▷ Unique flute designs for optimal performance in portable drilling applications
- ▷ Save time by drilling faster. Drill more holes per charge
- ▷ Premium quality substrates for optimal performance in the desired application

*Based on internal benchmark using a 3/8" Nitro® drill in stainless steel



Video

See SST™ in action on our YouTube Channel

Walter, Drillco And Triumph Offer A Complete Product Program For A Wide Range Of Materials, Applications, And Industries

What Does the Walter SST™ Program Offer?

SST™

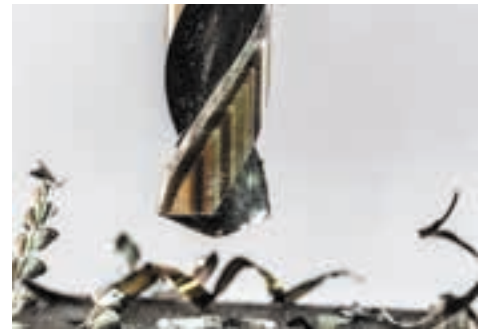
- ▷ Special HSS M35 cobalt material for premium performance and extended tool life
- ▷ High flow spiral and chisel edge design to maximize chip evacuation
- ▷ Proven SST™ heat and surface treatment to reduce friction and increase chip flow
- ▷ Self-centering split point allowing you to drill any size hole in a single operation and prevents the "walking effect" on curved surfaces
- ▷ Available in stub or jobber length with round shank or specially designed six-flat shank



What Does the Drillco Nitro® Program Offer?

NITRO

- ▷ A complete line of drills including jobber length, mechanic's length, stub length, silver & deming (S&D), and sets
- ▷ All Nitro® drills are made from premium quality M2 High Speed Steel
- ▷ Body and flute are black and gold surface treated for maximum lubricity
- ▷ Split Point ensures ease of penetration and reduces "walking" when starting a hole
- ▷ Designed for use in portable hand drills, or fixed spindle applications (CNC Machines, Drill Presses)
- ▷ Made in the USA



What Does the Triumph Thunderbit® Program Offer?

THUNDERBIT® THUNDERBIT® THUNDERBIT® THUNDERBIT®

COBALT TIN

- ▷ A complete line of drills including jobber length, stub length, silver & deming (S&D), hex shanks, and sets
- ▷ Unique spiral flute design improves chip ejection and coolant flow to the point
- ▷ The heavy-duty core guarantees increased strength and reduced breakage
- ▷ 135° self-centering split point prevents "walking" and provides quick penetration
- ▷ Friction-reducing black & bronze oxide surface treatments for higher drilling speeds
- ▷ Available in High-Speed Steel (HSS) and Cobalt
- ▷ Designed for use in portable hand drills
- ▷ Made in the USA

THUNDERBIT <i>The HOLE Story</i>		
<p>Unique spiral flute design improves chip ejection and coolant flow to the point</p> <p>The heavy-duty core guarantees increased strength and reduced breakage</p> <p>135° self-centering split point prevents "walking" and provides quick penetration</p> <p>Friction-reducing black & bronze oxide surface treatments for higher drilling speeds</p>		
THUNDERBIT®	GENERAL PURPOSE	

TIPS!

Use a drill with a flattened shank to reduce slippage in the drill chuck in portable drill applications.



Material

High Speed Steel (HSS)

The most commonly used tool material for general purpose drilling. Suitable for most materials, including low to medium strength steels, aluminum and other non-ferrous materials, as well as wood and plastic.

Cobalt (HSSCo)

This composition increases tool "hardness" and improves "wear resistance" making it a great option for drilling into harder steel as well as stainless steel grades.

Carbide (C)

Carbide tools are designed for very hard and very tough to machine materials. Carbide drills are more brittle than HSS or HSSCo drills, and should only be used for production drilling in stationary equipment. They are not recommended for use in hand held portable drills.

Why it's important?
It's important to select the correct material of the drill bit based on your application to maximize performance.

Finish and Coating

Bright Finish

Can be used on low-carbon steel and aluminum.



Black Oxide

More lubricity than bright finish. Resists corrosion and oxidation with an added heat treatment that reduces friction.



Black and Gold

Better resistance to corrosion and breakage while increasing lubricity. Reduces chipping and flaking. Can be used on most materials.



Titanium Nitride Coated (TiN)

A wear resistant gold colored, all-purpose ceramic coating provides high hardness, low coefficient of friction and thermal barrier. Tool life may be extended 500% or more in high wear or very abrasive drilling applications.



Bronze

Will increase lubricity and bit life while reducing chip build-up. For performance on harder metals and stainless steel. Applied primarily to Cobalt drills.



Drill Point Style

Conventional

Most commonly used drill point. Ideal for a wide variety of materials.



Split Point

Designed to drill in hard and soft materials, it reduces "walking", lifts away debris, allowing you to drill holes faster and with less chance of breakage. Ideal for curved surfaces.



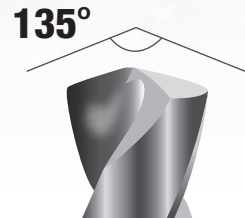
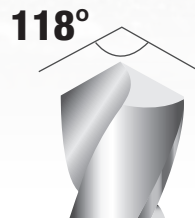
Drill Point Angle

118°

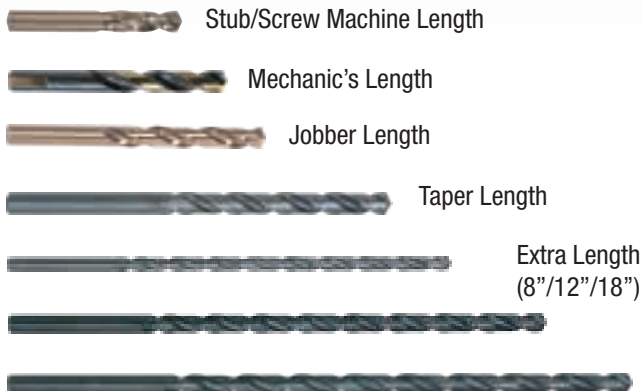
Ideal for cutting mild steel, aluminum, and free machining materials.

135°

Ideal for drilling into more difficult to machine materials, such as stainless steel, hardened steels, cast iron and more. For CNC or hand drilling applications.



Drill Length



Why it's important?

- ▷ The shorter the bit, the more suitable they are for applications that require precision and accuracy.
- ▷ The shorter the bit the more rigid it is.
- ▷ Ensure you use the right flute length to get the chips completely out of the hole.

Drill Selection Chart

● = WALTER ● = DRILLCO ● = TRIUMPH

Works best with this material	Aluminum and soft alloys	Cast iron	Low and medium carbon steel	High carbon steel	Stainless steel	Tough, medium and high tensile strength alloys	Wood and plastic	Point type
SST+™ (01A5XX, 01B, 01C, 01D, 01H, 01J, 01K, 01M, 01R)		●	●	●	●	●		135° Split
THUNDERBIT® (T1HD+, T2HD+, T3HD+, T1HD, T2HD, T3HD, MM1HD, T8HD)		●	●	●	●	●		135° Split
NITRO Black and Gold (300N, 350N, 400N, 440N, 480N)		●	●	●	●	●		135° Split
TiN / THUNDERBIT® (450T, T1HDG)		●	●	●	●	●	●	135° Split
Heavy Duty Black Oxide (400, 440, 480, T1D, T2D, T3D)		● ●	● ●	● ●	● ●	● ●		135° Split
Heavy Duty Cobalt Bronze Oxide (500, 540, 580, 500E, 580E, T1C, BP1C, T2C, T3C)		● ●	● ●	● ●	● ●	● ●	● ●	135° Split
THUNDERBIT® (T1HDC)		●	●	●	●	●		135° Split
MRO (T101D, T102D, T103D)		●	●	●	●	●		135° Split
TRINADO® (T1M, T8M)		●	●	●	●	●		135° Split
SST™ (01A0XX)	●		●				●	118°
General Purpose Bright (T1, T2, T3, MM1, 200B, 240B, 280B)	● ●						● ●	118°
General Purpose Black Oxide (T1B, T2B, T3B, 200, 240, 280, 100SE, 180SE)		● ●	● ●		● ●			118°

TIPS!

A flattened shank or hex shank in a hand held application will reduce slippage in the drill chuck.



Jobber Length Drills

Designed for general purpose drilling under a wide range of drilling condition. It can drill various materials such as cast iron, steel, and steel forging. The surface treatment prevents chip welding, improves chip flow and increases abrasion resistance.

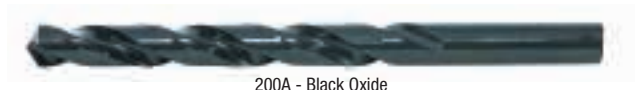
- ▷ 118° Point designed for general use
- ▷ A general purpose jobber for a wide range of applications
- ▷ Bright finish improves chip flow and increases abrasion resistance
- ▷ Bright finish recommended for aluminum and other non-ferrous materials
- ▷ Available in bulk packaging

200A

High Speed Steel

118° Point / Straight Shank

Fractional / Black Oxide



200A - Black Oxide

Size	Flute Length	Overall Length	200A Order No.
1/64"	3/16"	3/4"	200A101
1/32"	1/2"	1-3/8"	200A102
3/64"	3/4"	1-3/4"	200A103
1/16"	7/8"	1-7/8"	200A104
5/64"	1"	2"	200A105
3/32"	1-1/4"	2-1/4"	200A106
7/64"	1-1/2"	2-5/8"	200A107
1/8"	1-5/8"	2-3/4"	200A108
9/64"	1-3/4"	2-7/8"	200A109
5/32"	2"	3-1/8"	200A110
11/64"	2-1/8"	3-1/4"	200A111
3/16"	2-5/16"	3-1/2"	200A112
13/64"	2-7/16"	3-5/8"	200A113
7/32"	2-1/2"	3-3/4"	200A114
15/64"	2-5/8"	3-7/8"	200A115
1/4"	2-3/4"	4"	200A116
17/64"	2-7/8"	4-1/8"	200A117
9/32"	2-15/16"	4-1/4"	200A118
19/64"	3-1/16"	4-3/8"	200A119
5/16"	3-3/16"	4-1/2"	200A120
21/64"	3-5/16"	4-5/8"	200A121
11/32"	3-7/16"	4-3/4"	200A122
23/64"	3-1/2"	4-7/8"	200A123
3/8"	3-5/8"	5"	200A124
25/64"	3-3/4"	5-1/8"	200A125
13/32"	3-7/8"	5-1/4"	200A126
27/64"	3-15/16"	5-3/8"	200A127
7/16"	4-1/16"	5-1/2"	200A128
29/64"	4-3/16"	5-5/8"	200A129
15/32"	4-5/16"	5-3/4"	200A130
31/64"	4-3/8"	5-7/8"	200A131
1/2"	4-1/2"	6"	200A132

200B

High Speed Steel

118° Point / Straight Shank

Fractional / Bright



200B - Bright

Size	Flute Length	Overall Length	200B Order No.
1/64"	3/16"	3/4"	200B101
1/32"	1/2"	1-3/8"	200B102
3/64"	3/4"	1-3/4"	200B103
1/16"	7/8"	1-7/8"	200B104
5/64"	1"	2"	200B105
3/32"	1-1/4"	2-1/4"	200B106
7/64"	1-1/2"	2-5/8"	200B107
1/8"	1-5/8"	2-3/4"	200B108
9/64"	1-3/4"	2-7/8"	200B109
5/32"	2"	3-1/8"	200B110
11/64"	2-1/8"	3-1/4"	200B111
3/16"	2-5/16"	3-1/2"	200B112
13/64"	2-7/16"	3-5/8"	200B113
7/32"	2-1/2"	3-3/4"	200B114
15/64"	2-5/8"	3-7/8"	200B115
1/4"	2-3/4"	4"	200B116
17/64"	2-7/8"	4-1/8"	200B117
9/32"	2-15/16"	4-1/4"	200B118
19/64"	3-1/16"	4-3/8"	200B119
5/16"	3-3/16"	4-1/2"	200B120
21/64"	3-5/16"	4-5/8"	200B121
11/32"	3-7/16"	4-3/4"	200B122
23/64"	3-1/2"	4-7/8"	200B123
3/8"	3-5/8"	5"	200B124
25/64"	3-3/4"	5-1/8"	200B125
13/32"	3-7/8"	5-1/4"	200B126
27/64"	3-15/16"	5-3/8"	200B127
7/16"	4-1/16"	5-1/2"	200B128
29/64"	4-3/16"	5-5/8"	200B129
15/32"	4-5/16"	5-3/4"	200B130
31/64"	4-3/8"	5-7/8"	200B131
1/2"	4-1/2"	6"	200B132

1/64" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack

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

240A

High Speed Steel

118° Point / Straight Shank
Letter / Black Oxide



240A - Black Oxide

Size	Flute Length	Overall Length	240A Order No.
A	2-5/8"	3-7/8"	240A501
B	2-3/4"	4"	240A502
C	2-3/4"	4"	240A503
D	2-3/4"	4"	240A504
E	2-3/4"	4"	240A505
F	2-7/8"	4-1/8"	240A506
G	2-7/8"	4-1/8"	240A507
H	2-7/8"	4-1/8"	240A508
I	2-7/8"	4-1/8"	240A509
J	2-7/8"	4-1/8"	240A510
K	2-15/16"	4-1/4"	240A511
L	2-15/16"	4-1/4"	240A512
M	3-1/16"	4-3/8"	240A513
N	3-1/16"	4-3/8"	240A514
O	3-3/16"	4-1/2"	240A515
P	3-5/16"	4-5/8"	240A516
Q	3-7/16"	4-3/4"	240A517
R	3-7/16"	4-3/4"	240A518
S	3-1/2"	4-7/8"	240A519
T	3-1/2"	4-7/8"	240A520
U	3-5/8"	5"	240A521
V	3-5/8"	5"	240A522
W	3-3/4"	5-1/8"	240A523
X	3-3/4"	5-1/8"	240A524
Y	3-7/8"	5-1/4"	240A525
Z	3-7/8"	5-1/4"	240A526

240B

High Speed Steel

118° Point / Straight Shank
Letter / Bright



240B - Bright

Size	Flute Length	Overall Length	240B Order No.
A	2-5/8"	3-7/8"	240B501
B	2-3/4"	4"	240B502
C	2-3/4"	4"	240B503
D	2-3/4"	4"	240B504
E	2-3/4"	4"	240B505
F	2-7/8"	4-1/8"	240B506
G	2-7/8"	4-1/8"	240B507
H	2-7/8"	4-1/8"	240B508
I	2-7/8"	4-1/8"	240B509
J	2-7/8"	4-1/8"	240B510
K	2-15/16"	4-1/4"	240B511
L	2-15/16"	4-1/4"	240B512
M	3-1/16"	4-3/8"	240B513
N	3-1/16"	4-3/8"	240B514
O	3-3/16"	4-1/2"	240B515
P	3-5/16"	4-5/8"	240B516
Q	3-7/16"	4-3/4"	240B517
R	3-7/16"	4-3/4"	240B518
S	3-1/2"	4-7/8"	240B519
T	3-1/2"	4-7/8"	240B520
U	3-5/8"	5"	240B521
V	3-5/8"	5"	240B522
W	3-3/4"	5-1/8"	240B523
X	3-3/4"	5-1/8"	240B524
Y	3-7/8"	5-1/4"	240B525
Z	3-7/8"	5-1/4"	240B526

"A" thru "L" - 12 per pack, "M" thru "Z" - 6 per pack

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



200AW29



200B29



280A

High Speed Steel

118° Point / Straight Shank
Number / Black Oxide



280A - Black Oxide

Size	Flute Length	Overall Length	280A Order No.
1	2-5/8"	3-7/8"	280A001
2	2-1/2"	3-7/8"	280A002
3	2-1/2"	3-3/4"	280A003
4	2-1/2"	3-3/4"	280A004
5	2-1/2"	3-3/4"	280A005
6	2-1/2"	3-3/4"	280A006
7	2-7/16"	3-5/8"	280A007
8	2-7/16"	3-5/8"	280A008
9	2-7/16"	3-5/8"	280A009
10	2-7/16"	3-5/8"	280A010
11	2-5/16"	3-1/2"	280A011
12	2-5/16"	3-1/2"	280A012
13	2-5/16"	3-1/2"	280A013
14	2-3/16"	3-3/8"	280A014
15	2-3/16"	3-3/8"	280A015
16	2-3/16"	3-3/8"	280A016
17	2-3/16"	3-3/8"	280A017
18	2-1/8"	3-1/4"	280A018
19	2-1/8"	3-1/4"	280A019
20	2-1/8"	3-1/4"	280A020
21	2-1/8"	3-1/4"	280A021
22	2"	3-1/8"	280A022
23	2"	3-1/8"	280A023
24	2"	3-1/8"	280A024
25	1-7/8"	3"	280A025
26	1-7/8"	3"	280A026
27	1-7/8"	3"	280A027
28	1-3/4"	2-7/8"	280A028
29	1-3/4"	2-7/8"	280A029
30	1-5/8"	2-3/4"	280A030
31	1-5/8"	2-3/4"	280A031
32	1-5/8"	2-3/4"	280A032
33	1-1/2"	2-5/8"	280A033
34	1-1/2"	2-5/8"	280A034
35	1-1/2"	2-5/8"	280A035
36	1-7/16"	2-1/2"	280A036
37	1-7/16"	2-1/2"	280A037
38	1-7/16"	2-1/2"	280A038
39	1-3/8"	2-3/8"	280A039
40	1-3/8"	2-3/8"	280A040

Size	Flute Length	Overall Length	280A Order No.
41	1-3/8"	2-3/8"	280A041
42	1-1/4"	2-1/4"	280A042
43	1-1/4"	2-1/4"	280A043
44	1-1/8"	2-1/8"	280A044
45	1-1/8"	2-1/8"	280A045
46	1-1/8"	2-1/8"	280A046
47	1"	2"	280A047
48	1"	2"	280A048
49	1"	2"	280A049
50	1"	2"	280A050
51	1"	2"	280A051
52	7/8"	1-7/8"	280A052
53	7/8"	1-7/8"	280A053
54	7/8"	1-7/8"	280A054
55	7/8"	1-7/8"	280A055
56	3/4"	1-3/4"	280A056
57	3/4"	1-3/4"	280A057
58	11/16"	1-5/8"	280A058
59	11/16"	1-5/8"	280A059
60	11/16"	1-5/8"	280A060
61	11/16"	1-5/8"	280A061
62	5/8"	1-1/2"	280A062
63	5/8"	1-1/2"	280A063
64	5/8"	1-1/2"	280A064
65	5/8"	1-1/2"	280A065
66	1/2"	1-3/8"	280A066
67	1/2"	1-3/8"	280A067
68	1/2"	1-3/8"	280A068
69	1/2"	1-3/8"	280A069
70	3/8"	1-1/4"	280A070
71	3/8"	1-1/4"	280A071
72	5/16"	1-1/8"	280A072
73	5/16"	1-1/8"	280A073
74	1/4"	1"	280A074
75	1/4"	1"	280A075
76	3/16"	7/8"	280A076
77	3/16"	7/8"	280A077
78	3/16"	7/8"	280A078
79	1/8"	3/4"	280A079
80	1/8"	3/4"	280A080

#1 thru #80 - 12 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72



280B

High Speed Steel

**118° Point / Straight Shank
Number / Bright**



280B - Bright

Size	Flute Length	Overall Length	280B Order No.
1	2-5/8"	3-7/8"	280B001
2	2-1/2"	3-7/8"	280B002
3	2-1/2"	3-3/4"	280B003
4	2-1/2"	3-3/4"	280B004
5	2-1/2"	3-3/4"	280B005
6	2-1/2"	3-3/4"	280B006
7	2-7/16"	3-5/8"	280B007
8	2-7/16"	3-5/8"	280B008
9	2-7/16"	3-5/8"	280B009
10	2-7/16"	3-5/8"	280B010
11	2-5/16"	3-1/2"	280B011
12	2-5/16"	3-1/2"	280B012
13	2-5/16"	3-1/2"	280B013
14	2-3/16"	3-3/8"	280B014
15	2-3/16"	3-3/8"	280B015
16	2-3/16"	3-3/8"	280B016
17	2-3/16"	3-3/8"	280B017
18	2-1/8"	3-1/4"	280B018
19	2-1/8"	3-1/4"	280B019
20	2-1/8"	3-1/4"	280B020
21	2-1/8"	3-1/4"	280B021
22	2"	3-1/8"	280B022
23	2"	3-1/8"	280B023
24	2"	3-1/8"	280B024
25	1-7/8"	3"	280B025
26	1-7/8"	3"	280B026
27	1-7/8"	3"	280B027
28	1-3/4"	2-7/8"	280B028
29	1-3/4"	2-7/8"	280B029
30	1-5/8"	2-3/4"	280B030
31	1-5/8"	2-3/4"	280B031
32	1-5/8"	2-3/4"	280B032
33	1-1/2"	2-5/8"	280B033
34	1-1/2"	2-5/8"	280B034
35	1-1/2"	2-5/8"	280B035
36	1-7/16"	2-1/2"	280B036
37	1-7/16"	2-1/2"	280B037
38	1-7/16"	2-1/2"	280B038
39	1-3/8"	2-3/8"	280B039
40	1-3/8"	2-3/8"	280B040

Size	Flute Length	Overall Length	280B Order No.
41	1-3/8"	2-3/8"	280B041
42	1-1/4"	2-1/4"	280B042
43	1-1/4"	2-1/4"	280B043
44	1-1/8"	2-1/8"	280B044
45	1-1/8"	2-1/8"	280B045
46	1-1/8"	2-1/8"	280B046
47	1"	2"	280B047
48	1"	2"	280B048
49	1"	2"	280B049
50	1"	2"	280B050
51	1"	2"	280B051
52	7/8"	1-7/8"	280B052
53	7/8"	1-7/8"	280B053
54	7/8"	1-7/8"	280B054
55	7/8"	1-7/8"	280B055
56	3/4"	1-3/4"	280B056
57	3/4"	1-3/4"	280B057
58	11/16"	1-5/8"	280B058
59	11/16"	1-5/8"	280B059
60	11/16"	1-5/8"	280B060
61	11/16"	1-5/8"	280B061
62	5/8"	1-1/2"	280B062
63	5/8"	1-1/2"	280B063
64	5/8"	1-1/2"	280B064
65	5/8"	1-1/2"	280B065
66	1/2"	1-3/8"	280B066
67	1/2"	1-3/8"	280B067
68	1/2"	1-3/8"	280B068
69	1/2"	1-3/8"	280B069
70	3/8"	1-1/4"	280B070
71	3/8"	1-1/4"	280B071
72	5/16"	1-1/8"	280B072
73	5/16"	1-1/8"	280B073
74	1/4"	1"	280B074
75	1/4"	1"	280B075
76	3/16"	7/8"	280B076
77	3/16"	7/8"	280B077
78	3/16"	7/8"	280B078
79	1/8"	3/4"	280B079
80	1/8"	3/4"	280B080

#1 thru #80 - 12 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

100SE

High Speed Steel

118° Point / Straight Shank
Fractional / Black Oxide



100SE

Size	Flute Length	Overall Length	100SE Order No.
1/16"	7/8"	1-7/8"	100SE104
5/64"	1"	2"	100SE105
3/32"	1-1/4"	2-1/4"	100SE106
7/64"	1-1/2"	2-5/8"	100SE107
1/8"	1-5/8"	2-3/4"	100SE108
9/64"	1-3/4"	2-7/8"	100SE109
5/32"	2"	3-1/8"	100SE110
11/64"	2-1/8"	3-1/4"	100SE111
3/16"	2-5/16"	3-1/2"	100SE112
13/64"	2-7/16"	3-5/8"	100SE113
7/32"	2-1/2"	3-3/4"	100SE114
15/64"	2-5/8"	3-7/8"	100SE115
1/4"	2-3/4"	4"	100SE116
17/64"	2-7/8"	4-1/8"	100SE117
9/32"	2-15/16"	4-1/4"	100SE118
19/64"	3-1/16"	4-3/8"	100SE119
5/16"	3-3/16"	4-1/2"	100SE120
21/64"	3-5/16"	4-5/8"	100SE121
11/32"	3-7/16"	4-3/4"	100SE122
23/64"	3-1/2"	4-7/8"	100SE123
3/8"	3-5/8"	5"	100SE124
25/64"	3-3/4"	5-1/8"	100SE125
13/32"	3-7/8"	5-1/4"	100SE126
27/64"	3-15/16"	5-3/8"	100SE127
7/16"	4-1/16"	5-1/2"	100SE128
29/64"	4-3/16"	5-5/8"	100SE129
15/32"	4-5/16"	5-3/4"	100SE130
31/64"	4-3/8"	5-7/8"	100SE131
1/2"	4-1/2"	6"	100SE132

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack



100SE15

Corresponding Sets

No. of Pcs.	Description	Order No.
100SE Series Jobber Drill Sets		
13	1/16" - 1/4" by 64 ^{ths}	100SE13
15	1/16" - 1/2" by 32 ^{nds}	100SE15
21	1/16" - 3/8" by 64 ^{ths}	100SE21
21	1/16" - 1/4" by 64 ^{ths} & 9/32" - 1/2" by 32 ^{nds}	100SE21V
29	DRILL PAL 1/16" - 1/2": by 64 ^{ths}	100SEW29
29	1/16" - 1/2" by 64 ^{ths}	100SE29

180SE

High Speed Steel

118° Point / Straight Shank
Number / Black Oxide



180SE

Size	Flute Length	Overall Length	180SE Order No.
1	2-5/8"	3-7/8"	180SE001
2	2-1/2"	3-7/8"	180SE002
3	2-1/2"	3-3/4"	180SE003
4	2-1/2"	3-3/4"	180SE004
5	2-1/2"	3-3/4"	180SE005
6	2-1/2"	3-3/4"	180SE006
7	2-7/16"	3-5/8"	180SE007
8	2-7/16"	3-5/8"	180SE008
9	2-7/16"	3-5/8"	180SE009
10	2-7/16"	3-5/8"	180SE010
11	2-5/16"	3-1/2"	180SE011
12	2-5/16"	3-1/2"	180SE012
13	2-5/16"	3-1/2"	180SE013
14	2-3/16"	3-3/8"	180SE014
15	2-3/16"	3-3/8"	180SE015
16	2-3/16"	3-3/8"	180SE016
17	2-3/16"	3-3/8"	180SE017
18	2-1/8"	3-1/4"	180SE018
19	2-1/8"	3-1/4"	180SE019
20	2-1/8"	3-1/4"	180SE020
21	2-1/8"	3-1/4"	180SE021
22	2"	3-1/8"	180SE022
23	2"	3-1/8"	180SE023
24	2"	3-1/8"	180SE024
25	1-7/8"	3"	180SE025
26	1-7/8"	3"	180SE026
27	1-7/8"	3"	180SE027
28	1-3/4"	2-7/8"	180SE028
29	1-3/4"	2-7/8"	180SE029
30	1-5/8"	2-3/4"	180SE030
31	1-5/8"	2-3/4"	180SE031
32	1-5/8"	2-3/4"	180SE032
33	1-1/2"	2-5/8"	180SE033
34	1-1/2"	2-5/8"	180SE034
35	1-1/2"	2-5/8"	180SE035
36	1-7/16"	2-1/2"	180SE036
37	1-7/16"	2-1/2"	180SE037
38	1-7/16"	2-1/2"	180SE038
39	1-3/8"	2-3/8"	180SE039
40	1-3/8"	2-3/8"	180SE040

#1 thru #40 - 12 per pack



Jobber Length Drills

Designed for general purpose drilling under a wide range of drilling condition. It can drill various materials such as cast iron, steel, and steel forging.

- ▷ 118° Point designed for general use
- ▷ A general purpose jobber for a wide range of applications
- ▷ Black Oxide improves chip flow and increases abrasion resistance

T1B - BP1B - T2B - T3B

High Speed Steel

118° Point / Straight Shank

Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1B Packaging: Tube		T1B Packaging: Bulk		BP1B Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/64"	.0156	3/16"	3/4"	011201	12	-	-	-	-
1/32"	.0312	1/2"	1-3/8"	011202	12	011202.20	288	-	-
3/64"	.0469	3/4"	1-3/4"	011203	12	011203.20	288	-	-
1/16"	.0625	7/8"	1-7/8"	011204	12	011204.20	288	011304	1
5/64"	.0781	1"	2"	011205	12	011205.20	288	011305	1
3/32"	.0938	1-1/4"	2-1/4"	011206	12	011206.20	288	011306	1
7/64"	.1094	1-1/2"	2-5/8"	011207	12	011207.20	288	011307	1
1/8"	.1250	1-5/8"	2-3/4"	011208	12	011208.20	288	011308	1
9/64"	.1406	1-3/4"	2-7/8"	011209	12	011209.20	288	011309	1
5/32"	.1562	2"	3-1/8"	011210	12	011210.20	288	011310	1
11/64"	.1719	2-1/8"	3-1/4"	011211	12	011211.20	288	011311	1
3/16"	.1875	2-5/16"	3-1/2"	011212	12	011212.20	288	011312	1
13/64"	.2031	2-7/16"	3-5/8"	011213	12	011213.20	288	011313	1
7/32"	.2188	2-1/2"	3-3/4"	011214	12	011214.20	288	011314	1
15/64"	.2344	2-5/8"	3-7/8"	011215	12	011215.20	288	011315	1
1/4"	.2500	2-3/4"	4"	011216	12	011216.20	288	011316	1
17/64"	.2656	2-7/8"	4-1/8"	011217	12	011217.20	144	011317	1
9/32"	.2812	2-15/16"	4-1/4"	011218	12	011218.20	144	011318	1
19/64"	.2969	3-1/16"	4-3/8"	011219	12	011219.20	144	011319	1
5/16"	.3125	3-3/16"	4-1/2"	011220	6	011220.20	144	011320	1
21/64"	.3281	3-5/16"	4-5/8"	011221	6	011221.20	144	011321	1
11/32"	.3438	3-7/16"	4-3/4"	011222	6	011222.20	144	011322	1
23/64"	.3594	3-1/2"	4-7/8"	011223	6	011223.20	144	011323	1
3/8"	.3750	3-5/8"	5"	011224	6	011224.20	144	011324	1
25/64"	.3906	3-3/4"	5-1/8"	011225	6	011225.20	144	011325	1
13/32"	.4062	3-7/8"	5-1/4"	011226	6	011226.20	144	011326	1
27/64"	.4219	3-15/16"	5-3/8"	011227	6	011227.20	144	011327	1
7/16"	.4375	4-1/16"	5-1/2"	011228	6	011228.20	144	011328	1
29/64"	.4531	4-3/16"	5-5/8"	011229	6	011229.20	144	011329	1
15/32"	.4688	4-5/16"	5-3/4"	011230	6	011230.20	144	011330	1
31/64"	.4844	4-3/8"	5-7/8"	011231	6	011231.20	144	011331	1
1/2"	.5000	4-1/2"	6"	011232	6	011232.20	144	011321	1



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T17B	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099802
T18B	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099808
T19B	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	099814
T22B	Metal Index	60 Piece	#1 - #60	099820
T25B	Metal Index	26 Piece	A - Z	099827
T123B	Metal Index	115 Piece	1/16"-1/2 by 64 ^{ths} , #1 - #60, A-Z	099832
T180B	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	099835
T815B*	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099812
T829B*	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099833

*3/8" Reduced Shank





GENERAL PURPOSE DRILLS

DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T2B Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	12201	12
2	.2210	2-5/8"	3-7/8"	12202	12
3	.2130	2-1/2"	3-3/4"	12203	12
4	.2090	2-1/2"	3-3/4"	12204	12
5	.2055	2-1/2"	3-3/4"	12205	12
6	.2040	2-1/2"	3-3/4"	12206	12
7	.2010	2-7/16"	3-5/8"	12207	12
8	.1990	2-7/16"	3-5/8"	12208	12
9	.1960	2-7/16"	3-5/8"	12209	12
10	.1935	2-7/16"	3-5/8"	12210	12
11	.1910	2-5/16"	3-1/2"	12211	12
12	.1890	2-5/16"	3-1/2"	12212	12
13	.1850	2-5/16"	3-1/2"	12213	12
14	.1820	2-3/16"	3-3/8"	12214	12
15	.1800	2-3/16"	3-3/8"	12215	12
16	.1770	2-3/16"	3-3/8"	12216	12
17	.1730	2-3/16"	3-3/8"	12217	12
18	.1695	2-1/8"	3-1/4"	12218	12
19	.1660	2-1/8"	3-1/4"	12219	12
20	.1610	2-1/8"	3-1/4"	12220	12
21	.1590	2-1/8"	3-1/4"	12221	12
22	.1570	2"	3-1/8"	12222	12
23	.1540	2"	3-1/8"	12223	12
24	.1520	2"	3-1/8"	12224	12
25	.1495	1-7/8"	3"	12225	12
26	.1470	1-7/8"	3"	12226	12
27	.1440	1-7/8"	3"	12227	12
28	.1405	1-3/4"	2-7/8"	12228	12
29	.1360	1-3/4"	2-7/8"	12229	12
30	.1285	1-5/8"	2-3/4"	12230	12
31	.1200	1-5/8"	2-3/4"	12231	12
32	.1160	1-5/8"	2-3/4"	12232	12
33	.1130	1-1/2"	2-5/8"	12233	12
34	.1110	1-1/2"	2-5/8"	12234	12
35	.1100	1-1/2"	2-5/8"	12235	12
36	.1065	1-7/16"	2-1/2"	12236	12
37	.1040	1-7/16"	2-1/2"	12237	12
38	.1015	1-7/16"	2-1/2"	12238	12
39	.0995	1-3/8"	2-3/8"	12239	12
40	.0980	1-3/8"	2-3/8"	12240	12
41	.0960	1-3/8"	2-3/8"	12241	12
42	.0935	1-1/4"	2-1/4"	12242	12
43	.0890	1-1/4"	2-1/4"	12243	12
44	.0860	1-1/8"	2-1/8"	12244	12
45	.0820	1-1/8"	2-1/8"	12245	12
46	.0810	1-1/8"	2-1/8"	12246	12
47	.0785	1"	2"	12247	12
48	.0760	1"	2"	12248	12
49	.0730	1"	2"	12249	12
50	.0700	1"	2"	12250	12
51	.0670	1"	2"	12251	12
52	.0635	7/8"	1-7/8"	12252	12
53	.0595	7/8"	1-7/8"	12253	12
54	.0550	7/8"	1-7/8"	12254	12
55	.0520	7/8"	1-7/8"	12255	12
56	.0465	3/4"	1-3/4"	12256	12
57	.0430	3/4"	1-3/4"	12257	12
58	.0420	11/16"	1-5/8"	12258	12
59	.0410	11/16"	1-5/8"	12259	12
60	.0400	11/16"	1-5/8"	12260	12

Size	Decimal Equivalent	Flute Length	Overall Length	T2B Packaging: Bulk	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	012201.20	288
2	.2210	2-5/8"	3-7/8"	012202.20	288
6	.2040	2-1/2"	3-3/4"	012206.20	288
7	.2010	2-7/16"	3-5/8"	012207.20	288
10	.1935	2-7/16"	3-5/8"	012210.20	288
16	.1770	2-3/16"	3-3/8"	012216.20	288
20	.1610	2-1/8"	3-1/4"	012220.20	288
21	.1590	2-1/8"	3-1/4"	012221.20	288
25	.1495	1-7/8"	3"	012225.20	288
28	.1405	1-3/4"	2-7/8"	012228.20	288
29	.1360	1-3/4"	2-7/8"	012229.20	288
30	.1285	1-5/8"	2-3/4"	012230.20	288
31	.1200	1-5/8"	2-3/4"	012231.20	288
36	.1065	1-7/16"	2-1/2"	012236.20	288
40	.0980	1-3/8"	2-3/8"	012240.20	288
52	.0635	7/8"	1-7/8"	012252.20	288
53	.0595	7/8"	1-7/8"	012253.20	288
54	.0550	7/8"	1-7/8"	012254.20	288
55	.0520	7/8"	1-7/8"	012255.20	288
56	.0465	3/4"	1-3/4"	012256.20	288
57	.0430	3/4"	1-3/4"	012257.20	288
58	.0420	11/16"	1-5/8"	012258.20	288
59	.0410	11/16"	1-5/8"	012259.20	288

Size	Decimal Equivalent	Flute Length	Overall Length	T3B Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	013201	12
B	.2380	2-3/4"	4"	013202	12
C	.2420	2-3/4"	4"	013203	12
D	.2460	2-3/4"	4"	013204	12
E	.2500	2-3/4"	4"	013205	12
F	.2570	2-7/8"	4-1/8"	013206	12
G	.2610	2-7/8"	4-1/8"	013207	12
H	.2660	2-7/8"	4-1/8"	013208	12
I	.2720	2-7/8"	4-1/8"	013209	12
J	.2770	2-7/8"	4-1/8"	013210	12
K	.2810	2-15/16"	4-1/4"	013211	12
L	.2900	2-15/16"	4-1/4"	013212	12
M	.2950	3-1/16"	4-3/8"	013213	12
N	.3020	3-1/16"	4-3/8"	013214	12
O	.3160	3-3/16"	4-1/2"	013215	6
P	.3230	3-5/16"	4-5/8"	013216	6
Q	.3320	3-7/16"	4-3/4"	013217	6
R	.3390	3-7/16"	4-3/4"	013218	6
S	.3480	3-1/2"	4-7/8"	013219	6
T	.3580	3-1/2"	4-7/8"	013220	6
U	.3680	3-5/8"	5"	013221	6
V	.3770	3-5/8"	5"	013222	6
W	.3860	3-3/4"	5-1/8"	013223	6
X	.3970	3-3/4"	5-1/8"	013224	6
Y	.4040	3-7/8"	5-1/4"	013225	6
Z	.4130	3-7/8"	5-1/4"	013226	6

T1 - BP1 - T2 - T3 - MM1

High Speed Steel

118° Point

Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T1 Packaging: Tube		T1 Packaging: Bulk		BP1 Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/64"	.0156	3/16"	3/4"	011001	12	-	-	-	-
1/32"	.0312	1/2"	1-3/8"	011002	12	011002.20	288	-	-
3/64"	.0469	3/4"	1-3/4"	011003	12	011003.20	288	-	-
1/16"	.0625	7/8"	1-7/8"	011004	12	011004.20	288	011604	1
5/64"	.0781	1"	2"	011005	12	011005.20	288	011605	1
3/32"	.0938	1-1/4"	2-1/4"	011006	12	011006.20	288	011606	1
7/64"	.1094	1-1/2"	2-5/8"	011007	12	011007.20	288	011607	1
1/8"	.1250	1-5/8"	2-3/4"	011008	12	011008.20	288	011608	1
9/64"	.1406	1-3/4"	2-7/8"	011009	12	011009.20	288	011609	1
5/32"	.1562	2"	3-1/8"	011010	12	011010.20	288	011610	1
11/64"	.1719	2-1/8"	3-1/4"	011011	12	011011.20	288	011611	1
3/16"	.1875	2-5/16"	3-1/2"	011012	12	011012.20	288	011612	1
13/64"	.2031	2-7/16"	3-5/8"	011013	12	011013.20	288	011613	1
7/32"	.2188	2-1/2"	3-3/4"	011014	12	011014.20	288	011614	1
15/64"	.2344	2-5/8"	3-7/8"	011015	12	011015.20	288	011615	1
1/4"	.2500	2-3/4"	4"	011016	12	011016.20	288	011616	1
17/64"	.2656	2-7/8"	4-1/8"	011017	12	011017.20	144	011617	1
9/32"	.2812	2-15/16"	4-1/4"	011018	12	011018.20	144	011618	1
19/64"	.2969	3-1/16"	4-3/8"	011019	12	011019.20	144	011619	1
5/16"	.3125	3-3/16"	4-1/2"	011020	6	011020.20	144	011620	1
21/64"	.3281	3-5/16"	4-5/8"	011021	6	011021.20	144	011621	1
11/32"	.3438	3-7/16"	4-3/4"	011022	6	011022.20	144	011622	1
23/64"	.3594	3-1/2"	4-7/8"	011023	6	011023.20	144	011623	1
3/8"	.3750	3-5/8"	5"	011024	6	011024.20	144	011624	1
25/64"	.3906	3-3/4"	5-1/8"	011025	6	011025.20	144	011625	1
13/32"	.4062	3-7/8"	5-1/4"	011026	6	011026.20	144	011626	1
27/64"	.4219	3-15/16"	5-3/8"	011027	6	011027.20	144	011627	1
7/16"	.4375	4-1/16"	5-1/2"	011028	6	011028.20	144	011628	1
29/64"	.4531	4-3/16"	5-5/8"	011029	6	011029.20	144	011629	1
15/32"	.4688	4-5/16"	5-3/4"	011030	6	011030.20	144	011630	1
31/64"	.4844	4-3/8"	5-7/8"	011031	6	011031.20	144	011631	1
1/2"	.5000	4-1/2"	6"	011032	6	011032.20	144	011632	1



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
SAD13	Select-A-Drill	13 Piece	1/16"-1/4" by 64 ^{ths}	090490
SAD21	Select-A-Drill	21 Piece	1/16"-3/8" by 64 ^{ths}	090491
T14P*	Metal Index	14 Piece	1/16", 5/64", 3/32", 7/64", 1/8", 9/64", 5/32", 3/16", 7/32", 1/4"* 5/16", 3/8", 7/16", 1/2"	090614
T17	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	090517
T18	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	090518
T19	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	090519
T180	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	090580
T123	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1-#60, A-Z	090560
T829B*	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099833

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





GENERAL PURPOSE DRILLS

DRILLS

Size	Decimal Equivalent	Flute Length	Overall Length	T2 Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	12001	12
2	.2210	2-5/8"	3-7/8"	12002	12
3	.2130	2-1/2"	3-3/4"	12003	12
4	.2090	2-1/2"	3-3/4"	12004	12
5	.2055	2-1/2"	3-3/4"	12005	12
6	.2040	2-1/2"	3-3/4"	12006	12
7	.2010	2-7/16"	3-5/8"	12007	12
8	.1990	2-7/16"	3-5/8"	12008	12
9	.1960	2-7/16"	3-5/8"	12009	12
10	.1935	2-7/16"	3-5/8"	12010	12
11	.1910	2-5/16"	3-1/2"	12011	12
12	.1890	2-5/16"	3-1/2"	12012	12
13	.1850	2-5/16"	3-1/2"	12013	12
14	.1820	2-3/16"	3-3/8"	12014	12
15	.1800	2-3/16"	3-3/8"	12015	12
16	.1770	2-3/16"	3-3/8"	12016	12
17	.1730	2-3/16"	3-3/8"	12017	12
18	.1695	2-1/8"	3-1/4"	12018	12
19	.1660	2-1/8"	3-1/4"	12019	12
20	.1610	2-1/8"	3-1/4"	12020	12
21	.1590	2-1/8"	3-1/4"	12021	12
22	.1570	2"	3-1/8"	12022	12
23	.1540	2"	3-1/8"	12023	12
24	.1520	2"	3-1/8"	12024	12
25	.1495	1-7/8"	3"	12025	12
26	.1470	1-7/8"	3"	12026	12
27	.1440	1-7/8"	3"	12027	12
28	.1405	1-3/4"	2-7/8"	12028	12
29	.1405	1-3/4"	2-7/8"	12029	12
30	.1285	1-5/8"	2-3/4"	12030	12
31	.1200	1-5/8"	2-3/4"	12031	12
32	.1160	1-5/8"	2-3/4"	12032	12
33	.1130	1-1/2"	2-5/8"	12033	12
34	.1110	1-1/2"	2-5/8"	12034	12
35	.1100	1-1/2"	2-5/8"	12035	12
36	.1065	1-7/16"	2-1/2"	12036	12
37	.1040	1-7/16"	2-1/2"	12037	12
38	.1015	1-7/16"	2-1/2"	12038	12
39	.0995	1-3/8"	2-3/8"	12039	12
40	.0980	1-3/8"	2-3/8"	12040	12
41	.0960	1-3/8"	2-3/8"	12041	12
42	.0935	1-1/4"	2-1/4"	12042	12
43	.0890	1-1/4"	2-1/4"	12043	12
44	.0860	1-1/8"	2-1/8"	12044	12
45	.0820	1-1/8"	2-1/8"	12045	12
46	.0810	1-1/8"	2-1/8"	12046	12
47	.0785	1"	2"	12047	12
48	.0760	1"	2"	12048	12
49	.0730	1"	2"	12049	12
50	.0700	1"	2"	12050	12
51	.0670	1"	2"	12051	12
52	.0635	7/8"	1-7/8"	12052	12
53	.0595	7/8"	1-7/8"	12053	12
54	.0550	7/8"	1-7/8"	12054	12
55	.0520	7/8"	1-7/8"	12055	12
56	.0465	3/4"	1-3/4"	12056	12
57	.0430	3/4"	1-3/4"	12057	12
58	.0420	11/16"	1-5/8"	12058	12
59	.0410	11/16"	1-5/8"	12059	12
60	.0400	11/16"	1-5/8"	12060	12
61	.0390	11/16"	1-5/8"	12061	12

Size	Decimal Equivalent	Flute Length	Overall Length	T2 Packaging: Bulk	
				Order No.	Pkg Qty
62	.0380	5/8"	1-1/2"	12062	12
63	.0370	5/8"	1-1/2"	12063	12
64	.0360	5/8"	1-1/2"	12064	12
65	.0350	5/8"	1-1/2"	12065	12
66	.0330	1/2"	1-3/8"	12066	12
67	.0320	1/2"	1-3/8"	12067	12
68	.0310	1/2"	1-3/8"	12068	12
69	.0292	1/2"	1-3/8"	12069	12
70	.0280	3/8"	1-1/4"	12070	12
71	.0260	3/8"	1-1/4"	12071	12
72	.0250	5/16"	1-1/8"	12072	12
73	.0240	5/16"	1-1/8"	12073	12
74	.0225	1/4"	1"	12074	12
75	.0210	1/4"	1"	12075	12
76	.0200	3/16"	7/8"	12076	12
77	.0180	3/16"	7/8"	12077	12
78	.0160	3/16"	7/8"	12078	12
79	.0145	1/8"	3/4"	12079	12
80	.0135	1/8"	3/4"	12080	12

Size	Decimal Equivalent	Flute Length	Overall Length	T2 Packaging: Bulk	
				Order No.	Pkg Qty
7	.2010	2-7/16"	3-5/8"	012007.20	288
10	.1935	2-7/16"	3-5/8"	012010.20	288
21	.1590	2-1/8"	3-1/4"	012021.20	288
25	.1495	1-7/8"	3"	012025.20	288
29	.1360	1-3/4"	2-7/8"	012029.20	288
31	.1200	1-5/8"	2-3/4"	012031.20	288
32	.1160	1-5/8"	2-3/4"	012032.20	288
35	.1100	1-1/2"	2-5/8"	012035.20	288
36	.1065	1-7/16"	2-1/2"	012036.20	288
44	.0860	1-1/8"	2-1/8"	012044.20	288
50	.0700	1"	2"	012050.20	288
53	.0595	7/8"	1-7/8"	012053.20	288
54	.0550	7/8"	1-7/8"	012054.20	288
55	.0520	7/8"	1-7/8"	012055.20	288
56	.0465	3/4"	1-3/4"	012056.20	288
58	.0420	11/16"	1-5/8"	012058.20	288
60	.0400	11/16"	1-5/8"	012060.20	288
63	.0370	5/8"	1-1/2"	012063.20	288
66	.0330	1/2"	1-3/8"	012066.20	288
67	.0320	1/2"	1-3/8"	012067.20	288
69	.0292	1/2"	1-3/8"	012069.20	288
70	.0280	3/8"	1-1/4"	012070.20	288
73	.0240	5/16"	1-1/8"	012073.20	288
74	.0225	1/4"	1"	012074.20	288
76	.0200	3/16"	7/8"	012076.20	288
77	.0180	3/16"	7/8"	012077.20	288

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T22	Metal Index	60 Piece	#1- #60	090522
T23	Metal Index	20 Piece	#61- #80	090523
T123	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1- #60, A-Z	090560



T1 - BP1 - T2 - T3 - MM1

High Speed Steel

118° Point

Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T3 Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	013001	12
B	.2380	2-3/4"	4"	013002	12
C	.2420	2-3/4"	4"	013003	12
D	.2460	2-3/4"	4"	013004	12
E	.2500	2-3/4"	4"	013005	12
F	.2570	2-7/8"	4-1/8"	013006	12
G	.2610	2-7/8"	4-1/8"	013007	12
H	.2660	2-7/8"	4-1/8"	013008	12
I	.2720	2-7/8"	4-1/8"	013009	12
J	.2770	2-7/8"	4-1/8"	013010	12
K	.2810	2-15/16"	4-1/4"	013011	12
L	.2900	2-15/16"	4-1/4"	013012	12
M	.2950	3-1/16"	4-3/8"	013013	12
N	.3020	3-1/16"	4-3/8"	013014	12
O	.3160	3-3/16"	4-1/2"	013015	6
P	.3230	3-5/16"	4-5/8"	013016	6
Q	.3320	3-7/16"	4-3/4"	013017	6
R	.3390	3-7/16"	4-3/4"	013018	6
S	.3480	3-1/2"	4-7/8"	013019	6
T	.3580	3-1/2"	4-7/8"	013020	6
U	.3680	3-5/8"	5"	013021	6
V	.3770	3-5/8"	5"	013022	6
W	.3860	3-3/4"	5-1/8"	013023	6
X	.3970	3-3/4"	5-1/8"	013024	6
Y	.4040	3-7/8"	5-1/4"	013025	6
Z	.4130	3-7/8"	5-1/4"	013026	6

Size	Decimal Equivalent	Flute Length	Overall Length	MM1 Packaging: Tube	
				Order No.	Pkg Qty
1.00	.0394	17	41	013910	12
1.20	.0472	22	48	013912	12
1.50	.0591	22	48	013915	12
2.00	.0787	25	51	013920	12
2.50	.0984	35	60	013925	12
3.00	.1181	41	70	013930	12
3.30	.1299	44	73	013933	12
3.50	.1378	44	73	013935	12
4.00	.1575	54	83	013940	12
4.20	.1654	54	83	013942	12
4.50	.1772	56	86	013945	12
5.00	.1969	62	92	013950	12
5.10	.2008	62	92	013951	12
5.30	.2087	64	95	013953	12
5.50	.2165	64	95	013955	12
6.00	.2362	70	102	013960	12
6.50	.2559	73	105	013965	12
6.90	.2717	73	105	013969	6
7.00	.2756	73	105	013970	6
7.20	.2835	75	108	013972	6
7.50	.2953	78	111	013975	6
8.00	.3150	81	114	013980	6
8.30	.3268	84	117	013983	6
8.50	.3346	87	121	013985	6
9.00	.3543	89	124	013990	6
10.00	.3937	95	130	013800	6
10.50	.4134	98	133	013805	6
11.00	.4331	103	140	013810	6
11.50	.4528	106	143	013811	6
12.00	.4724	111	149	013812	6
12.50	.4921	114	152	013813	6
13.00	.5118	114	152	013814	1

Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T123	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1- #60, A-Z	090560

T8 - BP8

High Speed Steel

118° Point

Bright Finish

3/8" Reduced Shank



Size	Decimal Equivalent	Flute Length	Overall Length	T8 Packaging: Tube		BP8 Packaging: Tube	
				Order No.	Pkg Qty	Order No.	Pkg Qty
25/64"	.3906	3-3/4"	5-1/8"	091825	6	-	-
13/32"	.4062	3-7/8"	5-1/4"	091826	6	-	-
27/64"	.4219	3-15/16"	5-3/8"	091827	6	-	-
7/16"	.4375	4-1/16"	5-1/2"	091828	6	091928	1
29/64"	.4531	4-3/16"	5-5/8"	091829	6	-	-
15/32"	.4688	4-5/16"	5-3/4"	091830	6	-	-
31/64"	.4844	4-3/8"	5-7/8"	091831	6	-	-
1/2"	.5000	4-1/2"	6"	091832	6	091932	1

Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T815	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	090815
T829	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	090829





Left Hand Jobber Length Drills

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

- ▷ *Left handed flutes and cutting edges allow for counter-clockwise drilling*
- ▷ *Easy removal of broken bolts*
- ▷ *Bright finish for increased lubricity when drilling softer materials*

T1L

High Speed Steel

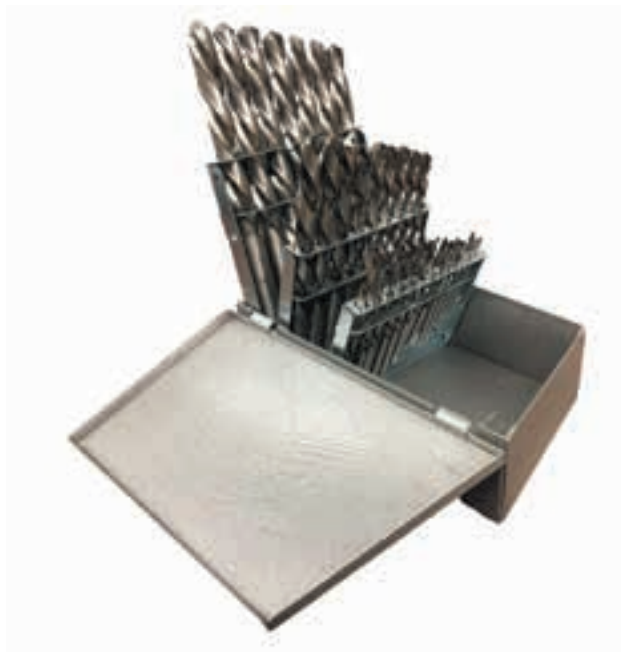
118° Point

Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T1L Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	011104	12
5/64"	.0781	1"	2"	011105	12
3/32"	.0938	1-1/4"	2-1/4"	011106	12
7/64"	.1094	1-1/2"	2-5/8"	011107	12
1/8"	.1250	1-5/8"	2-3/4"	011108	12
9/64"	.1406	1-3/4"	2-7/8"	011109	12
5/32"	.1562	2"	3-1/8"	011110	12
11/64"	.1719	2-1/8"	3-1/4"	011111	12
3/16"	.1875	2-5/16"	3-1/2"	011112	12
13/64"	.2031	2-7/16"	3-5/8"	011113	12
7/32"	.2188	2-1/2"	3-3/4"	011114	12
15/64"	.2344	2-5/8"	3-7/8"	011115	12
1/4"	.2500	2-3/4"	4"	011116	12
17/64"	.2656	2-7/8"	4-1/8"	011117	12
9/32"	.2812	2-15/16"	4-1/4"	011118	12
19/64"	.2969	3-1/16"	4-3/8"	011119	12
5/16"	.3125	3-3/16"	4-1/2"	011120	6
21/64"	.3281	3-5/16"	4-5/8"	011121	6
11/32"	.3438	3-7/16"	4-3/4"	011122	6
23/64"	.3594	3-1/2"	4-7/8"	011123	6
3/8"	.3750	3-5/8"	5"	011124	6
25/64"	.3906	3-3/4"	5-1/8"	011125	6
13/32"	.4062	3-7/8"	5-1/4"	011126	6
27/64"	.4219	3-15/16"	5-3/8"	011127	6
7/16"	.4375	4-1/16"	5-1/2"	011128	6
29/64"	.4531	4-3/16"	5-5/8"	011129	6
15/32"	.4688	4-5/16"	5-3/4"	011130	6
31/64"	.4844	4-3/8"	5-7/8"	011131	6
1/2"	.5000	4-1/2"	6"	011132	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T17L	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	011199



TIPS!

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



Left Hand Jobber Length Drills

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

- ▷ *Left handed flutes and cutting edges allow for counter-clockwise drilling*
- ▷ *Easy removal of broken bolts*
- ▷ *Bright finish for increased lubricity when drilling softer materials*

200LH

High Speed Steel

118° Point / Straight Shank

Fractional / Bright



200LH

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

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



200LH29

Corresponding Sets		
No. of Pcs.	Description	Order No.
200LH Series Left Hand Jobber Drill Sets		
13	1/16" - 1/4" by 64 ^{ths}	200LH13
15	1/16" - 1/2" by 32 ^{nds}	200LH15
21	1/16" - 3/8" by 64 ^{ths}	200LH21
21	1/16" - 1/4" by 64 ^{ths} & 9/32" - 1/2" by 32 ^{nds}	200LH21V
29	1/16" - 1/2" by 64 ^{ths}	200LH29

SST™ 118° Jobbers Length Fractional

Quick shank drill bits
For hand held tools in mild steel

The proven original SST™ drill bit, made with M35 cobalt blend, is designed with an exclusive quick shank that ensures fast and secure tightening inside anykeyed or keyless chucks. Ideal for cordless drills, allowing you to drill more holes per charge. Recommended for drilling on any type of thin gauge metal or sheet metal where a jobber's length bit is required. Ability to drill through multiple layers of metal quickly and easily.

- ▷ *Unique shank design with six long flats*
- ▷ *Self-centering 118° split point geometry*
- ▷ *Proven SST heat and surface treatment*
- ▷ *Back tapered body*
- ▷ *Heavy-duty HSCo body construction*
- ▷ *Packaged in reusable plastic boxes*



Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.	Available individually Order No.
1/16"	3/16"	13/16"	01-A 004	10	100	01-A 004A
5/64"	15/16"	1 15/16"	01-A 005	10	100	01-A 005A
3/32"	1 3/16"	2 1/4"	01-A 006	10	100	01-A 006A
7/64"	1 5/16"	2 3/8"	01-A 007	10	100	01-A 007A
1/8"	1 7/16"	2 9/16"	01-A 008	10	100	01-A 008A
9/64"	1 9/16"	2 3/4"	01-A 009	10	100	01-A 009A
5/32"	1 11/16"	2 15/16"	01-A 010	10	100	01-A 010A
11/64"	1 7/8"	3 1/8"	01-A 011	10	100	01-A 011A
3/16"	2 1/16"	3 3/8"	01-A 012	10	100	01-A 012A
13/64"	2 1/16"	3 3/8"	01-A 013	10	100	01-A 013A
7/32"	2 1/4"	3 11/16"	01-A 014	10	100	01-A 014A
15/64"	2 1/4"	3 11/16"	01-A 015	10	100	01-A 015A
1/4"	2 1/2"	4"	01-A 016	10	100	01-A 016A
17/64"	2 11/16"	4 5/16"	01-A 017	10	100	01-A 017A
9/32"	2 11/16"	4 5/16"	01-A 018	10	100	01-A 018A
19/64"	2 15/16"	4 5/8"	01-A 019	10	100	01-A 019A
5/16"	2 15/16"	4 5/8"	01-A 020	10	100	01-A 020A
21/64"	2 15/16"	4 5/8"	01-A 021	10	100	01-A 021A
11/32"	3 3/16"	4 15/16"	01-A 022	10	100	01-A 022A
23/64"	3 3/16"	4 15/16"	01-A 023	10	100	01-A 023A
3/8"	3 7/16"	5 1/4"	01-A 024	10	100	01-A 024A
25/64"	3 7/16"	5 1/4"	01-A 025	5	50	01-A 025A
13/32"	3 7/16"	5 1/4"	01-A 026	5	50	01-A 026A
27/64"	3 11/16"	5 9/16"	01-A 027	5	50	01-A 027A
7/16"	3 11/16"	5 9/16"	01-A 028	5	50	01-A 028A
29/64"	3 11/16"	5 9/16"	01-A 029	5	50	01-A 029A
15/32"	4"	5 15/16"	01-A 030	5	50	01-A 030A
31/64"	4"	5 15/16"	01-A 031	5	50	01-A 031A
1/2"	4"	5 15/16"	01-A 032	5	50	01-A 032A

Sizes 11/64" and smaller have a round shank.



**NOW AVAILABLE
 IN BLISTER PACKS
 SOLD IN BOXES**



Corresponding Sets	
Shock-Resistant, Extra-Thick Polyethylene Drill Bit Carrying Case	
Description	Order No.
1/16" to 1/2" by 64 th s 29 drill bits	01-E 118
1/16" to 1/2" by 64 th s 29 Jobbers Length drill bits	01-E 178



YouTube
 Video available at The Walter Network
www.youtube.com/user/TheWalterNetwork

TIPS! For increased cutting efficiency and tool life, use COOLCUT solid stick lubricant. Order No.: 53-B 013



Jobber Length Drills

Designed for efficient drilling in stainless steel and tougher ferrous materials.

- ▷ The 135° split point reduces the thrust requirements and minimizes walking
- ▷ NAS Type B
- ▷ Steam oxide surface treatment for increased wear resistance and lubricity
- ▷ Available in bulk packaging

400

High Speed Steel

135° Split Point / Straight Shank
Fractional / Black Oxide



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

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

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

440

High Speed Steel

135° Split Point / Straight Shank
Letter / Black Oxide



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

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

"A" thru "L" - 12 per pack, "M" thru "Z" - 6 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72



480

High Speed Steel

135° Split Point / Straight Shank
Number / Black Oxide



480

Size	Flute Length	Overall Length	480 Order No.
1	2-5/8"	3-7/8"	480A001
2	2-1/2"	3-7/8"	480A002
3	2-1/2"	3-3/4"	480A003
4	2-1/2"	3-3/4"	480A004
5	2-1/2"	3-3/4"	480A005
6	2-1/2"	3-3/4"	480A006
7	2-7/16"	3-5/8"	480A007
8	2-7/16"	3-5/8"	480A008
9	2-7/16"	3-5/8"	480A009
10	2-7/16"	3-5/8"	480A010
11	2-5/16"	3-1/2"	480A011
12	2-5/16"	3-1/2"	480A012
13	2-5/16"	3-1/2"	480A013
14	2-3/16"	3-3/8"	480A014
15	2-3/16"	3-3/8"	480A015
16	2-3/16"	3-3/8"	480A016
17	2-3/16"	3-3/8"	480A017
18	2-1/8"	3-1/4"	480A018
19	2-1/8"	3-1/4"	480A019
20	2-1/8"	3-1/4"	480A020
21	2-1/8"	3-1/4"	480A021
22	2"	3-1/8"	480A022
23	2"	3-1/8"	480A023
24	2"	3-1/8"	480A024
25	1-7/8"	3"	480A025
26	1-7/8"	3"	480A026
27	1-7/8"	3"	480A027
28	1-3/4"	2-7/8"	480A028
29	1-3/4"	2-7/8"	480A029
30	1-5/8"	2-3/4"	480A030

Size	Flute Length	Overall Length	480 Order No.
31	1-5/8"	2-3/4"	480A031
32	1-5/8"	2-3/4"	480A032
33	1-1/2"	2-5/8"	480A033
34	1-1/2"	2-5/8"	480A034
35	1-1/2"	2-5/8"	480A035
36	1-7/16"	2-1/2"	480A036
37	1-7/16"	2-1/2"	480A037
38	1-7/16"	2-1/2"	480A038
39	1-3/8"	2-3/8"	480A039
40	1-3/8"	2-3/8"	480A040
41	1-3/8"	2-3/8"	480A041
42	1-1/4"	2-1/4"	480A042
43	1-1/4"	2-1/4"	480A043
44	1-1/8"	2-1/8"	480A044
45	1-1/8"	2-1/8"	480A045
46	1-1/8"	2-1/8"	480A046
47	1"	2"	480A047
48	1"	2"	480A048
49	1"	2"	480A049
50	1"	2"	480A050
51	1"	2"	480A051
52	7/8"	1-7/8"	480A052
53*	7/8"	1-7/8"	480A053
54*	7/8"	1-7/8"	480A054
55*	7/8"	1-7/8"	480A055
56*	3/4"	1-3/4"	480A056
57*	3/4"	1-3/4"	480A057
58*	11/16"	1-5/8"	480A058
59*	11/16"	1-5/8"	480A059
60*	11/16"	1-5/8"	480A060

* Not Split Point

#1 thru #60 - 12 per pack

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

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72



400HD21



Jobber Length Drills

The heavy duty construction affords efficient drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. A black oxide surface treatment improves tool life.

- ▷ Heavy-duty 135° Split Point minimizes walking
- ▷ Black oxide surface treatment for increased wear resistance
- ▷ A multi-purpose heavy-duty drill bit

T1D - T2D - T3D
High Speed Steel
135° Split Point
Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1D Packaging: Tube		T1D Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	011404	12	011404.20	288
5/64"	.0781	1"	2"	011405	12	011405.20	288
3/32"	.0938	1-1/4"	2-1/4"	011406	12	011406.20	288
7/64"	.1094	1-1/2"	2-5/8"	011407	12	011407.20	288
1/8"	.1250	1-5/8"	2-3/4"	011408	12	011408.20	288
9/64"	.1406	1-3/4"	2-7/8"	011409	12	011409.20	288
5/32"	.1562	2"	3-1/8"	011410	12	011410.20	288
11/64"	.1719	2-1/8"	3-1/4"	011411	12	011411.20	288
3/16"	.1875	2-5/16"	3-1/2"	011412	12	011412.20	288
13/64"	.2031	2-7/16"	3-5/8"	011413	12	011413.20	288
7/32"	.2188	2-1/2"	3-3/4"	011414	12	011414.20	288
15/64"	.2344	2-5/8"	3-7/8"	011415	12	011415.20	288
1/4"	.2500	2-3/4"	4"	011416	12	011416.20	288
17/64"	.2656	2-7/8"	4-1/8"	011417	12	011417.20	288
9/32"	.2812	2-15/16"	4-1/4"	011418	12	011418.20	144
19/64"	.2969	3-1/16"	4-3/8"	011419	12	011419.20	144
5/16"	.3125	3-3/16"	4-1/2"	011420	6	011420.20	144
21/64"	.3281	3-5/16"	4-5/8"	011421	6	011421.20	144
11/32"	.3438	3-7/16"	4-3/4"	011422	6	011422.20	144
23/64"	.3594	3-1/2"	4-7/8"	011423	6	011423.20	144
3/8"	.3750	3-5/8"	5"	011424	6	011424.20	144
25/64"	.3906	3-3/4"	5-1/8"	011425	6	011425.20	144
13/32"	.4062	3-7/8"	5-1/4"	011426	6	011426.20	144
27/64"	.4219	3-15/16"	5-3/8"	011427	6	011427.20	144
7/16"	.4375	4-1/16"	5-1/2"	011428	6	011428.20	144
29/64"	.4531	4-3/16"	5-5/8"	011429	6	011429.20	144
15/32"	.4688	4-5/16"	5-3/4"	011430	6	011430.20	144
31/64"	.4844	4-3/8"	5-7/8"	011431	6	011431.20	144
1/2"	.5000	4-1/2"	6"	011432	6	011432.20	144



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Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T19D	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	099815
T18D	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099809
T180D	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	099836
T17DC	Clip-On Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099804
T17D	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099803
T123D	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1- #60, A-Z	090561



T1D - T2D - T3D
High Speed Steel
135° Split Point
Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T2D Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	12401	12
2	.2210	2-5/8"	3-7/8"	12402	12
3	.2130	2-1/2"	3-3/4"	12403	12
4	.2090	2-1/2"	3-3/4"	12404	12
5	.2055	2-1/2"	3-3/4"	12405	12
6	.2040	2-1/2"	3-3/4"	12406	12
7	.2010	2-7/16"	3-5/8"	12407	12
8	.1990	2-7/16"	3-5/8"	12408	12
9	.1960	2-7/16"	3-5/8"	12409	12
10	.1935	2-7/16"	3-5/8"	12410	12
11	.1910	2-5/16"	3-1/2"	12411	12
12	.1890	2-5/16"	3-1/2"	12412	12
13	.1850	2-5/16"	3-1/2"	12413	12
14	.1820	2-3/16"	3-3/8"	12414	12
15	.1800	2-3/16"	3-3/8"	12415	12
16	.1770	2-3/16"	3-3/8"	12416	12
17	.1730	2-3/16"	3-3/8"	12417	12
18	.1695	2-1/8"	3-1/4"	12418	12
19	.1660	2-1/8"	3-1/4"	12419	12
20	.1610	2-1/8"	3-1/4"	12420	12
21	.1590	2-1/8"	3-1/4"	12421	12
22	.1570	2"	3-1/8"	12422	12
23	.1540	2"	3-1/8"	12423	12
24	.1520	2"	3-1/8"	12424	12
25	.1495	1-7/8"	3"	12425	12
26	.1470	1-7/8"	3"	12426	12
27	.1440	1-7/8"	3"	12427	12
28	.1405	1-3/4"	2-7/8"	12428	12
29	.1360	1-3/4"	2-7/8"	12429	12
30	.1285	1-5/8"	2-3/4"	12430	12
31	.1200	1-5/8"	2-3/4"	12431	12
32	.1160	1-5/8"	2-3/4"	12432	12
33	.1130	1-1/2"	2-5/8"	12433	12
34	.1110	1-1/2"	2-5/8"	12434	12
35	.1100	1-1/2"	2-5/8"	12435	12
36	.1065	1-7/16"	2-1/2"	12436	12
37	.1040	1-7/16"	2-1/2"	12437	12
38	.1015	1-7/16"	2-1/2"	12438	12
39	.0995	1-3/8"	2-3/8"	12439	12
40	.0980	1-3/8"	2-3/8"	12440	12
41	.0960	1-3/8"	2-3/8"	12441	12
42	.0935	1-1/4"	2-1/4"	12442	12
43	.0890	1-1/4"	2-1/4"	12443	12
44	.0860	1-1/8"	2-1/8"	12444	12
45	.0820	1-1/8"	2-1/8"	12445	12
46	.0810	1-1/8"	2-1/8"	12446	12
47	.0785	1"	2"	12447	12
48	.0760	1"	2"	12448	12
49	.0730	1"	2"	12449	12
50	.0700	1"	2"	12450	12
51	.0670	1"	2"	12451	12
52	.0635	7/8"	1-7/8"	12452	12
53*	.0595	7/8"	1-7/8"	12453	12
54*	.0550	7/8"	1-7/8"	12454	12
55*	.0520	7/8"	1-7/8"	12455	12
56*	.0465	3/4"	1-3/4"	12456	12
57*	.0430	3/4"	1-3/4"	12457	12
58*	.0420	11/16"	1-5/8"	12458	12
59*	.0410	11/16"	1-5/8"	12459	12
60*	.0400	11/16"	1-5/8"	12460	12

*Not split point

Size	Decimal Equivalent	Flute Length	Overall Length	T3D Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	013401	12
B	.2380	2-3/4"	4"	013402	12
C	.2420	2-3/4"	4"	013403	12
D	.2460	2-3/4"	4"	013404	12
E	.2500	2-3/4"	4"	013405	12
F	.2570	2-7/8"	4-1/8"	013406	12
G	.2610	2-7/8"	4-1/8"	013407	12
H	.2660	2-7/8"	4-1/8"	013408	12
I	.2720	2-7/8"	4-1/8"	013409	12
J	.2770	2-7/8"	4-1/8"	013410	12
K	.2810	2-15/16"	4-1/4"	013411	12
L	.2900	2-15/16"	4-1/4"	013412	12
M	.2950	3-1/16"	4-3/8"	013413	12
N	.3020	3-1/16"	4-3/8"	013414	12
O	.3160	3-3/16"	4-1/2"	013415	6
P	.3230	3-5/16"	4-5/8"	013416	6
Q	.3320	3-7/16"	4-3/4"	013417	6
R	.3390	3-7/16"	4-3/4"	013418	6
S	.3480	3-1/2"	4-7/8"	013419	6
T	.3580	3-1/2"	4-7/8"	013420	6
U	.3680	3-5/8"	5"	013421	6
V	.3770	3-5/8"	5"	013422	6
W	.3860	3-3/4"	5-1/8"	013423	6
X	.3970	3-3/4"	5-1/8"	013424	6
Y	.4040	3-7/8"	5-1/4"	013425	6
Z	.4130	3-7/8"	5-1/4"	013426	6



© triumphtwistdrill





Jobber Length Drills



Nitro® drills (NAS Type B) offer superior performance over conventional HSS drills. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations.

- ▷ Heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult to machine materials such as stainless steel
- ▷ Jobber length for extra reach
- ▷ Available in bulk packaging

400N

High Speed Steel

135° Split Point / Straight Shank
Fractional / Black & Gold



400N

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

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

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72





DRILLS

440N

High Speed Steel

135° Split Point / Straight Shank
Letter / Black & Gold



440N

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

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

'A' thru 'L' - 12 per pack, 'M' thru 'Z' - 6 per pack

480N

High Speed Steel

135° Split Point / Straight Shank
Number / Black & Gold



480N

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

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

*Not split point

#1 thru #60 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
400N/440N/480N Series Nitro® Heavy Duty Jobber Drill Sets		
13	1/16" - 1/4" by 64 ^{ths}	400N13
15	1/16" - 1/2" by 32 ^{nds}	400N15
19	Maintenance Set - 1/16, 5/64, 3/32, 1/8, #29, #25, 5/32, #21, 3/16, #7, 7/32, 1/4, F, 5/16, U, 3/8, 27/64, 7/16, 1/2	400N19
21	1/16" - 3/8" by 64 ^{ths}	400N21
21	1/16" - 1/4" by 64 ^{ths} & 9/32" - 1/2" by 32 ^{nds}	400N21V
26	A - Z	400N26
29	1/16" - 1/2" by 64 ^{ths}	400N29
29	DRILL PAL 1/16" - 1/2" by 64 ^{ths}	400NW29
60	#1 - #60	400N60
115	1/16" - 1/2" by 64 ^{ths} , #1 - 60, A - Z	400N115



400N29



3/8" Reduced Shank Drills

Has all of the features of the Nitro jobber drill, but with a 3/8" reduced shank for use in 3/8" drill chucks.

1035N

High Speed Steel

135° Split Point / 3/8" Reduced Shank
Fractional / Black & Gold



1035N

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

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

25/64" - 1/2" - 6 per pack, 17/32" - 3/4" - 1 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
1035N Series Reduced Shank Drill Sets		
15	1/16" - 1/2" by 32 ^{nds}	1035N15
29	1/16" - 1/2" by 64 ^{ths}	1035N29



1035N15

Jobber Length Drills

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

- ▷ *Heavy-duty 135° Split Point minimizes walking*
- ▷ *Black & Gold surface treatment for high wear resistance and lubricity*
- ▷ *A multi-purpose heavy-duty drill bit*

400E

High Speed Steel

135° Split Point / Straight Shank Fractional / Black & Gold



400E

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

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

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

480E

High Speed Steel

135° Split Point / Straight Shank
Number / Black & Gold



480E

Size	Flute Length	Overall Length	480E Order No.
1	2-5/8"	3-7/8"	480E001
2	2-1/2"	3-7/8"	480E002
3	2-1/2"	3-3/4"	480E003
4	2-1/2"	3-3/4"	480E004
5	2-1/2"	3-3/4"	480E005
6	2-1/2"	3-3/4"	480E006
7	2-7/16"	3-5/8"	480E007
8	2-7/16"	3-5/8"	480E008
9	2-7/16"	3-5/8"	480E009
10	2-7/16"	3-5/8"	480E010
11	2-5/16"	3-1/2"	480E011
12	2-5/16"	3-1/2"	480E012
13	2-5/16"	3-1/2"	480E013
14	2-3/16"	3-3/8"	480E014
15	2-3/16"	3-3/8"	480E015
16	2-3/16"	3-3/8"	480E016
17	2-3/16"	3-3/8"	480E017
18	2-1/8"	3-1/4"	480E018
19	2-1/8"	3-1/4"	480E019
20	2-1/8"	3-1/4"	480E020
21	2-1/8"	3-1/4"	480E021
22	2"	3-1/8"	480E022
23	2"	3-1/8"	480E023
24	2"	3-1/8"	480E024
25	1-7/8"	3"	480E025
26	1-7/8"	3"	480E026
27	1-7/8"	3"	480E027
28	1-3/4"	2-7/8"	480E028
29	1-3/4"	2-7/8"	480E029
30	1-5/8"	2-3/4"	480E030

Size	Flute Length	Overall Length	480E Order No.
31	1-5/8"	2-3/4"	480E031
32	1-5/8"	2-3/4"	480E032
33	1-1/2"	2-5/8"	480E033
34	1-1/2"	2-5/8"	480E034
35	1-1/2"	2-5/8"	480E035
36	1-7/16"	2-1/2"	480E036
37	1-7/16"	2-1/2"	480E037
38	1-7/16"	2-1/2"	480E038
39	1-3/8"	2-3/8"	480E039
40	1-3/8"	2-3/8"	480E040
41	1-3/8"	2-3/8"	480E041
42	1-1/4"	2-1/4"	480E042
43	1-1/4"	2-1/4"	480E043
44	1-1/8"	2-1/8"	480E044
45	1-1/8"	2-1/8"	480E045
46	1-1/8"	2-1/8"	480E046
47	1"	2"	480E047
48	1"	2"	480E048
49	1"	2"	480E049
50	1"	2"	480E050
51	1"	2"	480E051
52	7/8"	1-7/8"	480E052
53*	7/8"	1-7/8"	480E053
54*	7/8"	1-7/8"	480E054
55*	7/8"	1-7/8"	480E055
56*	3/4"	1-3/4"	480E056
57*	3/4"	1-3/4"	480E057
58*	11/16"	1-5/8"	480E058
59*	11/16"	1-5/8"	480E059
60*	11/16"	1-5/8"	480E060

#1 thru #60 - 12 per pack

Designed for efficient drilling in stainless steel and tougher ferrous materials. The 135° split point reduces the thrust requirements and minimizes walking. Black & Gold surface treatment for increased wear resistance and lubricity.

800

High Speed Steel

135° Split Point / Straight Shank
Metric / Black & Gold



800

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
.35	3	19	800A0035
.40	5	19	800A0040
.45	5	22	800A0045
.50	5	22	800A0050
.55	6	25	800A0055
.60	8	29	800A0060
.65	10	32	800A0065
.70	10	32	800A0070
.75	13	35	800A0075
.80	13	35	800A0080
.85	16	38	800A0085
.90	16	38	800A0090
.95	16	38	800A0095
1.00	17	41	800A0100
1.05	17	41	800A0105
1.10	19	44	800A0110
1.15	19	44	800A0115

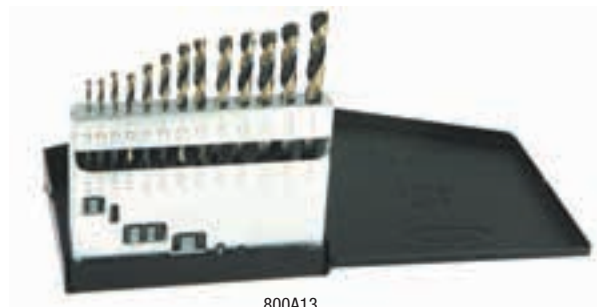
Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
1.20	22	48	800A0120
1.25	22	48	800A0125
1.30	22	48	800A0130
1.35	22	49	800A0135
1.40	22	48	800A0140
1.45	22	48	800A0145
1.50	22	48	800A0150
1.55	22	48	800A0155
1.60	22	48	800A0160
1.65	25	51	800A0165
1.70	25	51	800A0170
1.75	25	51	800A0175
1.80	25	51	800A0180
1.85	25	51	800A0185
1.90	25	51	800A0190
1.95	25	51	800A0195
2.00	25	51	800A0200

Continued on next page

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
2.05	29	54	800A0205
2.10	29	54	800A0210
2.15	29	54	800A0215
2.20	32	57	800A0220
2.25	32	57	800A0225
2.30	32	57	800A0230
2.35	32	57	800A0235
2.40	35	60	800A0240
2.45	35	60	800A0245
2.50	35	60	800A0250
2.60	37	64	800A0260
2.70	37	64	800A0270
2.75	37	64	800A0275
2.80	38	67	800A0280
2.90	41	70	800A0290
3.00	41	70	800A0300
3.10	41	70	800A0310
3.20	41	70	800A0320
3.25	41	70	800A0325
3.30	44	73	800A0330
3.40	44	73	800A0340
3.50	44	73	800A0350
3.60	48	76	800A0360
3.70	48	76	800A0370
3.75	48	76	800A0375
3.80	48	76	800A0380
3.90	51	79	800A0390
4.00	54	83	800A0400
4.10	54	83	800A0410
4.20	54	83	800A0420
4.25	54	83	800A0425
4.30	54	83	800A0430
4.40	56	86	800A0440
4.50	56	86	800A0450
4.60	56	86	800A0460
4.70	59	89	800A0470
4.75	59	89	800A0475
4.80	59	89	800A0480
4.90	62	92	800A0490
5.00	62	92	800A0500
5.10	62	92	800A0510
5.20	64	95	800A0520
5.25	64	95	800A0525
5.30	64	95	800A0530
5.40	64	95	800A0540
5.50	64	95	800A0550
5.60	67	98	800A0560
5.70	67	98	800A0570
5.75	67	98	800A0575
5.80	67	98	800A0580
5.90	67	98	800A0590
6.00	70	102	800A0600
6.10	70	102	800A0610
6.20	70	102	800A0620
6.25	70	102	800A0625
6.30	70	102	800A0630
6.40	73	105	800A0640
6.50	73	105	800A0650
6.60	73	105	800A0660
6.70	73	105	800A0670
6.75	73	105	800A0675
6.80	73	105	800A0680
6.90	73	105	800A0690
7.00	73	105	800A0700

Size (mm)	Flute Length (mm)	Overall Length (mm)	800 Order No.
7.10	75	108	800A0710
7.20	75	108	800A0720
7.25	75	108	800A0725
7.30	75	108	800A0730
7.40	78	111	800A0740
7.50	78	111	800A0750
7.60	78	111	800A0760
7.70	81	114	800A0770
7.75	81	114	800A0775
7.80	81	114	800A0780
7.90	81	114	800A0790
8.00	81	114	800A0800
8.10	84	117	800A0810
8.20	84	117	800A0820
8.25	84	117	800A0825
8.30	84	117	800A0830
8.40	87	121	800A0840
8.50	87	121	800A0850
8.60	87	121	800A0860
8.70	87	121	800A0870
8.75	87	121	800A0875
8.80	89	124	800A0880
8.90	89	124	800A0890
9.00	89	124	800A0900
9.10	89	124	800A0910
9.20	92	127	800A0920
9.25	92	127	800A0925
9.30	92	127	800A0930
9.40	92	127	800A0940
9.50	92	127	800A0950
9.60	95	130	800A0960
9.70	95	130	800A0970
9.75	95	130	800A0975
9.80	95	130	800A0980
9.90	95	130	800A0990
10.00	95	130	800A1000
10.50	98	133	800A1050
11.00	103	140	800A1100
11.50	106	143	800A1150
12.00	111	149	800A1200
12.50	114	152	800A1250
13.00	114	152	800A1300

0.35 mm thru 6.60 mm - 12 pack, 6.70 mm thru 12.50 mm - 6 pack, 13.0 mm - packaged individually



800A13

Corresponding Sets		
No. of Pcs.	Description	Order No.
800 Series Metric Jobber Drill Sets		
13	1mm - 7mm by 0.5mm	800A13
19	1mm - 10mm by 0.5mm	800A19
25	1mm - 13mm by 0.5mm	800A25



3/8" Reduced Shank Drills



T8HD - BP8HD

High Speed Steel

135° Split Point 3/8" Reduced Shank

Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T8HD Packaging: Tube		BP8HD Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
25/64"	.3906	3-3/4"	5-1/8"	092125	6	095125	1
13/32"	.4062	3-7/8"	5-1/4"	092126	6	095126	1
27/64"	.4219	3-15/16"	5-3/8"	092127	6	095127	1
7/16"	.4375	4-1/16"	5-1/2"	092128	6	095128	1
29/64"	.4531	4-3/16"	5-5/8"	092129	6	095129	1
15/32"	.4688	4-5/16"	5-3/4"	092130	6	095130	1
31/64"	.4844	4-3/8"	5-7/8"	092131	6	095131	1
1/2"	.5000	4-1/2"	6"	092132	6	095132	1



Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T815HD	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099104
T829HD	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099101

Jobber Length Drills

The heavy duty construction with a Thunderbit core and flute design affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. A black and gold surface treatment is applied for superior lubricity.

- ▷ *Unique flute design for added strength and improved chip evacuation*
- ▷ *Black & Gold surface treatment for maximum lubricity*



T1HD - BP1HD - T2HD - T3HD - MM1HD

High Speed Steel

135° Split Point

Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1HD Packaging: Tube		T1HD Packaging: Bulk		BP1HD Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	012504	12	012504.20	288	014004	1
5/64"	.0781	1"	2"	012505	12	012505.20	288	014005	1
3/32"	.0938	1-1/4"	2-1/4"	012506	12	012506.20	288	014006	1
7/64"	.1094	1-1/2"	2-5/8"	012507	12	012507.20	288	014007	1
1/8"	.1250	1-5/8"	2-3/4"	012508	12	012508.20	288	014008	1
9/64"	.1406	1-3/4"	2-7/8"	012509	12	012509.20	288	014009	1
5/32"	.1562	2"	3-1/8"	012510	12	012510.20	288	014010	1
11/64"	.1719	2-1/8"	3-1/4"	012511	12	012511.20	288	014011	1
3/16"	.1875	2-5/16"	3-1/2"	012512	12	012512.20	288	014012	1
13/64"	.2031	2-7/16"	3-5/8"	012513	12	012513.20	288	014013	1
7/32"	.2188	2-1/2"	3-3/4"	012514	12	012514.20	288	014014	1
15/64"	.2344	2-5/8"	3-7/8"	012515	12	012515.20	288	014015	1
1/4"	.2500	2-3/4"	4"	012516	12	012516.20	288	014016	1
17/64"	.2656	2-7/8"	4-1/8"	012517	12	012517.20	144	014017	1
9/32"	.2812	2-15/16"	4-1/4"	012518	12	012518.20	144	014018	1
19/64"	.2969	3-1/16"	4-3/8"	012519	12	012519.20	144	014019	1
5/16"	.30125	3-3/16"	4-1/2"	012520	6	012520.20	144	014020	1
21/64"	.3281	3-5/16"	4-5/8"	012521	6	012521.20	144	014021	1
11/32"	.3438	3-7/16"	4-3/4"	012522	6	012522.20	144	014022	1
23/64"	.3594	3-1/2"	4-7/8"	012523	6	012523.20	144	014023	1
3/8"	.3750	3-5/8"	5"	012524	6	012524.20	144	014024	1
25/64"	.3906	3-3/4"	5-1/8"	012525	6	012525.20	144	014025	1
13/32"	.4062	3-7/8"	5-1/4"	012526	6	012526.20	144	014026	1
27/64"	.4219	3-15/16"	5-3/8"	012527	6	012527.20	144	014027	1
7/16"	.4375	4-1/16"	5-1/2"	012528	6	012528.20	144	014028	1
29/64"	.4531	4-3/16"	5-5/8"	012529	6	012529.20	144	014029	1
15/32"	.4688	4-5/16"	5-3/4"	012530	6	012530.20	144	014030	1
31/64"	.4844	4-3/8"	5-7/8"	012531	6	012531.20	144	014031	1
1/2"	.5000	4-1/2"	6"	012532	6	012532.20	144	014032	1



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
SAD13HD	Select-A-Drill	13 Piece	1/16"-1/4" by 64 ^{ths}	090495
SAD21HD	Select-A-Drill	21 Piece	1/16"-3/8" by 64 ^{ths}	090496
T19HD	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	099858
T18HD	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099857
T180HD	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	099861
T17HDDC	Clip-On Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099855
T17HD	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099856
T123HD	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1- #60, A-Z	099862
T80HD	Display		1/16"-1/2" by 64 ^{ths}	099995





Size	Decimal Equivalent	Flute Length	Overall Length	T2HD Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	12601	12
2	.2210	2-5/8"	3-7/8"	12602	12
3	.2130	2-1/2"	3-3/4"	12603	12
4	.2090	2-1/2"	3-3/4"	12604	12
5	.2055	2-1/2"	3-3/4"	12605	12
6	.2040	2-1/2"	3-3/4"	12606	12
7	.2010	2-7/16"	3-5/8"	12607	12
8	.1990	2-7/16"	3-5/8"	12608	12
9	.1960	2-7/16"	3-5/8"	12609	12
10	.1935	2-7/16"	3-5/8"	12610	12
11	.1910	2-5/16"	3-1/2"	12611	12
12	.1890	2-5/16"	3-1/2"	12612	12
13	.1850	2-5/16"	3-1/2"	12613	12
14	.1820	2-3/16"	3-3/8"	12614	12
15	.1800	2-3/16"	3-3/8"	12615	12
16	.1770	2-3/16"	3-3/8"	12616	12
17	.1730	2-3/16"	3-3/8"	12617	12
18	.1695	2-1/8"	3-1/4"	12618	12
19	.1660	2-1/8"	3-1/4"	12619	12
20	.1610	2-1/8"	3-1/4"	12620	12
21	.1590	2-1/8"	3-1/4"	12621	12
22	.1570	2"	3-1/8"	12622	12
23	.1540	2"	3-1/8"	12623	12
24	.1520	2"	3-1/8"	12624	12
25	.1495	1-7/8"	3"	12625	12
26	.1470	1-7/8"	3"	12626	12
27	.1440	1-7/8"	3"	12627	12
28	.1405	1-3/4"	2-7/8"	12628	12
29	.1360	1-3/4"	2-7/8"	12629	12
30	.1285	1-5/8"	2-3/4"	12630	12
31	.1200	1-5/8"	2-3/4"	12631	12
32	.1160	1-5/8"	2-3/4"	12632	12
33	.1130	1-1/2"	2-5/8"	12633	12
34	.1110	1-1/2"	2-5/8"	12634	12
35	.1100	1-1/2"	2-5/8"	12635	12
36	.1065	1-7/16"	2-1/2"	12636	12
37	.1040	1-7/16"	2-1/2"	12637	12
38	.1015	1-7/16"	2-1/2"	12638	12
39	.0995	1-3/8"	2-3/8"	12639	12
40	.0980	1-3/8"	2-3/8"	12640	12
41	.0960	1-3/8"	2-3/8"	12641	12
42	.0935	1-1/4"	2-1/4"	12642	12
43	.0890	1-1/4"	2-1/4"	12643	12
44	.0860	1-1/8"	2-1/8"	12644	12
45	.0820	1-1/8"	2-1/8"	12645	12
46	.0810	1-1/8"	2-1/8"	12646	12
47	.0785	1"	2"	12647	12
48	.0760	1"	2"	12648	12
49	.0730	1"	2"	12649	12
50	.0700	1"	2"	12650	12
51	.0670	1"	2"	12651	12
52	.0635	7/8"	1-7/8"	12652	12
53*	.0595	7/8"	1-7/8"	12653	12
54*	.0550	7/8"	1-7/8"	12654	12
55*	.0520	7/8"	1-7/8"	12655	12
56*	.0465	3/4"	1-3/4"	12656	12
57*	.0430	3/4"	1-3/4"	12657	12
58*	.0420	11/16"	1-5/8"	12658	12
59*	.0410	11/16"	1-5/8"	12659	12
60*	.0400	11/16"	1-5/8"	12660	12

*Not split point

Size	Decimal Equivalent	Flute Length	Overall Length	T3HD Packaging: Bulk	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	012701	12
B	.2380	2-3/4"	4"	012702	12
C	.2420	2-3/4"	4"	012703	12
D	.2460	2-3/4"	4"	012704	12
E	.2500	2-3/4"	4"	012705	12
F	.2570	2-7/8"	4-1/8"	012706	12
G	.2610	2-7/8"	4-1/8"	012707	12
H	.2660	2-7/8"	4-1/8"	012708	12
I	.2720	2-7/8"	4-1/8"	012709	12
J	.2770	2-7/8"	4-1/8"	012710	12
K	.2810	2-15/16"	4-1/4"	012711	12
L	.2900	2-15/16"	4-1/4"	012712	12
M	.2950	3-1/16"	4-3/8"	012713	12
N	.3020	3-1/16"	4-3/8"	012714	12
O	.3160	3-3/16"	4-1/2"	012715	6
P	.3230	3-5/16"	4-5/8"	012716	6
Q	.3320	3-7/16"	4-3/4"	012717	6
R	.3390	3-7/16"	4-3/4"	012718	6
S	.3480	3-1/2"	4-7/8"	012719	6
T	.3580	3-1/2"	4-7/8"	012720	6
U	.3680	3-5/8"	5"	012721	6
V	.3770	3-5/8"	5"	012722	6
W	.3860	3-3/4"	5-1/8"	012723	6
X	.3970	3-3/4"	5-1/8"	012724	6
Y	.4040	3-7/8"	5-1/4"	012725	6
Z	.4130	3-7/8"	5-1/4"	012726	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T22HD	Metal Index	60 Piece	#1- #60	099859
T25HD	Metal Index	26 Piece	A - Z	099860
T123HD	Metal Index	115 Piece	1/16"-1/2" by 64ths, #1- #60, A-Z	099862

Size	Decimal Equivalent	Flute Length	Overall Length	MM1HD Packaging: Tube	
				Order No.	Pkg Qty
1.00	.0394	17	41	014310	12
1.50	.0591	22	48	014315	12
2.00	.0787	25	51	014320	12
2.50	.0984	35	60	014325	12
3.00	.1181	41	70	014330	12
3.50	.1378	44	73	014335	12
4.00	.1575	54	83	014340	12
4.50	.1772	56	86	014345	12
5.00	.1969	62	92	014350	12
5.50	.2165	64	95	014355	12
6.00	.2362	70	102	014360	12
6.50	.2559	73	105	014365	12
7.00	.2756	73	105	014370	6
7.50	.2953	78	111	014375	6
8.00	.3150	81	114	014380	6
8.50	.3346	87	121	014385	6
9.00	.3543	89	124	014390	6
9.50	.3740	92	127	014395	6
10.00	.3937	95	130	014400	6
10.50	.4134	98	133	014405	6
11.00	.4331	103	140	014410	6
11.50	.4528	106	143	014415	6
12.00	.4724	111	149	014420	6
12.50	.4921	114	152	014425	6
13.00	.5118	114	152	014430	1



Jobber Length Drills

The heavy duty construction with a Thunderbit core and flute design affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. A black and gold surface treatment is applied for superior lubricity.



- ▷ 3-flats for handheld power tools
- ▷ Unique flute design for added strength and improved chip evacuation
- ▷ Black & Gold surface treatment for maximum lubricity

T1HD+ - BP1HD+ - T2HD+ - T3HD+

High Speed Steel

135° Split Point

3-Flats on Shank

Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1HD+ Packaging: Tube		T1HD+ Packaging: Bulk		BP1HD+ Packaging: Single	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	014504	12	014504.20	288	014804	1
5/64"	.0781	1"	2"	014505	12	014505.20	288	014805	1
3/32"	.0938	1-1/4"	2-1/4"	014506	12	014506.20	288	014806	1
7/64"	.1094	1-1/2"	2-5/8"	014507	12	014507.20	288	014807	1
1/8"	.1250	1-5/8"	2-3/4"	014508	12	014508.20	288	014808	1
9/64"	.1406	1-3/4"	2-7/8"	014509	12	014509.20	288	014809	1
5/32"	.1562	2"	3-1/8"	014510	12	014510.20	288	014810	1
11/64"	.1719	2-1/8"	3-1/4"	014511	12	014511.20	288	014811	1
3-Flats on Shank									
3/16"	.1875	2-5/16"	3-1/2"	014512	12	014512.20	288	014812	1
13/64"	.2031	2-7/16"	3-5/8"	014513	12	014513.20	288	014813	1
7/32"	.2188	2-1/2"	3-3/4"	014514	12	014514.20	288	014814	1
15/64"	.2344	2-5/8"	3-7/8"	014515	12	014515.20	288	014815	1
1/4"	.2500	2-3/4"	4"	014516	12	014516.20	288	014816	1
17/64"	.2656	2-7/8"	4-1/8"	014517	12	014517.20	144	014817	1
9/32"	.2812	2-15/16"	4-1/4"	014518	12	014518.20	144	014818	1
19/64"	.2969	3-1/16"	4-3/8"	014519	12	014519.20	144	014819	1
5/16"	.30125	3-3/16"	4-1/2"	014520	6	014520.20	144	014820	1
21/64"	.3281	3-5/16"	4-5/8"	014521	6	014521.20	144	014821	1
11/32"	.3438	3-7/16"	4-3/4"	014522	6	014522.20	144	014822	1
23/64"	.3594	3-1/2"	4-7/8"	014523	6	014523.20	144	014823	1
3/8"	.3750	3-5/8"	5"	014524	6	014524.20	144	014824	1
25/64"	.3906	3-3/4"	5-1/8"	014525	6	014525.20	144	014825	1
13/32"	.4062	3-7/8"	5-1/4"	014526	6	014526.20	144	014826	1
27/64"	.4219	3-15/16"	5-3/8"	014527	6	014527.20	144	014827	1
7/16"	.4375	4-1/16"	5-1/2"	014528	6	014528.20	144	014828	1
29/64"	.4531	4-3/16"	5-5/8"	014529	6	014529.20	144	014829	1
15/32"	.4688	4-5/16"	5-3/4"	014530	6	014530.20	144	014830	1
31/64"	.4844	4-3/8"	5-7/8"	014531	6	014531.20	144	014831	1
1/2"	.5000	4-1/2"	6"	014532	6	014532.20	144	014832	1



Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T19HD+	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	099501
T18HD+	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099502
T180HD+	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	099503
T17HDDC+	Clip-On Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099504
T17HD+	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099505
T123HD+	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1-#60, A-Z	099508
T80HD+	Display		1/16"-1/2" by 64 ^{ths}	099509



Size	Decimal Equivalent	Flute Length	Overall Length	T2HD+ Packaging: Tube	
				Order No.	Pkg Qty
1**	.2280	2-5/8"	3-7/8"	14601	12
2**	.2210	2-5/8"	3-7/8"	14602	12
3**	.2130	2-1/2"	3-3/4"	14603	12
4**	.2090	2-1/2"	3-3/4"	14604	12
5**	.2055	2-1/2"	3-3/4"	14605	12
6**	.2040	2-1/2"	3-3/4"	14606	12
7**	.2010	2-7/16"	3-5/8"	14607	12
8**	.1990	2-7/16"	3-5/8"	14608	12
9**	.1960	2-7/16"	3-5/8"	14609	12
10**	.1935	2-7/16"	3-5/8"	14610	12
11**	.1910	2-5/16"	3-1/2"	14611	12
12**	.1890	2-5/16"	3-1/2"	14612	12
13	.1850	2-5/16"	3-1/2"	14613	12
14	.1820	2-3/16"	3-3/8"	14614	12
15	.1800	2-3/16"	3-3/8"	14615	12
16	.1770	2-3/16"	3-3/8"	14616	12
17	.1730	2-3/16"	3-3/8"	14617	12
18	.1695	2-1/8"	3-1/4"	14618	12
19	.1660	2-1/8"	3-1/4"	14619	12
20	.1610	2-1/8"	3-1/4"	14620	12
21	.1590	2-1/8"	3-1/4"	14621	12
22	.1570	2"	3-1/8"	14622	12
23	.1540	2"	3-1/8"	14623	12
24	.1520	2"	3-1/8"	14624	12
25	.1495	1-7/8"	3"	14625	12
26	.1470	1-7/8"	3"	14626	12
27	.1440	1-7/8"	3"	14627	12
28	.1405	1-3/4"	2-7/8"	14628	12
29	.1360	1-3/4"	2-7/8"	14629	12
30	.1285	1-5/8"	2-3/4"	14630	12
31	.1200	1-5/8"	2-3/4"	14631	12
32	.1160	1-5/8"	2-3/4"	14632	12
33	.1130	1-1/2"	2-5/8"	14633	12
34	.1110	1-1/2"	2-5/8"	14634	12
35	.1100	1-1/2"	2-5/8"	14635	12
36	.1065	1-7/16"	2-1/2"	14636	12
37	.1040	1-7/16"	2-1/2"	14637	12
38	.1015	1-7/16"	2-1/2"	14638	12
39	.0995	1-3/8"	2-3/8"	14639	12
40	.0980	1-3/8"	2-3/8"	14640	12
41	.0960	1-3/8"	2-3/8"	14641	12
42	.0935	1-1/4"	2-1/4"	14642	12
43	.0890	1-1/4"	2-1/4"	14643	12
44	.0860	1-1/8"	2-1/8"	14644	12
45	.0820	1-1/8"	2-1/8"	14645	12
46	.0810	1-1/8"	2-1/8"	14646	12
47	.0785	1"	2"	14647	12
48	.0760	1"	2"	14648	12
49	.0730	1"	2"	14649	12
50	.0700	1"	2"	14650	12
51	.0670	1"	2"	14651	12
52	.0635	7/8"	1-7/8"	14652	12
53*	.0595	7/8"	1-7/8"	14653	12
54*	.0550	7/8"	1-7/8"	14654	12
55*	.0520	7/8"	1-7/8"	14655	12
56*	.0465	3/4"	1-3/4"	14656	12
57*	.0430	3/4"	1-3/4"	14657	12
58*	.0420	11/16"	1-5/8"	14658	12
59*	.0410	11/16"	1-5/8"	14659	12
60*	.0400	11/16"	1-5/8"	14660	12

*Not split point **3-Flats on shank

Size	Decimal Equivalent	Flute Length	Overall Length	T3HD+ Packaging: Bulk	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	014701	12
B	.2380	2-3/4"	4"	014702	12
C	.2420	2-3/4"	4"	014703	12
D	.2460	2-3/4"	4"	014704	12
E	.2500	2-3/4"	4"	014705	12
F	.2570	2-7/8"	4-1/8"	014706	12
G	.2610	2-7/8"	4-1/8"	014707	12
H	.2660	2-7/8"	4-1/8"	014708	12
I	.2720	2-7/8"	4-1/8"	014709	12
J	.2770	2-7/8"	4-1/8"	014710	12
K	.2810	2-15/16"	4-1/4"	014711	12
L	.2900	2-15/16"	4-1/4"	014712	12
M	.2950	3-1/16"	4-3/8"	014713	12
N	.3020	3-1/16"	4-3/8"	014714	12
O	.3160	3-3/16"	4-1/2"	014715	6
P	.3230	3-5/16"	4-5/8"	014716	6
Q	.3320	3-7/16"	4-3/4"	014717	6
R	.3390	3-7/16"	4-3/4"	014718	6
S	.3480	3-1/2"	4-7/8"	014719	6
T	.3580	3-1/2"	4-7/8"	014720	6
U	.3680	3-5/8"	5"	014721	6
V	.3770	3-5/8"	5"	014722	6
W	.3860	3-3/4"	5-1/8"	014723	6
X	.3970	3-3/4"	5-1/8"	014724	6
Y	.4040	3-7/8"	5-1/4"	014725	6
Z	.4130	3-7/8"	5-1/4"	014726	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T22HD+	Metal Index	60 Piece	#1- #60	099506
T25HD+	Metal Index	26 Piece	A - Z	099507
T123HD+	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1- #60, A-Z	099508



Jobber Length Drills

The heavy duty construction affords efficient drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. A black and gold surface treatment is applied for superior lubricity.



- ▷ Heavy-duty 135° Split Point minimizes walking
- ▷ Black & Gold surface treatment for high wear resistance and lubricity
- ▷ 3-flats on shank for hand-held power tools

T101D - T102D - T103D

High Speed Steel

135° Split Point

Fractional, Wire, Letter sizes

3-Flats on Shank

Black & Gold Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T101D Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	022704	12
5/64"	.0781	1"	2"	022705	12
3/32"	.0938	1-1/4"	2-1/4"	022706	12
7/64"	.1094	1-1/2"	2-5/8"	022707	12
1/8"	.1250	1-5/8"	2-3/4"	022708	12
9/64"	.1406	1-3/4"	2-7/8"	022709	12
5/32"	.1562	2"	3-1/8"	022710	12
11/64"	.1719	2-1/8"	3-1/4"	022711	12
3-Flats on Shank					
3/16"	.1875	2-5/16"	3-1/2"	022712	12
13/64"	.2031	2-7/16"	3-5/8"	022713	12
7/32"	.2188	2-1/2"	3-3/4"	022714	12
15/64"	.2344	2-5/8"	3-7/8"	022715	12
1/4"	.2500	2-3/4"	4"	022716	12
17/64"	.2656	2-7/8"	4-1/8"	022717	12
9/32"	.2812	2-15/16"	4-1/4"	022718	12
19/64"	.2969	3-1/16"	4-3/8"	022719	12
5/16"	.3125	3-3/16"	4-1/2"	022720	6
21/64"	.3281	3-5/16"	4-5/8"	022721	6
11/32"	.3438	3-7/16"	4-3/4"	022722	6
23/64"	.3594	3-1/2"	4-7/8"	022723	6
3/8"	.3750	3-5/8"	5"	022724	6
25/64"*	.3906	3-3/4"	5-1/8"	022725	6
13/32"*	.4062	3-7/8"	5-1/4"	022726	6
27/64"	.4219	3-15/16"	5-3/8"	022727	6
7/16"	.4375	4-1/16"	5-1/2"	022728	6
29/64"	.4531	4-3/16"	5-5/8"	022729	6
15/32"	.4688	4-5/16"	5-3/4"	022730	6
31/64"	.4844	4-3/8"	5-7/8"	022731	6
1/2"	.5000	4-1/2"	6"	022732	6



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T1019D	Metal Index	13	1/16" - 1/4" by 64 ^{ths}	090113
T1018D	Metal Index	15	1/16" - 1/2" by 32 ^{nds}	090115
T10180D	Metal Index	21	1/16" - 3/8" by 64 ^{ths}	090121
T1017D	Metal Index	29	1/16" - 1/2" by 64 ^{ths}	090190
T1017DC	Round Twist Top Drill Caddy	29	1/16" - 1/2" by 64 ^{ths}	090192
T10123D	Metal Index	115	1/16" - 1/2" by 64 ^{ths} , #1- #60, A-Z	090196





Size	Decimal Equivalent	Flute Length	Overall Length	T102D Packaging: Tube	
				Order No.	Pkg Qty
1**	.2280	2-5/8"	3-7/8"	24701	12
2**	.2210	2-5/8"	3-7/8"	24702	12
3**	.2130	2-1/2"	3-3/4"	24703	12
4**	.2090	2-1/2"	3-3/4"	24704	12
5**	.2055	2-1/2"	3-3/4"	24705	12
6**	.2040	2-1/2"	3-3/4"	24706	12
7**	.2010	2-7/16"	3-5/8"	24707	12
8**	.1990	2-7/16"	3-5/8"	24708	12
9**	.1960	2-7/16"	3-5/8"	24709	12
10**	.1935	2-7/16"	3-5/8"	24710	12
11**	.1910	2-5/16"	3-1/2"	24711	12
12**	.1890	2-5/16"	3-1/2"	24712	12
13	.1850	2-5/16"	3-1/2"	24713	12
14	.1820	2-3/16"	3-3/8"	24714	12
15	.1800	2-3/16"	3-3/8"	24715	12
16	.1770	2-3/16"	3-3/8"	24716	12
17	.1730	2-3/16"	3-3/8"	24717	12
18	.1695	2-1/8"	3-1/4"	24718	12
19	.1660	2-1/8"	3-1/4"	24719	12
20	.1610	2-1/8"	3-1/4"	24720	12
21	.1590	2-1/8"	3-1/4"	24721	12
22	.1570	2"	3-1/8"	24722	12
23	.1540	2"	3-1/8"	24723	12
24	.1520	2"	3-1/8"	24724	12
25	.1495	1-7/8"	3"	24725	12
26	.1470	1-7/8"	3"	24726	12
27	.1440	1-7/8"	3"	24727	12
28	.1405	1-3/4"	2-7/8"	24728	12
29	.1360	1-3/4"	2-7/8"	24729	12
30	.1285	1-5/8"	2-3/4"	24730	12
31	.1200	1-5/8"	2-3/4"	24731	12
32	.1160	1-5/8"	2-3/4"	24732	12
33	.1130	1-1/2"	2-5/8"	24733	12
34	.1110	1-1/2"	2-5/8"	24734	12
35	.1100	1-1/2"	2-5/8"	24735	12
36	.1065	1-7/16"	2-1/2"	24736	12
37	.1040	1-7/16"	2-1/2"	24737	12
38	.1015	1-7/16"	2-1/2"	24738	12
39	.0995	1-3/8"	2-3/8"	24739	12
40	.0980	1-3/8"	2-3/8"	24740	12
41	.0960	1-3/8"	2-3/8"	24741	12
42	.0935	1-1/4"	2-1/4"	24742	12
43	.0890	1-1/4"	2-1/4"	24743	12
44	.0860	1-1/8"	2-1/8"	24744	12
45	.0820	1-1/8"	2-1/8"	24745	12
46	.0810	1-1/8"	2-1/8"	24746	12
47	.0785	1"	2"	24747	12
48	.0760	1"	2"	24748	12
49	.0730	1"	2"	24749	12
50	.0700	1"	2"	24750	12
51	.0670	1"	2"	24751	12
52	.0635	7/8"	1-7/8"	24752	12
53*	.0595	7/8"	1-7/8"	24753	12
54*	.0550	7/8"	1-7/8"	24754	12
55*	.0520	7/8"	1-7/8"	24755	12
56*	.0465	3/4"	1-3/4"	24756	12
57*	.0430	3/4"	1-3/4"	24757	12
58*	.0420	11/16"	1-5/8"	24758	12
59*	.0410	11/16"	1-5/8"	24759	12
60*	.0400	11/16"	1-5/8"	24760	12

*Not split point **3-Flats on shank

Size	Decimal Equivalent	Flute Length	Overall Length	T103D Packaging: Bulk	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	026701	12
B	.2380	2-3/4"	4"	026702	12
C	.2420	2-3/4"	4"	026703	12
D	.2460	2-3/4"	4"	026704	12
E	.2500	2-3/4"	4"	026705	12
F	.2570	2-7/8"	4-1/8"	026706	12
G	.2610	2-7/8"	4-1/8"	026707	12
H	.2660	2-7/8"	4-1/8"	026708	12
I	.2720	2-7/8"	4-1/8"	026709	12
J	.2770	2-7/8"	4-1/8"	026710	12
K	.2810	2-15/16"	4-1/4"	026711	12
L	.2900	2-15/16"	4-1/4"	026712	12
M	.2950	3-1/16"	4-3/8"	026713	12
N	.3020	3-1/16"	4-3/8"	026714	12
O	.3160	3-3/16"	4-1/2"	026715	6
P	.3230	3-5/16"	4-5/8"	026716	6
Q	.3320	3-7/16"	4-3/4"	026717	6
R	.3390	3-7/16"	4-3/4"	026718	6
S	.3480	3-1/2"	4-7/8"	026719	6
T	.3580	3-1/2"	4-7/8"	026720	6
U	.3680	3-5/8"	5"	026721	6
V	.3770	3-5/8"	5"	026722	6
W	.3860	3-3/4"	5-1/8"	026723	6
X	.3970	3-3/4"	5-1/8"	026724	6
Y	.4040	3-7/8"	5-1/4"	026725	6
Z	.4130	3-7/8"	5-1/4"	026726	6

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T10125D	Metal Index	26	A-Z	099828
T10123D	Metal Index	115	1/16"-1/2" by 64 ^{ths} , #1- #60, A-Z	090196



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Jobber Length Drills

140° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations. Usable in a wide range of materials including difficult to machine materials such as stainless steel.

- ▷ *Black & Gold surface treatment for maximum lubricity*
- ▷ *Jobber length for extra reach*
- ▷ *3-flat shank helps reduce slippage in the drill chuck*

400F

High Speed Steel
140° Split Point / 3-Flats
Fractional / Black & Gold



400F

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

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

Flats start at 3/16"

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
400F Series Jobber Drill Sets		
21	1/16" - 3/8" by 64 ^{ths}	400F21
29	1/16" - 1/2" by 64 ^{ths}	400F29
29	DRILL PAL 1/16" - 1/2" by 64 ^{ths}	400FW29



400F29



Jobber Length Drills

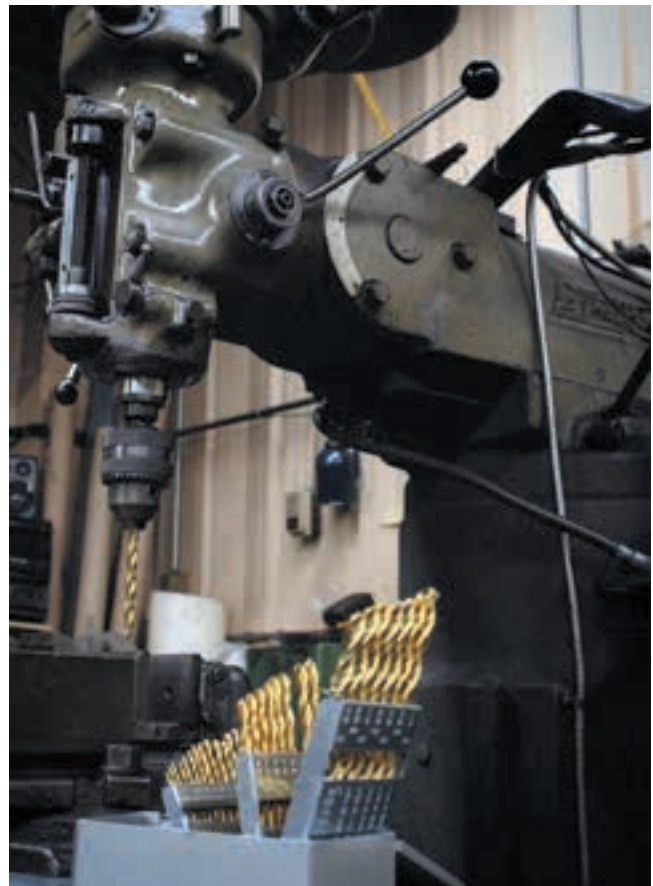
TiN (Titanium Nitride) coated drill bits are used for drilling holes in very hard and tough materials. The gold colored coating excels at evacuating chips due to its high lubricity. The TiN coating is also very resistant to wear and abrasion due to it being extremely hard. This significantly extends the life of the tool in many intense drilling operations. This jobber drill also employs the Thunderbit geometry for increased strength and better resistance to breakage.

- ▷ *Unique flute design for added strength and improved chip evacuation*
- ▷ *The TiN (titanium nitride) coating provides a super hard surface with high lubricity*
- ▷ *Extended tool life in high wear drilling applications*

T1HDG
High Speed Steel
135° Split Point
TiN Coating



Size	Decimal Equivalent	Flute Length	Overall Length	T1HDG Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	012804	12
5/64"	.0781	1"	2"	012805	12
3/32"	.0938	1-1/4"	2-1/4"	012806	12
7/64"	.1094	1-1/2"	2-5/8"	012807	12
1/8"	.1250	1-5/8"	2-3/4"	012808	12
9/64"	.1406	1-3/4"	2-7/8"	012809	12
5/32"	.1562	2"	3-1/8"	012810	12
11/64"	.1719	2-1/8"	3-1/4"	012811	12
3/16"	.1875	2-5/16"	3-1/2"	012812	12
13/64"	.2031	2-7/16"	3-5/8"	012813	12
7/32"	.2188	2-1/2"	3-3/4"	012814	12
15/64"	.2344	2-5/8"	3-7/8"	012815	12
1/4"	.2500	2-3/4"	4"	012816	12
17/64"	.2656	2-7/8"	4-1/8"	012817	12
9/32"	.2812	2-15/16"	4-1/4"	012818	12
19/64"	.2969	3-1/16"	4-3/8"	012819	12
5/16"	.3125	3-3/16"	4-1/2"	012820	6
21/64"	.3281	3-5/16"	4-5/8"	012821	6
11/32"	.3438	3-7/16"	4-3/4"	012822	6
23/64"	.3594	3-1/2"	4-7/8"	012823	6
3/8"	.3750	3-5/8"	5"	012824	6
25/64"	.3906	3-3/4"	5-1/8"	012825	6
13/32"	.4062	3-7/8"	5-1/4"	012826	6
27/64"	.4219	3-15/16"	5-3/8"	012827	6
7/16"	.4375	4-1/16"	5-1/2"	012828	6
29/64"	.4531	4-3/16"	5-5/8"	012829	6
15/32"	.4688	4-5/16"	5-3/4"	012830	6
31/64"	.4844	4-3/8"	5-7/8"	012831	6
1/2"	.5000	4-1/2"	6"	012832	6



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19HDG	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	093713
T18HDG	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	093716
T180HDG	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	093719
T17HDG	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	093700
T17HDCG	Clip On Index	29 Piece	1/16"-1/2" by 64 ^{ths}	093754



Jobber Length Drills

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

- ▷ *The TiN (titanium nitride) coating provides a super hard surface with high lubricity*
- ▷ *Extended tool life in high wear application*
- ▷ *135° split point for self centering and reduced walking*

450T

High Speed Steel

135° Split Point / Straight Shank

Fractional / TiN Tip Coated



450T

Size	Flute Length	Overall Length	450T Order No.
1/16"	7/8"	1-7/8"	450T104
5/64"	1"	2"	450T105
3/32"	1-1/4"	2-1/4"	450T106
7/64"	1-1/2"	2-5/8"	450T107
1/8"	1-5/8"	2-3/4"	450T108
9/64"	1-3/4"	2-7/8"	450T109
5/32"	2"	3-1/8"	450T110
11/64"	2-1/8"	3-1/4"	450T111
3/16"	2-5/16"	3-1/2"	450T112
13/64"	2-7/16"	3-5/8"	450T113
7/32"	2-1/2"	3-3/4"	450T114
15/64"	2-5/8"	3-7/8"	450T115
1/4"	2-3/4"	4"	450T116
17/64"	2-7/8"	4-1/8"	450T117
9/32"	2-15/16"	4-1/4"	450T118

Size	Flute Length	Overall Length	450T Order No.
19/64"	3-1/16"	4-3/8"	450T119
5/16"	3-3/16"	4-1/2"	450T120
21/64"	3-5/16"	4-5/8"	450T121
11/32"	3-7/16"	4-3/4"	450T122
23/64"	3-1/2"	4-7/8"	450T123
3/8"	3-5/8"	5"	450T124
25/64"	3-3/4"	5-1/8"	450T125
13/32"	3-7/8"	5-1/4"	450T126
27/64"	3-15/16"	5-3/8"	450T127
7/16"	4-1/16"	5-1/2"	450T128
29/64"	4-3/16"	5-5/8"	450T129
15/32"	4-5/16"	5-3/4"	450T130
31/64"	4-3/8"	5-7/8"	450T131
1/2"	4-1/2"	6"	450T132

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

450T

High Speed Steel

135° Split Point / Straight Shank
Number / TiN Tip Coated



450T

Size	Flute Length	Overall Length	450T Order No.
1	2-5/8"	3-7/8"	450T001
2	2-5/8"	3-7/8"	450T002
3	2-1/2"	3-3/4"	450T003
4	2-1/2"	3-3/4"	450T004
5	2-1/2"	3-3/4"	450T005
6	2-1/2"	3-3/4"	450T006
7	2-7/16"	3-5/8"	450T007
8	2-7/16"	3-5/8"	450T008
9	2-7/16"	3-5/8"	450T009
10	2-7/16"	3-5/8"	450T010
11	2-5/16"	3-1/2"	450T011
12	2-5/16"	3-1/2"	450T012
13	2-5/16"	3-1/2"	450T013
14	2-3/16"	3-3/8"	450T014
15	2-3/16"	3-3/8"	450T015
16	2-3/16"	3-3/8"	450T016
17	2-3/16"	3-3/8"	450T017
18	2-1/8"	3-1/4"	450T018
19	2-1/8"	3-1/4"	450T019
20	2-1/8"	3-1/4"	450T020
21	2-1/8"	3-1/4"	450T021
22	2"	3-1/8"	450T022
23	2"	3-1/8"	450T023
24	2"	3-1/8"	450T024
25	1-7/8"	3"	450T025
26	1-7/8"	3"	450T026
27	1-7/8"	3"	450T027
28	1-3/4"	2-7/8"	450T028
29	1-3/4"	2-7/8"	450T029
30	1-5/8"	2-3/4"	450T030

Size	Flute Length	Overall Length	450T Order No.
31	1-5/8"	2-3/4"	450T031
32	1-5/8"	2-3/4"	450T032
33	1-1/2"	2-5/8"	450T033
34	1-1/2"	2-5/8"	450T034
35	1-1/2"	2-5/8"	450T035
36	1-7/16"	2-1/2"	450T036
37	1-7/16"	2-1/2"	450T037
38	1-7/16"	2-1/2"	450T038
39	1-3/8"	2-3/8"	450T039
40	1-3/8"	2-3/8"	450T040
41	1-3/8"	2-3/8"	450T041
42	1-1/4"	2-1/4"	450T042
43	1-1/4"	2-1/4"	450T043
44	1-1/8"	2-1/8"	450T044
45	1-1/8"	2-1/8"	450T045
46	1-1/8"	2-1/8"	450T046
47	1"	2"	450T047
48	1"	2"	450T048
49	1"	2"	450T049
50	1"	2"	450T050
51	1"	2"	450T051
52	7/8"	1-7/8"	450T052
53*	7/8"	1-7/8"	450T053
54*	7/8"	1-7/8"	450T054
55*	7/8"	1-7/8"	450T055
56*	3/4"	1-3/4"	450T056
57*	3/4"	1-3/4"	450T057
58*	11/16"	1-5/8"	450T058
59*	11/16"	1-5/8"	450T059
60*	11/16"	1-5/8"	450T060

*Not split point

#1 thru #60 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
450T Series Jobber Drill Sets		
13	1/16" - 1/4" by 64 ^{ths}	450T13
15	1/16" - 1/2" by 32 ^{nds}	450T15
21	1/16" - 3/8" by 64 ^{ths}	450T21
29	1/16" - 1/2" by 64 ^{ths}	450T29
29	1/16" - 1/2" by 64 ^{ths} DRILL PAL	450TW29
60	#1 - 60	450T60



450T21



Jobber Length Drills

Heavy duty construction made to NAS Type J aircraft specifications. Used for drilling holes in hard, tough materials such as stainless steel, titanium high temperature and high strength alloys.

- ▷ High red hardness of cobalt permits speeds 30% greater than HSS drills
- ▷ Bronze surface treatment for high lubricity
- ▷ Cobalt drills can cut harder materials than HSS drills
- ▷ Available in bulk packaging

500

Cobalt

135° Split Point / Straight Shank
Fractional / Bronze



500

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

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

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

580

Cobalt

135° Split Point / Straight Shank
Number / Bronze



580

Size	Flute Length	Overall Length	580 Order No.
1	2-5/8"	3-7/8"	580A001
2	2-1/2"	3-7/8"	580A002
3	2-1/2"	3-3/4"	580A003
4	2-1/2"	3-3/4"	580A004
5	2-1/2"	3-3/4"	580A005
6	2-1/2"	3-3/4"	580A006
7	2-7/16"	3-5/8"	580A007
8	2-7/16"	3-5/8"	580A008
9	2-7/16"	3-5/8"	580A009
10	2-7/16"	3-5/8"	580A010
11	2-5/16"	3-1/2"	580A011
12	2-5/16"	3-1/2"	580A012
13	2-5/16"	3-1/2"	580A013

Size	Flute Length	Overall Length	580 Order No.
14	2-3/16"	3-3/8"	580A014
15	2-3/16"	3-3/8"	580A015
16	2-3/16"	3-3/8"	580A016
17	2-3/16"	3-3/8"	580A017
18	2-1/8"	3-1/4"	580A018
19	2-1/8"	3-1/4"	580A019
20	2-1/8"	3-1/4"	580A020
21	2-1/8"	3-1/4"	580A021
22	2"	3-1/8"	580A022
23	2"	3-1/8"	580A023
24	2"	3-1/8"	580A024
25	1-7/8"	3"	580A025
26	1-7/8"	3"	580A026



580

Cobalt

135° Split Point / Straight Shank
Number / Bronze



580

Size	Flute Length	Overall Length	580 Order No.
27	1-7/8"	3"	580A027
28	1-3/4"	2-7/8"	580A028
29	1-3/4"	2-7/8"	580A029
30	1-5/8"	2-3/4"	580A030
31	1-5/8"	2-3/4"	580A031
32	1-5/8"	2-3/4"	580A032
33	1-1/2"	2-5/8"	580A033
34	1-1/2"	2-5/8"	580A034
35	1-1/2"	2-5/8"	580A035
36	1-7/16"	2-1/2"	580A036
37	1-7/16"	2-1/2"	580A037
38	1-7/16"	2-1/2"	580A038
39	1-3/8"	2-3/8"	580A039
40	1-3/8"	2-3/8"	580A040
41	1-3/8"	2-3/8"	580A041
42	1-1/4"	2-1/4"	580A042
43	1-1/4"	2-1/4"	580A043

Size	Flute Length	Overall Length	580 Order No.
44	1-1/8"	2-1/8"	580A044
45	1-1/8"	2-1/8"	580A045
46	1-1/8"	2-1/8"	580A046
47	1"	2"	580A047
48	1"	2"	580A048
49	1"	2"	580A049
50	1"	2"	580A050
51	1"	2"	580A051
52	7/8"	1-7/8"	580A052
53*	7/8"	1-7/8"	580A053
54*	7/8"	1-7/8"	580A054
55*	7/8"	1-7/8"	580A055
56*	3/4"	1-3/4"	580A056
57*	3/4"	1-3/4"	580A057
58*	11/16"	1-5/8"	580A058
59*	11/16"	1-5/8"	580A059
60*	11/16"	1-5/8"	580A060

*Not split point

#1 thru #60 - 12 per pack

540

Cobalt

135° Split Point / Straight Shank
Letter / Bronze



540

Size	Flute Length	Overall Length	540 Order No.
A	2-5/8"	3-7/8"	540A501
B	2-3/4"	4"	540A502
C	2-3/4"	4"	540A503
D	2-3/4"	4"	540A504
E	2-3/4"	4"	540A505
F	2-7/8"	4-1/8"	540A506
G	2-7/8"	4-1/8"	540A507
H	2-7/8"	4-1/8"	540A508
I	2-7/8"	4-1/8"	540A509
J	2-7/8"	4-1/8"	540A510
K	2-15/16"	4-1/4"	540A511
L	2-15/16"	4-1/4"	540A512
M	3-1/16"	4-3/8"	540A513

Size	Flute Length	Overall Length	540 Order No.
N	3-1/16"	4-3/8"	540A514
O	3-3/16"	4-1/2"	540A515
P	3-5/16"	4-5/8"	540A516
Q	3-7/16"	4-3/4"	540A517
R	3-7/16"	4-3/4"	540A518
S	3-1/2"	4-7/8"	540A519
T	3-1/2"	4-7/8"	540A520
U	3-5/8"	5"	540A521
V	3-5/8"	5"	540A522
W	3-3/4"	5-1/8"	540A523
X	3-3/4"	5-1/8"	540A524
Y	3-7/8"	5-1/4"	540A525
Z	3-7/8"	5-1/4"	540A526

"A" thru "L" - 12 per pack, "M" thru "Z" - 6 per pack

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

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



500A29

500E

Cobalt

**135° Split Point / Straight Shank
Fractional / Bronze**



500E

Size	Flute Length	Overall Length	500E Order No.
1/16"	7/8"	1-7/8"	500E104
5/64"	1"	2"	500E105
3/32"	1-1/4"	2-1/4"	500E106
7/64"	1-1/2"	2-5/8"	500E107
1/8"	1-5/8"	2-3/4"	500E108
9/64"	1-3/4"	2-7/8"	500E109
5/32"	2"	3-1/8"	500E110
11/64"	2-1/8"	3-1/4"	500E111
3/16"	2-5/16"	3-1/2"	500E112
13/64"	2-7/16"	3-5/8"	500E113
7/32"	2-1/2"	3-3/4"	500E114
15/64"	2-5/8"	3-7/8"	500E115
1/4"	2-3/4"	4"	500E116
17/64"	2-7/8"	4-1/8"	500E117
9/32"	2-15/16"	4-1/4"	500E118
19/64"	3-1/16"	4-3/8"	500E119
5/16"	3-3/16"	4-1/2"	500E120
21/64"	3-5/16"	4-5/8"	500E121
11/32"	3-7/16"	4-3/4"	500E122
23/64"	3-1/2"	4-7/8"	500E123
3/8"	3-5/8"	5"	500E124
25/64"	3-3/4"	5-1/8"	500E125
13/32"	3-7/8"	5-1/4"	500E126
27/64"	3-15/16"	5-3/8"	500E127
7/16"	4-1/16"	5-1/2"	500E128
29/64"	4-3/16"	5-5/8"	500E129
15/32"	4-5/16"	5-3/4"	500E130
31/64"	4-3/8"	5-7/8"	500E131
1/2"	4-1/2"	6"	500E132

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



500E29

Corresponding Sets		
No. of Pcs.	Description	Order No.
500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets		
13	1/16" - 1/4" by 64 ^{ths}	500E13
15	1/16" - 1/2" by 32 ^{nds}	500E15
21	1/16" - 3/8" by 64 ^{ths}	500E21
21	1/16" - 1/4" by 64 ^{ths} & 9/32" - 1/2" by 32 ^{nds}	500E21V
29	1/16" - 1/2" by 64 ^{ths}	500E29
60	#1 - #60	500E60

580E

Cobalt

**135° Split Point / Straight Shank
Number / Bronze**



580E

Size	Flute Length	Overall Length	580E Order No.
1	2-5/8"	3-7/8"	580E001
2	2-1/2"	3-7/8"	580E002
3	2-1/2"	3-3/4"	580E003
4	2-1/2"	3-3/4"	580E004
5	2-1/2"	3-3/4"	580E005
6	2-1/2"	3-3/4"	580E006
7	2-7/16"	3-5/8"	580E007
8	2-7/16"	3-5/8"	580E008
9	2-7/16"	3-5/8"	580E009
10	2-7/16"	3-5/8"	580E010
11	2-5/16"	3-1/2"	580E011
12	2-5/16"	3-1/2"	580E012
13	2-5/16"	3-1/2"	580E013
14	2-3/16"	3-3/8"	580E014
15	2-3/16"	3-3/8"	580E015
16	2-3/16"	3-1/4"	580E016
17	2-3/16"	3-1/4"	580E017
18	2-1/8"	3-1/4"	580E018
19	2-1/8"	3-1/4"	580E019
20	2-1/8"	3-1/4"	580E020
21	2-1/8"	3-1/4"	580E021
22	2"	3-1/8"	580E022
23	2"	3-1/8"	580E023
24	2"	3-1/8"	580E024
25	1-7/8"	3"	580E025
26	1-7/8"	3"	580E026
27	1-7/8"	3"	580E027
28	1-3/4"	2-7/8"	580E028
29	1-3/4"	2-7/8"	580E029
30	1-5/8"	2-3/4"	580E030
31	1-5/8"	2-3/4"	580E031
32	1-5/8"	2-3/4"	580E032
33	1-1/2"	2-5/8"	580E033
34	1-1/2"	2-5/8"	580E034
35	1-1/2"	2-5/8"	580E035
36	1-7/16"	2-1/2"	580E036
37	1-7/16"	2-1/2"	580E037
38	1-7/16"	2-1/2"	580E038
39	1-3/8"	2-3/8"	580E039
40	1-3/8"	2-3/8"	580E040
41	1-3/8"	2-3/8"	580E041
42	1-1/4"	2-1/4"	580E042
43	1-1/4"	2-1/4"	580E043
44	1-1/8"	2-1/8"	580E044
45	1-1/8"	2-1/8"	580E045
46	1-1/8"	2-1/8"	580E046
47	1"	2"	580E047
48	1"	2"	580E048
49	1"	2"	580E049
50	1"	2"	580E050
51	1"	2"	580E051
52	7/8"	1-7/8"	580E052
53*	7/8"	1-7/8"	580E053
54*	7/8"	1-7/8"	580E054
55*	7/8"	1-7/8"	580E055
56*	3/4"	1-3/4"	580E056
57*	3/4"	1-3/4"	580E057
58*	11/16"	1-5/8"	580E058
59*	11/16"	1-5/8"	580E059
60*	11/16"	1-5/8"	580E060

* Not Split Point



Jobber Length Drills

The heavy duty construction with a Thunderbit core and flute design affords efficient portable drilling in medium strength alloy materials. The split point reduces the thrust requirements and minimizes walking. A black and gold surface treatment is applied for superior lubricity.

- ▷ Unique flute design for added strength and improved chip evacuation
- ▷ Bronze oxide for maximum lubricity
- ▷ Cobalt substrate permits speeds and feeds up to 30% faster than HSS drill

T1HDC

Cobalt

135° Split Point / Straight Shank
Fractional / Bronze



Size	Decimal Equivalent	Flute Length	Overall Length	T1HDC Packaging: Tube	
				Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	013504	12
5/64"	.0781	1"	2"	013505	12
3/32"	.0938	1-1/4"	2-1/4"	013506	12
7/64"	.1094	1-1/2"	2-5/8"	013507	12
1/8"	.1250	1-5/8"	2-3/4"	013508	12
9/64"	.1406	1-3/4"	2-7/8"	013509	12
5/32"	.1562	2"	3-1/8"	013510	12
11/64"	.1719	2-1/8"	3-1/4"	013511	12
3/16"	.1875	2-5/16"	3-1/2"	013512	12
13/64"	.2031	2-7/16"	3-5/8"	013513	12
7/32"	.2188	2-1/2"	3-3/4"	013514	12
15/64"	.2344	2-5/8"	3-7/8"	013515	12
1/4"	.2500	2-3/4"	4"	013516	12
17/64"	.2656	2-7/8"	4-1/8"	013517	12
9/32"	.2812	2-15/16"	4-1/4"	013518	12
19/64"	.2969	3-1/16"	4-3/8"	013519	12
5/16"	.3125	3-3/16"	4-1/2"	013520	6
21/64"	.3281	3-5/16"	4-5/8"	013521	6
11/32"	.3438	3-7/16"	4-3/4"	013522	6
23/64"	.3594	3-1/2"	4-7/8"	013523	6
3/8"	.3750	3-5/8"	5"	013524	6
25/64"	.3906	3-3/4"	5-1/8"	013525	6
13/32"	.4062	3-7/8"	5-1/4"	013526	6
27/64"	.4219	3-15/16"	5-3/8"	013527	6
7/16"	.4375	4-1/16"	5-1/2"	013528	6
29/64"	.4531	4-3/16"	5-5/8"	013529	6
15/32"	.4688	4-5/16"	5-3/4"	013530	6
31/64"	.4844	4-3/8"	5-7/8"	013531	6
1/2"	.5000	4-1/2"	6"	013532	6

#1 thru #60 - 12 per pack



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Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19HDC	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	099813
T18HDC	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099816
T180HDC	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	099819
T17HDC	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099821
T17HDCDC	Clip On Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099854





Jobber Length Drills

Used for drilling holes in hard, tough materials such as stainless steel, titanium, high temperature and high strength alloys.

- ▷ High red hardness of cobalt permits speeds 30% greater than HSS drills
- ▷ Bronze surface treatment for high lubricity
- ▷ Cobalt drills can cut harder materials than HSS drills

T1C - BP1C - T2C - T3C

Cobalt

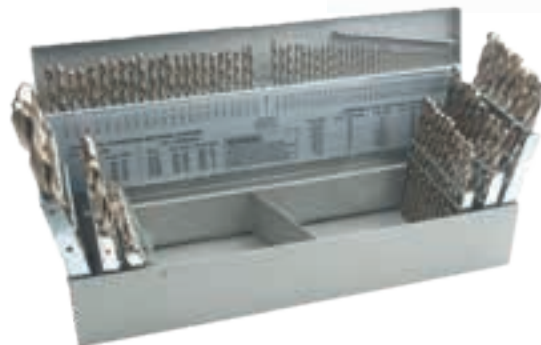
135° Split Point / Straight Shank/
Fractional, Number, Letter / Bronze



Size	Decimal Equivalent	Flute Length	Overall Length	T1C Packaging: Tube		T1C Packaging: Bulk		BP1C Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	011504	12	011504.20	288	014204	1
5/64"	.0781	1"	2"	011505	12	011505.20	288	014205	1
3/32"	.0938	1-1/4"	2-1/4"	011506	12	011506.20	288	014206	1
7/64"	.1094	1-1/2"	2-5/8"	011507	12	011507.20	288	014207	1
1/8"	.1250	1-5/8"	2-3/4"	011508	12	011508.20	288	014208	1
9/64"	.1406	1-3/4"	2-7/8"	011509	12	011509.20	288	014209	1
5/32"	.1562	2"	3-1/8"	011510	12	011510.20	288	014210	1
11/64"	.1719	2-1/8"	3-1/4"	011511	12	011511.20	288	014211	1
3/16"	.1875	2-5/16"	3-1/2"	011512	12	011512.20	288	014212	1
13/64"	.2031	2-7/16"	3-5/8"	011513	12	011513.20	288	014213	1
7/32"	.2188	2-1/2"	3-3/4"	011514	12	011514.20	288	014214	1
15/64"	.2344	2-5/8"	3-7/8"	011515	12	011515.20	288	014215	1
1/4"	.2500	2-3/4"	4"	011516	12	011516.20	288	014216	1
17/64"	.2656	2-7/8"	4-1/8"	011517	12	011517.20	144	014217	1
9/32"	.2812	2-15/16"	4-1/4"	011518	12	011518.20	144	014218	1
19/64"	.2969	3-1/16"	4-3/8"	011519	12	011519.20	144	014219	1
5/16"	.3125	3-3/16"	4-1/2"	011520	6	011520.20	144	014220	1
21/64"	.3281	3-5/16"	4-5/8"	011521	6	011521.20	144	014221	1
11/32"	.3438	3-7/16"	4-3/4"	011522	6	011522.20	144	014222	1
23/64"	.3594	3-1/2"	4-7/8"	011523	6	011523.20	144	014223	1
3/8"	.3750	3-5/8"	5"	011524	6	011524.20	144	014224	1
25/64"	.3906	3-3/4"	5-1/8"	011525	6	011525.20	144	014225	1
13/32"	.4062	3-7/8"	5-1/4"	011526	6	011526.20	144	014226	1
27/64"	.4219	3-15/16"	5-3/8"	011527	6	011527.20	144	014227	1
7/16"	.4375	4-1/16"	5-1/2"	011528	6	011528.20	144	014228	1
29/64"	.4531	4-3/16"	5-5/8"	011529	6	011529.20	144	014229	1
15/32"	.4688	4-5/16"	5-3/4"	011530	6	011530.20	144	014230	1
31/64"	.4844	4-3/8"	5-7/8"	011531	6	011531.20	144	014231	1
1/2"	.5000	4-1/2"	6"	011532	6	011532.20	144	014232	1



Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T19C	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	099823
T18C	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	099826
T180C	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	099825
T17C	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	099822
T123C	Metal Index	115 Piece	1/16"-1/2" by 64 ^{ths} , #1- #60, A-Z	099831





Size	Decimal Equivalent	Flute Length	Overall Length	T2C Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	3-7/8"	11701	12
2	.2210	2-5/8"	3-7/8"	11702	12
3	.2130	2-1/2"	3-3/4"	11703	12
4	.2090	2-1/2"	3-3/4"	11704	12
5	.2055	2-1/2"	3-3/4"	11705	12
6	.2040	2-1/2"	3-3/4"	11706	12
7	.2010	2-7/16"	3-5/8"	11707	12
8	.1990	2-7/16"	3-5/8"	11708	12
9	.1960	2-7/16"	3-5/8"	11709	12
10	.1935	2-7/16"	3-5/8"	11710	12
11	.1910	2-5/16"	3-1/2"	11711	12
12	.1890	2-5/16"	3-1/2"	11712	12
13	.1850	2-5/16"	3-1/2"	11713	12
14	.1820	2-3/16"	3-3/8"	11714	12
15	.1800	2-3/16"	3-3/8"	11715	12
16	.1770	2-3/16"	3-3/8"	11716	12
17	.1730	2-3/16"	3-3/8"	11717	12
18	.1695	2-1/8"	3-1/4"	11718	12
19	.1660	2-1/8"	3-1/4"	11719	12
20	.1610	2-1/8"	3-1/4"	11720	12
21	.1590	2-1/8"	3-1/4"	11721	12
22	.1570	2"	3-1/8"	11722	12
23	.1540	2"	3-1/8"	11723	12
24	.1520	2"	3-1/8"	11724	12
25	.1495	1-7/8"	3"	11725	12
26	.1470	1-7/8"	3"	11726	12
27	.1440	1-7/8"	3"	11727	12
28	.1405	1-3/4"	2-7/8"	11728	12
29	.1360	1-3/4"	2-7/8"	11729	12
30	.1285	1-5/8"	2-3/4"	11730	12
31	.1200	1-5/8"	2-3/4"	11731	12
32	.1160	1-5/8"	2-3/4"	11732	12
33	.1130	1-1/2"	2-5/8"	11733	12
34	.1110	1-1/2"	2-5/8"	11734	12
35	.1100	1-1/2"	2-5/8"	11735	12
36	.1065	1-7/16"	2-1/2"	11736	12
37	.1040	1-7/16"	2-1/2"	11737	12
38	.1015	1-7/16"	2-1/2"	11738	12
39	.0995	1-3/8"	2-3/8"	11739	12
40	.0980	1-3/8"	2-3/8"	11740	12
41	.0960	1-3/8"	2-3/8"	11741	12
42	.0935	1-1/4"	2-1/4"	11742	12
43	.0890	1-1/4"	2-1/4"	11743	12
44	.0860	1-1/8"	2-1/8"	11744	12
45	.0820	1-1/8"	2-1/8"	11745	12
46	.0810	1-1/8"	2-1/8"	11746	12
47	.0785	1"	2"	11747	12
48	.0760	1"	2"	11748	12
49	.0730	1"	2"	11749	12
50	.0700	1"	2"	11750	12
51	.0670	1"	2"	11751	12
52	.0635	7/8"	1-7/8"	11752	12
53	.0595	7/8"	1-7/8"	11753	12
54	.0550	7/8"	1-7/8"	11754	12
55	.0520	7/8"	1-7/8"	11755	12
56	.0465	3/4"	1-3/4"	11756	12
57	.0430	3/4"	1-3/4"	11757	12
58	.0420	11/16"	1-5/8"	11758	12
59	.0410	11/16"	1-5/8"	11759	12
60	.0400	11/16"	1-5/8"	11760	12

Size	Decimal Equivalent	Flute Length	Overall Length	T3C Packaging: Tube	
				Order No.	Pkg Qty
A	.2340	2-5/8"	3-7/8"	011901	12
B	.2380	2-3/4"	4"	011902	12
C	.2420	2-3/4"	4"	011903	12
D	.2460	2-3/4"	4"	011904	12
E	.2500	2-3/4"	4"	011905	12
F	.2570	2-7/8"	4-1/8"	011906	12
G	.2610	2-7/8"	4-1/8"	011907	12
H	.2660	2-7/8"	4-1/8"	011908	12
I	.2720	2-7/8"	4-1/8"	011909	12
J	.2770	2-7/8"	4-1/8"	011910	12
K	.2810	2-15/16"	4-1/4"	011911	12
L	.2900	2-15/16"	4-1/4"	011912	12
M	.2950	3-1/16"	4-3/8"	011913	12
N	.3020	3-1/16"	4-3/8"	011914	12
O	.3160	3-3/16"	4-1/2"	011915	6
P	.3230	3-5/16"	4-5/8"	011916	6
Q	.3320	3-7/16"	4-3/4"	011917	6
R	.3390	3-7/16"	4-3/4"	011918	6
S	.3480	3-1/2"	4-7/8"	011919	6
T	.3580	3-1/2"	4-7/8"	011920	6
U	.3680	3-5/8"	5"	011921	6
V	.3770	3-5/8"	5"	011922	6
W	.3860	3-3/4"	5-1/8"	011923	6
X	.3970	3-3/4"	5-1/8"	011924	6
Y	.4040	3-7/8"	5-1/4"	011925	6
Z	.4130	3-7/8"	5-1/4"	011926	6



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SST+™ 135° Jobber Length Fractional

Round shank drill bits
For high tensile steel

Walter SST+™ drill bits are made from M35 cobalt blend to drill even more holes faster on any type of material.

- ▷ Self-centering 135° split point geometry
- ▷ Proven SST heat and surface treatment
- ▷ Heavy-duty HSCo body construction
- ▷ High flow flute design
- ▷ Packaged in reusable plastic packaging



Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
1/64"	3/16"	13/16"	01-A 501	10	100
1/32"	3/8"	1 3/16"	01-A 502	10	100
3/64"	5/8"	1 1/2"	01-A 503	10	100
1/16"	13/16"	1 11/16"	01-A 504	10	100
5/64"	15/16"	1 15/16"	01-A 505	10	100
3/32"	1 3/16"	2 1/4"	01-A 506	10	100
7/64"	1 5/16"	2 3/8"	01-A 507	10	100
1/8"	1 7/16"	2 9/16"	01-A 508	10	100
9/64"	1 9/16"	2 3/4"	01-A 509	10	100
5/32"	1 11/16"	2 15/16"	01-A 510	10	100
11/64"	1 7/8"	3 1/8"	01-A 511	10	100
3/16"	2 1/16"	3 3/8"	01-A 512	10	100
13/64"	2 1/16"	3 3/8"	01-A 513	10	100
7/32"	2 1/4"	3 11/16"	01-A 514	10	100
15/64"	2 1/4"	3 11/16"	01-A 515	10	100
1/4"	2 1/2"	4"	01-A 516	10	100
17/64"	2 11/16"	4 5/16"	01-A 517	10	100
9/32"	2 11/16"	4 5/16"	01-A 518	10	100
19/64"	2 15/16"	4 5/8"	01-A 519	10	100
5/16"	2 15/16"	4 5/8"	01-A 520	10	100
21/64"	2 15/16"	4 5/8"	01-A 521	10	100
11/32"	3 3/16"	4 15/16"	01-A 522	10	100
23/64"	3 3/16"	4 15/16"	01-A 523	10	100
3/8"	3 7/16"	5 1/4"	01-A 524	10	100
25/64"	3 7/16"	5 1/4"	01-A 525	5	50
13/32"	3 7/16"	5 1/4"	01-A 526	5	50
27/64"	3 11/16"	5 9/16"	01-A 527	5	50
7/16"	3 11/16"	5 9/16"	01-A 528	5	50
29/64"	3 11/16"	5 9/16"	01-A 529	5	50
15/32"	4"	5 15/16"	01-A 530	5	50
31/64"	4"	5 15/16"	01-A 531	5	50
1/2"	4"	5 15/16"	01-A 532	5	50

Sizes 3/64" and smaller have a regular point.



Corresponding Sets	
Shock-Resistant, Extra-Thick Polyethylene Drill Bit Carrying Case	
Description	Order No.
1/16" to 1/2" by 64 ^{ths} 29 drill bits	01-E 618
1/16" to 1/2" by 64 ^{ths} 29 Jobbers Length drill bits	01-E 678



- ▷ Refillable
- ▷ Protects drill bits from water, rust, oil and other contaminants
- ▷ Quick-release belt clip

SST+™ 135° Jobber Length Metric and Letter Sizes

Round shank drill bits
For high tensile steel

Walter has a substantial offering of metric and letter size SST+™ twist drill bits so professionals across a wide range of industries can enjoy the same quality and performance our fractional drill bits are known for.

▷ *Packaged in reusable plastic packaging*



Metric Sizes					
Drill Size (mm)	Flute length (mm)	Overall Length (mm)	Order No.	Std. Pkg.	Std. Ctn.
1.00 mm	12 mm	34 mm	01-D 510	10	100
1.50 mm	20 mm	43 mm	01-D 515	10	100
2.00 mm	24 mm	49 mm	01-D 520	10	100
2.50 mm	30 mm	57 mm	01-D 525	10	100
3.00 mm	33 mm	61 mm	01-D 530	10	100
3.30 mm	36 mm	65 mm	01-D 533	10	100
3.50 mm	39 mm	70 mm	01-D 535	10	100
4.00 mm	43 mm	75 mm	01-D 540	10	100
4.20 mm	43 mm	75 mm	01-D 542	10	100
4.50 mm	47 mm	80 mm	01-D 545	10	100
5.00 mm	52 mm	86 mm	01-D 550	10	100
5.50 mm	57 mm	93 mm	01-D 555	10	100
6.00 mm	57 mm	93 mm	01-D 560	10	100
6.50 mm	63 mm	101 mm	01-D 565	10	100
6.70 mm	63 mm	101 mm	01-D 567	10	100
7.00 mm	69 mm	109 mm	01-D 570	10	100
7.50 mm	69 mm	109 mm	01-D 575	10	100
8.00 mm	75 mm	117 mm	01-D 580	10	100
8.50 mm	75 mm	117 mm	01-D 585	10	100
9.00 mm	81 mm	125 mm	01-D 590	10	100
9.50 mm	81 mm	125 mm	01-D 595	10	100
10.00 mm	87 mm	133 mm	01-D 600	5	50
10.20 mm	87 mm	133 mm	01-D 602	5	50
10.50 mm	87 mm	133 mm	01-D 605	5	50
11.00 mm	94 mm	142 mm	01-D 610	5	50
11.50 mm	94 mm	142 mm	01-D 615	5	50
12.00 mm	101 mm	151 mm	01-D 620	5	50
12.50 mm	101 mm	151 mm	01-D 625	5	50
13.00 mm	101 mm	151 mm	01-D 630	5	50

Letter Sizes					
Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
F	2 1/2"	4"	01-C 506	10	100
I	2 3/4"	4 1/4"	01-C 509	10	100
Q	3"	4 5/8"	01-C 517	10	100
U	3 3/16"	4 15/16"	01-C 521	10	100

SST+™ 135° Jobber Length Number

Round shank drill bits
For high tensile steel

Our SST+ twist drill bits are also available in wire gauge sizes commonly used by electricians and electrical contractors.



Drill Size	Flute Length	Number Sizes		Std. Pkg.	Std. Ctn.
		Overall Length	Order No.		
1	2 1/4"	3 11/16"	01-B 501	10	100
2	2 1/4"	3 11/16"	01-B 502	10	100
3	2 1/4"	3 11/16"	01-B 503	10	100
4	2 1/16"	3 3/8"	01-B 504	10	100
5	2 1/16"	3 3/8"	01-B 505	10	100
6	2 1/16"	3 3/8"	01-B 506	10	100
7	2 1/16"	3 3/8"	01-B 507	10	100
8	2 1/16"	3 3/8"	01-B 508	10	100
9	2 1/16"	3 3/8"	01-B 509	10	100
10	2 1/16"	3 3/8"	01-B 510	10	100
11	2 1/16"	3 3/8"	01-B 511	10	100
12	2 1/16"	3 3/8"	01-B 512	10	100
13	1 7/8"	3 1/8"	01-B 513	10	100
14	1 7/8"	3 1/8"	01-B 514	10	100
15	1 7/8"	3 1/8"	01-B 515	10	100
16	1 7/8"	3 1/8"	01-B 516	10	100
17	1 7/8"	3 1/8"	01-B 517	10	100
18	1 7/8"	3 1/8"	01-B 518	10	100
19	1 11/16"	2 15/16"	01-B 519	10	100
20	1 11/16"	2 15/16"	01-B 520	10	100
21	1 11/16"	2 15/16"	01-B 521	10	100
22	1 11/16"	2 15/16"	01-B 522	10	100
23	1 11/16"	2 15/16"	01-B 523	10	100
24	1 11/16"	2 15/16"	01-B 524	10	100
25	1 11/16"	2 15/16"	01-B 525	10	100
26	1 9/16"	2 3/4"	01-B 526	10	100
27	1 9/16"	2 3/4"	01-B 527	10	100
28	1 9/16"	2 3/4"	01-B 528	10	100
29	1 9/16"	2 3/4"	01-B 529	10	100
30	1 7/16"	2 9/16"	01-B 530	10	100
31	1 5/16"	2 3/8"	01-B 531	10	100
32	1 5/16"	2 3/8"	01-B 532	10	100
33	1 5/16"	2 3/8"	01-B 533	10	100
34	1 5/16"	2 3/8"	01-B 534	10	100
35	1 5/16"	2 3/8"	01-B 535	10	100
36	1 5/16"	2 3/8"	01-B 536	10	100
37	1 3/16"	2 1/4"	01-B 537	10	100
38	1 3/16"	2 1/4"	01-B 538	10	100
39	1 3/16"	2 1/4"	01-B 539	10	100
40	1 3/16"	2 1/4"	01-B 540	10	100
41	1 3/16"	2 1/4"	01-B 541	10	100
42	1 3/16"	2 1/4"	01-B 542	10	100
43	1 1/16"	2 1/16"	01-B 543	10	100
44	1 1/16"	1 15/16"	01-B 544	10	100
45	15/16"	1 15/16"	01-B 545	10	100
46	15/16"	1 15/16"	01-B 546	10	100
47	15/16"	1 15/16"	01-B 547	10	100
48	7/8"	1 13/16"	01-B 548	10	100
49	7/8"	1 13/16"	01-B 549	10	100
50	7/8"	1 13/16"	01-B 550	10	100
51	13/16"	1 11/16"	01-B 551	10	100
52	13/16"	1 11/16"	01-B 552	10	100
53	11/16"	1 9/16"	01-B 553	10	100
54	11/16"	1 9/16"	01-B 554	10	100
55	5/8"	1 1/2"	01-B 555	10	100
56	5/8"	1 1/2"	01-B 556	10	100
57	9/16"	1 7/16"	01-B 557	10	100
58	1/2"	1 5/16"	01-B 558	10	100
59	1/2"	1 5/16"	01-B 559	10	100
60	1/2"	1 5/16"	01-B 560	10	100

Sizes #53 to #60 are not split point.

Drill Bit Sets

Packaged in sturdy metal index containers or shock resistant, extra-thick polyethylene carrying case. Drill bit sizes are clearly marked on inside panels for easy identification and selection. The sets in metal boxes are ideal for use in a shop environment where they can be easily stored in a drawer or tool box. Sets in orange polyethylene carrying cases are an excellent option for contractors or off-site operations. They have a belt clip for ease of use and a threaded top that helps prevent the drill bits from going everywhere if the set is dropped.

Photo	No. of Pieces	Type	Sizes	Order No.	Std. Pkg.	Std. Ctn.
A	15	SST+ 135° Jobbers length round shank, fractional	1/16" to 1/2" by 32 ^{nds}	01-E 606	1	10
B	21	SST+ 135° Jobbers length round shank, fractional	1/16" to 3/8" by 64 ^{ths}	01-E 621	1	10
C	29	SST 118° Jobbers length quick shank, fractional/polymer case	1/16" to 1/2" by 64 ^{ths}	01-E 178	1	10
C	29	SST+ 135° Jobbers length round shank, fractional/polymer case	1/16" to 1/2" by 64 ^{ths}	01-E 678	1	10
C	29	SST+ 135° 3/8" reduced shank, fractional/polymer case	1/16" to 1/2" by 64 ^{ths}	01-E 818	1	10
D	29	SST+ 135° Stub length quick shank, fractional/polymer case	1/16" to 1/2" by 64 ^{ths}	01-E 239	1	10
E	29	SST 118° Jobbers length quick shank, fractional/round case	1/16" to 1/2" by 64 ^{ths}	01-E 118	1	10
E	29	SST+ 135° Jobbers length round shank, fractional/round case	1/16" to 1/2" by 64 ^{ths}	01-E 618	1	10
F	60	SST+ 135° Jobbers length round shank, wire gauge	No. 1 to 60	01-E 619	1	10
G	8	SST+ 135° Prentice three flats, fractional	9/16" to 1" by 16 ^{ths}	01-E 708	1	10
H	25	SST+ 135° Jobbers length round shank, metric	1 to 13 mm by 0.5 mm	01-E 625	1	10



A
1/16" to 1/2" by 32^{nds}
15 drill bits



B
1/16" to 3/8" by 64^{ths}
21 drill bits



C
1/16" to 1/2" by 64^{ths}
29 Jobbers Length drill bits



D
1/16" to 1/2" by 64^{ths}
29 Stub Length drill bits



E
1/16" to 1/2" by 64^{ths}
29 drill bits



F
No. 1 to 60
60 wire gauge drill bits



G
9/16" to 1" by 16^{ths}
8 Prentice drill bits



H
1 to 13 mm by 0.5 mm
25 Metric drill bits

Jobber Drills Sets



400N29



450TW29



100SE15

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



Jobber Drills Sets



200B29

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

Jobber Drills Sets



400HD21

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

Jobber Drills Sets



500AW29



500

No. of Pieces	Made in	Material	Coating/Finish	Point Angle	Description	Order No.
500/540/580 & 500E/580E Series Cobalt Heavy-Duty Jobber Drill Sets						
13	USA	Cobalt	Bronze	135°	1/16" - 1/4" by 64 ^{ths}	500A13
15	USA	Cobalt	Bronze	135°	1/16" - 1/2" by 32 ^{nds}	500A15
21	USA	Cobalt	Bronze	135°	1/16" - 3/8" by 64 ^{ths}	500A21
21	USA	Cobalt	Bronze	135°	1/16" - 1/4" by 64 ^{ths} & 9/32" - 1/2" by 32 ^{nds}	500A21V
26	USA	Cobalt	Bronze	135°	A - Z	500A26
29	USA	Cobalt	Bronze	135°	1/16" - 1/2" by 64 ^{ths}	500A29
29	USA	Cobalt	Bronze	135°	DRILL PAL 1/16" - 1/2" by 64 ^{ths}	500AW29
60	USA	Cobalt	Bronze	135°	#1 - #60	500A60
115	USA	Cobalt	Bronze	135°	1/16" - 1/2" by 64 ^{ths} , #1 - 60, A - Z	500A0115
13		Cobalt	Bronze	135°	1/16" - 1/4" by 64 ^{ths}	500E13
15		Cobalt	Bronze	135°	1/16" - 1/2" by 32 ^{nds}	500E15
21		Cobalt	Bronze	135°	1/16" - 3/8" by 64 ^{ths}	500E21
21		Cobalt	Bronze	135°	1/16" - 1/4" by 64 ^{ths} & 9/32" - 1/2" by 32 ^{nds}	500E21V
29		Cobalt	Bronze	135°	1/16" - 1/2" by 64 ^{ths}	500E29
60		Cobalt	Bronze	135°	#1 - #60	500E60



800A13



200LH29

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

Jobber Drills Sets

Jobber, Fractional (Metal Index)		
13 Piece, 1/16" – 1/4" by 64 ^{ths}		Order No.
T19	General Purpose, Bright Finish	090519
T19B	General Purpose, Black Oxide	099814
T19D	Heavy-Duty, Black Oxide	099815
T19C	Cobalt, Bronze Oxide	099823
T19HDC	ThunderBit [®] , Cobalt	099813
T19HDG	ThunderBit [®] , TiN Coated	093713
T19HD	ThunderBit [®] , Black & Bronze Oxide	099858
T19HD+	ThunderBit+ [®] , Black & Bronze Oxide	099501



Jobber, Fractional (Metal Index)		
15 Piece, 1/16" – 1/2" by 32 ^{ths}		Order No.
T18	General Purpose, Bright Finish	090518
T18B	General Purpose, Black Oxide	099808
T18D	Heavy-Duty, Black Oxide	099809
T18C	Cobalt, Bronze Oxide	099826
T18HDC	ThunderBit [®] , Cobalt	099816
T18HDG	ThunderBit [®] , TiN Coated	093716
T18HD	ThunderBit [®] , Black & Bronze Oxide	099857
T18HD+	ThunderBit+ [®] , Black & Bronze Oxide	099502



Jobber, Fractional (Metal Index)		
21 Piece, 1/16" – 3/8" by 64 ^{ths}		Order No.
T180	General Purpose, Bright Finish	090580
T180B	General Purpose, Black Oxide	099835
T180D	Heavy-Duty, Black Oxide	099836
T180C	Cobalt, Bronze Oxide	099825
T180HDC	ThunderBit [®] , Cobalt	099819
T180HDG	ThunderBit [®] , TiN Coated	093719
T180HD	ThunderBit [®] , Black & Bronze Oxide	099861
T180HD+	ThunderBit+ [®] , Black & Bronze Oxide	099503



Jobber, Fractional (Metal Index)		
29 Piece, 1/16" – 1/2" by 64 ^{ths}		Order No.
T17	General Purpose, Bright Finish	090517
T17L	General Purpose, L.H., Bright Finish	011199
T17B	Heavy-Duty, Black Oxide	099802
T17D	Heavy-Duty, Black Oxide	099803
T17C	Cobalt, Bronze Oxide	099822
T17HDC	ThunderBit [®] , Cobalt	099821
T17HDG	ThunderBit [®] , TiN Coated	093700
T17HD	ThunderBit [®] , Black & Bronze Oxide	099856
T17HD+	ThunderBit+ [®] , Black & Bronze Oxide	099505
T17HDCDC	CLIP-ON INDEX - ThunderBit [®] , Cobalt	099854
T17HDG	CLIP-ON INDEX - ThunderBit [®] , TiN Coated	093754
T17HDDC	CLIP-ON INDEX - ThunderBit [®] , Black & Bronze Oxide	099855
T17HDDC+	CLIP-ON INDEX - ThunderBit+ [®] , Black & Bronze Oxide	099504



Jobber Drills Sets

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



Jobber, Letter (Metal Index)		
26 Piece, A-Z		Order No.
T25B	General Purpose, Black Oxide	099827
T25HD	ThunderBit®, Black & Bronze Oxide	099860
T25HD	ThunderBit®, Black & Bronze Oxide	099507

Jobber (Metal Index)		
Metric		Order No.
MM19HD, 1mm-10mm x .5	ThunderBit®, Black & Bronze Oxide	099866
MM25HD, 1mm-13mm x .5	ThunderBit®, Black & Bronze Oxide	099867

Jobber, Combination Sizes (Metal Index)		
115 Piece, 1/16 - 1/2 by 64 ^{ths} , #1- #60, A-Z		Order No.
T123	General Purpose, Bright Finish	090560
T123B	General Purpose, Black Oxide	099832
T123D	Heavy-Duty, Black Oxide	090561
T123C	Cobalt, Bronze Oxide	099831
T123HD	ThunderBit®, Black & Bronze Oxide	099862
T123HD+	ThunderBit+®, Black & Bronze Oxide	099508



Jobber, Miscellaneous		
Select-A-Drill Case		Order No.
SAD13	13 Piece, General Purpose, Bright Finish, 1/16 - 1/4 by 64 ^{ths}	090490
SAD13HD	13 Piece, ThunderBit®, Black & Bronze Oxide, 1/16 - 1/4 by 64 ^{ths}	090495
SAD21	21 Piece, General Purpose, Bright Finish, 1/16 - 3/8 by 64 ^{ths}	090491
SAD21HD	21 Piece, ThunderBit®, Black & Bronze Oxide, 1/16 - 3/8" by 64 ^{ths}	090496
Metal Index		
T14P	14 Piece, General Purpose, Bright Finish, 1/16, 5/64, 3/32, 7/64, 1/8, 9/64, 5/32, 3/16, 7/32, 1/4, 5/16, 3/8, 7/16, 1/2. Sizes over 1/4" have 1/4" reduced shank.	090614



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

Mechanics Length Drills



Nitro® drills offer superior performance over conventional HSS drills. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations.

- ▷ Their heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult to machine materials such as stainless steel
- ▷ Mechanic's length drill lengths are in-between jobber length and screw machine (stub) length
- ▷ 3-flat shank helps to reduce slippage in the drill chuck
- ▷ Available in bulk packaging

350N

High Speed Steel

135° Split Point / 3-Flats
Fractional / Black & Gold



350N

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

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

No flats on sizes smaller than 3/16"

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

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

Corresponding Sets		
No. of Pcs.	Description	Order No.
350N Series Nitro® Mechanics Length Drill Sets		
13	1/16" - 1/4" by 64 ^{ths}	350N13
15	1/16" - 1/2" by 32 ^{nds}	350N15
21	1/16" - 3/8" by 64 ^{ths}	350N21
21	1/16" - 1/4" by 64 ^{ths} & 9/32" - 1/2" by 32 ^{nds}	350N21V
29	1/16" - 1/2" by 64 ^{ths}	350N29
29	DRILL PAL 1/16" - 1/2" by 64 ^{ths}	350NW29



350N21



Mechanics Length Drills

Mechanic's length drills are shorter than standard jobber drills. This allows them to be used in tighter spaces and it also improves their overall toughness and reduces chances for breakage. This is ideal for drilling applications in harder metals like stainless steel. These drills are surface treated for high wear resistance and increased lubricity.

- ▷ Shorter length increases rigidity
- ▷ 135° Split Point reduces walking and improves ease of penetration
- ▷ Black & Gold surface treatment for high wear resistance and lubricity

T1M - BP1M
High Speed Steel
135° Split Point
Black & Bronze Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T1M Packaging: Tube		T1M Packaging: Bulk		BP1M Packaging: Card	
				Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	7/8"	1-7/8"	033304	12	033304.20	144	035304	1
5/64"	.0781	1"	2"	033305	12	033305.20	144	035305	1
3/32"	.0938	1-1/4"	2-1/4"	033306	12	033306.20	144	035306	1
7/64"	.1094	1-5/16"	2-3/8"	033307	12	033307.20	144	035307	1
1/8"	.1250	1-7/16"	2-1/2"	033308	12	033308.20	144	035308	1
9/64"	.1406	1-9/16"	2-5/8"	033309	12	033309.20	144	035309	1
5/32"	.1562	1-11/16"	2-3/4"	033310	12	033310.20	144	035310	1
11/64"	.1719	1-13/16"	2-7/8"	033311	12	033311.20	144	035311	1
3-Flats on Shank									
3/16"	.1875	1-7/8"	3"	033312	12	033312.20	144	035312	1
13/64"	.2031	1-15/16"	3-1/8"	033313	12	033313.20	144	035313	1
7/32"	.2188	2"	3-1/4"	033314	12	033314.20	144	035314	1
15/64"	.2344	2-1/16"	3-3/8"	033315	12	033315.20	144	035315	1
1/4"	.2500	2"	3-1/2"	033316	12	033316.20	144	035316	1
17/64"	.2656	2-1/8"	3-5/8"	033317	12	033317.20	144	035317	1
9/32"	.2812	2-1/4"	3-3/4"	033318	12	033318.20	144	035318	1
19/64"	.2969	2-3/8"	3-7/8"	033319	12	033319.20	144	035319	1
5/16"	.3125	2-1/2"	4"	033320	6	033320.20	144	035320	1
21/64"	.3281	2-9/16"	4-1/16"	033321	6	033321.20	144	035321	1
11/32"	.3438	2-5/8"	4-1/8"	033322	6	033322.20	144	035322	1
23/64"	.3594	2-11/16"	4-3/16"	033323	6	033323.20	144	035323	1
3/8"	.3750	2-11/16"	4-1/4"	033324	6	033324.20	144	035324	1
25/64"	.3906	2-3/4"	4-5/16"	033325	6	033325.20	144	035325	1
13/32"	.4062	2-13/16"	4-3/8"	033326	6	033326.20	144	035326	1
27/64"	.4219	2-7/8"	4-7/16"	033327	6	033327.20	144	035327	1
7/16"	.4375	2-15/16"	4-1/2"	033328	6	033328.20	144	035328	1
29/64"	.4531	3"	4-5/8"	033329	6	033329.20	144	035329	1
15/32"	.4688	3-1/8"	4-3/4"	033330	6	033330.20	144	035330	1
31/64"	.4844	3-1/4"	4-7/8"	033331	6	033331.20	144	035331	1
1/2"	.5000	3-3/8"	5"	033332	6	033332.20	144	035332	1

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

TIPS!

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



Straight Shank



Reduced Shank



Corresponding Sets					T8M Reduced Shank Packaging: Tube					
Style	Description	Pieces	Size Range	Order No.	Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
T19M	Metal Index	13 Piece	1/16"-1/4" by 64 ^{ths}	090547	3-Flats on Shank					
T18M	Metal Index	15 Piece	1/16"-1/2" by 32 ^{nds}	090551						
T180M	Metal Index	21 Piece	1/16"-3/8" by 64 ^{ths}	090549	27/64"	.4219	2-7/8"	4-7/16"	092627	6
T17MDC	Clip-On Index	29 Piece	1/16"-1/2" by 64 ^{ths}	090553	7/16"	.4375	2-15/16"	4-1/2"	092628	6
T17M	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	090552	29/64"	.4531	3"	4-5/8"	092629	6
T829M	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths} (3/8" Reduced Shank)	090550	15/32"	.4688	3-1/8"	4-3/4"	092630	6
					31/64"	.4844	3-1/4"	4-7/8"	092631	6
					1/2"	.5000	3-3/8"	5"	092632	6

(3/8" Reduced Shank)

Mechanics Length Drills



Nitro® drills offer superior performance over conventional HSS drills. 135° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations.

- ▷ Their heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult to machine materials such as stainless steel
- ▷ Mechanic's length drill lengths are in-between jobber length and screw machine (stub) length
- ▷ 3-flat shank helps to reduce slippage in the drill chuck
- ▷ Available in bulk packaging

1045N

High Speed Steel

Mechanics Length / 135° Split Point / 3/8" Reduced Shank
Fractional / Black & Gold



1045N

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

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

6 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
1045N Series Reduced Shank Drill Sets		
15	1/16" - 1/2" by 32 ^{nds}	1045N15
29	1/16" - 1/2" by 64 ^{ths}	1045N29



1045N15



Screw Machine Length Drills

Screw Machine Drills (NAS Type C) are designed for use in machines and portable drilling in sheet metal.

300A

High Speed Steel

135° Split Point / Straight Shank

Fractional / Black Oxide



300A

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

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

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

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72

Corresponding Sets		
No. of Pcs.	Description	Order No.
300 Series Screw Machine (Stub) Length Drill Sets		
29	1/16" - 1/2" by 64 ^{ths}	300A29



300A29



340A

High Speed Steel

135° Split Point / Straight Shank
Letter / Black Oxide



340A

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

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

A - Z - 12 per pack

Sizes	Bulk Quantity
1/16" - 1/8" & #60 - #30	504
9/64" - 13/64" & #29 - #6	252
7/32" - 5/16" & #5 - #1 & A - N	132
21/64" - 1/2" & 0 - Z	72



380A

High Speed Steel

**135° Split Point / Straight Shank
Number / Black Oxide**



380A

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

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

* Not Split Point

#1 thru #60 - 12 per pack

300E

High Speed Steel

**135° Split Point / Straight Shank
Fractional / Black Oxide**



300E

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

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

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



Screw Machine Length Drills

Screw machine drills are shorter than jobbers length drills and are designed for use in drill presses and CNC applications. They can also be used in portable drills when drilling sheet metal.

- ▷ Shorter length increases rigidity
- ▷ Improved drilling in hard metal like stainless
- ▷ 135° Split Point reduces walking and improves ease of penetration

T4 - T5

High Speed Steel
135° Split Point
Black Oxide



Fractional				T4 Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
3/64**	.0469	1/2"	1-3/8"	044403	12
1/16"	.0625	5/8"	1-5/8"	044404	12
5/64"	.0781	11/16"	1-11/16"	044405	12
3/32"	.0938	3/4"	1-3/4"	044406	12
7/64"	.1094	13/16"	1-13/16"	044407	12
1/8"	.1250	7/8"	1-7/8"	044408	12
9/64"	.1406	15/16"	1-15/16"	044409	12
5/32"	.1562	1"	2-1/16"	044410	12
11/64"	.1719	1-1/16"	2-1/8"	044411	12
3/16"	.1875	1-1/8"	2-3/16"	044412	12
13/64"	.2031	1-3/16"	2-1/4"	044413	12
7/32"	.2188	1-1/4"	2-3/8"	044414	12
15/64"	.2344	1-5/16"	2-7/16"	044415	12
1/4"	.2500	1-3/8"	2-1/2"	044416	12
17/64"	.2656	1-7/16"	2-5/8"	044417	12
9/32"	.2812	1-1/2"	2-11/16"	044418	12
19/64"	.2969	1-9/16"	2-3/4"	044419	12
5/16"	.3125	1-5/8"	2-13/16"	044420	6
21/64"	.3281	1-11/16"	2-15/16"	044421	6
11/32"	.3438	1-11/16"	3"	044422	6
23/64"	.3594	1-3/4"	3-1/16"	044423	6
3/8"	.3750	1-13/16"	3-1/8"	044424	6
25/64"	.3906	1-7/8"	3-1/4"	044425	6
13/32"	.4062	1-15/16"	3-5/16"	044426	6
27/64"	.4219	2"	3-3/8"	044427	6
7/16"	.4375	2-1/16"	3-7/16"	044428	6
29/64"	.4531	2-1/8"	3-9/16"	044429	6
15/32"	.4688	2-1/8"	3-5/8"	044430	6
31/64"	.4844	2-3/16"	3-11/16"	044431	6
1/2"	.5000	2-1/4"	3-3/4"	044432	6

				T4 Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/8"	.1250	7/8"	1-7/8"	044408.20	144
9/64"	.1406	15/16"	1-15/16"	044409.20	144
5/32"	.1562	1"	2-1/16"	044410.20	144
3/16"	.1875	1-1/8"	2-3/16"	044412.20	144
13/64"	.2031	1-3/16"	2-1/4"	044413.20	144

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T29	Metal Index	29 Piece	1/16"-1/2" by 64ths	090569

Number				T5 Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1	.2280	1-5/16"	2-7/16"	44501	12
2	.2210	1-5/16"	2-7/16"	44502	12
3	.2130	1-1/4"	2-3/8"	44503	12
4	.2090	1-1/4"	2-3/8"	44504	12
5	.2055	1-1/4"	2-3/8"	44505	12
6	.2040	1-1/4"	2-3/8"	44506	12
7	.2010	1-3/16"	2-1/4"	44507	12
8	.1990	1-3/16"	2-1/4"	44508	12
9	.1960	1-3/16"	2-1/4"	44509	12
10	.1935	1-3/16"	2-1/4"	44510	12
11	.1910	1-3/16"	2-1/4"	44511	12
12	.1890	1-3/16"	2-1/4"	44512	12
13	.1850	1-1/8"	2-3/16"	44513	12
14	.1820	1-1/8"	2-3/16"	44514	12
15	.1800	1-1/8"	2-3/16"	44515	12
16	.1770	1-1/8"	2-3/16"	44516	12
17	.1730	1-1/8"	2-3/16"	44517	12
18	.1695	1-1/16"	2-1/8"	44518	12
19	.1660	1-1/16"	2-1/8"	44519	12
20	.1610	1-1/16"	2-1/8"	44520	12
21	.1590	1-1/16"	2-1/8"	44521	12
22	.1570	1-1/16"	2-1/8"	44522	12
23	.1540	1"	2-1/16"	44523	12
24	.1520	1"	2-1/16"	44524	12
25	.1495	1"	2-1/16"	44525	12
26	.1470	1"	2-1/16"	44526	12
27	.1440	1"	2-1/16"	44527	12
28	.1405	15/16"	1-15/16"	44528	12
29	.1360	15/16"	1-15/16"	44529	12
30	.1285	15/16"	1-15/16"	44530	12
31	.1200	7/8"	1-7/8"	44531	12
32	.1160	7/8"	1-7/8"	44532	12
33	.1130	7/8"	1-7/8"	44533	12
34	.1110	7/8"	1-7/8"	44534	12
35	.1100	7/8"	1-7/8"	44535	12
36	.1065	13/16"	1-13/16"	44536	12
37	.1040	13/16"	1-13/16"	44537	12
38	.1015	13/16"	1-13/16"	44538	12
39	.0995	13/16"	1-13/16"	44539	12
40	.0980	13/16"	1-13/16"	44540	12
41	.0960	13/16"	1-13/16"	44541	12
42	.0935	3/4"	1-3/4"	44542	12
43	.0890	3/4"	1-3/4"	44543	12
44	.0860	3/4"	1-3/4"	44544	12
45	.0820	3/4"	1-3/4"	44545	12
46	.0810	3/4"	1-3/4"	44546	12
47	.0785	11/16"	1-11/16"	44547	12
48	.0760	11/16"	1-11/16"	44548	12
49	.0730	11/16"	1-11/16"	44549	12
50	.0700	11/16"	1-11/16"	44550	12
51	.0670	11/16"	1-11/16"	44551	12
52	.0635	11/16"	1-11/16"	44552	12
53*	.0595	5/8"	1-5/8"	44553	12
54*	.0550	5/8"	1-5/8"	44554	12
55*	.0520	5/8"	1-5/8"	44555	12
56*	.0465	1/2"	1-3/8"	44556	12
57*	.0430	1/2"	1-3/8"	44557	12
58*	.0420	1/2"	1-3/8"	44558	12
59*	.0410	1/2"	1-3/8"	44559	12
60*	.0400	1/2"	1-3/8"	44560	12

* Not Split Point

				T5 Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
60	.0400	1/2"	1-3/8"	044560.20	72



Screw Machine Length Drills



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

300N

High Speed Steel

135° Split Point / Straight Shank
Fractional / Black & Gold



300N

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

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

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

Corresponding Sets		
No. of Pcs.	Description	Order No.
300N Series Screw Machine (Stub) Length Heavy-Duty Drill Sets		
29	1/16" - 1/2" by 64 ^{ths}	300N29



300N29



Screw Machine Length Drills

These drill bits have short flutes as well as a short overall length for maximum rigidity when drilling in sheet metal. They are made with a cobalt blend to provide a long service life in hard materials such as stainless steel.

- ▷ *Shorter length increases rigidity*
- ▷ *Improved drilling in hard metal like stainless*
- ▷ *135° Split Point reduces walking and improves ease of penetration*



T4HD

High Speed Steel

135° Split Point

Black & Gold



Fractional				T4HD Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/16"	.0625	5/8"	1-5/8"	060404	12
5/64"	.0781	11/16"	1-11/16"	060405	12
3/32"	.0938	3/4"	1-3/4"	060406	12
7/64"	.1094	13/16"	1-13/16"	060407	12
1/8"	.1250	7/8"	1-7/8"	060408	12
9/64"	.1406	15/16"	1-15/16"	060409	12
5/32"	.1562	1"	2-1/16"	060410	12
11/64"	.1719	1-1/16"	2-1/8"	060411	12
3/16"	.1875	1-1/8"	2-3/16"	060412	12
13/64"	.2031	1-3/16"	2-1/4"	060413	12
7/32"	.2188	1-1/4"	2-3/8"	060414	12
15/64"	.2344	1-5/16"	2-7/16"	060415	12
1/4"	.2500	1-3/8"	2-1/2"	060416	12
17/64"	.2656	1-7/16"	2-5/8"	060417	12
9/32"	.2812	1-1/2"	2-11/16"	060418	12
19/64"	.2969	1-9/16"	2-3/4"	060419	12
5/16"	.3125	1-5/8"	2-13/16"	060420	6
21/64"	.3281	1-11/16"	2-15/16"	060421	6
11/32"	.3438	1-11/16"	3"	060422	6
23/64"	.3594	1-3/4"	3-1/16"	060423	6
3/8"	.3750	1-13/16"	3-1/8"	060424	6
25/64"	.3906	1-7/8"	3-1/4"	060425	6
13/32"	.4062	1-15/16"	3-5/16"	060426	6
27/64"	.4219	2"	3-3/8"	060427	6
7/16"	.4375	2-1/16"	3-7/16"	060428	6
29/64"	.4531	2-1/8"	3-9/16"	060429	6
15/32"	.4688	2-1/8"	3-5/8"	060430	6
31/64"	.4844	2-3/16"	3-11/16"	060431	6
1/2"	.5000	2-1/4"	3-3/4"	060432	6

				T4HD Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/8"	.1250	7/8"	1-7/8"	060408.20	288
5/32"	.1562	1"	2-1/16"	060410.20	288
3/16"	.1875	1-1/8"	2-3/16"	060412.20	288
7/32"	.2188	1-1/4"	2-3/8"	060414.20	288
1/4"	.2500	1-3/8"	2-1/2"	060416.20	288
9/32"	.2812	1-1/2"	2-11/16"	060418.20	72
5/16"	.3125	1-5/8"	2-13/16"	060420.20	72

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T29HD	Metal Index	29 Piece	1/16"-1/2" by 64 ^{ths}	090568



Screw Machine Length Drills

These drill bits have short flutes as well as a short overall length for maximum rigidity when drilling in sheet metal. They are made with a cobalt blend to provide a long service life in hard materials such as stainless steel.

300C

Cobalt

135° Split Point / Straight Shank
Fractional / Bronze



300C

Size	Flute Length	Overall Length	300C Order No.
1/16"	5/8"	1-5/8"	300C104
5/64"	11/16"	1-11/16"	300C105
3/32"	3/4"	1-3/4"	300C106
7/64"	13/16"	1-13/16"	300C107
1/8"	7/8"	1-7/8"	300C108
9/64"	15/16"	1-15/16"	300C109
5/32"	1"	2-1/16"	300C110
11/64"	1-1/16"	2-1/8"	300C111
3/16"	1-1/8"	2-3/16"	300C112
13/64"	1-3/16"	2-1/4"	300C113
7/32"	1-1/4"	2-3/8"	300C114
15/64"	1-5/16"	2-7/16"	300C115
1/4"	1-3/8"	2-1/2"	300C116
17/64"	1-7/16"	2-5/8"	300C117
9/32"	1-1/2"	2-11/16"	300C118
19/64"	1-9/16"	2-3/4"	300C119
5/16"	1-5/8"	2-13/16"	300C120
21/64"	1-11/16"	2-15/16"	300C121
11/32"	1-11/16"	3"	300C122
23/64"	1-3/4"	3-1/16"	300C123
3/8"	1-13/16"	3-1/8"	300C124
25/64"	1-7/8"	3-1/4"	300C125
13/32"	1-15/16"	3-5/16"	300C126
27/64"	2"	3-3/8"	300C127
7/16"	2-1/16"	3-7/16"	300C128
29/64"	2-1/8"	3-9/16"	300C129
15/32"	2-1/8"	3-5/8"	300C130
31/64"	2-3/16"	3-11/16"	300C131
1/2"	2-1/4"	3-3/4"	300C132

1/16" thru 19/64" - 12 per pack, 5/16" thru 1/2" - 6 per pack



300C29

380C

Cobalt

135° Split Point / Straight Shank
Number / Bronze



380C

Size	Flute Length	Overall Length	380C Order No.
1	1-5/16"	2-7/16"	380C001
2	1-5/16"	2-7/16"	380C002
3	1-1/4"	2-3/8"	380C003
4	1-1/4"	2-3/8"	380C004
5	1-1/4"	2-3/8"	380C005
6	1-1/4"	2-3/8"	380C006
7	1-3/16"	2-1/4"	380C007
8	1-3/16"	2-1/4"	380C008
9	1-3/16"	2-1/4"	380C009
10	1-3/16"	2-1/4"	380C010
11	1-3/16"	2-1/4"	380C011
12	1-3/16"	2-1/4"	380C012
13	1-1/8"	2-3/16"	380C013
14	1-1/8"	2-3/16"	380C014
15	1-1/8"	2-3/16"	380C015
16	1-1/8"	2-3/16"	380C016
17	1-1/8"	2-3/16"	380C017
18	1-1/16"	2-1/8"	380C018
19	1-1/16"	2-1/8"	380C019
20	1-1/16"	2-1/8"	380C020
21	1-1/16"	2-1/8"	380C021
22	1-1/16"	2-1/8"	380C022
23	1"	2-1/16"	380C023
24	1"	2-1/16"	380C024
25	1"	2-1/16"	380C025
26	1"	2-1/16"	380C026
27	1"	2-1/16"	380C027
28	15/16"	1-15/16"	380C028
29	15/16"	1-15/16"	380C029
30	15/16"	1-15/16"	380C030
31	7/8"	1-7/8"	380C031
32	7/8"	1-7/8"	380C032
33	7/8"	1-7/8"	380C033
34	7/8"	1-7/8"	380C034
35	7/8"	1-7/8"	380C035
36	13/16"	1-13/16"	380C036
37	13/16"	1-13/16"	380C037
38	13/16"	1-13/16"	380C038
39	13/16"	1-13/16"	380C039
40	13/16"	1-13/16"	380C040

#1 thru #40 - 12 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
29	300C Series Cobalt Screw Machine (Stub) Length Drill Sets 1/16" - 1/2" by 64 ^{ths}	300C29

SST+™ 135° Screw Machine Length Fractional

Quick shank drill bits
For thin gauge material and sheet metal

Excellent for drilling into sheet metal and other thin-walled material. The 135° split point prevents center-punching and its short length helps prevent breakage, making it an ideal option for drilling in confined spaces.

- ▷ *Self-centering 135° split point geometry*
- ▷ *Special bronze SST surface treatment*
- ▷ *Heavy-duty fully ground body construction*
- ▷ *High flow flute design*
- ▷ *Unique shank design with six long flats to provide a better grip for cordless and corded power tools*
- ▷ *Packaged in reusable plastic packaging*



Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
1/16"	3/8"	1 5/16"	01-H 004	10	100
5/64"	1/2"	1 1/2"	01-H 005	10	100
3/32"	9/16"	1 11/16"	01-H 006	10	100
7/64"	5/8"	1 13/16"	01-H 007	10	100
1/8"	11/16"	1 15/16"	01-H 108	10	100
9/64"	13/16"	2 1/16"	01-H 109	10	100
5/32"	7/8"	2 3/16"	01-H 110	10	100
11/64"	15/16"	2 5/16"	01-H 111	10	100
3/16"	1"	2 7/16"	01-H 112	10	100
13/64"	1"	2 7/16"	01-H 113	10	100
7/32"	1 1/8"	2 5/8"	01-H 114	10	100
15/64"	1 1/8"	2 5/8"	01-H 115	10	100
1/4"	1 1/4"	2 3/4"	01-H 116	10	100
17/64"	1 5/16"	2 15/16"	01-H 117	10	100
9/32"	1 5/16"	2 15/16"	01-H 118	10	100
19/64"	1 5/16"	2 15/16"	01-H 119	10	100
5/16"	1 7/16"	3 1/8"	01-H 120	10	100
21/64"	1 7/16"	3 1/8"	01-H 121	10	100
11/32"	1 9/16"	3 5/16"	01-H 122	10	100
23/64"	1 9/16"	3 5/16"	01-H 123	10	100
3/8"	1 11/16"	3 1/2"	01-H 124	10	100
25/64"	1 11/16"	3 1/2"	01-H 125	5	50
13/32"	1 11/16"	3 1/2"	01-H 126	5	50
27/64"	1 7/8"	3 3/4"	01-H 127	5	50
7/16"	1 7/8"	3 3/4"	01-H 128	5	50
29/64"	1 7/8"	3 3/4"	01-H 129	5	50
15/32"	2"	4"	01-H 130	5	50
31/64"	2"	4"	01-H 131	5	50
1/2"	2"	4"	01-H 132	5	50

Sizes 11/64" and smaller have a round shank.

TIPS! Remember this rule:
 Small diameter bits = High speed, low feed
 Large diameter bits = Low speed, high feed

SST+™ 135° Screw Machine Length Fractional and Number

Round shank drill bits
For thin gauge material and sheet metal

These drill bits have short flutes as well as a short overall length for maximum rigidity when drilling in sheet metal. They are made with a cobalt blend to provide a long service life in hard materials such as stainless steel.

- ▷ Produce minimal burr when drilling in sheet metal
- ▷ Self-centering 135° split point
- ▷ Heavy-duty body construction
- ▷ No center punching necessary
- ▷ Packaged in reusable plastic packaging.



Fractional Sizes					
Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
1/16"	3/8"	1 5/16"	01-H 004	10	100
5/64"	1/2"	1 1/2"	01-H 005	10	100
3/32"	9/16"	1 11/16"	01-H 006	10	100
7/64"	5/8"	1 13/16"	01-H 007	10	100
1/8"	11/16"	1 15/16"	01-H 008	10	100
9/64"	13/16"	2 1/16"	01-H 009	10	100
5/32"	7/8"	2 3/16"	01-H 010	10	100
11/64"	15/16"	2 5/16"	01-H 011	10	100
3/16"	1"	2 7/16"	01-H 012	10	100
13/64"	1"	2 7/16"	01-H 013	10	100
7/32"	1 1/8"	2 5/8"	01-H 014	10	100
15/64"	1 1/8"	2 5/8"	01-H 015	10	100
1/4"	1 1/4"	2 3/4"	01-H 016	10	100
17/64"	1 5/16"	2 15/16"	01-H 017	10	100
9/32"	1 5/16"	2 15/16"	01-H 018	10	100
19/64"	1 5/16"	2 15/16"	01-H 019	10	100
5/16"	1 7/16"	3 1/8"	01-H 020	10	100
21/64"	1 7/16"	3 1/8"	01-H 021	10	100
11/32"	1 9/16"	3 5/16"	01-H 022	10	100
23/64"	1 9/16"	3 5/16"	01-H 023	10	100
3/8"	1 11/16"	3 1/2"	01-H 024	10	100
25/64"	1 11/16"	3 1/2"	01-H 025	5	50
13/32"	1 11/16"	3 1/2"	01-H 026	5	50
27/64"	1 7/8"	3 3/4"	01-H 027	5	50
7/16"	1 7/8"	3 3/4"	01-H 028	5	50
29/64"	1 7/8"	3 3/4"	01-H 029	5	50
15/32"	2"	4"	01-H 030	5	50
31/64"	2"	4"	01-H 031	5	50
1/2"	2"	4"	01-H 032	5	50

Number Sizes					
Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
1	1 1/8"	2 5/8"	01-J 001	10	100
2	1 1/8"	2 5/8"	01-J 002	10	100
3	1 1/8"	2 5/8"	01-J 003	10	100
4	1"	2 7/16"	01-J 004	10	100
5	1"	2 7/16"	01-J 005	10	100
6	1"	2 7/16"	01-J 006	10	100
7	1"	2 7/16"	01-J 007	10	100
8	1"	2 7/16"	01-J 008	10	100
9	1"	2 7/16"	01-J 009	10	100
10	1"	2 7/16"	01-J 010	10	100
11	1"	2 7/16"	01-J 011	10	100
12	1"	2 7/16"	01-J 012	10	100
13	15/16"	2 5/16"	01-J 013	10	100
14	15/16"	2 5/16"	01-J 014	10	100
15	15/16"	2 5/16"	01-J 015	10	100
16	15/16"	2 5/16"	01-J 016	10	100
17	15/16"	2 5/16"	01-J 017	10	100
18	15/16"	2 5/16"	01-J 018	10	100
19	7/8"	2 3/16"	01-J 019	10	100
20	7/8"	2 3/16"	01-J 020	10	100
21	7/8"	2 3/16"	01-J 021	10	100
22	7/8"	2 3/16"	01-J 022	10	100
23	7/8"	2 3/16"	01-J 023	10	100
24	7/8"	2 3/16"	01-J 024	10	100
25	7/8"	2 3/16"	01-J 025	10	100
26	7/8"	2 3/16"	01-J 026	10	100
27	13/16"	2 1/16"	01-J 027	10	100
28	13/16"	2 1/16"	01-J 028	10	100
29	13/16"	2 1/16"	01-J 029	10	100
30	11/16"	1 15/16"	01-J 030	10	100
31	5/8"	1 13/16"	01-J 031	10	100
32	5/8"	1 13/16"	01-J 032	10	100
33	5/8"	1 13/16"	01-J 033	10	100
34	5/8"	1 13/16"	01-J 034	10	100
35	5/8"	1 13/16"	01-J 035	10	100
36	5/8"	1 13/16"	01-J 036	10	100
37	9/16"	1 11/16"	01-J 037	10	100
38	9/16"	1 11/16"	01-J 038	10	100
39	9/16"	1 11/16"	01-J 039	10	100
40	9/16"	1 11/16"	01-J 040	10	100





Screw Machine Length Drills

These drill bits have short flutes as well as a short overall length for maximum rigidity when drilling in sheet metal. They are made with a cobalt blend to provide a long service life in hard materials such as stainless steel.

- ▷ *Shorter length increases rigidity*
- ▷ *Improved drilling in hard sheet metal like stainless*
- ▷ *135° Split Point reduces walking and improves ease of penetration*

T4C

Cobalt

135° Split Point
Bronze Oxide



Fractional				T4C Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
1/16"	.0625	5/8"	1-5/8"	046604	12
5/64"	.0781	11/16"	1-11/16"	046605	12
3/32"	.0938	3/4"	1-3/4"	046606	12
7/64"	.1094	13/16"	1-13/16"	046607	12
1/8"	.1250	7/8"	1-7/8"	046608	12
9/64"	.1406	15/16"	1-15/16"	046609	12
5/32"	.1562	1"	2-1/16"	046610	12
11/64"	.1719	1-1/16"	2-1/8"	046611	12
3/16"	.1875	1-1/8"	2-3/16"	046612	12
13/64"	.2031	1-3/16"	2-1/4"	046613	12
7/32"	.2188	1-1/4"	2-3/8"	046614	12
15/64"	.2344	1-5/16"	2-7/16"	046615	12
1/4"	.2500	1-3/8"	2-1/2"	046616	12
17/64"	.2656	1-7/16"	2-5/8"	046617	12
9/32"	.2812	1-1/2"	2-11/16"	046618	12
19/64"	.2969	1-9/16"	2-3/4"	046619	12
5/16"	.3125	1-5/8"	2-13/16"	046620	6
21/64"	.3281	1-11/16"	2-15/16"	046621	6
11/32"	.3438	1-11/16"	3"	046622	6
23/64"	.3594	1-3/4"	3-1/16"	046623	6
3/8"	.3750	1-13/16"	3-1/8"	046624	6
25/64"	.3906	1-7/8"	3-1/4"	046625	6
13/32"	.4062	1-15/16"	3-5/16"	046626	6
27/64"	.4219	2"	3-3/8"	046627	6
7/16"	.4375	2-1/16"	3-7/16"	046628	6
29/64"	.4531	2-1/8"	3-9/16"	046629	6
15/32"	.4688	2-1/8"	3-5/8"	046630	6
31/64"	.4844	2-3/16"	3-11/16"	046631	6
1/2"	.5000	2-1/4"	3-3/4"	046632	6

Left Hand Screw Machine Length Drills

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

300LH

Cobalt

135° Split Point / 3-Flat Shank
Fractional / Bronze



300LH

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

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

1/16" thru 9/32" - 12 per pack, 5/16" thru 3/8" - 6 per pack



Corresponding Sets		
No. of Pcs.	Description	Order No.
300LH Series Cobalt Screw Machine (Stub) Length Drill Sets		
11	1/16" - 3/8" by 32 ^{nds}	300LH11



Double Ended Drills

These drills have flutes and cutting points on both ends. This allows the user to reverse the drill and utilize both ends. For users that want to drill a hole into sheet metal, thin material, for automotive or aerospace purposes, for a rivet hole or simply to double the life of your current stub length drill bit.

330

High Speed Steel

135° Split Point

Fractional & Number / Black Oxide



330

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

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

12 per pack

TSM8

High Speed Steel

135° Split Point

Fractional & Number / Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	TSM8 Packaging: Tube		TSM8 Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
#11	.1910	1/2"	2-1/4"	098811	12	098811.20	288
#20	.1610	1/2"	2-1/8"	098820	12	098820.20	288
#30	.1285	1/2"	2"	098830	12	098830.20	288
7/64"	.1094	1/2"	1-7/8"	098807	12	098807.20	288
1/8"	.1250	1/2"	2"	098808	12	098808.20	288
9/64"	.1406	1/2"	2"	098809	12	098809.20	288
5/32"	.1562	1/2"	2-1/16"	098810	12	098810.20	288
3/16"	.1875	1/2"	2-3/16"	098812	12	09812.20	288
7/32"	.2188	1/2"	2-3/8"	098814	12	098814.20	288
1/4"	.2500	1/2"	2-1/2"	098816	12	098816.20	288

SST+™ 135° Double-Ended Fractional and Rivet Sizes

Round shank stub drill bits
For thin gauge and sheet metal

The most effective double-ended drill bit available that can allow you to drill hundreds of holes faster than anyone else. The state of the art cobalt blend provides these drill bits an incomparable lifespan that would make any black oxide competitors blush. Even if you want to drill a hole into sheet metal, thin material, for automotive or aerospace purposes, for a rivet hole or simply to double the life of your current stub length drill bit.

- ▷ Self-centering 135° split point geometry
- ▷ Special bronze SST surface treatment
- ▷ Heavy-duty fully ground body construction
- ▷ High flow flute design
- ▷ Double-ended design provides twice the life and quicker change outs compared to traditional drill bits



Fractional Sizes					
Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
1/16"	23/64"	1 1/2"	01-K 004	10	100
5/64"	23/64"	1 1/2"	01-K 005	10	100
3/32"	25/64"	1 11/16"	01-K 006	10	100
7/64"	7/16"	1 13/16"	01-K 007	10	100
1/8"	15/32"	1 59/64"	01-K 008	10	100
9/64"	35/64"	2 3/64"	01-K 009	10	100
5/32"	35/64"	2 11/64"	01-K 010	10	100
11/64"	5/8"	2 9/32"	01-K 011	10	100
3/16"	11/16"	2 7/16"	01-K 012	10	100
13/64"	11/16"	2 7/16"	01-K 013	10	100
7/32"	3/4"	2 19/32"	01-K 014	10	100
15/64"	3/4"	2 19/32"	01-K 015	10	100
1/4"	53/64"	2 3/4"	01-K 016	10	100

Corresponding Rivet Sizes					
Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
#51	25/64"	1 11/16"	01-K 151	10	100
#40	7/16"	1 13/16"	01-K 140	10	100
#30	35/64"	2 3/64"	01-K 130	10	100
#20	5/8"	2 9/32"	01-K 120	10	100
#10	11/16"	2 7/16"	01-K 110	10	100
#1	3/4"	2 19/32"	01-K 101	10	100
F	1 7/64"	4 1/64"	01-K 206	10	100



Taper Length Drills

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

▷ All sizes are individually packaged

900

High Speed Steel

118° Point / Straight Shank

Fractional / Black Oxide



900

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

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



6" Aircraft Extension Drills

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

- ▷ 135° Split Point reduces walking
- ▷ Extended length to drill hard to reach places
- ▷ Black Oxide surface treatment to improve performance

1100

High Speed Steel

135° Split Point / Straight Shank
Fractional / Black Oxide



1100

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

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

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

1180

High Speed Steel

135° Split Point / Straight Shank
Number / Black Oxide



1180

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

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

#1 thru #40 - 6 per pack



6" Aircraft Extension Drills

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

- ▷ 135° Split Point reduces walking
- ▷ Extended length to drill hard to reach places
- ▷ Black Oxide surface treatment to improve performance

T6HH - BP6HH - T6WW

High Speed Steel

135° Split Point

Black Oxide



Fractional				T6HH Packaging: Tube		T6HH Packaging: Bulk		BP6HH Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty	Order No.	Pkg Qty	Order No.	Pkg Qty
7/64"	.1094	1-1/2"	6"	057507	6	057507.20	144	057707	1
1/8"	.1250	1-5/8"	6"	057508	6	057508.20	144	057708	1
9/64"	.1406	1-3/4"	6"	057509	6	057509.20	144	057709	1
5/32"	.1562	2"	6"	057510	6	057510.20	144	057710	1
11/64"	.1719	2-1/8"	6"	057511	6	057511.20	144	057711	1
3/16"	.1875	2-5/16"	6"	057512	6	057512.20	144	057712	1
13/64"	.2031	2-7/16"	6"	057513	6	057513.20	144	057713	1
7/32"	.2188	2-1/2"	6"	057514	6	057514.20	144	057714	1
15/64"	.2344	2-5/8"	6"	057515	6	057515.20	144	057715	1
1/4"	.2500	2-3/4"	6"	057516	6	057516.20	144	057716	1
17/64"	.2656	2-7/8"	6"	057517	6	057517.20	144	057717	1
9/32"	.2812	2-15/16"	6"	057518	6	057518.20	144	057718	1
19/64"	.2969	3-1/16"	6"	057519	6	057519.20	144	057719	1
5/16"	.3125	3-3/16"	6"	057520	6	057520.20	144	057720	1
21/64"	.3281	3-5/16"	6"	057521	6	057521.20	144	057721	1
11/32"	.3438	3-7/16"	6"	057522	6	057522.20	144	057722	1
23/64"	.3594	3-1/2"	6"	057523	6	057523.20	144	057723	1
3/8"	.3750	3-5/8"	6"	057524	6	057524.20	144	057724	1
7/16"	.4375	4-1/16"	6"	057528	6	057528.20	144	057728	1
1/2"	.5000	4-1/2"	6"	057532	6	057532.20	144	057732	1

Number				T6WW Packaging: Tube	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
2	.2210	2-5/8"	6"	57602	6
5	.2055	2-1/2"	6"	57605	6
6	.2040	2-1/2"	6"	57606	6
9	.1960	2-7/16"	6"	57609	6
10	.1935	2-7/16"	6"	57610	6
11	.1910	2-5/16"	6"	57611	6
18	.1695	2-1/8"	6"	57618	6
19	.1660	2-1/8"	6"	57619	6
20	.1610	2-1/8"	6"	57620	6
21	.1590	2-1/8"	6"	57621	6
25	.1495	1-7/8"	6"	57625	6
27	.1440	1-7/8"	6"	57627	6
29	.1360	1-3/4"	6"	57629	6
30	.1285	1-5/8"	6"	57630	6
33	.1130	1-1/2"	6"	57633	6
40	.0980	1-3/8"	6"	57640	6

Number				T6WW Packaging: Bulk	
Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
20	.1610	2-1/8"	6"	057620.20	144
30	.1285	1-5/8"	6"	057630.20	144



12" Aircraft Extension Drills

1200

High Speed Steel

135° Split Point / Straight Shank

Fractional / Black Oxide



1200

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

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

1/16" thru 19/64" - 6 per pack, 5/16" thru 1/2" - 3 per pack

1280

High Speed Steel

135° Split Point / Straight Shank

Number / Black Oxide



1280

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

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

#1 thru #40 - 6 per pack



12" Aircraft Extension Drills

T12HH - BP12HH - T12WW

High Speed Steel

135° Split Point

Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T12HH Packaging: Tube	
				Order No.	Pkg Qty
5/64"	.0781	1"	12"	058505	6
3/32"	.0938	1-1/4"	12"	058506	6
7/64"	.1094	1-1/2"	12"	058507	6
1/8"	.1250	1-5/8"	12"	058508	6
9/64"	.1406	1-3/4"	12"	058509	6
5/32"	.1562	2"	12"	058510	6
11/64"	.1719	2-1/8"	12"	058511	6
3/16"	.1875	2-5/16"	12"	058512	6
7/32"	.2188	2-1/2"	12"	058514	6
1/4"	.2500	2-3/4"	12"	058516	6
17/64"	.2656	2-7/8"	12"	058517	6
9/32"	.2812	2-15/16"	12"	058518	6
19/64"	.2969	3-1/16"	12"	058519	6
5/16"	.3125	3-3/16"	12"	058520	3
11/32"	.3438	3-7/16"	12"	058522	3
3/8"	.3750	3-5/8"	12"	058524	3
13/32"	.4062	3-7/8"	12"	058526	3
7/16"	.4375	4-1/16"	12"	058528	3
15/32"	.4688	4-5/16"	12"	058530	3
1/2"	.5000	4-1/2"	12"	058532	3

Size	Decimal Equivalent	Flute Length	Overall Length	T12WW Packaging: Tube	
				Order No.	Pkg Qty
1	.2280	2-5/8"	12"	58601	6
7	.2010	2-7/16"	12"	58607	6
10	.1935	2-7/16"	12"	58610	6
11	.1910	2-5/16"	12"	58611	6
17	.1730	2-3/16"	12"	58617	6
20	.1610	2-1/8"	12"	58620	6
30	.1285	1-5/8"	12"	58630	6
40	.0980	1-3/8"	12"	58640	6

Size	Decimal Equivalent	Flute Length	Overall Length	BP12HH Packaging: Tube	
				Order No.	Pkg Qty
1/8"	.1250	1-5/8"	12"	058408	1
3/16"	.1875	2-5/16"	12"	058412	1
1/4"	.2500	2-3/4"	12"	058416	1
5/16"	.3125	3-3/16"	12"	058420	1
3/8"	.3750	3-5/8"	12"	058424	1
7/16"	.4375	4-1/16"	12"	058428	1
1/2"	.5000	4-1/2"	12"	058432	1



6" Aircraft Extension Drills

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

1100C

Cobalt

135° Split Point / Straight Shank

Fractional / Bronze



1100C

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

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

1180C

Cobalt

135° Split Point / Straight Shank

Number / Bronze



1180C

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

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

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

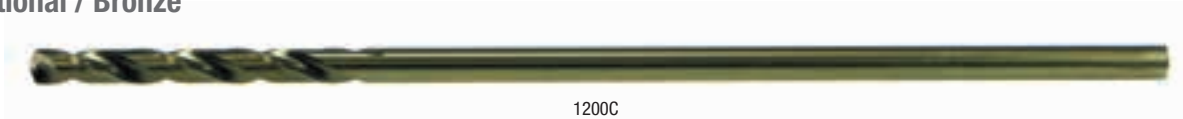


12" Aircraft Extension Drills

1200C

Cobalt

135° Split Point / Straight Shank
Fractional / Bronze



1200C

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

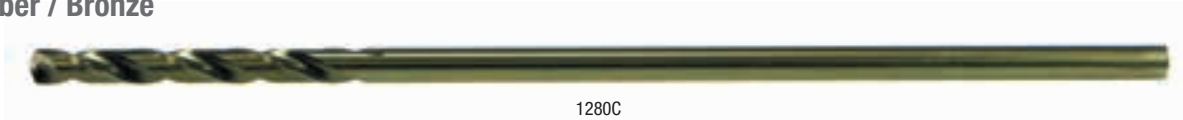
Size	Flute Length	Overall Length	1200C Order No.
19/64"	3-1/16"	12"	1200C119
5/16"	3-3/16"	12"	1200C120
21/64"	3-5/16"	12"	1200C121
11/32"	3-7/16"	12"	1200C122
23/64"	3-1/2"	12"	1200C123
3/8"	3-5/8"	12"	1200C124
25/64"	3-3/4"	12"	1200C125
13/32"	3-7/8"	12"	1200C126
27/64"	3-15/16"	12"	1200C127
7/16"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

1/16" thru 19/64" - 6 per pack, 5/16" thru 1/2" - 3 per pack

1280C

Cobalt

135° Split Point / Straight Shank
Number / Bronze



1280C

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

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

#1 thru #40 - 6 per pack

8" Extra Length Drills

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

1308

High Speed Steel

118° Point / Straight Shank
Fractional / Black Oxide



1308

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

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

1 per pack

12" Extra Length Drills

1312 / 1312R

High Speed Steel

118° Point / Straight & Reduced Shanks
Fractional / Black Oxide



1312 - Straight Shank



1312R - 1/2" Reduced Shank

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

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

1 per pack

12" Extra Length Drills

T1290

High Speed Steel

118° Point

Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T1290 Packaging: Tube	
				Order No.	Pkg Qty
1/8"	.1250	9"	12"	059808	1
5/32"	.1562	9"	12"	059810	1
3/16"	.2031	9"	12"	059812	1
7/32"	.2188	9"	12"	059814	1
1/4"	.2500	9"	12"	059816	1
9/32"	.2812	9"	12"	059818	1
5/16"	.3125	9"	12"	059820	1
11/32"	.3438	9"	12"	059822	1
3/8"	.3750	9"	12"	059824	1
13/32"	.4062	9"	12"	059826	1
7/16"	.4375	9"	12"	059828	1
15/32"	.4688	9"	12"	059830	1
1/2"	.5000	9"	12"	059832	1
17/32"*	.5312	9"	12"	059834	1
9/16"*	.5625	9"	12"	059836	1
5/8"*	.6250	9"	12"	059840	1

* Black oxide

18" Extra Length Drills

T1813

High Speed Steel

118° Split Point

Bright Finish



Size	Decimal Equivalent	Flute Length	Overall Length	T1813 Packaging: Tube	
				Order No.	Pkg Qty
1/4	.2500	13"	18"	059916	1
5/16	.3125	13"	18"	059920	1
3/8	.3750	13"	18"	059924	1
7/16	.4375	13"	18"	059928	1
1/2	.5000	13"	18"	059932	1
9/16*	.6250	13"	18"	059936	1
5/8*	.6250	13"	18"	059940	1

* Black oxide

18" Extra Length Drills

1318 / 1318R

High Speed Steel

118° Point / Straight & Reduced Shanks

Fractional / Black Oxide



1318 - Straight Shank



1318R - 1/2" Reduced Shank

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

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

1 per pack

1/2" Shank S&D Drills

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

1000A / 1000F

High Speed Steel

118° Split Point / 1/2" Reduced Shank

3-Flats on 1000F

Fractional / Bright & Black



Size	Flute Length	Overall Length	1000A Order No.	1000F Order No.
33/64"	3"	6"	1000A133	1000F133
17/32"	3"	6"	1000A134	1000F134
35/64"	3"	6"	1000A135	1000F135
9/16"	3"	6"	1000A136	1000F136
37/64"	3"	6"	1000A137	1000F137
19/32"	3"	6"	1000A138	1000F138
39/64"	3"	6"	1000A139	1000F139
5/8"	3"	6"	1000A140	1000F140
41/64"	3"	6"	1000A141	1000F141
21/32"	3"	6"	1000A142	1000F142
43/64"	3"	6"	1000A143	1000F143
11/16"	3"	6"	1000A144	1000F144
45/64"	3"	6"	1000A145	1000F145
23/32"	3"	6"	1000A146	1000F146
47/64"	3"	6"	1000A147	1000F147
3/4"	3"	6"	1000A148	1000F148
49/64"	3"	6"	1000A149	1000F149
25/32"	3"	6"	1000A150	1000F150
51/64"	3"	6"	1000A151	1000F151
13/16"	3"	6"	1000A152	1000F152
53/64"	3"	6"	1000A153	1000F153
27/32"	3"	6"	1000A154	1000F154
55/64"	3"	6"	1000A155	1000F155
7/8"	3"	6"	1000A156	1000F156
57/64"	3"	6"	1000A157	1000F157
29/32"	3"	6"	1000A158	1000F158
59/64"	3"	6"	1000A159	1000F159

Size	Flute Length	Overall Length	1000A Order No.	1000F Order No.
15/16"	3"	6"	1000A160	1000F160
61/64"	3"	6"	1000A161	1000F161
31/32"	3"	6"	1000A162	1000F162
63/64"	3"	6"	1000A163	1000F163
1"	3"	6"	1000A164	1000F164
1-1/64"	3"	6"	1000A201	-
1-1/32"	3"	6"	1000A202	1000F202
1-3/64"	3"	6"	1000A203	-
1-1/16"	3"	6"	1000A204	1000F204
1-5/64"	3"	6"	1000A205	-
1-3/32"	3"	6"	1000A206	1000F206
1-7/64"	3"	6"	1000A207	-
1-1/8"	3"	6"	1000A208	1000F208
1-9/64"	3"	6"	1000A209	-
1-5/32"	3"	6"	1000A210	1000F210
1-11/64"	3"	6"	1000A211	-
1-3/16"	3"	6"	1000A212	1000F212
1-13/64"	3"	6"	1000A213	-
1-7/32"	3"	6"	1000A214	1000F214
1-15/64"	3"	6"	1000A215	-
1-1/4"	3"	6"	1000A216	1000F216
1-9/32"	3"	6"	1000A218	-
1-5/16"	3"	6"	1000A220	1000F220
1-3/8"	3"	6"	1000A224	1000F224
1-7/16"	3"	6"	1000A228	1000F228
1-1/2"	3"	6"	1000A232	1000F232

1 per pack

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000A Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 ^{ths}	1000A5
8	9/16" - 1" by 16 ^{ths}	1000A8
32	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000A32

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000F Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 ^{ths}	1000F5
8	9/16" - 1" by 16 ^{ths}	1000F8
32	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000F32



1/2" Shank S&D Drills

DRILLS

1000E

High Speed Steel

118° Split Point / 3-Flats, Reduced Shank
Fractional / Bright & Black



1000E

Size	Flute Length	Overall Length	1000E Order No.
33/64"	3"	6"	1000E133
17/32"	3"	6"	1000E134
35/64"	3"	6"	1000E135
9/16"	3"	6"	1000E136
37/64"	3"	6"	1000E137
19/32"	3"	6"	1000E138
39/64"	3"	6"	1000E139
5/8"	3"	6"	1000E140
41/64"	3"	6"	1000E141
21/32"	3"	6"	1000E142
43/64"	3"	6"	1000E143
11/16"	3"	6"	1000E144
45/64"	3"	6"	1000E145
23/32"	3"	6"	1000E146
47/64"	3"	6"	1000E147
3/4"	3"	6"	1000E148
49/64"	3"	6"	1000E149
25/32"	3"	6"	1000E150
51/64"	3"	6"	1000E151
13/16"	3"	6"	1000E152
53/64"	3"	6"	1000E153
27/32"	3"	6"	1000E154
55/64"	3"	6"	1000E155
7/8"	3"	6"	1000E156
57/64"	3"	6"	1000E157
29/32"	3"	6"	1000E158
59/64"	3"	6"	1000E159
15/16"	3"	6"	1000E160
61/64"	3"	6"	1000E161
31/32"	3"	6"	1000E162
63/64"	3"	6"	1000E163
1"	3"	6"	1000E164

Size	Flute Length	Overall Length	1000E Order No.
1-1/64"	3"	6"	1000E201
1-1/32"	3"	6"	1000E202
1-3/64"	3"	6"	1000E203
1-1/16"	3"	6"	1000E204
1-5/64"	3"	6"	1000E205
1-3/32"	3"	6"	1000E206
1-7/64"	3"	6"	1000E207
1-1/8"	3"	6"	1000E208
1-9/64"	3"	6"	1000E209
1-5/32"	3"	6"	1000E210
1-11/64"	3"	6"	1000E211
1-3/16"	3"	6"	1000E212
1-13/64"	3"	6"	1000E213
1-7/32"	3"	6"	1000E214
1-15/64"	3"	6"	1000E215
1-1/4"	3"	6"	1000E216
1-17/64"	3"	6"	1000E217
1-9/32"	3"	6"	1000E218
1-19/64"	3"	6"	1000E219
1-5/16"	3"	6"	1000E220
1-21/64"	3"	6"	1000E221
1-11/32"	3"	6"	1000E222
1-23/64"	3"	6"	1000E223
1-3/8"	3"	6"	1000E224
1-25/64"	3"	6"	1000E225
1-13/32"	3"	6"	1000E226
1-27/64"	3"	6"	1000E227
1-7/16"	3"	6"	1000E228
1-29/64"	3"	6"	1000E229
1-15/32"	3"	6"	1000E230
1-31/64"	3"	6"	1000E231
1-1/2"	3"	6"	1000E232

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000E Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 ^{ths}	1000E5
8	9/16" - 1" by 16 ^{ths}	1000E8
32	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000E32



1000E8

1/2" Shank S&D Drills

NITRO

Nitro® drills offer superior performance over conventional HSS drills. 118° Split Point reduces walking at the drill point and makes these drills ideal for both hand held and CNC Operations.

- ▷ Their heavy-duty construction increases tool life and performance
- ▷ Black & Gold surface treatment for maximum lubricity
- ▷ Usable in a wide range of materials including difficult to machine materials such as stainless steel
- ▷ S&D drills expand the size range capacity of a 1/2" portable drill chuck
- ▷ All sizes are individually packaged

1000N

High Speed Steel

118° Split Point / 1/2" Reduced Shank / 3-Flat Shank
Fractional / Black Oxide



1000N

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

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

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000N Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 ^{ths}	1000N5
8	9/16" - 1" by 16 ^{ths}	1000N8
32	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000N32



1000N32

1/2" Shank S&D Drills

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

▷ All sizes are individually packaged

1000EF

High Speed Steel

135° Split Point / 3-Flats, Reduced Shank
Fractional / Black & Gold



1000EF

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

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

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000EF Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 ^{ths}	1000EF5
8	9/16" - 1" by 16 ^{ths}	1000EF8
32	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000EF32



1000EF8



Reduced Shank S&D Drill

HSS S&D drills expand the size range capacity of a 1/2" drill chuck. By including a split-point and a 3-flats option, this style of drill is ideal for hand held drilling operations. The split-point reduces walking and the 3-flats keep the tool from rotating in the chuck.

- ▷ 1/2" reduced shank with 3-flats is ideal for hand held power tools
- ▷ Incorporating a reduced shank increases drilling diameter range
- ▷ Split-Point eliminates walking at the drill point

T9FHD

High Speed Steel

118° Split Point / 3-Flats on Shank
Black & Bronze Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T9FHD Packaging: Tube	
				Order No.	Pkg Qty
33/64"	.5156	3"	6"	094133	1
17/32"	.5312	3"	6"	094134	1
35/64"	.5469	3"	6"	094135	1
9/16"	.5625	3"	6"	094136	1
37/64"	.5781	3"	6"	094137	1
19/32"	.5938	3"	6"	094138	1
39/64"	.6094	3"	6"	094139	1
5/8"	.6250	3"	6"	094140	1
41/64"	.6406	3"	6"	094141	1
21/32"	.6562	3"	6"	094142	1
43/64"	.6719	3"	6"	094143	1
11/16"	.6875	3"	6"	094144	1
45/64"	.7031	3"	6"	094145	1
23/32"	.7188	3"	6"	094146	1
47/64"	.7344	3"	6"	094147	1
3/4"	.7500	3"	6"	094148	1
49/64"	.7656	3"	6"	094149	1
25/32"	.7812	3"	6"	094150	1
51/64"	.7969	3"	6"	094151	1
13/16"	.8125	3"	6"	094152	1
53/64"	.8281	3"	6"	094153	1
27/32"	.8438	3"	6"	094154	1
55/64"	.8594	3"	6"	094155	1
7/8"	.8750	3"	6"	094156	1
57/64"	.8906	3"	6"	094157	1
29/32"	.9062	3"	6"	094158	1
59/64"	.9219	3"	6"	094159	1
15/16"	.9375	3"	6"	094160	1
61/64"	.9531	3"	6"	094161	1
31/32"	.9688	3"	6"	094162	1
63/64"	.9844	3"	6"	094163	1
1"	1.0000	3"	6"	094164	1

T9F

High Speed Steel

118° Point / 3-Flats, Reduced Shank
Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T9F Packaging: Tube	
				Order No.	Pkg Qty
33/64"	.5156	3"	6"	092833	1
17/32"	.5312	3"	6"	092834	1
35/64"	.5469	3"	6"	092835	1
9/16"	.5625	3"	6"	092836	1
37/64"	.5781	3"	6"	092837	1
19/32"	.5938	3"	6"	092838	1
39/64"	.6094	3"	6"	092839	1
5/8"	.6250	3"	6"	092840	1
41/64"	.6406	3"	6"	092841	1
21/32"	.6562	3"	6"	092842	1
43/64"	.6719	3"	6"	092843	1
11/16"	.6875	3"	6"	092844	1
45/64"	.7031	3"	6"	092845	1
23/32"	.7188	3"	6"	092846	1
47/64"	.7344	3"	6"	092847	1
3/4"	.7500	3"	6"	092848	1
49/64"	.7656	3"	6"	092849	1
25/32"	.7812	3"	6"	092850	1
51/64"	.7969	3"	6"	092851	1
13/16"	.8125	3"	6"	092852	1
53/64"	.8281	3"	6"	092853	1
27/32"	.8438	3"	6"	092854	1
55/64"	.8594	3"	6"	092855	1
7/8"	.8750	3"	6"	092856	1
57/64"	.8906	3"	6"	092857	1
29/32"	.9062	3"	6"	092858	1
59/64"	.9219	3"	6"	092859	1
15/16"	.9375	3"	6"	092860	1
61/64"	.9531	3"	6"	092861	1
31/32"	.9688	3"	6"	092862	1
63/64"	.9844	3"	6"	092863	1
1"	1.0000	3"	6"	092864	1
1-1/32"	1.0312	3"	6"	092866	1
1-1/16"	1.0625	3"	6"	092868	1
1-3/32"	1.0938	3"	6"	092870	1
1-1/8"	1.1250	3"	6"	092872	1
1-5/32"	1.1562	3"	6"	092874	1
1-3/16"	1.1875	3"	6"	092876	1
1-7/32"	1.2188	3"	6"	092878	1
1-1/4"	1.2500	3"	6"	092880	1
1-5/16"	1.3125	3"	6"	092884	1
1-3/8"	1.3750	3"	6"	092888	1
1-7/16"	1.4375	3"	6"	092892	1
1-1/2"	1.5000	3"	6"	092896	1

Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T98F	Molded Case	8 Piece	9/16"-1" by 16 ^{ths}	090596
T98FHD	Molded Case	8 Piece	9/16"-1" by 16 ^{ths}	090595
T933FHD	Metal Stand	33 Piece	1/2"-1" by 64 ^{ths}	090593



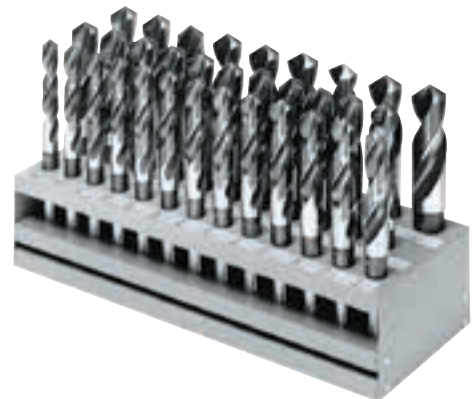
T9
High Speed Steel
118° Point / Reduced Shank
Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	T9 Packaging: Tube		T9 Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
33/64"	.5156	3"	6"	091733	1	091733.20	25
17/32"	.5312	3"	6"	091734	1	091734.20	25
35/64"	.5469	3"	6"	091735	1	091735.20	25
9/16"	.5625	3"	6"	091736	1	091736.20	25
37/64"	.5781	3"	6"	091737	1	091737.20	25
19/32"	.5938	3"	6"	091738	1	091738.20	25
39/64"	.6094	3"	6"	091739	1	091739.20	25
5/8"	.6250	3"	6"	091740	1	091740.20	25
41/64"	.6406	3"	6"	091741	1	091741.20	25
21/32"	.6562	3"	6"	091742	1	091742.20	25
43/64"	.6719	3"	6"	091743	1	091743.20	25
11/16"	.6875	3"	6"	091744	1	091744.20	25
45/64"	.7031	3"	6"	091745	1	091745.20	25
23/32"	.7188	3"	6"	091746	1	091746.20	25
47/64"	.7344	3"	6"	091747	1	091747.20	25
3/4"	.7500	3"	6"	091748	1	091748.20	25
49/64"	.7656	3"	6"	091749	1	091749.20	25
25/32"	.7812	3"	6"	091750	1	091750.20	25
51/64"	.7969	3"	6"	091751	1	091751.20	25
13/16"	.8125	3"	6"	091752	1	091752.20	25
53/64"	.8281	3"	6"	091753	1	091753.20	25
27/32"	.8438	3"	6"	091754	1	091754.20	25
55/64"	.8594	3"	6"	091755	1	091755.20	25
7/8"	.8750	3"	6"	091756	1	091756.20	25
57/64"	.8906	3"	6"	091757	1	091757.20	25
29/32"	.9062	3"	6"	091758	1	091758.20	25
59/64"	.9219	3"	6"	091759	1	091759.20	25
15/16"	.9375	3"	6"	091760	1	091760.20	25
61/64"	.9531	3"	6"	091761	1	091761.20	25
31/32"	.9688	3"	6"	091762	1	091762.20	25
63/64"	.9844	3"	6"	091763	1	091763.20	25
1"	1.0000	3"	6"	091764	1	091764.20	25
1-1/64"	1.0156	3"	6"	091765	1	091765.20	25
1-1/32"	1.0312	3"	6"	091766	1	091766.20	25
1-3/64"	1.0469	3"	6"	091767	1	091767.20	25
1-1/16"	1.0625	3"	6"	091768	1	091768.20	25
1-3/32"	1.0938	3"	6"	091770	1	091770.20	25
1-1/8"	1.1250	3"	6"	091772	1	091772.20	25
1-5/32"	1.1562	3"	6"	091774	1	091774.20	25
1-3/16"	1.1875	3"	6"	091776	1	091776.20	25
1-7/32"	1.2188	3"	6"	091778	1	091778.20	25
1-1/4"	1.2500	3"	6"	091780	1	091780.20	25
1-9/32"	1.2812	3"	6"	091782	1	091782.20	25
1-5/16"	1.3125	3"	6"	091784	1	091784.20	25
1-3/8"	1.3750	3"	6"	091788	1	091788.20	25
1-7/16"	1.4375	3"	6"	091792	1	091792.20	25
1-1/2"	1.5000	3"	6"	091796	1	091796.20	25



T98FHD



T933

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T98	Molded Case	8 Piece	9/16"-1" by 16 ^{ths}	090598
T933	Metal Stand	33 Piece	1/2"-1" by 64 ^{ths}	090599

Reduced Shank S&D Drill

S&D drills expand the size range capacity of a 1/2" drill chuck. By including a split-point and a 3-flats option, this style of drill is ideal for hand held drilling operations. The split-point reduces walking and the 3-flats keep the tool from rotating in the chuck.

- ▷ 1/2" reduced shank is ideal for hand held power tools
- ▷ Incorporating a reduced shank increases drilling diameter range
- ▷ Split-Point eliminates walking at the drill point
- ▷ Cobalt drills offer speeds and feeds of up to 30% faster than HSS drills
- ▷ All sizes are individually packaged

1000C

Cobalt

**118° Split Point / Reduced Shank
Fractional / Black & Gold**



1000C

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

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

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000C Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 ^{ths}	1000C5
8	9/16" - 1" by 16 ^{ths}	1000C8
32	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000C32



1000C8

SST+™ 135° 3/8" Reduced Shank Fractional

Round shank bits

For high tensile steel, fits in a 3/8" chuck

Our SST+ 3/8" reduced shank drill bits allow for the drilling of larger holes with drills that have a 3/8" chuck capacity. Their 135° self-centering split point allows for outstanding performance with much less pressure.

▷ *Packaged in reusable plastic packaging.*



Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
25/64"	3 7/16"	5 1/4"	01-R 225	5	50
13/32"	3 7/16"	5 1/4"	01-R 226	5	50
27/64"	3 11/16"	5 1/2"	01-R 227	5	50
7/16"	3 11/16"	5 9/16"	01-R 228	5	50
29/64"	3 11/16"	5 9/16"	01-R 229	5	50
15/32"	4"	5 15/16"	01-R 230	5	50
31/64"	4"	5 15/16"	01-R 231	5	50
1/2"	4"	5 15/16"	01-R 232	5	50
17/32"	4 13/16"	6 5/8"	01-R 234	5	50
9/16"	4 13/16"	6 5/8"	01-R 236	5	50
5/8"	5 3/16"	7 1/8"	01-R 240	5	50

For sizes smaller than 33/64", use our jobber's length drill bits.



SST+™ 135° 1/2" S&D Fractional

Three flats shank drill bits

For hole diameters >1/2", fits in a 1/2" chuck

SST+ 1/2" S&D are heavy-duty large diameter drill bits for use in portable power drills, drill presses and magnetic base drills with 1/2" chuck capacity. Their extra hard tips allow for the drilling of many more holes between re-sharpenings. They are made with a cobalt blend for unmatched life and durability.



Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
33/64"	3 1/8"	6"	01-M 533	1	10
17/32"	3 1/8"	6"	01-M 534	1	10
35/64"	3 1/8"	6"	01-M 535	1	10
9/16"	3 1/8"	6"	01-M 536	1	10
37/64"	3 1/8"	6"	01-M 537	1	10
19/32"	3 1/8"	6"	01-M 538	1	10
39/64"	3 1/8"	6"	01-M 539	1	10
5/8"	3 1/8"	6"	01-M 540	1	10
41/64"	3 1/8"	6"	01-M 541	1	10
21/32"	3 1/8"	6"	01-M 542	1	10
43/64"	3 1/8"	6"	01-M 543	1	10
11/16"	3 1/8"	6"	01-M 544	1	10
45/64"	3 1/8"	6"	01-M 545	1	10
23/32"	3 1/8"	6"	01-M 546	1	10
47/64"	3 1/8"	6"	01-M 547	1	10
3/4"	3 1/8"	6"	01-M 548	1	10
49/64"	3 1/8"	6"	01-M 549	1	10
25/32"	3 1/8"	6"	01-M 550	1	10
51/64"	3 1/8"	6"	01-M 551	1	10
13/16"	3 1/8"	6"	01-M 552	1	10
53/64"	3 1/8"	6"	01-M 553	1	10

Drill Size	Flute Length	Overall Length	Order No.	Std. Pkg.	Std. Ctn.
27/32"	3 1/8"	6"	01-M 554	1	10
55/64"	3 1/8"	6"	01-M 555	1	10
7/8"	3 1/8"	6"	01-M 556	1	10
57/64"	3 1/8"	6"	01-M 557	1	10
29/32"	3 1/8"	6"	01-M 558	1	10
59/64"	3 1/8"	6"	01-M 559	1	10
15/16"	3 1/8"	6"	01-M 560	1	10
61/64"	3 1/8"	6"	01-M 561	1	10
31/32"	3 1/8"	6"	01-M 562	1	10
63/64"	3 1/8"	6"	01-M 563	1	10
1"	3 1/8"	6"	01-M 600	1	10
1 1/16"	3 1/8"	6"	01-M 604	1	10
1 1/8"	3 1/8"	6"	01-M 608	1	10
1 3/16"	3 1/8"	6"	01-M 612	1	10
1 1/4"	3 1/8"	6"	01-M 616	1	10
1 5/16"	3 1/8"	6"	01-M 617	1	10
1 3/8"	3 1/8"	6"	01-M 618	1	10
1 7/16"	3 1/8"	6"	01-M 619	1	10
1 1/2"	3 1/8"	6"	01-M 620	1	10

For sizes smaller than 33/64", use our jobber's length drill bits.

Reduced Shank S&D Drill

T9C
Cobalt
118° Split Point / Reduced Shank
Black & Gold Oxide


Size	Decimal Equivalent	Flute Length	Overall Length	T9FHD Packaging: Tube	
				Order No.	Pkg Qty
33/64"	.5156	3"	6"	092033	1
17/32"	.5312	3"	6"	092034	1
35/64"	.5469	3"	6"	092035	1
9/16"	.5625	3"	6"	092036	1
37/64"	.5781	3"	6"	092037	1
19/32"	.5938	3"	6"	092038	1
39/64"	.6094	3"	6"	092039	1
5/8"	.6250	3"	6"	092040	1
41/64"	.6406	3"	6"	092041	1
21/32"	.6562	3"	6"	092042	1
43/64"	.6719	3"	6"	092043	1
11/16"	.6875	3"	6"	092044	1
45/64"	.7031	3"	6"	092045	1
23/32"	.7188	3"	6"	092046	1
47/64"	.7344	3"	6"	092047	1
3/4"	.7500	3"	6"	092048	1
49/64"	.7656	3"	6"	092049	1
25/32"	.7812	3"	6"	092050	1
51/64"	.7969	3"	6"	092051	1
13/16"	.8125	3"	6"	092052	1
53/64"	.8281	3"	6"	092053	1
27/32"	.8438	3"	6"	092054	1
55/64"	.8594	3"	6"	092055	1
7/8"	.8750	3"	6"	092056	1
57/64"	.8906	3"	6"	092057	1
29/32"	.9062	3"	6"	092058	1
59/64"	.9219	3"	6"	092059	1
15/16"	.9375	3"	6"	092060	1
61/64"	.9531	3"	6"	092061	1
31/32"	.9688	3"	6"	092062	1
63/64"	.9844	3"	6"	092063	1
1"	1.0000	3"	6"	092064	1



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Corresponding Sets

Style	Description	Pieces	Size Range	Order No.
T98C	Molded Case	8 Piece	9/16"-1" by 16 ^{ths}	090909

Reduced Shank S&D Drill

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

▷ All sizes are individually packaged

1000EC

Cobalt

135° Split Point / Reduced Shank Fractional / Bronze



1000EC

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

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

Corresponding Sets		
No. of Pcs.	Description	Order No.
1000EC Series 1/2" Shank S&D Drill Sets		
5	9/16" - 1" by 8 ^{ths}	1000EC5
8	9/16" - 1" by 16 ^{ths}	1000EC8
32	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000EC32



1000EC5

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



1000A8



1000N32

No. of Pieces	Brand	Material	Coating/Finish	Point Angle	Description	Order No.
1000EC Series 1/2" Shank S&D Drill Sets						
5	–	Cobalt	Bronze	135°	9/16" - 1" by 8 ^{ths}	1000EC5
8	–	Cobalt	Bronze	135°	9/16" - 1" by 16 ^{ths}	1000EC8
32	–	Cobalt	Bronze	135°	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000EC32
1000EF Series 1/2" Shank S&D Drill Sets						
5	–	High Speed Steel	Black & Gold	135°	9/16" - 1" by 8 ^{ths}	1000EF5
8	–	High Speed Steel	Black & Gold	135°	9/16" - 1" by 16 ^{ths}	1000EF8
32	–	High Speed Steel	Black & Gold	135°	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000EF32
1000E Series 1/2" Shank S&D Drill Sets						
5	–	High Speed Steel	Bright & Black	118°	9/16" - 1" by 8 ^{ths}	1000E5
8	–	High Speed Steel	Bright & Black	118°	9/16" - 1" by 16 ^{ths}	1000E8
32	–	High Speed Steel	Bright & Black	118°	STAND 1/2" - 1" by 64 ^{ths} W/DRILLS	1000E32
1035N & 1045N Series 3/8" Reduced Shank Drill Sets						
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 32 ^{nds}	1035N15
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 64 ^{ths}	1035N29
15	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 32 ^{nds}	1045N15
29	Nitro®	High Speed Steel	Black & Gold	135°	1/16" - 1/2" by 64 ^{ths}	1045N29

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



Taper Shank Drills

For general purpose use in a wide range of materials.

1400 – American Standard Taper Shanks / 1450 – Smaller than normal Taper Shanks / 1475 – Larger than normal Taper Shanks

▷ All sizes are individually packaged

1400

High Speed Steel

118° Point / Taper Shank
Fractional / Black Oxide



1400

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
1/8"	1	1-7/8"	5-1/8"	1400A108
9/64"	1	2-1/8"	5-3/8"	1400A109
5/32"	1	2-1/8"	5-3/8"	1400A110
11/64"	1	2-1/2"	5-3/4"	1400A111
3/16"	1	2-1/2"	5-3/4"	1400A112
13/64"	1	2-3/4"	6"	1400A113
7/32"	1	2-3/4"	6"	1400A114
15/64"	1	2-7/8"	6-1/8"	1400A115
1/4"	1	2-7/8"	6-1/8"	1400A116
17/64"	1	3"	6-1/4"	1400A117
9/32"	1	3"	6-1/4"	1400A118
19/64"	1	3-1/8"	6-3/8"	1400A119
5/16"	1	3-1/8"	6-3/8"	1400A120
21/64"	1	3-1/4"	6-1/2"	1400A121
11/32"	1	3-1/4"	6-1/2"	1400A122
23/64"	1	3-1/2"	6-3/4"	1400A123
3/8"	1	3-1/2"	6-3/4"	1400A124
25/64"	1	3-5/8"	7"	1400A125
13/32"	1	3-5/8"	7"	1400A126
27/64"	1	3-7/8"	7-1/4"	1400A127
7/16"	1	3-7/8"	7-1/4"	1400A128
29/64"	1	4-1/8"	7-1/2"	1400A129
15/32"	1	4-1/8"	7-1/2"	1400A130
31/64"	2	4-3/8"	8-1/4"	1400A131
1/2"	2	4-3/8"	8-1/4"	1400A132
33/64"	2	4-5/8"	8-1/2"	1400A133
17/32"	2	4-5/8"	8-1/2"	1400A134
35/64"	2	4-7/8"	8-3/4"	1400A135
9/16"	2	4-7/8"	8-3/4"	1400A136
37/64"	2	4-7/8"	8-3/4"	1400A137
19/32"	2	4-7/8"	8-3/4"	1400A138
39/64"	2	4-7/8"	8-3/4"	1400A139
5/8"	2	4-7/8"	8-3/4"	1400A140
41/64"	2	5-1/8"	9"	1400A141
21/32"	2	5-1/8"	9"	1400A142
43/64"	2	5-3/8"	9-1/4"	1400A143
11/16"	2	5-3/8"	9-1/4"	1400A144
45/64"	2	5-5/8"	9-1/2"	1400A145
23/32"	2	5-5/8"	9-1/2"	1400A146
47/64"	2	5-7/8"	9-3/4"	1400A147
3/4"	2	5-7/8"	9-3/4"	1400A148
49/64"	2	6"	9-7/8"	1400A149
25/32"	2	6"	9-7/8"	1400A150
51/64"	3	6-1/8"	10-3/4"	1400A151
13/16"	3	6-1/8"	10-3/4"	1400A152
53/64"	3	6-1/8"	10-3/4"	1400A153
27/32"	3	6-1/8"	10-3/4"	1400A154
55/64"	3	6-1/8"	10-3/4"	1400A155
7/8"	3	6-1/8"	10-3/4"	1400A156
57/64"	3	6-1/8"	10-3/4"	1400A157

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
29/32"	3	6-1/8"	10-3/4"	1400A158
59/64"	3	6-1/8"	10-3/4"	1400A159
15/16"	3	6-1/8"	10-3/4"	1400A160
61/64"	3	6-3/8"	11"	1400A161
31/32"	3	6-3/8"	11"	1400A162
63/64"	3	6-3/8"	11"	1400A163
1"	3	6-3/8"	11"	1400A164
1-1/64"	3	6-1/2"	11-1/8"	1400A201
1-1/32"	3	6-1/2"	11-1/8"	1400A202
1-3/64"	3	6-5/8"	11-1/4"	1400A203
1-1/16"	3	6-5/8"	11-1/4"	1400A204
1-5/64"	4	6-7/8"	12-1/2"	1400A205
1-3/32"	4	6-7/8"	12-1/2"	1400A206
1-7/64"	4	7-1/8"	12-3/4"	1400A207
1-1/8"	4	7-1/8"	12-3/4"	1400A208
1-9/64"	4	7-1/4"	12-7/8"	1400A209
1-5/32"	4	7-1/4"	12-7/8"	1400A210
1-11/64"	4	7-3/8"	13"	1400A211
1-3/16"	4	7-3/8"	13"	1400A212
1-13/64"	4	7-1/2"	13-1/8"	1400A213
1-7/32"	4	7-1/2"	13-1/8"	1400A214
1-15/64"	4	7-7/8"	13-1/2"	1400A215
1-1/4"	4	7-7/8"	13-1/2"	1400A216
1-17/64"	4	8-1/2"	14-1/8"	1400A217
1-9/32"	4	8-1/2"	14-1/8"	1400A218
1-19/64"	4	8-1/2"	14-1/4"	1400A219
1-5/16"	4	8-5/8"	14-1/4"	1400A220
1-21/64"	4	8-3/4"	14-3/8"	1400A221
1-11/32"	4	8-3/4"	14-3/8"	1400A222
1-23/64"	4	8-7/8"	14-1/2"	1400A223
1-3/8"	4	8-7/8"	14-1/2"	1400A224
1-25/64"	4	9"	14-5/8"	1400A225
1-13/32"	4	9"	14-5/8"	1400A226
1-27/64"	4	9-1/8"	14-3/4"	1400A227
1-7/16"	4	9-1/8"	14-3/4"	1400A228
1-29/64"	4	9-1/4"	14-7/8"	1400A229
1-15/32"	4	9-1/4"	14-7/8"	1400A230
1-31/64"	4	9-3/8"	15"	1400A231
1-1/2"	4	9-3/8"	15"	1400A232
1-17/32"	5	9-3/8"	16-3/8"	1400A234
1-9/16"	5	9-5/8"	16-5/8"	1400A236
1-19/32"	5	9-7/8"	16-7/8"	1400A238
1-5/8"	5	10"	17"	1400A240
1-21/32"	5	10-1/8"	17-1/8"	1400A242
1-11/16"	5	10-1/8"	17-1/8"	1400A244
1-23/32"	5	10-1/8"	17-1/8"	1400A246
1-3/4"	5	10-1/8"	17-1/8"	1400A248
1-25/32"	5	10-1/8"	17-1/8"	1400A250
1-13/16"	5	10-1/8"	17-1/8"	1400A252
1-27/32"	5	10-1/8"	17-1/8"	1400A254

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
1-7/8"	5	10-3/8"	17-3/8"	1400A256
1-29/32"	5	10-3/8"	17-3/8"	1400A258
1-15/16"	5	10-3/8"	17-3/8"	1400A260
1-31/32"	5	10-3/8"	17-3/8"	1400A262
2"	5	10-3/8"	17-3/8"	1400A264
2-1/32"	5	10-3/8"	17-3/8"	1400A302
2-1/16"	5	10-1/4"	17-3/8"	1400A304
2-3/32"	5	10-1/4"	17-3/8"	1400A306
2-1/8"	5	10-1/4"	17-3/8"	1400A308
2-5/32"	5	10-1/4"	17-3/8"	1400A310
2-3/16"	5	10-1/4"	17-3/8"	1400A312
2-7/32"	5	10-1/8"	17-3/8"	1400A314

Size	Morse Taper	Flute Length	Overall Length	1400 Order No.
2-1/4"	5	10-1/8"	17-3/8"	1400A316
2-5/16"	5	10-1/8"	17-3/8"	1400A320
2-3/8"	5	10-1/8"	17-3/8"	1400A324
2-7/16"	5	11-1/4"	18-3/4"	1400A328
2-1/2"	5	11-1/4"	18-3/4"	1400A332
2-9/16"	5	11-7/8"	19-1/2"	1400A336
2-5/8"	5	12-3/4"	19-1/2"	1400A340
2-11/16"	5	12-3/4"	20-3/8"	1400A344
2-3/4"	5	12-3/4"	20-3/8"	1400A348
2-13/16"	5	13-3/8"	21-1/8"	1400A352
2-7/8"	5	13-3/8"	21-1/8"	1400A356
2-15/16"	5	14"	21-3/4"	1400A360
3"	5	14"	21-3/4"	1400A364

1450

High Speed Steel

**118° Point / Undersize Taper Shank
Fractional / Black Oxide**



1450

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

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

1475

High Speed Steel

**118° Point / Oversize Taper Shank
Fractional / Black Oxide**



1475

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

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



HEX Shank Drills

Heavy-duty drills with added versatility thanks to the hex shank. This shank can quickly be installed in any adjustable power tool chuck. These heavy-duty drills employ a 135° Split Point to reduce walking when drilling. Each drill has been through a surface treatment process to improve overall performance.

- ▷ Hex shank for adjustable power tool chucks
- ▷ 135° split point for self centering and reduced walking
- ▷ Surface treatment for improved performance

HEXT4HD

High Speed Steel

1/4" Hex Shank for Hex or adjustable power tool chucks
Black & Gold Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	HEXT4HD Packaging: Tube		HEXT4HD Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	5/8"	2-1/4"	045504	1	045504.20	72
3/32"	.0938	3/4"	2-7/16"	045506	1	045506.20	72
1/8"	.1250	7/8"	2-5/8"	045508	1	045508.20	72
5/32"	.1562	1"	2-13/16"	045510	1	045510.20	72
3/16"	.1875	1-1/8"	3"	045512	1	045512.20	72
7/32"	.2188	1-1/4"	3-1/8"	045514	1	045514.20	72
1/4"	.2500	1-3/8"	3-3/16"	045516	1	045516.20	72

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T47HEXHD	Plastic Case	7 Piece	1/16"-1/4" by 32 ^{nds}	045532



HEXT4

High Speed Steel

1/4" Hex Shank for Hex or adjustable power tool chucks
Black Oxide



Size	Decimal Equivalent	Flute Length	Overall Length	HEXT4 Packaging: Tube		HEXT4 Packaging: Bulk	
				Order No.	Pkg Qty	Order No.	Pkg Qty
1/16"	.0625	5/8"	2-1/4"	045404	1	045404.20	72
3/32"	.0938	3/4"	2-7/16"	045406	1	045406.20	72
1/8"	.1250	7/8"	2-5/8"	045408	1	045408.20	72
5/32"	.1562	1"	2-13/16"	045410	1	045410.20	72
3/16"	.1875	1-1/8"	3"	045412	1	045412.20	72
7/32"	.2188	1-1/4"	3-1/8"	045414	1	045414.20	72
1/4"	.2500	1-3/8"	3-3/16"	045416	1	045416.20	72

Corresponding Sets				
Style	Description	Pieces	Size Range	Order No.
T47HEX	Plastic Case	7 Piece	1/16"-1/4" by 32 ^{nds}	045432





Jobber Length Drills

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

▷ All sizes are individually packaged

600

Carbide Tip

118° Point / Straight Shank
Fractional / Bright



600

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

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

680

Carbide Tip

118° Point / Straight Shank
Number / Bright



680

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

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



Jobber Length Drills

Solid carbide drills have the ability to retain hardness and a sharp edge at high temperature.

- ▷ *Excellent abrasion-resistant qualities*
- ▷ *Advantageous for use in drilling abrasive materials such as cast iron, non-ferrous alloys, high silicon aluminum, hard rubber, and Plexiglas*
- ▷ *Carbide drills are run at higher speeds than standard High Speed Steel drills*
- ▷ *They offer the advantage of extreme rigidity for greater drilling accuracy*
- ▷ *All sizes are individually packaged*

700

Solid Carbide

118° Point / Straight Shank
Fractional & Letter / Bright



700

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

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



700

Solid Carbide

**118° Point / Straight Shank
Number / Bright**



700

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

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



Straight Flute Drills

The straight flute design of these Solid Carbide drills increases edge strength, produces good size control, and hole surface finish.

- ▷ *The 140° split point provides ease of penetration*
- ▷ *Used to drill difficult materials (up to Rc 60) including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless-steel weldments*
- ▷ *Suitable for drilling out broken drills, taps, bolts, screws, studs, weldments*
- ▷ *All sizes are individually packaged*



710

Solid Carbide

140° Split Point / Straight Shank

Fractional & Letter / Bright



710

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

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

710

Solid Carbide

140° Split Point / Straight Shank
Number / Bright



710

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

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

Corresponding Sets		
No. of Pcs.	Description	Order No.
710 Series Solid Carbide Straight Flute Sets		
5	1/8, 3/16, 1/4, 5/16, 3/8	710A5



710A5



Screw Machine Length Drills

Slow helix 135° split point provides ease of penetration and increases edge strength.

- ▷ Heavy-duty web, short flute and overall length increases strength and rigidity
- ▷ Suited for drilling difficult materials (up to Rc 60), including nickel alloys, chrome alloys, steel weldments, titanium alloys, high temperature alloys, and stainless-steel weldments
- ▷ All sizes are individually packaged

720

Solid Carbide

135° Split Point / Straight Shank / Slow Helix
Fractional & Letter / Bright



720

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

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



720

Solid Carbide

**135° Split Point / Straight Shank / Slow Helix
Number / Bright**



720

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

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



3-Flute Drills

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

▷ *All sizes are individually packaged*

730

Solid Carbide

150° Point / Straight Shank

Fractional & Metric / Bright



730

Size	Flute Length	Overall Length	730 Order No.
1/8"	1-1/4"	2-1/4"	730A108
9/64"	1-3/8"	2-1/2"	730A109
5/32"	1-3/8"	2-1/2"	730A110
11/64"	1-5/8"	2-3/4"	730A111
3/16"	1-5/8"	2-3/4"	730A112
13/64"	1-3/4"	3"	730A113
7/32"	1-3/4"	3"	730A114
15/64"	2"	3-1/4"	730A115
1/4"	2"	3-1/4"	730A116
17/64"	2-1/8"	3-1/2"	730A117
9/32"	2-1/8"	3-1/2"	730A118
19/64"	2-3/8"	3-3/4"	730A119
5/16"	2-3/8"	3-3/4"	730A120
21/64"	2-1/2"	4"	730A121
11/32"	2-1/2"	4"	730A122
23/64"	2-1/2"	4"	730A123
3/8"	2-3/4"	4-1/2"	730A124
25/64"	2-7/8"	4-1/2"	730A125
13/32"	2-7/8"	4-1/2"	730A126
27/64"	2-7/8"	4-1/2"	730A127
7/16"	2-7/8"	4-1/2"	730A128
29/64"	3"	4-1/2"	730A129
15/32"	3"	4-3/4"	730A130
31/64"	3"	4-3/4"	730A131
1/2"	3"	4-3/4"	730A132
17/32"	3"	4-3/4"	730A134
9/16"	3-1/2"	5-3/4"	730A136
5/8"	3-1/2"	5-3/4"	730A140
3/4"	4-1/4"	5-3/4"	730A148

Size	Flute Length	Overall Length	730 Order No.
3.0 (mm)	1-1/4"	2-1/4"	730A003
6.0 (mm)	2"	3-1/4"	730A006
8.0 (mm)	2-3/8"	3-3/4"	730A008
10.0 (mm)	2-7/8"	4-1/2"	730A010
12.0 (mm)	3"	4-3/4"	730A012
14.0 (mm)	3-1/2"	5-3/4"	730A014
16.0 (mm)	3-1/2"	5-3/4"	730A016



Spade Drills

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

▷ All sizes are individually packaged

750

Solid Carbide**118° Point / Straight Shank****Fractional / Bright**

750

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

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

Combined Drill & Countersink (Center Drill)

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

▷ All sizes are individually packaged

3500C

Solid Carbide**60° Angle****Bright**

3500C

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

Masonry Drills

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

▷ All sizes are individually packaged

1600N

Carbide Tip
Straight Shank
Fractional / Gold & Silver



1600N

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

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

1600A

Carbide Tip
Rotary Percussion & Hammer Drilling,
Round Shank
Fractional / Black & Gold Tipped



1600A

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

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

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

Tip Masonry Drills

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

1700A

Carbide Tip

SDS Plus

Fractional / Bright



1700A

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

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

All sizes are individually packaged.

1700B (bulk packaging)

Carbide Tip

SDS Plus

Fractional / Bright



1700B

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

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

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

1730 PACKAGING:
All sizes are individually packaged.

Rebar Cutters

These cutters are the perfect solution for drilling through concrete embedded rebar! Evacuation zones between the carbide teeth and flutes for optimal dust evacuation. Made from premium grade European Carbide.

For sizes 3/8" – 5/8", rebar cutters come in a single, one-piece design in either Micro SDS+ (Compatible with SDS+ drive systems), or 3-Flat shank.

For sizes 3/4" and above, Drillco rebar cutters come in a two-piece design (Head + Shank Adapter). The adapter is available in Micro SDS+ or 3-Flat Shank, and is interchangeable and reusable with all sizes from 3/4" and above.

- ▷ *Cuts through rebar up to 5x faster than an SDS+ multi-cutting drill*
- ▷ *Eliminates the need to relocate holes to avoid rebar; just drill straight through!*
- ▷ *Large, unique flute design optimizes debris removal*
- ▷ *Relief hole for easier chip and heat removal away from the drilling surface*

1760 / 1770 Solid Carbide

Micro SDS+ or 3-Flat Shank / Fractional / Bright
One-Piece Design



1760

Size	Head Length	Overall Length	Micro SDS+ Order No	3-Flat SDS Order No
3/8"	4"	8"	176F1248	177F1248
1/2"	4"	12"	176F13212	177F13212
9/16"	4"	12"	176F13612	177F13612
5/8"	4"	12"	176F14012	177F14012

1780 Solid Carbide

Head Only / Fractional / Bright
Two-Piece Design



1780

Size	Head Length	Order No
3/4"	4"	178F1484
7/8"	4"	178F1564
1"	4"	178F1644
1-1/8"	4"	178F2084
1-1/4"	4"	178F2164
1-3/8"	4"	178F2244
1-1/2"	4"	178F2324

Type	Adapter Length	Order No
SDS PLUS	9"	178FSDSADAPT
3-Flat Shank	9"	178F3FLATADAPT



TIPS!

Use rebar cutters on rotation mode only

Masonry Drills

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

▷ All sizes are individually packaged

1720

Carbide Tip
SDS PLUS DURA-TIP
Fractional / Bright



1720

Size	Flute Length	Overall Length	1720 Order No.
3/16"	2"	4-1/4"	172F1124
3/16"	4"	6-1/2"	172F1126
3/16"	6"	8-1/2"	172F1128
3/16"	10"	12-1/2"	172F11212
1/4"	2"	4-1/2"	172F1164
1/4"	4"	6-1/2"	172F1166
1/4"	6"	8-1/2"	172F1168
1/4"	8"	10-1/2"	172F11610
1/4"	10"	12-1/2"	172F11612
5/16"	4"	6-1/2"	172F1206
5/16"	10"	12-1/2"	172F12012
5/16"	16"	18"	172F12018
3/8"	4"	6-1/4"	172F1246
3/8"	10"	12-1/4"	172F12412
3/8"	16"	18"	172F12418
7/16"	4"	6-1/4"	172F1286
7/16"	10"	12-1/4"	172F12812
7/16"	16"	18"	172F12818
1/2"	4"	6-1/4"	172F1326

Size	Flute Length	Overall Length	1720 Order No.
1/2"	10"	12-1/4"	172F13212
1/2"	16"	18"	172F13218
9/16"	4"	6-1/4"	172F1366
9/16"	10"	12-1/4"	172F13612
9/16"	16"	18"	172F13618
5/8"	8"	10-1/4"	172F14010
5/8"	10"	12-1/4"	172F14012
3/4"	8"	10"	172F14810
3/4"	10"	12"	172F14812

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

3/16" thru 5/16" - 15 per pack, 3/8" thru 1/2" - 10 per pack

1740

Carbide Tip
SDS MAX
Fractional / Bright



1740

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

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

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

Masonry Drills

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

▷ All sizes are individually packaged

1750

Carbide Tip

TAPCON® SDS-HEX Type Screw Anchor Drills
Fractional / Bright



1750

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

1800E

Carbide Tip

TAPCON® Screw Type Anchor Drills
Fractional / Black with Gold Tip



1800E

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

1800A

Carbide Tip

TAPCON® Screw Type Anchor Drills
Fractional / Black with Gold Tip



1800A

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

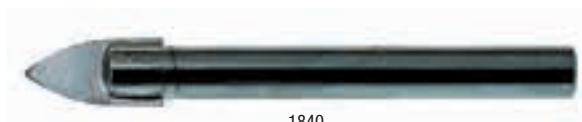
Glass and Tile Drills

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

1840

Straight Shank

Fractional / Bright



1840

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

Hammer Drill Tools

Series 1850



1850 Gouging Chisel



1850 Pointed Chisel



1850 Flat Chisel



1850 Toothed Chisel aka Slotting Tool



1850 Mortar Chisel aka Seam Tool



1850 Tile Chisel

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

Series 1860



1860 - ADAPTER



1860 - SCRIBER

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

Diamond Tipped Core Bits

These special purpose core bits are used to drill holes up to 1" in diameter in masonry like sandstone, ceramics, tile and marble. Each bit is tipped in diamond for very high hardness and great wear resistance.

- ▷ *Hex shank for use in hand held power tools*
- ▷ *Diamond tip for extremely high hardness and wear resistance*
- ▷ *Coated for increased wear resistance and tool life*

TG7

Diamond Tipped Core Bit Blue Finish



Size	Overall Length	TG7 Packaging: Tube	
		Order No.	Pkg Qty
15/64"	2-11/64"	039201	1
1/4"	2-11/64"	039202	1
9/32"	2-11/64"	039203	1
5/16"	2-11/64"	039204	1
3/8"	2-9/16"	039205	1
15/32"	2-9/16"	039206	1
1/2"	2-9/16"	039207	1
19/32"	2-3/4"	039208	1
25/32"	2-3/4"	039210	1
1"	2-3/4"	039211	1

* Run Wet 

* For : Glaze, Sandstone, Glazed Sandstone, Sandware, Terracotta, Marble and Tile

Multi-Step Drills

3-flat shank reduces slippage in the drill chuck. For sheet metal and other thin material such as plastic, PVC pipe, and wood. Ideal for electricians and other skilled trades.

8900 Bright / 3-Flat Shank Fractional



8900

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

Drillco's multi-step drills are designed for all sheet metals up to 5/32" thick. Creates clean, round, burr free holes in multiple sizes with just one tool!

8950 TiN/ Hex Shank Fractional

Spiral Flute Design allows for faster and smoother cutting action

Up to 13 Sizes with one drill. Save time and money!

1/4" Quick Change Hex Shank is impact ready and easily fits into any power drill/driver

118° Split Point reduces 'walking'

Premium grade M2 High Speed Steel construction

TiN Coating adds a protective layer that deflects heat, leading to longer tool life

3pc Set



Individually blister packed for easy display!

Tool#	Description	4700SE Order No.
1	13 Steps: 1/8" to 1/2"	895A001
2	9 Steps: 1/4" to 3/4"	895A002
3	12 Steps: 3/16" to 7/8"	895A003
4	13 Steps: 1/4" to 1.1/8"	895A004
SET	3pc Set: Tools #1 - #	895SET

Multi-Step Drills

Now with the exclusive ICECUT™ coating

Multi-Step drill bits are the fastest and easiest way to enlarge holes in sheet metal and other materials up to 1/8" thick.

- ▷ *Special AlCrN coating provides additional toughness and wear resistance to prolong tooling life, even when compared to titanium based coatings such as TiN or TiAlN*
- ▷ *2 wide cylindrical flutes eliminate chip build-up for faster drilling and to produce holes with minimal vibration or distortion*
- ▷ *Each shank has three flats for easy mounting*
- ▷ *Spiral fluting is ideal to improve speed when working with cordless power tools*
- ▷ *Straight fluting is ideal to ensure you get the proper hole size without warping on corded power tools*



Type	Type of Flute	Shank Size	Min. Size	Max. Size	Step Increment	Number of Steps	Order No.
A	SPIRAL	1/4"	1/8"	1/2"	1/8"	13	01-W 001
B	SPIRAL	3/8"	3/16"	7/8"	1/8"	12	01-W 005
C	SPIRAL	3/8"	1/4"	3/4"	1/8"	9	01-W 011
D	SPIRAL	3/8"	1/4"	1 3/8"	9/64"	10	01-W 012
E	SPIRAL	1/4"	3/16"	1/2"	3/8"	6	01-W 021
F	SPIRAL	3/8"	1/4"	1"	1/8"	10	01-W 029
A	STRAIGHT	1/4"	1/8"	1/2"	1/8"	13	01-W 101
B	STRAIGHT	3/8"	3/16"	7/8"	1/8"	12	01-W 105
C	STRAIGHT	3/8"	1/4"	3/4"	1/8"	9	01-W 111
D	STRAIGHT	3/8"	1/4"	1 3/8"	9/64"	10	01-W 112

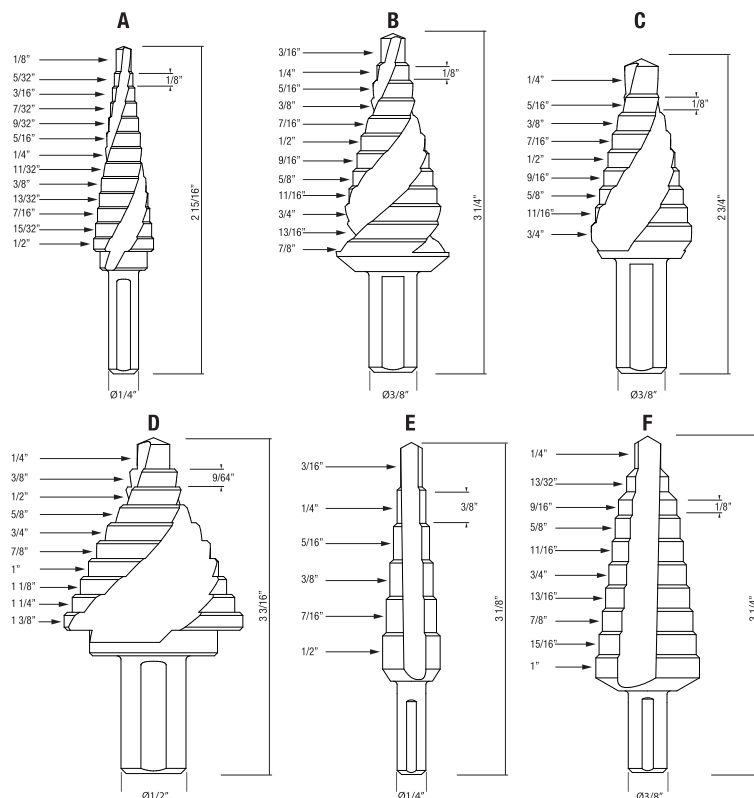
Packaged in reusable plastic packaging



Step drill set

Contains the three Multi-Step bits needed for all hole sizes from 1-3/8".

Set	
Description	Order No.
Each kit contains:	
01-W 001	01-W 951
01-W 005	
01-W 012	



Wood Drills

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

▷ All sizes are individually packaged

1900E

High Speed Steel

Ship Auger Bit / HEX Shank Fractional / Bright



1900E

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

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

1950E

High Speed Steel

Paddle Bits - Ball Groove Shank Fractional / Bright

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



1950E

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

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

Combined Drill & Countersink (Center Drill)

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

▷ All sizes are individually packaged

3500

High Speed Steel
Plain Type / 60° Angle
Bright



3500

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

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

3500E

High Speed Steel
Plain & Bell Type / 60° Angle
Bright

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



3500E Plain



3500E Bell Type

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

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

Combined Drill & Countersink (Center Drill)

Plain Type Long Series is used where extra reach is required.

3575E
60° Angle
Bright



3575E

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

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

Pilot for Holesaws

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



400P
118° Split Point / 3-Flats / Fractional
Black Oxide



400P

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

Carbon Screw Extractors

Screw extractors are designed to remove a broken or seized screw. The screw must first be "drilled out" to the proper size in order for the screw extractor to fit properly. The screw extractor is turned counter-clockwise using a tap wrench.

▷ Available individually, in a 5pc set, or in a 5pc set with corresponding required drill

Series 9000E



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



9000ESET



9000EDS

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

Hardened Drill Sleeve

Regular Length. For adapting Morse Taper Shank tools to larger Morse taper holders. Hardened Sleeves (1420) – Case hardened throughout and ground internally and externally

1420 Hardened Bright



1420

Size	Inside Morse Taper	Morse Taper Outside	1420 Order No.
12	1	2	142E012H
13	1	3	142E013H
14	1	4	142E014H
23	2	3	142E023H
24	2	4	142E024H
25	2	5	142E025H
34	3	4	142E034H
35	3	5	142E035H
45	4	5	142E045H
46	4	6	142E046H
56	5	6	142E056H

Extension Length. For adapting Morse Taper Shank tools to larger or smaller Morse taper holders. Can also be used to extend the length of taper shank tools. Hardened Sleeves (1440) – Case hardened throughout and ground internally and externally

1440 Hardened Bright



1440

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

Drill Drifts & Gauges

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

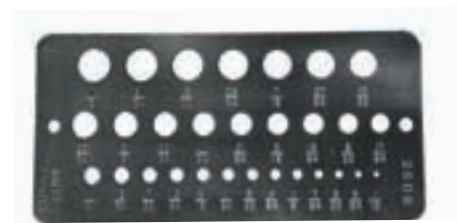
1470 Drill Drifts Bright



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

Drill Gauges

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



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

Displays, Dispensers, Indexes



49A123



115DX



29IDX

No. of Pieces	Series	Description	Order No.
Drill Display Case - Counter Top Display			
540	200		200A540C
	200B		200B540C
	200LH	(24) 1/16, (24) 5/64, (24) 3/32, (24) 7/64, (60) 1/8, (24) 9/64, (24) 5/32,	200LH540C
	300	(24) 11/64, (48) 3/16, (24) 13/64, (24) 7/32, (24) 15/64, (60) 1/4, (12)	300A540C
	300N	17/64, (12) 9/32, (12) 19/64, (12) 5/16, (6) 21/64, (6) 11/32, (6) 23/64,	300N540C
	300C	(12) 3/8, (6) 25/64, (6) 13/32, (6) 27/64, (12) 7/16, (6) 29/64, (6) 15/32,	300C540C
	350N	(6) 31/64, (6) 1/2	350N540C
	400		400A540C
	400N		400N540C
Drill Dispensers (Empty)			
Jobber Drill Dispensers	-	270PC FRACTIONAL SIZES	270DX
Jobber Drill Dispensers	-	720PC WIRE SIZES	720DX
Jobber Drill Dispensers	-	240PC LETTER SIZES	240DX
Jobber Drill Dispensers	-	MASTER DRILL DISPENSER	115DX
Jobber Drill Dispensers	-	234PC METRIC SIZES	800DX
Drill Index (Empty)			
13	-	13PC DRILL BIT INDEX 1/16" - 1/4" by 64 ^{ths}	13IDX
15	-	15PC DRILL BIT INDEX 1/16" - 1/2" by 32 ^{nds}	15IDX
21	-	21PC DRILL BIT INDEX 1/16" - 3/8" by 64 ^{ths}	21IDX
26	-	26PC DRILL BIT INDEX A-Z	26IDX
29	-	29PC DRILL BIT INDEX 1/16" - 1/2" by 64 ^{ths}	29IDX
29	-	29PC DRILL BIT INDEX 1/16" - 1/2" by 64 ^{ths} , "DRILL PAL"	29WIDX
60	-	60PC DRILL BIT INDEX #1-60	60IDX
540	-	540PC EMPTY DRILL COUNTER DISPLAY	540DX or 49A123

Technical Information

Drill Feeds and Speeds

Material	Hardness	Drill Type	Point Style	Point Angle	Speed (SFM)	Feed	Coolant
Aluminum / Aluminum Alloys	–	High Helix	Standard	118°	200-300	Medium to Heavy	Water Soluble
Aluminum Bronze	–	High Helix	Standard	118°	50-100	Medium to Heavy	Water Soluble
Brass, Free Machining	–	Low Helix	Standard	118°	100-250	Medium to Heavy	Water Soluble
Bronze, Soft Medium	Below 200	General Purpose	Standard	118°	70-150	Medium to Heavy	Water Soluble
Bronze, High Tensile	–	Low Helix or Half RD	Standard	118°	50-100	Medium to Heavy	Water Soluble
Cooper / Cooper Alloys	–	General Purpose	Standard	118°	100-200	Medium	Water Soluble
High Temp. Alloys, Cobalt Base	180-300	Cobalt	Split Point	135°	5-20	Medium	Activated Oils
High Temp. Alloys, Iron Base	180-300	Cobalt	Split Point	135°	5-20	Medium	Activated Oils
High Temp. Alloys, Nickel Base	180-300	Nitro® or Cobalt	Split Point	135°	5-15	Medium	Activated Oils
Iron, Soft Case	Up to 150	Heavy Duty or Nitro®	Split Point	135°	75-150	Medium	Dry / Air
Iron, Medium Case	150-250	Heavy Duty or Nitro®	Split Point	135°	50-100	Medium	Dry / Air
Iron, Hard Case	Over 250	Carbide	Standard	118°	40-75	Light to Medium	Dry / Air
Plastic & Related Materials	–	Low Helix	Low Angle	90°	100-200	Medium to Heavy	Dry / Air
Steel, Alloyed Low Carbon	125-275	General Purpose	Standard	118°	50-70	Medium	Water Soluble
Steel, Alloyed Medium Carbon	275-325	Heavy Duty or Nitro®	Split Point	135°	40-55	Medium	Water Soluble
Steel, Alloyed High Carbon	Over 325	Cobalt	Split Point	135°	30-50	Medium	Water Soluble
Steel Low & Medium carbon	Below 175	General Purpose	Standard	118°	45-95	Medium to Heavy	Water Soluble
Steel High Carbon	175-225	General Purpose	Standard	118°	45-65	Medium	Water Soluble
Stainless Steel, Austenitic	Below 300	Heavy Duty or Nitro®	Split Point	135°	40-60	Medium to Heavy	Water Soluble
Stainless Steel Precipitation	Over 300	Cobalt	Split Point	135°	20-40	Medium	Cutting Oil

Drill Dia.	Light	Medium	Heavy
Feed Per Drill Revolution			
1/16" to 1/8"	.0005 - .0010	.0010 - .0020	.0020 - .0040
1/8" to 1/4"	.0010 - .0030	.0030 - .0050	.0040 - .0060
1/4" to 3/8"	.0030 - .0050	.0050 - .0070	.0060 - .0100
3/8" to 1/2"	.0040 - .0060	.0050 - .0080	.0080 - .0120
1/2" to 3/4"	.0050 - .0070	.0070 - .0100	.0090 - .0140
3/4" to 1"	.0070 - .0100	.0090 - .0140	.0140 - .0200

Recommended Drilling Depths

Length of Drill	Drilling Depth
Center Drills	1 x D
Stub (Screw Machine)	2.5 x D
Mechanic's	3.5 x D
Jobber	4 x D
S&D Drill	4 x D
Aircraft Extension	4 x D
Taper Length	6 x D
8" Extra Length	10 x D
12" Extra Length	12 x D
18" Extra Length	15 x D

Feeds – Feed rates for drilling are governed by the drill diameter, machinability of materials and depth of hole.

Speeds – The speed of a drill is determined by the rate which the outer periphery of the tool rotates in relation to material being cut. In general, the SFM at which a drill will operate is within a range based upon the workpiece material, its condition, hardness and depth of hole. It is usually advisable to start the drilling process at a slower SFM and then increase to the maximum.

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

$$\text{SFM} = \text{RPM} \times \text{TD} \times .26 = \text{Surface Feet Per Minute}$$

TD – Tool diameter in inches

Technical Information

710 Drill Feeds and Speeds

Workpiece Material Groups	Hardness	Speed (SFM)	1/32"	1/16"	1/8"	1/4"	3/8"	1/2"	5/8"	3/4"
Free Machining & Low Carbon Steels 1006, 1008, 1015, 1018, 1020, 1022, 1025, 1117, 1140, 1141, 11L08, 11L14, 1213, 12L13, 12L14, 1215, 1330	up to 28 Rc	330	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
Medium Carbon & High Carbon Steels, Alloy Steels & Easy to Machine Tool Steels 1030, 1035, 1040, 1045, 1050, 1052, 1055, 1060, 1085, 1095, 1541, 1551, 9255, 2515, 3135, 3415, 4130, 4137, 4140, 4150, 4320, 4340, 4520, 5015, 5115, 5120, 5132, 5140, 5155, 6150, 8620, 9262, 9840, 52100, 01, 02, 06, S2, W1 to W310	28 to 38 Rc	265	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
Tool Steels & Die Steels 07, M1, M2, M3, M4, M7, T1, T2, T4, T5, T8, T15, A2, A3, A6, A7, H10, H11, H12, H13, H19, H21, L3, L6, L7, P2, P20, S1, S5, S7, 52100, A 128, D2, D3, D4, D5, D7	28 to 44 Rc	230	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
Hardened Steel	45 to 65 Rc	50	0.0003	0.0010	0.0010	0.0010	0.0020	0.0020	0.0020	0.0030
Stainless Steel - Moderately Difficult 301, 302, 303 High Tensile, 304, 304L, 305, 420, 15-5PH, 17-4PH, 17-7PH	up to 28 Rc	150	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
Stainless Steel - Difficult to Machine 302B, 304B, 309, 310, 316, 316B, 316L, 316Ti, 317, 317L, 321, PH13-8Mo, Nitronics	up to 28 Rc	100	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
High Temp Alloys Nimonic, Inconel, Monel, Hastelloy	up to 42 Rc	70	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
Titanium Alloys 6Al-4V, 5Al-2.5 Sn, 6Al-2 Sn-4Zr-6Mo, 3Al-8V-6Cr4Mo-4Zr, 10V-2Fe-3Al, 13V-11Cr-3Al	up to 42 Rc	180	0.0003	0.0005	0.0020	0.0040	0.0050	0.0060	0.0080	0.0100
Cast-Iron - Gray CG, ASTM A48, CLASS 20, 25, 30, 35, SAE J431C, GRADES G1800, G3000, G3500, GG 10, 15, 20, 25, 30, 35, 40	up to 240 HB	365	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
Cast Iron - Ductile & Malleable CGI 60-40-18, 65-45-12, D4018, D4512, D5506, 32510, 35108, M3210, M4504, M5503, 250, 300, 350, 400, 450	over 240 HB	365	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
Plastics		300	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120
Kevlar		300	0.0010	0.0020	0.0030	0.0060	0.0080	0.0100	0.0110	0.0120

Recommended cutting speed for HSS+Co Twist Drill Bits

SFM*		100	70	40	200
Cutter Dia.	Mild Steel	Steel	Stainless Steel	Aluminium	
Inch	mm	500N/mm ²	900N/mm ²		
1/16"	1.6	6112	4278	2445	12224
1/8"	3.2	3056	2139	1222	6112
3/16"	4.8	2037	1426	815	4075
1/4"	6.4	1528	1070	611	3056
5/16"	7.9	1222	856	489	2445
3/8"	9.5	1019	713	407	2037
7/16"	11.1	873	611	349	1746
1/2"	12.7	764	535	306	1528
9/16"	14.3	679	475	272	1358
5/8"	15.9	611	428	244	1222
11/16"	17.5	556	389	222	1111
3/4"	19.1	509	357	204	1019
13/16"	20.6	470	329	188	940
7/8"	22.2	437	306	175	873
15/16"	23.8	407	285	163	815
1"	25.4	382	267	153	764
1-1/16"	27	360	252	144	719
1-1/8"	28.6	340	238	136	679
1 3/16"	30.2	322	225	129	643
1-1/4"	31.8	306	214	122	611
1-5/16"	33.3	291	204	116	582
1-3/8"	34.9	278	194	111	556
1-7/16"	36.5	266	186	106	531
1-1/2"	38.1	255	178	102	509

* SFM = Surface Feet per Minute Optimal RPM = SFM x 3.82/Diameter (in.)

Recommended cutting speed for MULTI-STEP^{MC} M2AI HSS Drill Bits

Cutter Dia.		Alumin-ium	Copper	Mild Steel	Stainless Steel	Non-metallic
mm	Inch					
12.7	1/2"	1003	878	502	376	1128
14.3	9/16"	892	781	446	335	1004
15.9	5/8"	802	702	401	301	902
17.5	11/16"	730	638	365	274	821
19.1	3/4"	669	585	334	251	752
20.6	13/16"	617	540	309	231	694
22.2	7/8"	573	502	287	215	645
23.8	15/16"	535	468	268	201	602
25.4	1"	502	439	251	188	564
27.0	1-1/16"	472	413	236	177	531
28.6	1-1/8"	446	390	223	167	502
30.2	1-3/16"	422	370	211	158	475
31.8	1-1/4"	401	351	201	150	451
33.3	1-5/16"	382	334	191	143	430
34.9	1-3/8"	365	319	182	137	410

* Choose RPM based on LARGEST step diameter

Technical Information

Drill Surface Treatments

Type	Chemical Compositions of High Speed Steels					Term
	Carbon %	Tungsten %	Molybdenum	Chromium %	Vanadium %	
M.50	.83	0.10	4.25	4.00	1.00	HSS
M1	.80	1.50	8.00	4.00	1.00	HSS
M2	.85	6.00	5.00	4.00	2.00	HSS
M7	1.00	1.75	8.75	4.00	2.00	HSS
M35	.80	6.00	5.00	4.00	2.00	5% Cobalt
M42	1.0	1.50	9.50	3.75	1.05	8% Cobalt

Surface Treatments

Surface treatments for high speed steel tools function to condition them, so in certain applications they will outperform tools that have not been treated. Surface treatments do not, however, alter the functional structure of the tool itself.

Black Oxide - This treatment is applied to finished tools and produces a thin black iron oxide surface coating. It also provides additional tempering and stress relieving. This coating reduces galling and chip welding and also increases the ability of the tool to retain lubricants. Recommended in iron and steel drilling applications. It should not be used in non-ferrous metals such as aluminum because it increases the loading tendencies of the tool.

Nitride - This treatment produces a hard case which is highly resistant to abrasion. It also retards the tendency of softer materials to cling or load on tools. Recommended for tools that are used for ferrous, non-ferrous, and non-metallic materials which are abrasive and have loading characteristics.

Nitride and Oxide - Combines the advantages of the lubricity of oxide with the abrasion resistance of nitriding. Recommended for abrasive ferrous applications. Not recommended for soft materials such as aluminum, magnesium or similar non-ferrous applications.

Chrome Plating - This treatment deposits an extremely thin layer of chromium on the surface of tools. It reduces the coefficient of friction, and resists chip weld and abrasion. Recommended for non-ferrous and non-metallic materials.

Titanium Nitride - This surface treatment improves tool life by acting as a wear resistant and thermal barrier. It also gives the tool a low coefficient of friction and very high surface hardness. It reduces friction and chip welding and acts as a thermal insulator between the chip and the tool. Recommended for use in ferrous materials below Rc 40 and in non-ferrous materials.

Drill Points

Conventional Point - Conventional points with 118° included point angles are the most commonly used because they provide satisfactory results in a wide variety of materials. A possible limitation is that the straight chisel edge contributes to walking at the drill point, often making it necessary to spot the hole for improved accuracy.

Split Point - Split points were originally developed for use on drills designed for deep oil holes in automotive crankshafts. Since its inception, the split point has gained widespread use and is applied to both 118° and 135° included point angles. Its main advantages are the ability to reduce thrust and eliminate walking at the drill point. This is a distinct advantage when the drill is used in a portable drill or in drilling applications where busings cannot be used. The split point also has two positive rake cutting edges extending the center of the drill, which can assist as a chipbreaker to produce small chips which can readily be ejected.

Notched Point - Notched points were developed for drilling tough alloys. Commonly incorporated on heavy web drills, which allow the point to withstand the higher thrust loads required in drilling these materials. As with the split point, the notched point contains two additional positive rake cutting edges extending toward the center of the drill. These secondary cutting lips, which extend no further than half the original cutting lip, can assist in chip control and reduce the torque required in drilling tough materials. Notched points can be incorporated on both 118° and 135° included point angles, making them suitable for drilling a broad variety of materials.

Helical Point - Helical points change the flat blunt chisel to a "S" contour with a radiused crown effect which has its highest point at the center of the drill axis. This crown contour creates a continuous cutting edge from margin to margin across the web. The advantage is its self-centering ability which allows the chisel to cut and enables the drill to cut closer to actual drill diameter. Helical Points are not available under 1/16" diameter.

Reduced Rake Point - Reduced rake points are generated by flatterring or dubbing both cutting lips from the outer periphery to the chisel. This reduces the effective axial rake to 0–5, positive which translates to a plowing rather than shearing action. This reduction in shearing is an effective method of preventing the drill from grabbing in low tensile strength materials such as brass. Reducing the rake also strengthens the cutting lip and can assist in breaking chips.

Technical Information

Decimal Equivalent Chart

Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches	Drill Size	MM	Decimal Inches
-	0.10	.0039	45	2.08	.0820	5	5.22	.2055	7/16	11.11	.4375
-	0.20	.0079	44	2.18	.0860	4	5.31	.2090	29/64	11.15	.4531
-	0.25	.0098	43	2.26	.0890	3	5.41	.2130	15/32	11.91	.4688
-	0.30	.0118	42	2.37	.0935	7/32	5.56	.2188	-	12.00	.4724
80	0.34	.0135	3/32	2.38	.0938	2	5.61	.2210	31/64	12.30	.4844
79	0.37	.0145	41	2.44	.0960	1	5.79	.2280	1/2	12.70	.5000
1/64	0.40	.0156	40	2.50	.0980	A	5.94	.2340	-	13.00	.5118
78	0.41	.0160	39	2.53	.0995	15/64	5.95	.2344	33/64	13.10	.5156
77	0.46	.0180	38	2.58	.1015	-	6.00	.2360	17/32	13.49	.5312
-	0.50	.0197	37	2.64	.1040	B	6.05	.2380	35/64	13.89	.5469
76	0.51	.0200	36	2.71	.1065	C	6.15	.2420	-	14.00	.5512
75	0.53	.0210	7/64	2.78	.1094	D	6.25	.2460	9/16	14.29	.5625
74	0.57	.0225	35	2.79	.1100	1/4	6.35	.2500	37/64	14.68	.5781
-	0.60	.0236	34	2.82	.1110	E	6.35	.2500	-	15.00	.5906
73	0.61	.0240	33	2.87	.1130	F	6.53	.2570	19/32	15.08	.5938
72	0.64	.0250	32	2.95	.1160	G	6.63	.2610	39/64	15.48	.6094
71	0.66	.0260	-	3.00	.1181	17/64	6.75	.2656	5/8	15.88	.6250
-	0.70	.0276	31	3.05	.1200	H	6.76	.2660	-	16.00	.6299
70	0.71	.0280	1/8	3.18	.1250	I	6.91	.2720	41/64	16.27	.6406
69	0.74	.0282	30	3.26	.1285	-	7.00	.2756	21/32	16.67	.6562
-	0.75	.0295	29	3.45	.1360	J	7.04	.2770	-	17.00	.6693
68	0.79	.0310	28	3.57	.1405	K	7.14	.2810	43/64	17.07	.6719
1/32	0.79	.0313	9/64	3.57	.1406	9/32	7.14	.2812	11/16	17.46	.6875
-	0.80	.0315	27	3.66	.1440	L	7.37	.2900	45/64	17.86	.7031
67	0.81	.0320	26	3.73	.1470	M	7.49	.2950	-	18.00	.7087
66	0.84	.0330	25	3.80	.1495	19/64	7.54	.2969	23/32	18.26	.7188
65	0.89	.0350	24	3.86	.1520	N	7.67	.3020	47/64	18.65	.7344
-	0.90	.0354	23	3.91	.1540	5/16	7.94	.3125	-	19.00	.7480
64	0.91	.0360	5/32	3.97	.1562	-	8.00	.3150	3/4	19.05	.7500
63	0.94	.0370	22	3.99	.1570	O	8.03	.3160	49/64	19.45	.7656
62	0.97	.0380	-	4.00	.1575	P	8.20	.3230	25/32	19.84	.7812
61	0.99	.0390	21	4.04	.1590	21/64	8.33	.3281	-	20.00	.7874
-	1.00	.0394	20	4.09	.1610	Q	8.43	.3320	51/64	20.24	.7969
60	1.02	.0400	19	4.22	.1660	R	8.61	.3390	13/16	20.64	.8125
59	1.04	.0410	18	4.31	.1695	11/32	8.73	.3438	-	21.00	.8268
58	1.07	.0420	11/64	4.37	.1719	S	8.84	.3480	53/64	21.03	.8281
57	1.09	.0430	17	4.39	.1730	-	9.00	.3543	27/32	21.43	.8438
56	1.18	.0465	16	4.50	.1770	T	9.09	.3580	55/64	21.84	.8594
3/64	1.19	.0469	15	4.57	.1800	23/64	9.13	.3594	-	22.00	.8661
55	1.32	.0520	14	4.62	.1820	U	9.35	.3680	7/8	22.23	.8750
54	1.40	.0550	13	4.70	.1850	3/8	9.53	.3750	57/64	22.62	.8906
53	1.51	.0595	3/16	4.76	.1875	V	9.56	.3770	-	23.00	.9055
1/16	1.59	.0625	12	4.80	.1890	W	9.80	.3860	29/32	23.02	.9062
52	1.61	.0635	11	4.85	.1910	25/64	9.92	.3906	59/64	23.42	.9219
51	1.70	.0670	10	4.91	.1935	-	10.00	.3937	15/16	23.81	.9375
50	1.78	.0700	9	4.98	.1960	X	10.08	.3970	-	24.00	.9449
49	1.85	.0730	-	5.00	.1968	Y	10.26	.4040	61/64	24.21	.9531
48	1.93	.0760	8	5.05	.1990	13/32	10.32	.4062	31/32	24.61	.9688
5/64	1.98	.0781	7	5.11	.2010	Z	10.49	.4130	-	25.00	.9843
47	1.99	.0785	13/64	5.16	.2031	27/64	10.72	.4219	63/64	25.00	.9844
-	2.00	.0787	6	5.18	.2040	-	11.00	.4331	1"	25.40	1.0000
46	2.06	.0810	-	-	-	-	-	-	-	-	-

Technical Information

Common Drilling Terms

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

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

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

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

Chisel Edge - The edge at the end of the web that connects the cutting lips

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

Cobalt Steel - A heat-resistant steel that produces increased drill life

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

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

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

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

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

High Speed Steel - The high quality steel used in drills for most maintenance and industrial applications

IPM - Feed rate in Inches Per Minute = IPR X RPM

IPR - Inches Per Revolution (Feed)

Land - The outer portion of the body between two adjacent flutes

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

Lip Relief Angle - The relief angle at the outer corner of the lip

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

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

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

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

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

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

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

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

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

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

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

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

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

Web Thickness - The thickness of the web at the point, unless otherwise specified

Technical Information

Drill Troubleshooting Guide

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

General Purpose Taps



Hand Taps High Speed Steel

Bright Finish
Low to medium tensile strength materials, and aluminum

Type	Series	Catalog page reference
Taper, Plug, Bottoming/ Through or Blind Hole	2000	143, 144
	2000E	145
	2800	146
	2800E	147



Hand Taps High Speed Steel

Bronze Surface Treatment
For long life on most materials

Type	Series	Catalog page reference
Taper, Plug, Bottoming/ Through or Hole SST	03-A, 03-B	148



Hand Taps High Speed Steel

NITRO

Black Oxide
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
Taper, Plug, Bottoming/ Through or Blind Hole	2000N	149, 150



Power Tap High Speed Steel

Bronze Surface Treatment
For long life on most materials using power tools

Type	Series	Catalog page reference
Plug, Through or Blind Hole	03-A, 03-B	151



Hand Taps Carbon

Bright Finish
For cleaning up threads or repairing damaged threads

Type	Series	Catalog page reference
Taper, Plug, Bottoming/ Through or Blind Hole	2000C	152, 153



Spiral Point Taps High Speed Steel

NITRO

Black Oxide
For tapping through holes in high tensile strength materials

Type	Series	Catalog page reference
Plug / Through Hole	2100N	154



Spiral Point Taps High Speed Steel

Bright Finish
For tapping through holes in low to medium tensile strength materials

Type	Series	Catalog page reference
Plug / Through Hole	2850	154
	2100, 2100E	155



Oversize Spiral Point Taps High Speed Steel

Bright Finish
To cut oversized threads in through holes

Type	Series	Catalog page reference
Plug / Through Hole	2103, 2105	156



Oversized Hand Taps High Speed Steel

Bright Finish
To cut oversized threads in through holes

Type	Series	Catalog page reference
Oversize / Plug & Bottoming / Through or Blind Hole	2003, 2005	156





Production Taps

Nitro-Max CNC Taps **NITRO-MAX** M4 Premium HSS

Black Oxide or TiCN Coated
For production tapping & threading

Type	Series	Catalog page reference
Through or Blind Hole	2150N	157
	2160N	158
	2250N	159
	2260N	160
	2270N	161



Multi-Application Spiral Point Taps **NITRO** High Speed Steel

Bright Finish
For machine tapping through holes

Type	Series	Catalog page reference
Plug / Through Hole	2100PS	162



Multi-Application Spiral Flute Taps High Speed Steel

Bright Finish
For tapping blind holes

Type	Series	Catalog page reference
Bottoming / Blind Hole	2000PF	163
	2000F	164



Thread Forming Taps High Speed Steel

Bright Finish
Thread forming does not produce any chips

Type	Series	Catalog page reference
Plug & Bottoming / Through or Blind Hole	2090	164



Pipe Taps



Taper Pipe Taps (NPT) High Speed Steel

Bright Finish
For long life on most materials

Type	Series	Catalog page reference
Through or Blind Hole	2900, 2900E	165



Taper Pipe Taps (NPT) Carbon

Bright Finish
For long life on most material

Type	Series	Catalog page reference
Through or Blind Hole	2700E	165



Interrupted Thread Pipe Taps High Speed Steel

Bright Finish
For better chip management

Type	Series	Catalog page reference
Through or Blind Hole	2930	167



Taper Pipe Taps (NPS) High Speed Steel

Bright Finish
For straight pipe threads

Type	Series	Catalog page reference
Through or Blind Hole	2950	167



Special Purpose

Left Hand Taps

High Speed Steel

Bright Finish
For creating left-handed threads

Type	Series	Catalog page reference
Taper, Plug & Bottoming / Through or Blind Hole	2300	169



8-Pitch Hand Taps

High Speed Steel

Bright Finish
For larger diameter threaded holes

Type	Series	Catalog page reference
Taper, Plug & Bottoming / Through or Blind Hole	2500	170



Screw Thread Insert Hand Taps (STI)

High Speed Steel

Bright Finish
STI Taps for screw thread inserts

Type	Series	Catalog page reference
Plug & Bottoming / Through or Blind Hole	2020	171



Hand Taps Pulley Style

High Speed Steel

Bright & Black finish
For threading hard to reach holes

Type	Series	Catalog page reference
Plug / Through or Blind Hole	2400	171



Hand Taps 6" Extension

High Speed Steel

Bright & Black finish
For threading hard to reach holes

Type	Series	Catalog page reference
Plug & Bottoming / Through or Blind Hole	2060	171



Combined Tap & Drill

High Speed Steel

Bright Finish
Drill and tap in one

Type	Series	Catalog page reference
Through or Blind Hole	2050	172



For Tap/Drill sizes, please see chart on page



Hand Taps

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

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*
- ▷ *Sets – Contains 1 each of Taper, Plug, and Bottoming*

2000

High Speed Steel

Taper, Plug & Bottoming / Through or Blind Hole
Machine Screw/ Bright



2000

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

All sizes are individually packaged



2000

High Speed Steel

**Taper, Plug & Bottoming / Through or Blind Hole
Fractional / Bright**



2000

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

All sizes are individually packaged

2000E

High Speed Steel

Taper, Plug & Bottoming / Through or Blind Hole
Machine Screw / Bright

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

2000E

High Speed Steel

Taper, Plug & Bottoming / Through or Blind Hole
Fractional / Bright



2000E

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

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



2800

High Speed Steel

**Taper, Plug & Bottoming / Through or Blind Hole
Metric / Bright**



2800

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Dia. Limits	2800 Order No.			
				Taper	Plug	Bottoming	Sets
1.6	0.35	2	D3	28A016AT	28A016AP	28A016AB	28A016AS
1.8	0.35	2	D3	28A018AT	28A018AP	28A018AB	28A018AS
2	0.40	3	D3	28A020AT	28A020AP	28A020AB	28A020AS
2.2	0.45	3	D3	28A022AT	28A022AP	28A022AB	28A022AS
2.5	0.45	3	D3	28A025AT	28A025AP	28A025AB	28A025AS
3	0.50	3	D3	28A030AT	28A030AP	28A030AB	28A030AS
3.5	0.60	3	D4	28A035AT	28A035AP	28A035AB	28A035AS
4	0.70	4	D4	28A040AT	28A040AP	28A040AB	28A040AS
4.5	0.75	4	D4	28A045AT	28A045AP	28A045AB	28A045AS
5	0.80	4	D4	28A050AT	28A050AP	28A050AB	28A050AS
6	1.00	4	D5	28A060AT	28A060AP	28A060AB	28A060AS
6.3	1.00	4	D5	28A063AT	28A063AP	28A063AB	28A063AS
7	1.00	4	D5	28A070AT	28A070AP	28A070AB	28A070AS
8	1.00	4	D5	28A080BT	28A080BP	28A080BB	28A080BS
8	1.25	4	D5	28A080AT	28A080AP	28A080AB	28A080AS
10	1.25	4	D5	28A100BT	28A100BP	28A100BB	28A100BS
10	1.50	4	D5	28A100AT	28A100AP	28A100AB	28A100AS
12	1.25	4	D5	28A120CT	28A120CP	28A120CB	28A120CS
12	1.75	4	D6	28A120AT	28A120AP	28A120AB	28A120AS
14	1.50	4	D6	28A140BT	28A140BP	28A140BB	28A140BS
14	2.00	4	D7	28A140AT	28A140AP	28A140AB	28A140AS
16	1.50	4	D6	28A160BT	28A160BP	28A160BB	28A160BS
16	2.00	4	D7	28A160AT	28A160AP	28A160AB	28A160AS
18	1.50	4	D6	28A180DT	28A180DP	28A180DB	28A180DS
18	2.00	4	D6	28A180CT	28A180CP	28A180CB	28A180CS
18	2.50	4	D7	28A180AT	28A180AP	28A180AB	28A180AS
20	1.50	4	D6	28A200BT	28A200BP	28A200BB	28A200BS
20	2.50	4	D7	28A200AT	28A200AP	28A200AB	28A200AS
22	1.50	4	D6	28A220BT	28A220BP	28A220BB	28A220BS
22	2.50	4	D7	28A220AT	28A220AP	28A220AB	28A220AS
24	2.00	4	D7	28A240BT	28A240BP	28A240BB	28A240BS
24	3.00	4	D8	28A240AT	28A240AP	28A240AB	28A240AS
27	2.00	4	D7	28A270BT	28A270BP	28A270BB	28A270BS
27	3.00	4	D8	28A270AT	28A270AP	28A270AB	28A270AS
30	2.00	4	D7	28A300BT	28A300BP	28A300BB	28A300BS
30	3.50	4	D9	28A300AT	28A300AP	28A300AB	28A300AS
33	2.00	4	D7	28A330BT	28A330BP	28A330BB	28A330BS
33	3.50	4	D9	28A330AT	28A330AP	28A330AB	28A330AS
36	3.00	4	D8	28A360BT	28A360BP	28A360BB	28A360BS
36	4.00	4	D9	28A360AT	28A360AP	28A360AB	28A360AS
39	3.00	6	D8	28A390BT	28A390BP	28A390BB	28A390BS
39	4.00	6	D9	28A390AT	28A390AP	28A390AB	28A390AS

All sizes are individually packaged

2800E

High Speed Steel

**Taper, Plug & Bottoming / Through or Blind Hole
Metric / Bright**



2800E

Size (mm)	Pitch Dia. (mm)	No. of Flutes	2800E Order No.			
			Taper	Plug	Bottoming	Sets
1.5	0.35	2	28E015AT	28E015AP	28E015AB	28E015AS
1.6	0.35	2	28E016AT	28E016AP	28E016AB	28E016AS
1.8	0.35	2	28E018AT	28E018AP	28E018AB	28E018AS
2	0.40	3	28E020AT	28E020AP	28E020AB	28E020AS
2	0.45	3	28E020BT	28E020BP	28E020BB	28E020BS
2.2	0.45	3	28E022AT	28E022AP	28E022AB	28E022AS
2.3	0.40	3	28E023AT	28E023AP	28E023AB	28E023AS
2.5	0.45	3	28E025AT	28E025AP	28E025AB	28E025AS
2.6	0.45	3	28E026AT	28E026AP	28E026AB	28E026AS
3	0.50	3	28E030AT	28E030AP	28E030AB	28E030AS
3	0.60	3	28E030BT	28E030BP	28E030BB	28E030BS
3.5	0.60	3	28E035AT	28E035AP	28E035AB	28E035AS
4	0.50	4	28E040BT	28E040BP	28E040BB	28E040BS
4	0.70	4	28E040AT	28E040AP	28E040AB	28E040AS
4.5	0.75	4	28E045AT	28E045AP	28E045AB	28E045AS
5	0.50	4	28E050CT	28E050CP	28E050CB	28E050CS
5	0.80	4	28E050AT	28E050AP	28E050AB	28E050AS
5	0.90	4	28E050BT	28E050BP	28E050BB	28E050BS
5.5	0.90	4	28E055AT	28E055AP	28E055AB	28E055AS
6	0.75	4	28E060BT	28E060BP	28E060BB	28E060BS
6	1.00	4	28E060AT	28E060AP	28E060AB	28E060AS
6.3	1.00	4	28E063AT	28E063AP	28E063AB	28E063AS
7	1.00	4	28E070AT	28E070AP	28E070AB	28E070AS
8	1.00	4	28E080BT	28E080BP	28E080BB	28E080BS
8	1.25	4	28E080AT	28E080AP	28E080AB	28E080AS
10	1.00	4	28E100CT	28E100CP	28E100CB	28E100CS
10	1.25	4	28E100BT	28E100BP	28E100BB	28E100BS
10	1.50	4	28E100AT	28E100AP	28E100AB	28E100AS
11	1.50	4	28E110AT	28E110AP	28E110AB	28E110AS
12	1.25	4	28E120CT	28E120CP	28E120CB	28E120CS
12	1.50	4	28E120BT	28E120BP	28E120BB	28E120BS
12	1.75	4	28E120AT	28E120AP	28E120AB	28E120AS
14	1.25	4	28E140CT	28E140CP	28E140CB	28E140CS
14	1.50	4	28E140BT	28E140BP	28E140BB	28E140BS
14	2.00	4	28E140AT	28E140AP	28E140AB	28E140AS

Size (mm)	Pitch Dia. (mm)	No. of Flutes	2800E Order No.			
			Taper	Plug	Bottoming	Sets
16	1.50	4	28E160BT	28E160BP	28E160BB	28E160BS
16	2.00	4	28E160AT	28E160AP	28E160AB	28E160AS
18	1.00	4	28E180CT	28E180CP	28E180CB	28E180CS
18	1.50	4	28E180DT	28E180DP	28E180DB	28E180DS
18	2.00	4	28E180BT	28E180BP	28E180BB	28E180BS
18	2.50	4	28E180AT	28E180AP	28E180AB	28E180AS
20	1.00	4	28E200CT	28E200CP	28E200CB	28E200CS
20	1.50	4	28E200BT	28E200BP	28E200BB	28E200BS
20	2.00	4	28E200DT	28E200DP	28E200DB	28E200DS
20	2.50	4	28E200AT	28E200AP	28E200AB	28E200AS
22	1.50	4	28E220BT	28E220BP	28E220BB	28E220BS
22	2.50	4	28E220AT	28E220AP	28E220AB	28E220AS
24	1.50	4	28E240CT	28E240CP	28E240CB	28E240CS
24	2.00	4	28E240BT	28E240BP	28E240BB	28E240BS
24	3.00	4	28E240AT	28E240AP	28E240AB	28E240AS
27	2.00	4	28E270BT	28E270BP	28E270BB	28E270BS
27	3.00	4	28E270AT	28E270AP	28E270AB	28E270AS
30	1.50	4	28E300CT	28E300CP	28E300CB	28E300CS
30	2.00	4	28E300BT	28E300BP	28E300BB	28E300BS
30	3.50	4	28E300AT	28E300AP	28E300AB	28E300AS
32	2.00	4	28E320AT	28E320AP	28E320AB	28E320AS
33	2.00	4	28E330BT	28E330BP	28E330BB	28E330BS
33	3.50	4	28E330AT	28E330AP	28E330AB	28E330AS
36	3.00	4	28E360BT	28E360BP	28E360BB	28E360BS
36	4.00	4	28E360AT	28E360AP	28E360AB	28E360AS
39	3.00	6	28E390BT	28E390BP	28E390BB	28E390BS
39	4.00	6	28E390AT	28E390AP	28E390AB	28E390AS
42	1.50	6	28E420BT	28E420BP	28E420BB	28E420BS
42	4.50	6	28E420AT	28E420AP	28E420AB	28E420AS
45	1.50	6	28E450BT	28E450BP	28E450BB	28E450BS
45	4.50	6	28E450AT	28E450AP	28E450AB	28E450AS
48	1.50	6	28E480BT	28E480BP	28E480BB	28E480BS
48	5.00	6	28E480AT	28E480AP	28E480AB	28E480AS
52	1.50	6	28E520BT	28E520BP	28E520BB	28E520BS
52	5.00	6	28E520AT	28E520AP	28E520AB	28E520AS

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

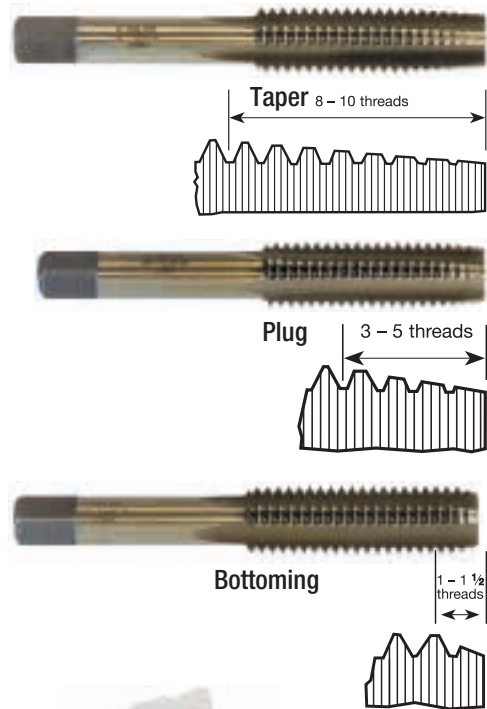
SST+ HSS™ Hand Taps

Made from premium quality high speed steel with ground threads, hardened and tempered for longest life in a variety of materials.

- ▷ Precision ground threads with eccentric relief for free cutting action
- ▷ Three and four flute designs
- ▷ Available in three chamfer lengths for through or blind hole tapping
- ▷ Special bronze SST surface treatment to improve life and tapping speed
- ▷ Packaged in reusable plastic packaging



Machine Screw and Fractional Sizes						
Tap Size × Threads per inch	Drill Size	Taper	Plug	Bottoming	Std. Pkg.	Std. Ctn.
4-40 NC	#43	03-A 041	03-A 042	03-A 043	3	30
5-40 NC	#38	03-A 051	03-A 052	03-A 053	3	30
6-32 NC	#36	03-A 061	03-A 062	03-A 063	3	30
8-32 NC	#29	03-A 081	03-A 082	03-A 083	3	30
10-24 NC	#25	03-A 101	03-A 102	03-A 103	3	30
10-32 NF	#21	03-A 104	03-A 105	03-A 106	3	30
12-24 NC	#16	03-A 121	03-A 122	03-A 123	3	30
1/4"-20 NC	#7	03-B 041	03-B 042	03-B 043	3	30
1/4"-28 NF	#3	03-B 044	03-B 045	03-B 046	3	30
5/16"-18 NC	F	03-B 051	03-B 052	03-B 053	3	30
5/16"-24 NF	17/64"	03-B 054	03-B 055	03-B 056	3	30
3/8"-16 NC	5/16"	03-B 061	03-B 062	03-B 063	3	30
3/8"-24 NF	21/64"	03-B 064	03-B 065	03-B 066	3	30
7/16"-14 NC	U	03-B 071	03-B 072	03-B 073	3	30
7/16"-20 NF	25/64"	03-B 074	03-B 075	03-B 076	3	30
1/2"-13 NC	27/64"	03-B 081	03-B 082	03-B 083	3	30
1/2"-20 NF	29/64"	03-B 084	03-B 085	03-B 086	3	30
9/16"-12 NC	31/64"	03-B 091	03-B 092	03-B 093	1	10
9/16"-18 NF	33/64"	03-B 094	03-B 095	03-B 096	1	10
5/8"-11 NC	17/32"	03-B 101	03-B 102	03-B 103	1	10
5/8"-18 NF	37/64"	03-B 104	03-B 105	03-B 106	1	10
3/4"-10 NC	21/32"	03-B 121	03-B 122	03-B 123	1	10
3/4"-16 NF	11/16"	03-B 124	03-B 125	03-B 126	1	10
7/8"-9 NC	49/64"	03-B 141	03-B 142	03-B 143	1	10
7/8"-14 NF	13/16"	03-B 144	03-B 145	03-B 146	1	10
1"-8 NC	7/8"	03-B 161	03-B 162	03-B 163	1	10
1"-12 NF	7/8"	03-B 164	03-B 165	03-B 166	1	10





Hand Taps

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

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*
- ▷ *Sets – Contains 1 each of Taper, Plug, and Bottoming*
- ▷ *Black oxide surface treatment reduces wear and chip welding in abrasive materials*

2000N

High Speed Steel

Taper, Plug & Bottoming / Through or Blind Hole
Machine Screw/ Black Oxide



2000N

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

All sizes are individually packaged



2000N

High Speed Steel

**Taper, Plug & Bottoming / Through or Blind Hole
Fractional / Black Oxide**



2000N

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

All sizes are individually packaged

SST™ High Performance Power Taps

Specially designed for use on reversible portable drills, SST™ power taps are guaranteed to work faster and last longer than standard taps in steel, stainless steel and other ferrous or non-ferrous metals. SST™ power taps eliminate slow hand tapping to increase productivity and reduce overall production costs.

- ▷ 3 flats to fit any drill chuck without slippage
- ▷ Special power tip ejects chips ahead of tap and self-aligns with hole axis for high quality threads
- ▷ Premium HSS body, ground threads, 3-flute plug style with SST surface treatment for long tap life
- ▷ Special long and resistant shank for tapping deep or difficult to reach holes
- ▷ Packaged in reusable plastic packaging



Tap Size	Overall Length	Drill Size	Order No.	Std. Pkg.	Std. Ctn.
6-32 NC	2 1/2"	#36	03-A 561	1	10
6-40 NF	2 1/2"	#33	03-A 564	1	10
8-32 NC	2 13/16"	#29	03-A 581	1	10
8-36 NF	2 13/16"	#29	03-A 584	1	10
10-24 NC	2 13/16"	#25	03-A 601	1	10
10-32 NF	2 13/16"	#21	03-A 604	1	10
12-24 NC	3 3/16"	#16	03-A 621	1	10
12-28 NF	3 3/16"	#15	03-A 624	1	10
1/4"-20 NC	3 3/16"	#7	03-B 541	1	10
1/4"-28 NF	3 3/16"	#3	03-B 544	1	10
5/16"-18 NC	3 11/16"	F	03-B 551	1	10
5/16"-24 NF	3 11/16"	I	03-B 554	1	10
3/8"-16 NC	4 3/32"	5/16"	03-B 561	1	10
3/8"-24 NF	4 3/32"	Q	03-B 564	1	10
7/16"-14 NC	4 3/32"	U	03-B 571	1	10
7/16"-20 NF	3 15/16"	25/64"	03-B 574	1	10
1/2"-13 NC	4 5/16"	27/64"	03-B 581	1	10
1/2"-20 NF	4 5/16"	29/64"	03-B 584	1	10
9/16"-12 NC	4 5/16"	31/64"	03-B 591	1	10
9/16"-18 NF	4 5/16"	33/64"	03-B 594	1	10
5/8"-11 NC	4 5/16"	17/32"	03-B 601	1	10
5/8"-18 NF	4 5/16"	37/64"	03-B 604	1	10
3/4"-10 NC	4 5/16"	21/32"	03-B 621	1	10
3/4"-16 NF	4 5/16"	11/16"	03-B 624	1	10
7/8"-9 NC	4 5/16"	49/64"	03-B 641	1	10
7/8"-14 NF	4 5/16"	13/16"	03-B 644	1	10
1"-8 NC	4 5/16"	7/8"	03-B 661	1	10
1"-12 NF	4 5/16"	59/64"	03-B 664	1	10

Tap drill size marked on shank (tap sizes 12-24 and over).

GUARANTEED TO TAP FASTER AND LAST LONGER

TIPS!

For increased cutting efficiency and tool life, use TAPCUT lubricant.

Hand Taps

Carbon Steel Taps are used to rethread damaged or jammed threads, or to thread mild steels. They can be used for either through or blind holes.

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*

2000C

Carbon

**Taper, Plug & Bottoming / Through or Blind Hole
Machine Screw & Fractional / Bright**



2000C

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

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

2000C

Carbon

Taper, Plug & Bottoming / Through or Blind Hole
Machine Screw, Fractional & Metric / Bright



2000C

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

4 mm thru 6 mm - 12 per pack , 8 mm thru 12 mm - 6 per pack, 13 mm and up - individually packaged



Spiral Point Taps



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

- ▷ *Spiral point taps eject chips ahead of the tap*
- ▷ *Bright finish for increased lubricity*
- ▷ *Black oxide surface treatment for longer life*
- ▷ *Reduced loading and clogging in flutes*

2100N

High Speed Steel

Plug / Through Hole

Machine Screw & Fractional / Black Oxide



2100N

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

2100N

High Speed Steel

Plug / Through Hole

Fractional / Black Oxide

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

All sizes are individually packaged

2850

High Speed Steel

Plug / Through Hole

Metric / Bright



2850

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Pitch Dia. Limits	2850 Order No. Plug
8.0	1.25	2	D5	285A080A
8.0	1.00	2	D5	285A080B
10	1.50	3	D6	285A100A
10	1.25	3	D5	285A100B
12	1.75	3	D6	285A120A
12	1.25	3	D5	285A120C
14	2.00	3	D7	285A140A
14	1.50	3	D6	285A140B
16	2.00	3	D7	285A160A
16	1.50	3	D6	285A160B
18	2.50	4	D7	285A180A
20	2.50	4	D7	285A200A
20	1.50	4	D6	285A200B

Size (mm)	Pitch Dia. (mm)	No. of Flutes	Pitch Dia. Limits	2850 Order No. Plug
8.0	1.25	2	D5	285A080A
8.0	1.00	2	D5	285A080B
10	1.50	3	D6	285A100A
10	1.25	3	D5	285A100B
12	1.75	3	D6	285A120A
12	1.25	3	D5	285A120C
14	2.00	3	D7	285A140A
14	1.50	3	D6	285A140B
16	2.00	3	D7	285A160A
16	1.50	3	D6	285A160B
18	2.50	4	D7	285A180A
20	2.50	4	D7	285A200A
20	1.50	4	D6	285A200B



2100

High Speed Steel
Plug / Through Hole
Machine Screw / Bright



2100

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

2100

High Speed Steel
Plug / Through Hole
Fractional / Bright

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

All sizes are individually packaged

2100E

High Speed Steel
Plug / Through Hole
Machine Screw / Bright



2100E

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

2100E

High Speed Steel
Plug / Through Hole
Fractional / Bright

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

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

Oversize Spiral Point Taps

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

▷ All sizes are individually packaged

2103

High Speed Steel

Machine Screw & Fractional / Bright
.003" Oversize / Plug / Through Hole



2103

Size	NC	NF	No. of Flutes	2103 Order No.	
				Plug	Bottoming
8	32	–	2	213A008CP	213A008CB
10	24	–	2	213A010CP	213A010CB
10	–	32	2	213A010FP	213A010FB

2105

High Speed Steel

Machine Screw & Fractional / Bright
.005" Oversize / Plug / Through Hole



2105

Size	NC	NF	No. of Flutes	2105 Order No.	
				Plug	Bottoming
5/16"	18	–	2	215A120CP	215A120CB
3/8"	16	–	3	215A124CP	215A124CB
7/16"	14	–	3	215A128CP	215A128CB
1/2"	13	–	3	215A132CP	215A132CB
5/8"	11	–	3	215A140CP	215A140CB

Oversized Hand Taps

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

▷ All sizes are individually packaged

2003

High Speed Steel

.003" Oversize / Plug & Bottoming
Through or Blind Hole
Machine Screw & Fractional / Bright



2003

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

2005

High Speed Steel

.005" Oversize / Plug & Bottoming
Through or Blind Hole
Machine Screw & Fractional / Bright



2005

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



ANSI Production Taps



Produced with a reduced neck to allow for longer reach, improved coolant flow, and easier chip evacuation. Can be used in a wide range of material groups, including difficult to machine materials such as High Tensile Strength Steels and Stainless Steel.

- ▷ *Manufactured from M4 HSS, an extremely versatile high-speed steel with high carbon and vanadium contents for exceptional abrasion-resistance*
- ▷ *Offer higher heat resistance and red hardness over conventional High Speed Steel taps*
- ▷ *Can be used for production threading with both conventional or CNC equipment*
- ▷ *Black Oxide surface treatment provides improved lubricity and helps prevent the formation of built-up edge*
- ▷ *Manufactured to industry recognized USCTI 302A Standards*
- ▷ *All sizes are individually packaged*

2150N

M4 Premium HSS

Spiral Point / Plug Chamfer / Through Hole

Machine Screw, Fractional & Metric / Black Oxide



2150N

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

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



2160N

M4 Premium HSS

High Spiral Flute / Bottoming Chamfer / Blind Hole
Machine Screw / Black Oxide



2160N

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

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



DIN/ANSI Production Taps



Manufactured to DIN/ANSI specifications, with DIN lengths to allow for longer reach and deeper threading in a single pass.

- ▷ *Manufactured from M4 HSS, an extremely versatile high-speed steel with high carbon and vanadium contents for exceptional abrasion-resistance*
- ▷ *Offer higher heat resistance and red hardness over conventional High Speed Steel taps*
- ▷ *TiCN (Titanium Carbo Nitride) coating*
 - *helps to reduce galling, microwelding, seizing and adhesive wear*
 - *allows for a smoother threading operation*
 - *helps to hold sharp edges and reduces the coefficient of friction*
- ▷ *All sizes are individually packaged*

2250N

M4 Premium HSS

Spiral Point / Plug Chamfer / Through Hole

Machine Screw, Fractional & Metric / TiCN Coated



2250N

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

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



2260N

M4 Premium HSS

High Spiral Flute / Bottoming Chamfer / Blind Hole
Machine Screw, Fractional & Metric / TiCN Coated



2260N

	Size	NC	NF	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2260N Order No.
	Machine Screw & Fractional Sizes	4	40	-	2.21"	0.110"	3	H2	#43
6		32	-	2.21"	0.110"	3	H3	#36	226N006C
8		32	-	2.48"	0.131"	3	H3	#29	226N008C
10		24	-	2.76"	0.152"	3	H3	#25	226N010C
10		-	32	2.76"	0.152"	3	H3	#21	226N010F
1/4"		20	-	3.15"	0.191"	3	H3	#7	226N116C
1/4"		-	28	3.15"	0.191"	3	H3	#3	226N116F
5/16"		18	-	3.54"	0.238"	3	H3	F	226N120C
5/16"		-	24	3.54"	0.238"	3	H3	I	226N120F
3/8"		16	-	3.94"	0.286"	3	H3	5/16"	226N124C
3/8"		-	24	3.94"	0.286"	3	H3	Q	226N124F
7/16"		14	-	3.94"	0.242"	3	H3	U	226N128C
7/16"		-	20	3.94"	0.242"	3	H3	W	226N128F
1/2"		13	-	4.33"	0.275"	3	H3	27/64"	226N132C
1/2"		-	20	4.33"	0.275"	3	H3	29/64"	226N132F
5/8"		11	-	4.33"	0.360"	4	H3	17/32"	226N140C
5/8"		-	18	4.33"	0.360"	4	H3	37/64"	226N140F
3/4"		10	-	4.92"	0.442"	4	H3	21/32"	226N148C
3/4"		-	16	4.92"	0.442"	4	H3	11/16"	226N148F

	Size	Pitch (mm)	Overall Length	Square Size	No. of Flutes	Pitch Dia. Limits	Tap/Drill Size (75%)	2260N Order No.
	Metric Sizes	M4	0.7	2.48"	0.131"	3	D4	#30
M5		0.8	2.76"	0.152"	3	D4	#19	226N050A
M6		1.0	3.15"	0.191"	3	D5	#9	226N060A
M8		1.25	3.54"	0.238"	3	D5	H	226N080A
M10		1.5	3.94"	0.286"	3	D6	Q	226N100A
M12		1.75	4.33"	0.275"	3	D6	Y	226N120A
M16		2.0	4.33"	0.360"	4	D7	35/64"	226N160A



Thread Formers



Thread forming taps "form" the thread in malleable materials without cutting, eliminating chips. This allows for increased speeds & feeds, and a cleaner threading environment.

- ▷ *Manufactured from M4 HSS, an extremely versatile high-speed steel with high carbon and vanadium contents for exceptional abrasion-resistance*
- ▷ *Offer higher heat resistance and red hardness over conventional High Speed Steel taps*
- ▷ *TiCN (Titanium Carbo Nitride) coating*
 - *helps to reduce galling, microwelding, seizing and adhesive wear*
 - *allows for a smoother threading operation*
 - *helps to hold sharp edges and reduces the coefficient of friction*
- ▷ *All sizes are individually packaged*

2270N

M4 Premium HSS

Fluteless / Bottoming Chamfer / Through or Blind Hole
Machine Screw, Fractional & Metric / TiCN Coated



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

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

Multi-Application Spiral Point Taps



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

- ▷ *Spiral point taps eject chips ahead of the tap*
- ▷ *A good choice for CNC and machine tapping*
- ▷ *Bright finish for increased lubricity*
- ▷ *All sizes are individually packaged*

2100PS

High Speed Steel

Plug / Through Hole

Machine Screw & Fractional / Bright

2100PS

High Speed Steel

Plug / Through Hole

Metric / Bright



2100PS

Size	NC	NF	Number of Flutes	Pitch Dia. Limits	2100PS Order No.
4	40	–	2	H2	21PS004C
4	–	48	2	H2	21PS004F
5	40	–	3	H2	21PS005C
5	–	44	3	H2	21PS005F
6	32	–	3	H3	21PS006C
6	–	40	3	H2	21PS006F
8	32	–	3	H3	21PS008C
8	–	36	3	H2	21PS008F
10	24	–	3	H3	21PS010C
10	–	32	3	H3	21PS010F
12	24	–	3	H3	21PS012C
12	–	28	3	H3	21PS012F
1/4"	20	–	3	H3	21PS116C
1/4"	–	28	3	H3	21PS116F
5/16"	18	–	3	H3	21PS120C
5/16"	–	24	3	H5	21PS120F
3/8"	16	–	3	H3	21PS124C
3/8"	–	24	3	H3	21PS124F
7/16"	14	–	3	H3	21PS128C
7/16"	–	20	3	H3	21PS128F
1/2"	13	–	3	H5	21PS132C
1/2"	–	20	3	H5	21PS132F
9/16"	12	–	3	H5	21PS136C
9/16"	–	18	3	H5	21PS136F
5/8"	11	–	3	H5	21PS140C
5/8"	–	18	3	H5	21PS140F
3/4"	10	–	3	H5	21PS148C
3/4"	–	16	3	H5	21PS148F
7/8"	9	–	3	H6	21PS156C
7/8"	–	14	3	H6	21PS156F
1"	8	–	3	H6	21PS164C
1"	–	12	3	H6	21PS164F

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



Multi-Application Spiral Flute Taps

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

- ▷ *Spiral flutes pull chips up out of the workpiece*
- ▷ *Ideal for tapping blind holes*
- ▷ *Bright finish for increased lubricity*
- ▷ *All sizes are individually packaged*

2000PF

High Speed Steel

Bottoming / Blind Hole
Machine Screw & Fractional / Bright

2000PF

High Speed Steel

Bottoming / Blind Hole
Metric / Bright



2000PF

Size	NC	NF	No. of Flutes	Pitch Dia. Limits	2000PF Order No.
4	40	—	2	H2	20PF004C
4	—	48	2	H2	20PF004F
6	32	—	3	H3	20PF006C
8	32	—	3	H3	20PF008C
10	24	—	3	H3	20PF010C
10	—	32	3	H3	20PF010F
12	24	—	3	H3	20PF012C
12	—	28	3	H3	20PF012F
1/4"	20	—	3	H3	20PF116C
1/4"	—	28	3	H3	20PF116F
5/16"	18	—	3	H3	20PF120C
5/16"	—	24	3	H5	20PF120F
3/8"	16	—	3	H3	20PF124C
3/8"	—	24	3	H3	20PF124F
7/16"	14	—	3	H3	20PF128C
7/16"	—	20	3	H3	20PF128F
1/2"	13	—	3	H5	20PF132C
1/2"	—	20	3	H5	20PF132F
9/16"	12	—	3	H5	20PF136C
9/16"	—	18	3	H5	20PF136F
5/8"	11	—	4	H5	20PF140C
5/8"	—	18	4	H5	20PF140F
3/4"	10	—	4	H5	20PF148C
3/4"	—	16	4	H5	20PF148F
7/8"	9	—	4	H6	20PF156C
7/8"	—	14	4	H6	20PF156F
1"	8	—	4	H6	20PF164C
1"	—	12	4	H6	20PF164F

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



Multi-Application Spiral Flute Taps

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

▷ All sizes are individually packaged

2000F

High Speed Steel

Plug & Bottoming / Blind Hole
Machine Screw & Fractional / Bright



2000F

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

Thread Forming Taps

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

- ▷ Thread forming does not produce any chips
- ▷ Thread forming taps have a longer tool life
- ▷ Formed threads are generally stronger than cut threads
- ▷ All sizes are individually packaged

2090

High Speed Steel

Plug & Bottoming / Through or Blind Hole
Machine Screw & Fractional / Bright



2090

Size	NC	NF	2090 Order No.	
			Plug	Bottoming
0	-	80	-	209A000FB
1	64	-	-	209A001CB
1	-	72	-	209A001FB
2	56	-	-	209A002CB
2	-	64	-	209A002FB
3	48	-	-	209A003CB
3	-	56	209A003FP	209A003FB
4	40	-	209A004CP	209A004CB
4	-	48	209A004FP	209A004FB
5	40	-	209A005CP	209A005CB
5	-	44	209A005FP	209A005FB
6	32	-	209A006CP	209A006CB
6	-	40	209A006FP	209A006FB
8	32	-	209A008CP	209A008CB
8	-	36	209A008FP	209A008FB
10	24	-	209A010CP	209A010CB
10	-	32	209A010FP	209A010FB
12	24	-	209A012CP	209A012CB
12	-	28	209A012FP	209A012FB
1/4"	20	-	209A116CP	209A116CB
1/4"	-	28	209A116FP	209A116FB
5/16"	18	-	209A120CP	209A120CB
5/16"	-	24	209A120FP	209A120FB
3/8"	16	-	209A124CP	209A124CB
3/8"	-	24	209A124FP	209A124FB
7/16"	14	-	209A128CP	209A128CB
7/16"	-	20	209A128FP	209A128FB
1/2"	13	-	209A132CP	209A132CB
1/2"	-	20	209A132FP	209A132FB
5/8"	11	-	209A140CP	209A140CB
5/8"	-	18	209A140FP	209A140FB
3/4"	10	-	209A148CP	209A148CB
3/4"	-	16	-	209A148FB

Taper Pipe Taps (NPT)

NPT taps are tapered to provide a tight seal and are used mainly with threaded pipes and pipe fittings. These taps are available in both HSS and carbon steel materials. A carbon tap is used to rethread damaged threads. These NPT taps have a bright finish to increase tool life and reduce chip loading in the flutes.

- ▷ *Bright finish for prolonged life*
- ▷ *Most commonly used to produce a tight sealing thread*
- ▷ *Available in high speed steel and carbon steel*
- ▷ *All sizes are individually packaged*

2900

High Speed Steel
Through or Blind Hole
Fractional / Bright



2900

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

2900E

High Speed Steel
Through or Blind Hole
Fractional / Bright



2900E

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

Taper Pipe Taps (NPT)

2700E

Carbon
Through or Blind Hole
Fractional / Bright



2700E

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

TAPS

Taper Pipe Taps (NPT)

Made from tough carbon alloy tool steel to cut new threads or repair damaged threads in pipe fittings. For use in steel and non-ferrous metals.

▷ Packaged in reusable plastic packaging



Nominal Size Inch	Thread per inch	Drill Size	Order No.	Std. Pkg.	Std. Ctn.
1/16"	27	D	02-C 010	1	10
1/8"	27	11/32"	02-C 020	1	10
1/4"	18	7/16"	02-C 040	1	10
3/8"	18	37/64"	02-C 060	1	10
1/2"	14	45/64"	02-C 080	1	10
3/4"	14	59/64"	02-C 120	1	10
1"	11 1/2	1 5/32"	02-C 160	1	10
1 1/4"	11 1/2	1 1/2"	02-C 200	1	10
1 1/2"	11 1/2	1 47/64"	02-C 240	1	10
2"	11 1/2	2 7/32"	02-C 320	1	10

Corresponding Sets	
Taper Pipe Tap Set	
Description	Order No.
Contains one of each of the following NPT taps: 1/8": 02-C 020, 1/4": 02-C 040, 3/8": 02-C 060, 1/2": 02-C 080	02-C 500

TIPS! For increased cutting efficiency and tool life, use TAPCUT™ lubricant



Pipe Taps, Interrupted Thread & NPS

The Interrupted Thread Pipe Taps have every other thread removed except for the first few at the point. They are used for tapping tough metals or those which have a tendency to load the tap teeth.

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

▷ All sizes are individually packaged

2930 Interrupted Thread

High Speed Steel

Through or Blind Hole

Fractional / Bright



2930

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

2950 Straight Pipe (NPS)

High Speed Steel

Through or Blind Hole

Fractional / Bright



2950

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



SPECIAL THREAD TAPS

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

- ▷ *Taps are manufactured in the USA*
- ▷ *Shipments within 1-2 weeks of receipt on most items*
- ▷ *Available with bright finish. Other coatings available with longer delivery times*
- ▷ *Size range available #0 – 4”*

Call us today for price and delivery!



Left Hand Taps

Left hand taps are used just like normal hand taps except they are rotated counter clockwise to cut left handed threads in the workpiece. They are for general use in production tapping or hand operations in a wide range of application material groups.

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*

2300

High Speed Steel

**Taper, Plug & Bottoming / Through or Blind Hole
Machine Screw & Fractional / Bright**



2300

Size	NC	NF	Overall Length	No. of Flutes	Pitch Dia. Limits	2300 Order No.		
						Taper	Plug	Bottoming
6	32	–	2"	4	H3	23A006CT	23A006CP	23A006CB
8	32	–	2-1/8"	4	H3	23A008CT	23A008CP	23A008CB
10	24	–	2-3/8"	4	H3	23A010CT	23A010CP	23A010CB
10	–	32	2-3/8"	4	H3	23A010FT	23A010FP	23A010FB
1/4"	20	–	2-1/2"	4	H3	23A116CT	23A116CP	23A116CB
1/4"	–	28	2-1/2"	4	H3	23A116FT	23A116FP	23A116FB
5/16"	18	–	2-23/32"	4	H3	23A120CT	23A120CP	23A120CB
5/16"	–	24	2-23/32"	4	H3	23A120FT	23A120FP	23A120FB
3/8"	16	–	2-5/16"	4	H3	23A124CT	23A124CP	23A124CB
3/8"	–	24	2-5/16"	4	H3	23A124FT	23A124FP	23A124FB
7/16"	14	–	3-5/32"	4	H3	23A128CT	23A128CP	23A128CB
7/16"	–	20	3-5/32"	4	H3	23A128FT	23A128FP	23A128FB
1/2"	13	–	3-3/8"	4	H3	23A132CT	23A132CP	23A132CB
1/2"	–	20	3-3/8"	4	H3	23A132FT	23A132FP	23A132FB
9/16"	12	–	3-19/32"	4	H3	23A136CT	23A136CP	23A136CB
9/16"	–	18	3-19/32"	4	H3	23A136FT	23A136FP	23A136FB
5/8"	11	–	3-3/16"	4	H3	23A140CT	23A140CP	23A140CB
5/8"	–	18	3-3/16"	4	H3	23A140FT	23A140FP	23A140FB
3/4"	10	–	4-1/4"	4	H3	23A148CT	23A148CP	23A148CB
3/4"	–	16	4-1/4"	4	H3	23A148FT	23A148FP	23A148FB
7/8"	9	–	4-11/16"	4	H4	23A156CT	23A156CP	23A156CB
7/8"	–	14	4-11/16"	4	H4	23A156FT	23A156FP	23A156FB
1"	8	–	5-1/8"	4	H4	23A164CT	23A164CP	23A164CB
1"	–	12	5-1/8"	4	H4	23A164FT	23A164FP	23A164FB
1"	–	14	5-1/8"	4	H4	23A164ST	23A164SP	23A164SB
1-1/8"	7	–	5-7/16"	4	H4	23A208CT	23A208CP	23A208CB
1-1/8"	–	12	5-7/16"	4	H4	23A208FT	23A208FP	23A208FB
1-1/4"	7	–	5-3/4"	4	H4	23A216CT	23A216CP	23A216CB
1-1/4"	–	12	5-3/4"	6	H4	23A216FT	23A216FP	23A216FB
1-3/8"	6	–	6"	4	H4	23A224CT	23A224CP	23A224CB
1-3/8"	–	12	6"	6	H4	23A224FT	23A224FP	23A224FB
1-1/2"	6	–	6-1/4"	4	H4	23A232CT	23A232CP	23A232CB
1-1/2"	–	12	6-1/4"	6	H4	23A232FT	23A232FP	23A232FB

All sizes are individually packaged



8-Pitch Hand Taps

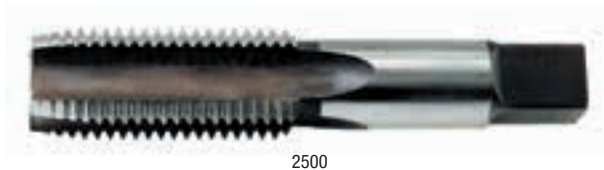
8-pitch hand taps are mainly used in oil field, gas exploration equipment, and power generation plants. They are of a larger diameter, with standard sizes up to 4".

- ▷ *Taper – 7-10 pitch chamfer length. Starts the thread square with the workpiece*
- ▷ *Plug – 3-5 pitch chamfer length. Generally used in through holes*
- ▷ *Bottoming – 1-2 pitch chamfer length. Generates the thread to the bottom*
- ▷ *All sizes are individually packaged*

2500

High Speed Steel

Taper, Plug & Bottoming / Through or Blind Hole
Fractional / Bright



2500

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



Hand Taps, Screw Thread Insert (STI)

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

▷ All sizes are individually packaged

2020

**Plug & Bottoming / Through or Blind Hole
Machine Screw & Fractional / Bright**



2020

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

Hand Taps, Pulley Style

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

▷ All sizes are individually packaged

2400

**Plug / Through or Blind Hole
Fractional / Bright & Black**



2400

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

Hand Taps, 6" Extension

The long shank is ideal for reaching holes inaccessible with standard length taps.

The thread length is the same length as a standard tap.

▷ All sizes are individually packaged

2060

**Plug & Bottoming / Through or Blind Hole
Machine Screw & Fractional / Bright & Black**



2060

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



Combined Tap and Drill

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

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



2050

2050 Through or Blind Hole Machine Screw & Fractional / Bright



205A6

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

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

Tap and Reamer Accessories



2000AW

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



2000TW



Tap Sets / Tap & Drill Sets



2000N10



400NC2018

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



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



Pieces	Description	Order No.
Tap Index Cases (Empty)		
10	TAP INDEX	10TDX
18	UNC TAP & DRILL INDEX	18CDX
18	UNF TAP & DRILL INDEX	18FDX
18	METRIC TAP & DRILL INDEX	18MDX

Power Taps and Drill Bit Sets



SST power taps and drill bit sets	
Description	Order No.
Power taps: 10-24 NC, 10-32 NF, 1/4"-20 NC, 5/16"-18 NC and 3/8"-16 NC Drill bits: #25, #21, #7, F and 5/16"	03-B 952



NC SST power taps and drill bit sets	
Description	Order No.
Power taps: 6-32 NC, 8-32 NC, 10-24 NC, 12-24 NC 1/4"-20 NC, 5/16"-18 NC, 3/8"-16 NC, 7/16"-14 NC and 1/2"-13 NC Drill bits: #36, #29, #25, #16, #7, F, 5/16", U and 27/64"	03-B 953



NF SST power taps and drill bit sets	
Description	Order No.
Power taps: 6-40 NF, 8-36 NF, 10-32 NF, 12-28 NF, 1/4"-28 NF, 5/16"-24 NF, 3/8"-24 NF, 7/16"-20 NF and 1/2"-20 NF Drill bits: #33, #29, #21, #15, #3, I, Q, 25/64" and 29/64"	03-B 954

Tap Wrenches

Premium quality tool stock, all jaws and set screws are hardened and tempered for optimum tool life.

▷ *Packaged in reusable plastic packaging*

Adjustable Tap Wrenches				
No.	Capacity	Order No.	Std. Pkg.	Std. Ctn.
1	1/16" – 1/4"	02-W 010	1	10
1 1/2	3/16" – 1/2"	02-W 015	1	10
3	1/4" – 3/4"	02-W 030	1	10
4	3/8" – 1"	02-W 040	1	10

T-Handle Tap Wrench With 3-Position Ratchet				
No.	Capacity	Order No.	Std. Pkg.	Std. Ctn.
1-T	6/32 to 1/4"	02-W 100	1	10
2-T	1/4" to 1/2"	02-W 200	1	10



Common Tapping Terms

Angle of Thread

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

Back Taper

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

Bottoming Chamfer

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

Chamfer

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

Chamfer Relief

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

Chordal Hook Angle

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

Crest

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

Cutting Face

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

Flutes

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

Height of Thread

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

Lead

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

Pitch

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

Pitch Diameter

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

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

Plug Chamfer

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

Rake

Any deviation of a straight cutting face of the tooth from a radial line. **Positive Rake** means that the crest of the cutting face is angularly advanced ahead of the balance of the face of the tooth.

Negative Rake means that the same point is angularly behind the balance of the cutting face of the tooth.

Zero Rake means that the cutting face is directly on the center line

Spiral Point (Chip Driver)

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

Taper Chamfer

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

Threads Per Inch

The number of threads in one inch of length

Tap Troubleshooting Guide

Trouble	Possible Causes	Corrections
Oversize Pitch Diameter	Incorrect tap	Use correct "H" limit Use longer chamfered tap
	Chip packing	Use spiral pointed tap Use larger drill size Shorten length of thread in blind holes
	Galling	Reduce tapping speed Use lubricants
Torn or Rough Threads	Dull tap	Resharpen or replace
	Chamfer too short	Increase chamfer length
	Galling	Use lubricant Reduce speed Use larger drill
Breakage	Incorrect tap selection	Increase chamfer length Use spiral pointed taps in through holes Tapping too deep
	Excessive tapping torque	Increase hole size Shorten thread length Increase chamfer length
	Operating conditions	Reduce tapping speed Avoid bottoming out the tap
Chipping	Incorrect tap selection	Increase chamfer length Avoid chip packing in flutes
	Operating conditions	Reduce tapping speed Use larger drill Ensure adequate lubricant
Excessive Wear	Incorrect tap selection	Increase chamfer length
	Operating conditions	Reduce tapping speed Ensure adequate lubricant Use larger drill

Tap Drill Sizes – Cut Taps

Regular Taps

Tap Size	Drill Size	Probable % Thread	Tap Size	Drill Size	Probable % Thread	Tap Size	Drill Size	Probable % Thread
0-80	3/64"	71-81	10-32	#21	68-76	5/8-18	37/64"	58-65
M1.6-.35	1.25 MM	69-77	M5 x .8	4.2 MM	69-77	M16 x 2	35/64"	76-81
1-64	#53	59-67	12-24	#16	66-72	3/4-10	21/32"	68-72
M2 x .4	1/16"	72-79	12-28	#15	70-78	3/4-16	11/16"	71-77
1-72	#53	67-75	M6 x 1	#10	76-84	M20 x 2.5	11/16"	74-78
2-56	#50	62-69	1/4-20	#7	70-75	7/8-9	49/64"	72-76
2-64	#50	70-79	1/4-28	#3	72-80	7/8-14	13/16"	62-67
M2 x .45	2.05 MM	69-77	5/16-18	F	72-77	M24 x 3	53/64"	72-76
3-48	5/64"	70-77	5/16-24	I	67-75	1" - 8	7/8"	73-77
3-56	#46	69-78	M8 x 1.25	6.7 MM	74-80	1" - 12	59/64"	67-72
4-40	#43	65-71	3/8-16	5/16"	72-77	1" - 14	15/16"	61-67
4-48	#42	61-68	3/8-24	Q	71-79	1-1/8" - 7	63/64"	72-76
M3 x .5	#40	70-79	M10 x 1.5	8.4 MM	76-82	1-1/8-12	1-3/64"	66-72
5-40	#38	65-72	7/16-14	U	70-75	M30 x 3.5	1-3/64"	75
5-44	#37	63-71	7/16-20	25/64"	65-72	1-1/4 - 7	1-7/64"	76
M3.5 x .6	#33	72-81	M12 x 1.7	13/32"	69-74	1-1/4-12	1-11/64"	72
6-32	#36	71-78	1/2-13	27/64"	73-78	1-3/8 - 6	1-7/32"	72
6-40	#33	69-77	1/2-20	29/64"	65-72	1-3/8-12	1-19/64"	72
M4 x .7	3.25 MM	74-82	M14 x 2	15/32"	76-81	M36 x 4	1-1/4"	82
8-32	#29	62-69	9/16-12	31/64"	68-72	1-1/2 - 6	1-11/32"	72
8-36	#29	70-78	9/16-18	33/64"	58-65	1-1/2-12	1-27/64"	72
10-24	#25	69-75	5/8-11	17/32"	75-79	-	-	-

STI Taps

Tap Size	Drill Size Aluminium	Drill Size Steel, Magnesium, Plastic
2-56	3/32	41
3-48	36	7-64
3-56	37	36
4-40	31	31
4-48	3.0 mm	31
5-40	3.4 mm	29
6-32	26	25
6-40	26	25
8-32	17	16
8-36	17	16
10-24	13/64	5
10-32	7	13/64
12-24	1	1
1/4-20	H	H
1/4-28	G	6.7 mm
5/16-18	Q	Q
5/16-24	21/64	21/64
3/8-16	X	X
3/8-24	25/64	25/64
7/16-14	29/64	29/64
7/16-20	29/64	29/64
1/2-13	33/64	17/32
1/2-20	29/64	29/64
9/16-12	37/64	19/32
9/16-18	37/64	37/64
5/8-11	21/32	21/32
5/8-18	41/64	41/64
3/4-10	25/32	25/32
3/4-16	49/64	49/64
7/8-9	29/32	29/32
7/8-14	57/64	57/64
1-8	1-1/32	1-1/32
1-12	1-1/64	1-1/64

Pipe Taps

Tap Size	Taperpipe NPF & NPTF	Decimal Equivalent	Straight Pipe NPS	Decimal Equivalent
1/8-27	Q	.3320	11/32	.3438
1/4-18	7/16	.4375	7/16	.7375
3/8-18	9/16	.5625	37/64	.5781
1/2-14	45/64	.7031	23/32	.7188
3/4-14	29/32	.9062	59/64	.9219
1" - 11-1/2	1-9/64	1.1406	1-5/32	1.1562
1-1/4" - 11-1/2	1-31/64	1.4844	1-1/2	1.5000
1-1/2" - 11-1/2	1-23/32	1.7188	1-3/4	1.7500
2" - 11-1/2	2-3/16	2.1875	2-7/32	2.2188
2-1/2" - 8	2-39/64	2.6094	2-21/32	2.6562
3" - 8	3-15/64	3.2344	3.2344	33/64

TAPS **Tap Drill Sizes – Thread Formers**

Note: Recommended thread percentage for various (Inch standard) tap sizes is shown in the "60% Thread" columns below. This is also the average percentage that is desirable for metric sizes. Use the "Probable Percent of Thread" column in the "Metric Sizes" tables below.

Machine Screw Sizes	Tap Size	75% Thread		70% Thread		65% Thread		60% Thread		55% Thread		50% Thread	
		Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size
0-80	0.0536	1.35 mm	0.0540	1.35 mm	0.0545	–	0.0549	54	0.0554	54	0.0558	1.0 mm	
1-64	0.0650	1.65 mm	0.0655	1.65 mm	0.0661	–	0.0666	–	0.0672	51	0.0677	51	
1-72	0.0659	1.65 mm	0.0663	–	0.0669	1.7 mm	0.0673	51	0.0679	51	0.0683	–	
2-56	0.0769	1.65 mm	0.0774	1.95 mm	0.0669	23498	0.0787	47	0.0794	2.0 mm	0.0799	–	
2-64	0.0780	5/64	0.0785	47	0.0791	2.0 mm	0.0796	2.0 mm	0.0802	–	0.0807	2.05 mm	
3-48	0.0884	2.25 mm	0.0890	43	0.0898	43	0.0905	2.3 mm	0.0913	2.3 mm	0.0919	–	
3-56	0.0899	43	0.0904	–	0.0911	2.3 mm	0.0917	2.8 mm	0.0924	2.35 mm	0.0929	2.35 mm	
4-40	0.0993	2.5 mm	0.1000	39	0.1010	39	0.1018	38	0.1028	2.6 mm	0.1035	2.6 mm	
4-48	0.1014	38	0.1020	38	0.1028	2.6 mm	0.1035	2.6 mm	0.1043	37	0.1049	37	
5-40	0.1123	34	0.1130	33	0.1140	33	0.1148	2.9 mm	0.1158	32	0.1165	32	
5-44	0.1134	33	0.1130	2.9 mm	0.1150	2.9 mm	0.1157	–	0.1166	32	0.1173	32	
6-32	0.1221	3.1mm	0.1230	3.1 mm	0.1243	–	0.1252	40916	0.1264	3.2 mm	0.1274	–	
6-40	0.1253	1/8	0.1260	3.2 mm	0.1270	2.9 mm	0.1278	3.25 mm	0.1288	30	0.1295	30	
8-32	0.1481	3.75 mm	0.1490	–	0.1503	25	0.1512	3.8 mm	0.1524	24	0.1534	3.9 mm	
8-36	0.1481	25	0.1507	3.8 mm	0.1518	25	0.1526	24	0.1537	3.9 mm	0.1546	23	
10-24	0.1481	–	0.1507	18	0.1717	23682	0.1729	23682	0.1746	–	0.1758	–	
10-32	0.1481	17	0.1750	–	0.1763	–	0.1772	16	0.1784	4.5 mm	0.1794	–	
12-24	0.1481	10	0.1960	9	0.1977	5.0 mm	0.1989	8	0.2006	5.1 mm	0.2018	7	
12-28	0.1481	5.0 mm	0.1989	8	0.2003	8	0.1989	7	0.2028	–	0.2039	13/16	

Fractional Sizes	Tap Size	75% Thread		70% Thread		65% Thread		60% Thread		55% Thread		50% Thread	
		Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size	Theor. Hole Size	Nearest Drill Size
1/4-20	.2245	5.7 mm	.2260	–	.2280	1	.2295	1	.2315	–	.2330	5.9 mm	
1/4-28	.2318	–	.2329	5.9 mm	.2343	A	.2354	15/64	.2368	6.0 mm	.2379	B	
5/16-18	0.2842	7.2 mm	.2861	7.25 mm	.2879	7.3 mm	.2898	L	.2917	7.4 mm	.2936	–	
5/16-24	0.2912	7.4 mm	.2927	–	.2941	M	.2955	7.5 mm	.2969	19/64	.2983	7.6 mm	
3/8-16	.3431	11/32	.3452	8.75 mm	.3474	S	.3495	8.9 mm	.3516	–	.3537	9.0 mm	
3/8-24	.3537	9.0 mm	.3552	9.0 mm	.3566	–	.3580	T	.3594	23/64	.3608	–	
7/16-14	.4011	–	.4035	Y	.4059	13/32	.4084	–	.4108	–	.4132	Z	
7/16-20	0.4120	Z	.4137	10.5 mm	.4154	–	.4171	–	.4188	–	.4205	–	
1/2-13	.4608	–	.4634	–	.4660	–	.4686	15/32	.4712	12 mm	.4738	12 mm	
1/2-20	.4745	–	.4762	–	.4779	–	.4796	–	.4712	–	.4830	31/64	

Metric Sizes	Metric Tap Size	Tap Drill Size	Decimal Equiv. of Tap Drill (inches)	Theoretical Percentage of thread %	Probable Mean Oversize (inches)	Probable Hole Size (inches)	Probable Percent of Thread %	Metric Tap Size	Tap Drill Size	Decimal Equiv. of Tap Drill (inches)	Theoretical Percentage of thread %	Probable Mean Oversize (inches)	Probable Hole Size (inches)	Probable Percent of Thread %
–	2.7 mm	0.1062	88	.0026	.1088	70	–	L	0.2900	75	.0042	.2942	62	
M4 x 0.7	27	0.1440	72	.0032	.1472	54	–	7.3 mm	.2874	82	.0042	.2916	70	
–	3.6 mm	.1417	84	.0032	.1449	67	M10 x 1.5	U	0.3680	64	.0046	.3726	53	
–	9/64	.1406	90	.0032	.1438	73	–	9.3 mm	0.3660	69	.0046	.3706	58	
M5 x 0.8	14	0.1820	69	.0035	.1855	53	–	9.2 mm	0.3620	78	.0046	.3666	67	
–	4.6 mm	.1811	74	.0035	.1846	57	–	23/64	.3594	85	.0046	.3640	74	
–	15	.1800	79	.0035	.1835	62	M12 x 1.5	11.3 mm	.4449	70	.0047	.4496	57	
–	16	0.1770	92	.0035	.1805	76	–	7/16	.4375	86	.0047	.4422	75	
M6 x 1	7/32	.2188	65	.0038	.2226	51	M12 x 1.75	7/16	.4375	75	.0047	.4422	65	
–	5.4 mm	.2126	88	.0038	.2164	74	–	11 mm	.4331	84	.0047	.4378	73	

NITRO-MAX CUTTING DATA

Material & Speed Recommendations

Nitro®-Max can be used in a wide range of materials. CNC type equipment is recommended to achieve maximum performance of the taps.

Conditions that effect SFM:

- ▷ *Rigidity of fixture*
- ▷ *Spindle runout*
- ▷ *Coolant flow*
- ▷ *Feed mechanism*

Workpiece Material	2150N (Sp.Pt)	2160N (Sp.FI)	2250N (Sp.Pt)	2260N (Sp.FI)	2270N (T.F)
	Speed (SFM)	Speed (SFM)	Speed (SFM)	Speed (SFM)	Speed (SFM)
A. Stainless Steel (Free Machining)	25-50	25-50	50-80	40-70	60-100
B. Carbon Steels					
Low Carbon	50-80	40-70	50-80	30-60	80-120
Medium Carbon	30-60	20-50	30-60	15-40	60-90
High Carbon	10-30	10-20	10-30	10-20	20-50
C. Non-Ferrous Materials					
Zinc Die Cast	75-100	60-90	80-120	80-120	150-200
		60-110	80-120	80-120	100-150
Brass	75-100	60-90	80-120	80-120	100-150
Plastic	40-80	40-80	60-100	60-100	80-120
D. Aluminum Alloys					
Wrought	75-100	60-90	80-120	80-120	150-200
Cast	60-100	60-100	80-120	80-120	120-180
Unalloyed	75-100	75-100	80-120	80-120	150-200

Threading Dies



Adjustable Round Split Dies High Speed Steel

Bright Finish	
Series	Catalog page reference
3000E	181
3050E, 3100E	182



Hexagon Dies High Speed Steel

Bright Finish	
Series	Catalog page reference
3300E, 3350	183



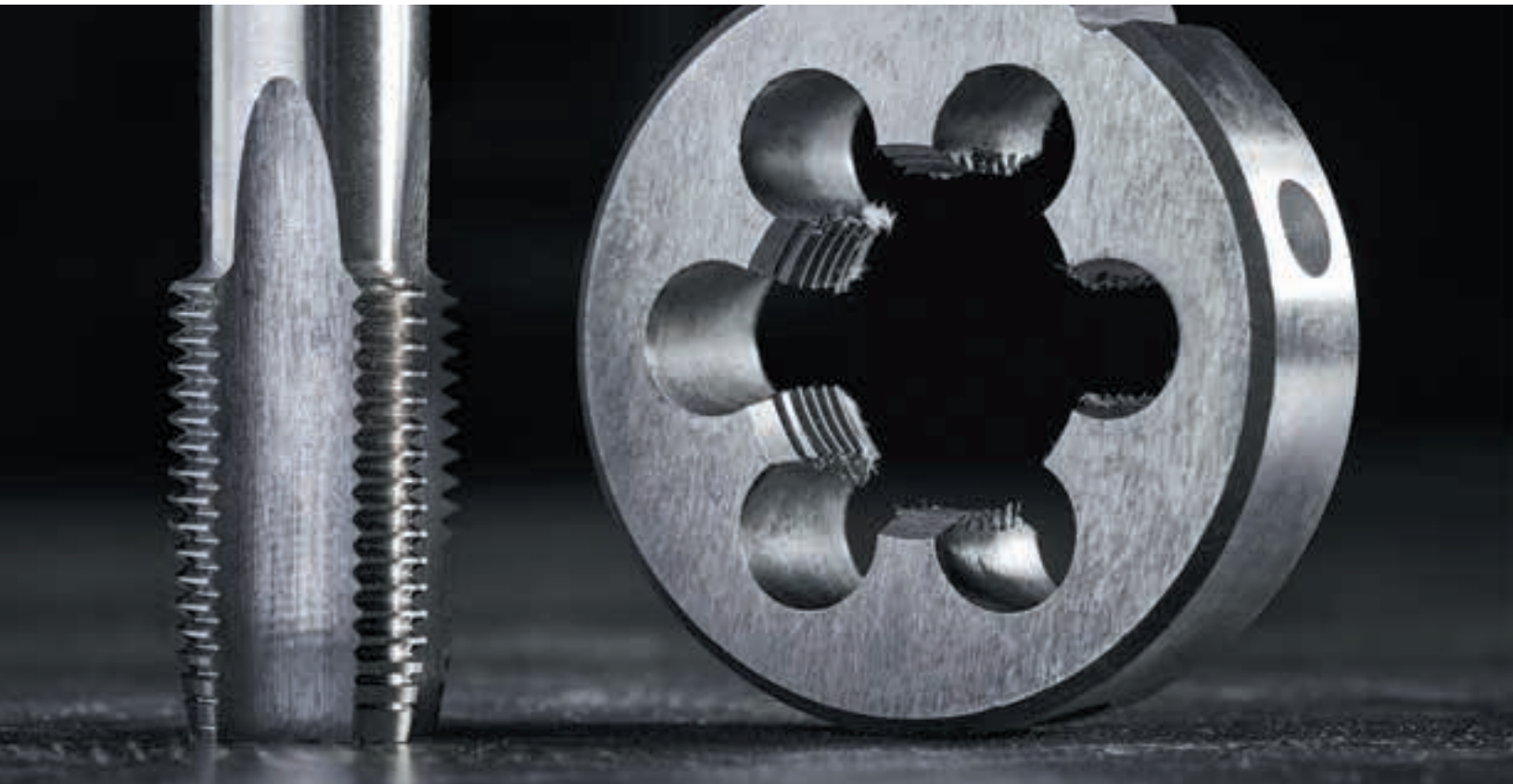
Hexagon Dies Carbon

Bright Finish	
Series	Catalog page reference
3350-E 8-Pitch, 3360E, 3380E	184



Die Stocks

Bright Finish For use with round Adjustable Split Dies	
Series	Catalog page reference
3000DS	186



Adjustable Round Split Dies

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

- ▷ *Manufactured using a premium grade High Speed Steel material*
- ▷ *Bright Finish*
- ▷ *Cuts an external thread when held in a die stock*

3000E
High Speed Steel
Machine Screw
Fractional / Bright



3000E

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

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

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

3050E Pipe Dies (NPT)

High Speed Steel

Machine Screw

Fractional / Bright

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



3050E



3100E

3100E

High Speed Steel

Machine Screw

Metric / Bright

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

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

Hexagon Dies

Hex rethreading dies are designed for repairing damaged threads on bolts, screws, rods, or studs. Their hexagon shape allows them to be used in a socket, or with a wrench.

- ▷ *Hex Dies are multi-edged, internally threaded tools used for cutting external threads*
- ▷ *Same size as standard hex nuts*

3300E High Speed Steel Machine Screw Fractional / Bright Threading Dies



3300E

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

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

- ▷ *Carbon steel hex dies are for repair work only; not recommended for creating new threads*
- ▷ *Extra thick, allows user to rethread damaged or jammed threads*
- ▷ *Same size as standard hex nuts*

3350E Carbon Machine Screw Fractional / Bright Rethreading Dies



3350E

Size	Threads Per Inch	Width A/F	3350E Order No.
4	40	19/32"	335E004C
4	48	19/32"	335E004F
5	40	19/32"	335E005C
5	44	19/32"	335E005F
6	32	19/32"	335E006C
6	40	19/32"	335E006F
8	32	19/32"	335E008C
8	36	19/32"	335E008F
10	24	19/32"	335E010C
10	32	19/32"	335E010F
12	24	19/32"	335E012C
12	28	19/32"	335E012F
1/4"	20	19/32"	335E116C
1/4"	28	19/32"	335E116F
5/16"	18	11/16"	335E120C
5/16"	24	11/16"	335E120F
3/8"	16	25/32"	335E124C
3/8"	24	25/32"	335E124F
7/16"	14	7/8"	335E128C
7/16"	20	7/8"	335E128F
1/2"	13	1-1/16"	335E132C
1/2"	20	1-1/16"	335E132F
9/16"	12	1-1/16"	335E136C

Size	Threads Per Inch	Width A/F	3350E Order No.
9/16"	18	1-1/16"	335E136F
5/8"	11	1-1/4"	335E140C
5/8"	18	1-1/4"	335E140F
11/16"	11	1-7/16"	335E144C
11/16"	16	1-7/16"	335E144F
3/4"	10	1-7/16"	335E148C
3/4"	16	1-7/16"	335E148F
7/8"	9	1-5/8"	335E156C
7/8"	14	1-5/8"	335E156F
1"	8	1-13/16"	335E164C
1"	12	1-13/16"	335E164F
1"	14	1-13/16"	335E164S
1-1/8"	7	2"	335E208C
1-1/8"	12	2"	335E208F
1-1/4"	7	2-3/16"	335E216C
1-1/4"	12	2-3/16"	335E216F
1-3/8"	6	2-3/8"	335E224C
1-3/8"	12	2-3/8"	335E224F
1-1/2"	6	2-9/16"	335E232C
1-1/2"	12	2-9/16"	335E232F
1-5/8"	5-1/2	3-1/8"	335E240C
1-5/8"	12	3-1/8"	335E240F
1-3/4"	5	3-1/8"	335E248C

Size	Threads Per Inch	Width A/F	3350E Order No.
1-3/4"	12	3-1/8"	335E248F
1-7/8"	5	3-1/8"	335E256C
1-7/8"	12	3-1/8"	335E256F
2"	4-1/2	3-1/2"	335E264C
2"	12	3-1/2"	335E264F
2-1/4"	4-1/2	3-1/2"	335E316C
2-1/4"	12	3-1/2"	335E316F
2-1/2"	4	4-1/2"	335E332C
2-1/2"	12	4-1/2"	335E332F
2-3/4"	4	4-1/2"	335E348C
2-3/4"	12	4-1/2"	335E348F
3"	4	5"	335E364C
3"	12	5"	335E364F
3-1/4"	4	5"	335E416C
3-1/4"	12	5"	335E416F
3-1/2"	4	5"	335E432C
3-1/2"	12	5"	335E432F
3-3/4"	4	6"	335E448C
3-3/4"	12	6"	335E448F
4"	4	6"	335E464C
4"	12	6"	335E464F

3350E 8-Pitch
Carbon
Machine Screw
Fractional / Bright
Rethreading Dies



3350E

Size	Threads Per Inch	Width A/F	3350E Order No.
1-1/8"	8	2"	335E208N
1-1/4"	8	2"	335E216N
1-3/8"	8	2-3/16"	335E224N
1-1/2"	8	2-3/16"	335E232N
1-5/8"	8	2-3/8"	335E240N
1-3/4"	8	2-3/8"	335E248N
1-7/8"	8	2-9/16"	335E256N
2"	8	2-9/16"	335E264N
2-1/4"	8	3-1/8"	335E316N
2-3/8"	8	3-1/8"	335E324N
2-1/2"	8	3-1/8"	335E332N
2-5/8"	8	3-1/8"	335E340N
2-3/4"	8	3-1/8"	335E348N
2-7/8"	8	3-1/8"	335E356N
3"	8	3-1/2"	335E364N
3-1/4"	8	3-1/2"	335E416N
3-1/2"	8	3-1/2"	335E432N
3-3/4"	8	3-1/2"	335E448N
4"	8	4-1/2"	335E464N

3380E Pipe Dies (NPT)
Carbon
Machine Screw
Fractional / Bright
Rethreading Dies



3380E

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

3360E
Carbon
Machine Screw
Metric / Bright
Rethreading Dies



3360E

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

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



2000H38

Material	Pieces	Includes	Case	Order No.
Tap & Hexagon Die Set				
TAPS: HSS USA DIES: Carbon Import	23 pcs (UNC & UNF)*	Taps & Dies: 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12 & 1/4-18 (NPT). Also: 1/4" to 1" Adjustable Tap Wrench.	Wood	2000H25
TAPS: HSS USA DIES: Carbon Import	36 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, & 1/8-27 (NPT). Also: 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench.	Wood	2000H38
TAPS: HSS USA DIES: Carbon Import	58 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12, & 1/8-27, 1/4-18 (NPT). Also: #7 to 1/2" & 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench.	Wood	2000H63
TAPS: HSS USA DIES: Carbon Import	18 pcs (UNC)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench.	Wood	2000HC20
TAPS: HSS USA DIES: Carbon Import	18 pcs (UNF)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench.	Wood	2000HF20
Tap & Round Adjustable Die Set				
High Speed Steel TAPS: USA DIES: Import	25 pcs (UNC & UNF)	Taps & Dies: 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12 & 1/4-18 (NPT). Also: 2" Round Die Stock, 1/4" to 1" Adjustable Tap Wrench, and 1 Screwdriver.	Wood	2000R25
High Speed Steel TAPS: USA DIES: Import	38 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20 & 1/8-27 (NPT). Also: 1" Round Die Stock, 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench and 1 Screwdriver.	Wood	2000R38
High Speed Steel TAPS: USA DIES: Import	63 pcs (UNC & UNF)	Taps & Dies: 4-40, 6-32, 8-32, 10-24, 10-32, 12-24, 1/4-20, 1/4-28, 5/16-18, 5/16-24, 3/8-16, 3/8-24, 7/16-14, 7/16-20, 1/2-13, 1/2-20, 9/16-12, 9/16-18, 5/8-11, 5/8-18, 3/4-10, 3/4-16, 7/8-9, 7/8-14, 1-8, 1-12, & 1/8-27, 1/4-18 (NPT). Also: 1" & 2" Round Die Stock, #7 to 1/2" & 1/4" to 1" Adjustable Tap Wrench, #0 to 3/8" T-Handle Tap Wrench and 2 Screwdrivers.	Wood	2000R63
High Speed Steel TAPS: USA DIES: Import	20 pcs (UNC)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: 1-1/2" Round Die Stock, #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench, and 1 Screwdriver.	Wood	2000RC20
High Speed Steel TAPS: USA DIES: Import	20 pcs (UNF)	Taps & Dies: 1/4, 5/16, 3/8, 7/16, 1/2, 9/16, 5/8, 3/4. Also: 1-1/2" Round Die Stock, #7 to 1/2 Adjustable Tap Wrench, #12 to 1/2" T-Handle Tap Wrench, and 1 Screwdriver.	Wood	2000RF20

* UNF threads are Unified fine pitch threads, UNC threads are Unified coarse pitch threads.



2800E36



3300EC10



3350C20

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

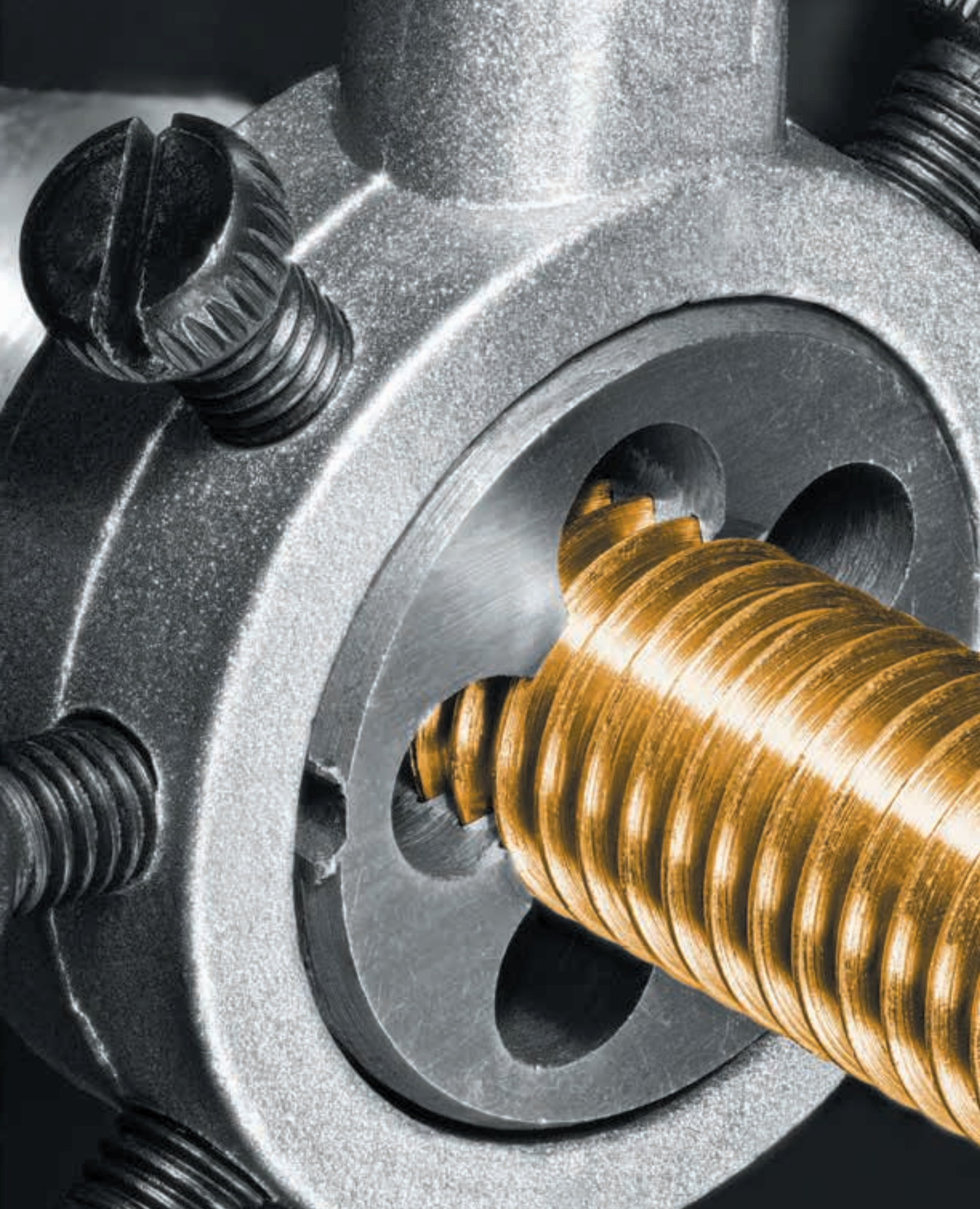
3000DS Die Stocks
3 Screw Type

Designed for use with round adjustable split dies.



3000DS

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



Carbide Burrs



Solid Carbide – Magnum

Bright Finish

For most ferrous metals, hard alloys; aluminum

Series 7'	Catalog page reference
7000A / 7000AX, 7000B	189
7000C / 7000CX, 7000D / 7000DX	190
7000E / 7000EX, 7000F / 7000FX, 7000G / 7000GX	191
7000H / 7000HX, 7000J, 7000K	192
7000L / 7000LX, 7000M, 7000N / 7000NE	193

Aluminium/Non-ferrous Cut

Bright Finish

For aluminum and other non-ferrous materials

Series 7'	Catalog page reference
7000AAL, 7000CAL, 7000DAL, 7000EAL, 7000FAL, 7000LAL	196

Heavy-Duty

Bright Finish

For high-performance on most ferrous metal, hard alloys; aluminum

Series	Catalog page reference
01-V	194, 195

Heavy-Duty

Bright Finish

For high-performance on non-ferrous, aluminium and soft metal

Series	Catalog page reference
01-V	197

Point Grinder

Dialspeed™ 6141

For fitting and finishing work

Order No.	Catalog page reference
30-A 141	198





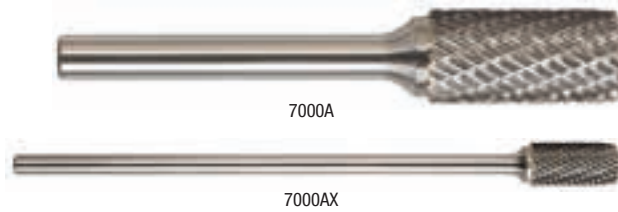
Solid Carbide – Magnum

Manufactured from premium grade Tungsten Carbide, they are primarily used to remove burrs (the small flakes of metal) that often remain on the workpiece after the machining process.

- ▷ One of the most widely used and versatile cutting tools
- ▷ Burrs are available in single cut, double cut, and non-ferrous/aluminum cut
- ▷ All sizes are individually packaged
- ▷ Special sizes and profiles are available upon request



7000A / 7000AX
Shape: Cylindrical
Use: Deburring



SA Burr Profile

7000B
Shape: Cylindrical with End Cut
Use: Interior Contour Work



SB Burr Profile

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

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000B – Cylindrical With End Cut					
SB-12	1/8"	1/4"	5/8"	7B108ASC	7B108ADC
SB-11	1/8"	1/4"	1/2"	7B108BSC	7B108BDC
SB-14	3/16"	1/4"	5/8"	7B112ASC	7B112ADC
SB-1	1/4"	1/4"	5/8"	7B116ASC	7B116ADC
SB-1L	1/4"	1/4"	1"	7B116BSC	7B116BDC
SB-2	5/16"	1/4"	3/4"	7B120ASC	7B120ADC
SB-2L	5/16"	1/4"	1"	7B120BSC	7B120BDC
SB-3	3/8"	1/4"	3/4"	7B124ASC	7B124ADC
SB-3L	3/8"	1/4"	1"	7B124BSC	7B124BDC
SB-3XL	3/8"	1/4"	1-1/2"	7B124CSC	7B124CDC
SB-4	7/16"	1/4"	1"	7B128BSC	7B128BDC
SB-5	1/2"	1/4"	1"	7B132BSC	7B132BDC
SB-6	5/8"	1/4"	1"	7B140BSC	7B140BDC
SB-16	3/4"	1/4"	3/4"	7B148ASC	7B148ADC
SB-7	3/4"	1/4"	1"	7B148BSC	7B148BDC
SB-9	1"	1/4"	1"	7B164BSC	7B164BDC
Series 7000B – Miniature					
SB-43	1/8"	1/8"	9/16"	70B043SC	70B043DC
SB-51	1/4"	1/8"	3/16"	70B051SC	70B051DC
SB-ECO	1/8"	1/8"	-	70BEC0SC	70BEC0DC



7000C / 7000CX

Shape: Cylindrical Ball Nose

Use: Surface Milling & Contour Work



7000C



7000CX



SC Burr Profile

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

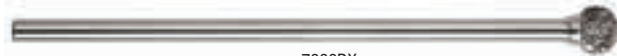
7000D / 7000DX

Shape: Ball

Use: Surface Milling, Deburring & Contour Work



7000D



7000DX



SD Burr Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000D – Ball Shape					
SD-12	1/8"	1/4"	1/8"	7D108ASC	7D108ADC
SD-14	3/16"	1/4"	3/16"	7D112ASC	7D112ADC
SD-1	1/4"	1/4"	1/4"	7D116ASC	7D116ADC
SD-2	5/16"	1/4"	5/16"	7D120ASC	7D120ADC
SD-3	3/8"	1/4"	3/8"	7D124ASC	7D124ADC
SD-4	7/16"	1/4"	7/16"	7D128ASC	7D128ADC
SD-5	1/2"	1/4"	1/2"	7D132ASC	7D132ADC
SD-6	5/8"	1/4"	5/8"	7D140ASC	7D140ADC
SD-7	3/4"	1/4"	3/4"	7D148ASC	7D148ADC
SD-9	1"	1/4"	1"	7D164ASC	7D164ADC
Series 7000D – Miniature					
SD-41	3/32"	1/8"	3/32"	70D041SC	70D041DC
SD-42	1/8"	1/8"	1/8"	70D042SC	70D042DC
SD-51	1/4"	1/8"	7/32"	70D051SC	70D051DC
SD-53	3/16"	1/8"	5/32"	70D053SC	70D053DC
SD-61	3/32"	3/32"	3/32"	70D061SC	70D061DC
SD-81	3/16"	3/16"	5/32"	70D081SC	70D081DC
SD-42L2	1/8"	1/8"	1/8"	7D42L2SC	7D42L2DC
SD-42L3	1/8"	1/8"	1/8"	7D42L3SC	7D42L3DC
Series 7000DX – 6" Extra Long					
SD-1L6	1/4"	1/4"	7/32"	7DX116SC	7DX116DC
SD-3L6	3/8"	1/4"	5/16"	7DX124SC	7DX124DC
SD-5L6	1/2"	1/4"	7/16"	7DX132SC	7DX132DC



7000E / 7000EX

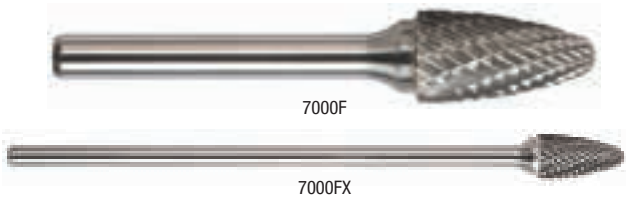
Shape: Oval
Use: Contour Work



SE Burr Profile

7000F / 7000FX

Shape: Round Tree
Use: Narrow Contour Work



SF Burr Profile

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

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

7000G / 7000GX

Shape: Pointed Tree
Use: Surface Milling & Narrow Contour Work

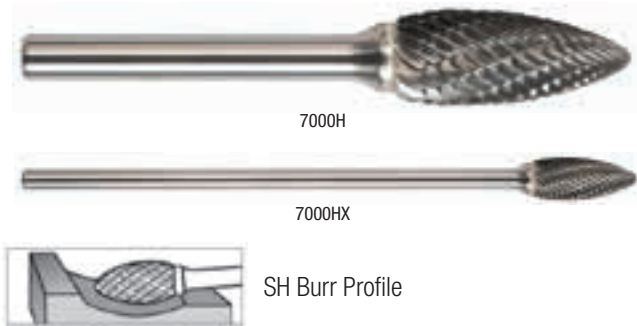


SG Burr Profile

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

7000H / 7000HX

Shape: Flame
Use: Contour Work



Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000H – Flame Shape					
SH-1	1/4"	1/4"	1/2"	7H116ASC	7H116ADC
SH-2	5/16"	1/4"	3/4"	7H120ASC	7H120ADC
SH-5	1/2"	1/4"	1-1/4"	7H132ASC	7H132ADC
SH-6	5/8"	1/4"	1-7/16"	7H140ASC	7H140ADC
SH-7	3/4"	1/4"	1-5/8"	7H148ASC	7H148ADC
Series 7000H – Miniature					
SH-41	1/8"	1/8"	1/4"	70H041SC	70H041DC
SH-53	3/16"	1/8"	3/8"	70H053SC	70H053DC
SH-41L2	1/8"	1/8"	1/4"	7H41L2SC	7H41L2DC
SH-41L3	1/8"	1/8"	1/4"	7H41L3SC	7H41L3DC
Series 7000HX – 6" Extra Long					
SH-2L6	5/16"	1/4"	3/4"	7HX120SC	7HX120DC
SH-5L6	1/2"	1/4"	1-1/4"	7HX132SC	7HX132DC

7000J

Shape: 60° Included Angle
Use: Machining of Acute Angle Areas & Countersinking



7000K

Shape: 90° Included Angle
Use: Machining of Acute Angle Areas & Countersinking



Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000J – 60° Included Angle					
SJ-1	3/16"	1/4"	3/16"	7J116ASC	7J116ADC
SJ-2	1/4"	1/4"	1/4"	7J120ASC	7J120ADC
SJ-3	5/16"	1/4"	1/4"	7J124ASC	7J124ADC
SJ-5	3/8"	1/4"	7/16"	7J132ASC	7J132ADC
SJ-6	1/2"	1/4"	1/2"	7J140ASC	7J140ADC
SJ-7	5/8"	1/4"	5/8"	7J148ASC	7J148ADC
SJ-9	3/4"	1/4"	3/4"	7J164ASC	7J164ADC
Series 7000J – Miniature					
SJ-42	1/8"	1/8"	3/32"	70J042SC	70J042DC

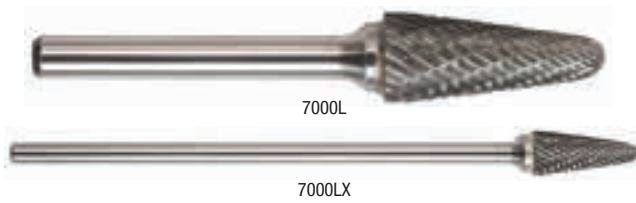
Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000K – 90° Included Angle					
SK-1	1/4"	1/4"	1/8"	7K116ASC	7K116ADC
SK-2	5/16"	1/4"	3/16"	7K120ASC	7K120ADC
SK-3	3/8"	1/4"	3/16"	7K124ASC	7K124ADC
SK-5	1/2"	1/4"	1/4"	7K132ASC	7K132ADC
SK-6	5/8"	1/4"	5/16"	7K140ASC	7K140ADC
SK-7	3/4"	1/4"	3/8"	7K148ASC	7K148ADC
SK-9	1"	1/4"	1/2"	7K164ASC	7K164ADC
Series 7000K – Miniature					
SK-42	1/8"	1/8"	7/32"	70K042SC	70K042DC



7000L / 7000LX

Shape: 14° Included Angle

Use: Surface Machining & Narrow Contour Work



SL Burr Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000L – 14° Included Angle					
SL-1	1/4"	1/4"	5/8"	7L116ASC	7L116ADC
SL-2	5/16"	1/4"	7/8"	7L120ASC	7L120ADC
SL-3	3/8"	1/4"	1-1/16"	7L124ASC	7L124ADC
SL-4	1/2"	1/4"	1-1/8"	7L132ASC	7L132ADC
SL-5	5/8"	1/4"	1-3/16"	7L140ASC	7L140ADC
SL-6	5/8"	1/4"	1-5/16"	7L140BSC	7L140BDC
SL-7	3/4"	1/4"	1-1/2"	7L148ASC	7L148ADC
Series 7000L – Miniature					
SL-41	1/8"	1/8"	3/8"	70L041SC	70L041DC
SL-42	1/8"	1/8"	1/2"	70L042SC	70L042DC
SL-53	3/16"	1/8"	1/2"	70L053SC	70L053DC
SL-81	3/16"	3/16"	7/16"	70L081SC	70L081DC
SL-42L2	1/8"	1/8"	1/2"	7L42L2SC	7L42L2DC
SL-42L3	1/8"	1/8"	1/2"	7L42L3SC	7L42L3DC
Series 7000LX – 6" Extra Long					
SL-1L6	1/4"	1/4"	5/8"	7LX116SC	7LX116DC
SL-3L6	3/8"	1/4"	1-1/16"	7LX124SC	7LX124DC
SL-4L6	1/2"	1/4"	1-1/8"	7LX132SC	7LX132DC

7000M

Shape: Cone

Use: Surface Machining & Narrow Contour Work



SM Burr Profile

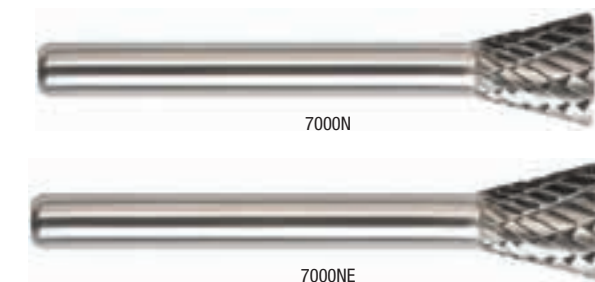
Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000M – Cone Shape					
SM-1	1/4"	1/4"	1/2"	7M116ASC	7M116ADC
SM-2	1/4"	1/4"	3/4"	7M116BSC	7M116BDC
SM-3	1/4"	1/4"	1"	7M116CSC	7M116CDC
SM-3L	1/4"	1/4"	1-1/4"	7M116DSC	7M116DDC
SM-4	3/8"	1/4"	5/8"	7M124ASC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

7000N / 7000NE

7000N: Shape: Inverted cone

7000NE: Shape: Inverted cone with end cut

Use: Machining from the rear in hard to reach areas



SN Burr Profile

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Single Cut Order No.	Double Cut Order No.
Series 7000N – Inverted Cone					
SN-1	1/4"	1/4"	5/16"	7N116ASC	7N116ADC
SN-2	3/8"	1/4"	3/8"	7N124ASC	7N124ADC
SN-4	1/2"	1/4"	1/2"	7N132ASC	7N132ADC
SN-6	5/8"	1/4"	3/4"	7N140ASC	7N140ADC
SN-7	3/4"	1/4"	5/8"	7N148ASC	7N148ADC
Series 7000N – Miniature					
SN-41	1/8"	1/8"	1/8"	70N041SC	70N041DC
SN-42	1/8"	1/8"	3/16"	70N042SC	70N042DC
SN-51	1/4"	1/8"	1/4"	70N051SC	70N051DC
SN-53	3/16"	1/8"	1/4"	70N053SC	70N053DC
SN-61	3/32"	3/32"	1/8"	70N061SC	70N061DC
SN-81	3/16"	3/16"	1/4"	70N081SC	70N081DC
Series 7000NE – Inverted Cone With End Cut					
SN-1E	1/4"	1/4"	5/16"	7N116ESC	7N116EDC
SN-2E	3/8"	1/4"	3/8"	7N124ESC	7N124EDC
SN-4E	1/2"	1/4"	1/2"	7N132ESC	7N132EDC
SN-7E	3/4"	1/4"	5/8"	7N148ESC	7N148EDC

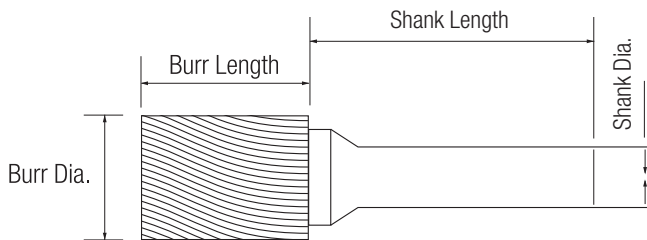


Carbide Burrs

High performance

Walter carbide burrs are made from the highest grade tungsten carbide and are manufactured to ensure perfect concentricity and balance. This means you get a product that is safer, removes material faster and is guaranteed to provide the longest working life in the industry.

- ▷ *Precise manufacturing – Burrs run perfectly true without vibration*
- ▷ *First grade tungsten carbide – For the toughest applications in a wide range of materials*
- ▷ *Exclusive tooth design – Guarantees maximum cutting performance*
- ▷ *Advanced flute geometry – Ensures maximum cutting capacity and chip evacuation from tip to bottom*



**HIGH STRENGTH BRAZED JOINT
GUARANTEED TO PREVENT
BREAKAGE**

1/4" Shank Ø, Double Cut



Burr Dia.xLength	USCTI Type	Std. Lgth. Order No.	6" Shank Order No.	Std. Pkg.	Std. Ctn.
Cylindrical (SA)					
1/4" x 5/8"	SA-1	01-V 001	01-V 601	1	10
5/16" x 3/4"	SA-2	01-V 037		1	10
3/8" x 3/4"	SA-3	01-V 002	01-V 602	1	10
7/16" x 1"	SA-4	01-V 038		1	10
1/2" x 1"	SA-5	01-V 004	01-V 604	1	10
5/8" x 1"	SA-6	01-V 055		1	10
Cylindrical (SB)					
1/4" x 5/8"	SB-1	01-V 056		1	10
3/8" x 3/4"	SB-3	01-V 057		1	10
1/2" x 1"	SB-5	01-V 059		1	10
Cylindrical round nose (SC)					
1/4" x 5/8"	SC-1	01-V 005	01-V 605	1	10
5/16" x 3/4"	SC-2	01-V 039		1	10
3/8" x 3/4"	SC-3	01-V 006	01-V 606	1	10
7/16" x 1"	SC-4	01-V 040		1	10
1/2" x 1"	SC-5	01-V 007	01-V 607	1	10
5/8" x 1"	SC-6	01-V 062		1	10
3/4" x 1"	SC-7	01-V 073		1	10
Ball (SD)					
1/4" x 7/32"	SD-1	01-V 009	01-V 609	1	10
3/8" x 5/16"	SD-3	01-V 010	01-V 610	1	10
1/2" x 7/16"	SD-5	01-V 026	01-V 626	1	10
5/8" x 9/16"	SD-6	01-V 011		1	10
Egg (SE)					
3/8" x 5/8"	SE-3	01-V 027		1	10
1/2" x 7/8"	SE-5	01-V 028		1	10
Tree (SF)					
1/4" x 5/8"	SF-1	01-V 041	01-V 641	1	10
5/16" x 5/8"	SF-2	01-V 042		1	10
3/8" x 3/4"	SF-3	01-V 014	01-V 614	1	10
7/16" x 1"	SF-4	01-V 043		1	10
1/2" x 1"	SF-5	01-V 015	01-V 615	1	10
5/8" x 1"	SF-6	01-V 066		1	10
Tapered (SG)					
1/4" x 5/8"	SG-1	01-V 044	01-V 644	1	10
5/16" x 3/4"	SG-2	01-V 045		1	10
3/8" x 3/4"	SG-3	01-V 046	01-V 646	1	10
1/2" x 1"	SG-5	01-V 013	01-V 613	1	10
Flame (SH)					
5/16" x 3/4"	SH-3	01-V 029		1	10
1/2" x 1 1/4"	SH-5	01-V 030		1	10
Cone 90° (SK)					
3/8" x 1/5"	SK-3	01-V 067		1	10
1/2" x 1/4"	SK-5	01-V 068		1	10
Cone (SL)					
1/4" x 5/8"	SL-1 14°	01-V 017		1	10
5/16" x 7/8"	SL-2	01-V 051		1	10
3/8" x 1 1/16"	SL-3 14°	01-V 031	01-V 631	1	10
1/2" x 1 1/8"	SL-4 14°	01-V 032		1	10
5/8" x 3/16"	SL-5	01-V 052	01-V 652	1	10
Conical (SM)					
1/4" x 1/2"	SM-1	01-V 047		1	10
1/4" x 3/4"	SM-2	01-V 048		1	10
1/4" x 1"	SM-3	01-V 049		1	10
3/8" x 5/8"	SM-4	01-V 050		1	10
1/2" x 7/8"	SM-5 28°	01-V 018		1	10
Inverted cone (SN)					
1/4" x 1/2"	SN-1	01-V 070		1	10
1/4" x 3/4"	SN-2	01-V 071		1	10
1/4" x 1"	SN-4	01-V 072		1	10

1/4" Shank Ø, Hard Alloys



Burr Dia. x Length	USCTI Type	Order No.	Std. Pkg.	Std. Ctn.
1/2" x 1"	SC-5	01-V 033	1	10
1/2" x 1"	SF-5	01-V 034	1	10
1/2" x 1 1/8"	SL-4	01-V 035	1	10

1/8" Shank Ø, Double Cut



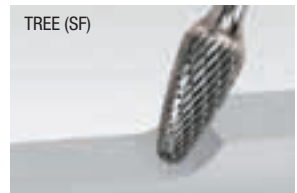
Burr Dia. x Length	USCTI Type	Order No.	Std. Pkg.	Std. Ctn.
1/8" x 9/16"	SA-43	01-V 020	1	10
1/8" x 1/8"	SD-42	01-V 021	1	10
1/8" x 1/2"	SF-42	01-V 022	1	10
1/8" x 1/2"	SG-44	01-V 023	1	10
1/8" x 1/2"	SL-42	01-V 024	1	10
1/8" x 7/16"	SM-42 12°	01-V 025	1	10

Burr diameter	Maximum cutting speed (RPM) for standard length burrs	Maximum cutting speed (RPM) for 6" long burrs
1/4"	70,000	35,000
5/16"	68,000	34,000
3/8"	66,000	33,000
7/16"	58,000	29,000
1/2"	50,000	25,000
5/8"	40,000	20,000

For safety reasons, never use the 6" tungsten carbide burrs below 20,000 RPM.

Material	Double cut	Non-ferrous
Aluminum	-	x
Brass	x	x
Bronze	x	-
Cast iron	x	-
Copper	-	x
Carbon fiber	-	x
Fiberglass	x	-
Hard rubber	x	-
Inconel	x	-
Magnesium	-	x
Plastics	x	-

Material	Double cut	Non-ferrous
Steel - 45-55Rc	x	-
Steel - 55-60Rc	x	-
Steel - Carbon	x	-
Steel - Nickel Chrome	x	-
Steel - Stainless	x	-
Steel - Weldments	x	-
Titanium	x	-
Zinc	-	x



Aluminium/Non-ferrous Cut

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

7000AAL

Shape: Cylindrical



7000AAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
Series 7000AAL – Cylindrical				
SA-1NF	1/4"	1/4"	3/4"	7AAL116
SA-3NF	3/8"	1/4"	3/4"	7AAL124
SA-5NF	1/2"	1/4"	1"	7AAL132
SA-6NF	5/8"	1/4"	1"	7AAL140
SA-7NF	3/4"	1/4"	1"	7AAL148

7000CAL

Shape: Cylindrical Ball Nose



7000CAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
Series 7000CAL – Cylindrical Ball Nose				
SC-1NF	1/4"	1/4"	3/4"	7CAL116
SC-3NF	3/8"	1/4"	3/4"	7CAL124
SC-5NF	1/2"	1/4"	1"	7CAL132
SC-6NF	5/8"	1/4"	1"	7CAL140
SC-7NF	3/4"	1/4"	1"	7CAL148

7000DAL

Shape: Ball



7000DAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
Series 7000DAL – Ball Shape				
SD-1NF	1/4"	1/4"	7/32"	7DAL116
SD-3NF	3/8"	1/4"	5/16"	7DAL124
SD-5NF	1/2"	1/4"	7/16"	7DAL132
SD-6NF	5/8"	1/4"	9/16"	7DAL140
SD-7NF	3/4"	1/4"	11/16"	7DAL148

7000EAL

Shape: Oval



7000EAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
Series 7000EAL – Oval Shape				
SE-1NF	1/4"	1/4"	7/32"	7EAL116
SE-3NF	3/8"	1/4"	5/16"	7EAL124
SE-5NF	1/2"	1/4"	7/16"	7EAL132
SE-6NF	5/8"	1/4"	9/16"	7EAL140
SE-7NF	3/4"	1/4"	11/16"	7EAL148

7000FAL

Shape: Round Tree



7000FAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
Series 7000FAL – Round Tree Shape				
SF-1NF	1/4"	1/4"	3/4"	7FAL116
SF-3NF	3/8"	1/4"	3/4"	7FAL124
SF-5NF	1/2"	1/4"	1"	7FAL132
SF-6NF	5/8"	1/4"	1"	7FAL140
SF-14NF	3/4"	1/4"	1-1/4"	7FAL148

7000LAL

Shape: 14° Included Angle



7000LAL

Tool No.	Cutter Dia.	Shank Dia.	Length of Cut	Order No.
Series 7000LAL – 14° Included Angle				
SL-1NF	1/4"	1/4"	5/8"	7LAL116
SL-3NF	3/8"	1/4"	1-1/16"	7LAL124
SL-4NF	1/2"	1/4"	1-1/8"	7LAL132
SL-5NF	5/8"	1/4"	1-3/16"	7LAL140
SL-6NF	5/8"	1/4"	1-5/16"	7LAL140A

Aluminium/Non-ferrous Cut

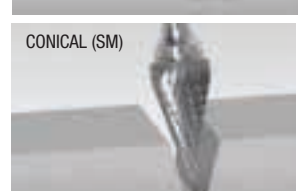
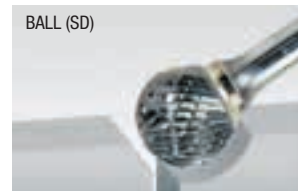
1/4" Shank Ø



Burr Dia. x Length	USCTI Type	Order No.	Std. Pkg.	Std. Ctn.
3/8" x 3/4"	SA-3	01-V 003	1	10
1/2" x 1"	SA-5	01-V 054	1	10
3/8" x 3/4"	SB-3	01-V 058	1	10
1/4" x 5/8"	SC-1	01-V 060	1	10
3/8" x 3/4"	SC-3	01-V 061	1	10
1/2" x 1"	SC-5	01-V 008	1	10
1/2" x 1/2"	SD-5	01-V 063	1	10
1/2" x 7/8"	SE-5	01-V 064	1	10
3/8" x 3/4"	SF-3	01-V 065	1	10
1/2" x 1"	SF-5	01-V 016	1	10
3/8" x 1 1/4"	SL-3	01-V 036	1	10
1/2" x 1 1/8"	SL-4	01-V 069	1	10

Material	Double cut	Non-ferrous
Aluminum	-	x
Brass	x	x
Bronze	x	-
Cast iron	x	-
Copper	-	x
Carbon fiber	-	x
Fiberglass	x	-
Hard rubber	x	-
Inconel	x	-
Magnesium	-	x
Plastics	x	-

Material	Double cut	Non-ferrous
Steel - 45-55Rc	x	-
Steel - 55-60Rc	x	-
Steel - Carbon	x	-
Steel - Nickel Chrome	x	-
Steel - Stainless	x	-
Steel - Weldments	x	-
Titanium	x	-
Zinc	-	x



Burrs Sets



Carbide Burr Kit	
Description	Order No.
Carbide Burr Production Kit Contains one of each of the following: 01-V 002, 006, 011, 015 and 018	01-V 990
5-Piece Alu Cut Carbide Burr Kit	01-V 995
10-Piece Double Cut Carbide Burr Kit	01-V 996

Point Grinder

Dialspeed™ 6141

For fitting and finishing work

The convenient design of this very popular point grinder results in increased performance and operator comfort to let you reach new levels of productivity. Proven electronics and the quality construction of the motor deliver more power to the spindle while the ergonomic housing minimizes fatigue. This tool is the perfect companion to our premium carbide burrs for any deburring or shaping applications.



RPM	
SPEED 1	10,000 rpm
SPEED 2	14,000 rpm
SPEED 3	18,500 rpm
SPEED 4	22,000 rpm
SPEED 5	26,000 rpm
SPEED 6	30,500 rpm

DIALSPEED™ 6141	
Model name	6141E
Order No.	30-A 141
Lock-on switch	✓
AC/DC compatibility	AC compatibility only
Soft-Start™	✓
Restart protection	✓
DYNAMAX™ RPM monitoring	✓
POWERGUARD™ overheat protection	✓
DIALSPEED™ variable RPM selector	✓
Collet	1/4"
RPM no-load	10,000 to 30,500
Amps	6.4 A
Power	710 W
Tool weight	4.2 lbs
Tool length	13.75"
Maximum wheel diameter	1.5"
Standard equipment	
1/4 collet	30-B 046
Spanner	48-Z 019
Optional equipment	
Cutting guard	30-B 051

Flexible shaft		
Description	Order No.	
For delicate finishing work with 6141 and 6145. 1/4" collet, 5 ft. long.	30-B 050	





Burr Sets

Set No.	No. of Pieces	Shank Sizes	Includes	Single Cut Order No.	Double Cut Order No.
Carbide Burr Sets					
1	8	1/4	SA-1, SC-1, SD-1, SE-1, SF-1, SG-1, SL-1, SM-1	70S001SC	70S001DC
2	8	1/4	SA-3, SC-3, SD-3, SE-3, SF-3, SG-3, SL-3, SM-4	70S002SC	70S002DC
3	8	1/4	SA-5, SC-5, SD-5, SE-5, SF-5, SG-5, SL-4, SM-5	70S003SC	70S003DC
4	10	1/4	SA-1, SA-3, SA-5, SC-1, SC-3, SC-5, SD-3, SF-3, SF-5, SH-1	70S004SC	70S004DC
5	10	1/4	SA-5, SC-3, SC-5, SD-5, SE-3, SF-3, SF-5, SG-3, SG-5, SL-4	70S005SC	70S005DC
6	8	1/8	SA-43, SC-42, SD-42, SE-41, SF-42, SG-42, SL-41, SN-42	70S006SC	70S006DC
7	8	1/8	SA-51, SB-51, SC-51, SD-51, SE-51, SF-51, SG-51, SM-51	70S007SC	70S007DC
Aluminum/Non Ferrous Cut					
10	8	1/4	SA-3NF, SA-5NF, SC-3NF, SC-5NF, SD-3NF, SF-3NF, SF-5NF, SL-3NF	70S010NF	



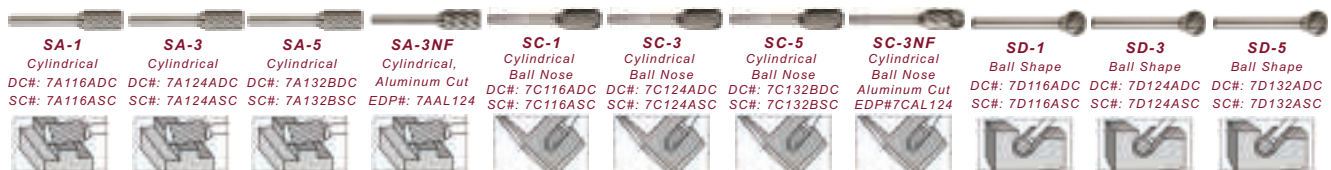
70S004DC

Burr Display

- ▷ Burrs are "Made in the USA" at our own state-of-the-art manufacturing facility
- ▷ A wide range of popular styles and sizes
- ▷ Comes complete with attractive, compact and light-weight acrylic display, ideal for your showroom and managing your inventory
- ▷ Display has a lock for added security. There is a shelf hidden in the back for holding additional replenishment inventory, or empty packages
- ▷ Available in 33, 66, or 99 pieces. The display holds 33 pieces (1 of each). The 66 piece display provides you with an extra piece of each for replenishment of the display. The 99 piece display provides you with 2 extra pieces of each.
- ▷ Detailed labels (sample pictured below) make filling the display simple and easy



Storage drawer in back of display



Displays	Each Set Contains The Following DC & NF Burrs:	Single Cut Order No.	Double Cut Order No.
33 Piece Display (1 of Each Burr)	SA-1, SA-3, SA-5, SA-3NF, SC-1, SC-3, SC-5, SC-3NF, SD-1, SD-3, SD-5, SE-1, SE-3, SE-5, SE-3NF, SF-1, SF-3, SF-5, SF-3NF, SG-1, SG-3, SG-5, SH-1, SH-5, SJ-1, SJ-3, SL-1, SL-3, SL-4, SL-3NF, SM-1, SM-4, SM-5	70S033SC	70S033DC
66 Piece Display (2 of Each Burr)		70S066SC	70S066DC
99 Piece Display (3 of Each Burr)		70S099SC	70S099DC

Technical Information

Burr Selection Chart

Head Style	Description	Use
SA	Cylindrical	Deburring
SB	Cylindrical with end cut	Interior Contour Work
SC	Cylindrical Ball Nose	Surface Milling & Contour Work
SD	Ball Shape	Surface Milling, Deburring, & Contour Work
SE	Oval Shape	Contour Work
SF	Round Tree Shape	Narrow Contour Work
SG	Pointed Tree Shape	Surface Milling & Narrow Contour Work
SH	Flame Shape	Contour Work
SJ	60° Included Angle	Machining of Acute Angle Areas & Countersinking
SK	90° Included Angle	Machining of Acute Angle Areas & Countersinking
SL	14° Included Angle	Surface Machining & Narrow Contour Work
SM	Cone Shape	Surface Machining & Narrow Contour Work
SN	Inverted Cone	Machining from the Rear in hard to reach areas
SNE	Inverted Cone with end cut	Machining from the Rear in hard to reach areas



Technical Information

Head Profiles / RPM Chart / Speed Recommendations



Single Cut

Drillco's Single Cut produces a smooth finish for general purpose use on steel, cast iron and other ferrous and non-ferrous materials. Most of Drillco's Carbide Burrs are available in the Single Cut right hand spiral design.



Double Cut

Drillco's Double Cut, with its chisel type cutting edge, is a machine ground tool built to exacting tolerances of concentricity, size and shape. This accuracy, when combined with precision grinders, results in smooth running, fast metal removal and fine finishes.

The right and left hand helical flutes combined to produce an chisel type cutting tooth. This results in faster penetration and stock removal with minimal bounce or chatter. The Double Cut design also produces an easy to handle granular type chip, in most metals, as opposed to the conventional sliver type chips. Throughout its life, the Double Cut gives faster stock removal, less operator fatigue, and maintains a good finish on the widest possible variety of materials.



Chip Breaker

The addition of a chip breaker will reduce sliver size and improve operator control at a slightly reduced surface finish. Available as a special.



Diamond Cut

The Diamond Cut is very effective in heat treated and tough alloy steels, producing extremely small chips. It offers very good operator control with good stock removal at the sacrifice of finish. The diamond grind will reduce tool life, however. Available as a special.



Aluminum Cut

Drillco's Aluminum Cut burrs are outstanding on soft or nonferrous type materials. Use the Aluminum Cut design on aluminum, magnesium, brass, lead and most plastics.

RPM Chart	
Burr Diameter	RPM
1/16"	60,000 - 90,000
1/8"	40,000 - 70,000
3/16"	35,000 - 60,000
1/4"	30,000 - 50,000
5/16"	20,000 - 40,000
3/8"	20,000 - 40,000
7/16"	15,000 - 40,000
1/2"	15,000 - 40,000
5/8"	12,000 - 25,000
3/4"	10,000 - 20,000
1"	7,500 - 20,000
1-1/8"	7,000 - 13,000
1-1/2"	5,000 - 10,000
1-3/4"	4,500 - 9,000
2"	4,000 - 8,000

Speed

High speeds are essential for efficient and economical use of a carbide burr. At high speeds there will be less tendency for chips to build up in the flute. Also, the burr will cut more freely in corners or pockets, and reduce the chances of jamming or wedging.

The selection of operating speeds for a carbide burr is usually less exacting than for most other cutting tools. Rather than specify a different grinder speed for every burr diameter used, one grinder will normally be used for many different burr sizes. However, for most efficient operations, the grinder should be specified with consideration given to diameter of the burrs that will be used.

Carbide burrs should operate between 1,500 and 3,000 surface feet per minute. Using these guidelines, a grinder can be selected that will efficiently work with a fairly broad range of burr sizes. For example, a 30,000 RPM grinder can be used with a 3/16" to a 3/8" diameter burr. A 22,000 RPM grinder will be satisfactory for burrs ranging from 1/4" to 1/2".

Speeds are an important factor in achieving desired stock removal rates and workpiece finish. Increasing the speed will improve finishes, while lower speeds will remove material more rapidly.

ANNULAR CUTTERS

ANNULAR CUTTERS

Annular Cutters



High Speed Steel High Speed Steel

Bright Finish
For low to medium tensile strength materials

Type	Series	Catalog page reference
	9100SE, 9200SE	204
	9300SE, 9400SE	205



High Speed Steel + Aluminum (M2AI)

Bronze Surface Treatment
For most materials

Type	Series	Catalog page reference
SST	05-A, 05-E	206



High Speed Steel + Aluminum (M2AI)

Chromium Aluminium Based Coating
For longer tool life

Type	Series	Catalog page reference
ICECUT™	05-B, 05-F	207



Cobalt Annular Cutters **NITRO**

Bronze Finish
For long life on stainless steel, titanium, high tensile steel, other hard materials

Type	Series	Catalog page reference
	9100N, 9200N, 9300N	208



Carbide Tipped Annular Cutters

Bright Finish
For high performance on cast iron, cast steel, other hard materials

Type	Series	Catalog page reference
	05-D, 05-F, 05-H	210



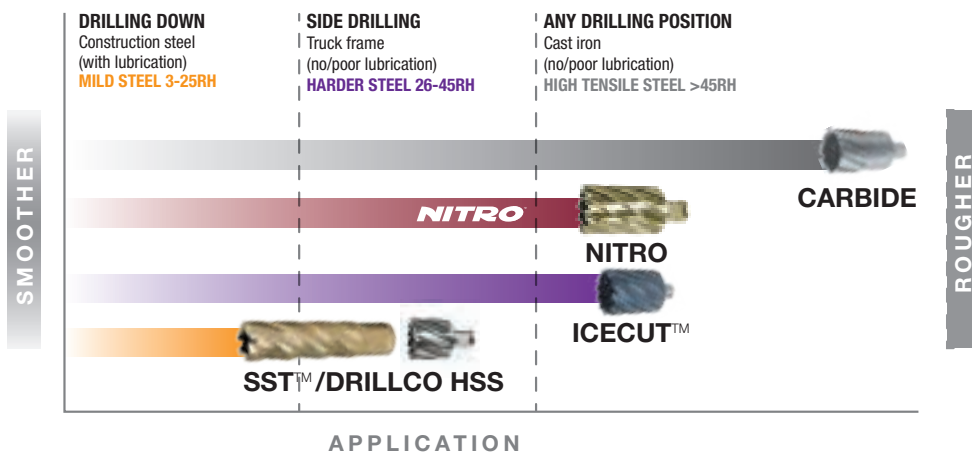
Carbide Tipped Annular Cutters

Bright Finish
For high performance on cast iron, cast steel, other hard materials

Type	Series	Catalog page reference
	9100CT, 9200CT	209



Annular Cutters Performance Chart

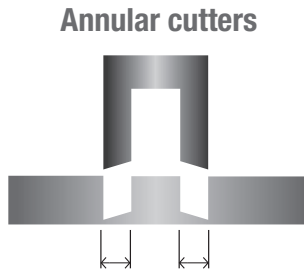


High Performance Annular Cutters

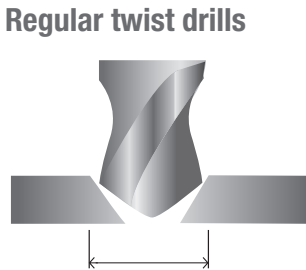
When drilling large holes through thick, flat metal surfaces, it is often more cost effective to use an annular cutter, which cuts at the circumference of the circle, instead of cutting through the entire area of the circle. This allows you to make holes faster and more efficiently.

Walter annular cutters are tougher because they are made with a sophisticated high speed steel and aluminum blend (M2Al). This advanced HSS blend extends the life of the core cutters by providing excellent toughness and durability, while also reducing the brittleness of the cutter. Conventional cutting tools are typically enhanced with cobalt to increase the resistance to wear (M35 or M42). However, as more cobalt is added, the product actually becomes more brittle, which increases the risk of breakage under load.

Through a graduated hardening of the cutter body, and by adding aluminum to the base material, Walter core cutters have more "micro-flexibility" than M35 or M42 core cutters. This makes Walter HSS annular cutters less brittle than a regular M42 annular cutter, and also makes them last much longer than other high speed steels. An exclusive triple tooth design and special fluting angle help optimize chip evacuation and eliminate chip debris. Walter's exclusive AlCrN coating on the ICECUT™ line of coated annular cutters forms a nano-sized lubrication layer when heated, making it self-lubricating and preventing materials from sticking, melting or deforming during hole-making. The ICECUT™ annular cutters provide the longest life of all coated HSS annular cutters.



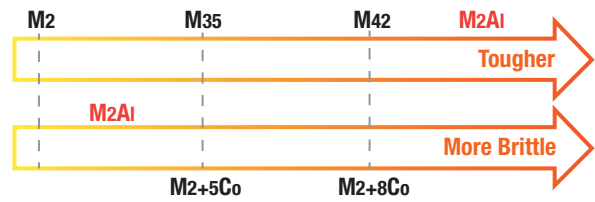
Annular cutters



Regular twist drills

Less metal to metal contact reduces friction, reducing heat, increasing tool life and efficiency

More metal to metal contact increases friction and heat, causing tooling to wear prematurely and resulting in longer cutting time



Adding Cobalt makes cutters more resistant to wear, but also more brittle which makes them more susceptible to breakage under pressure. M2Al provides an ideal blend of extreme toughness without a kind of "micro-flexibility" not found in standard cobalt blends.

Annular Cutter Selection Chart. Match the Best Cutter for your Application

	SST™ Core Cut/Drillco HSS	Icecut™	Nitro™ Cobalt	Carbide (Walter/Drillco)
SPECIFICATIONS				
Diameter Range	1/2" - 4"	1/2" - 2-3/8"	7/16" - 2-1/4"	1/2" - 4"
Drilling Depth	1", 2", 3" and 4"	Up to 4" depth cutters on selected items	1", 2" and 3"	1-1/2", 2", 3", 4"
Shank Size	3/4" and 1-1/4"	3/4"	3/4"	3/4", 1-1/4"
Shank Type	Universal & Weldon shank with 2 flats	Universal & Weldon shank with 2 flats	Weldon shank	Universal & Weldon shank with 2 flats*
MATERIAL				
Mild Steel (3 to 25 HRC)	✓	✓	✓	✓
Harder Steel (26 to 45 HRC)	✓	✓	✓	✓
Stainless Steel (300 and 400 series)	✓	✓	✓	✓
Cast Iron	—	✓	✓	✓
Aluminum	✓	✓	✓	✓
Brass and Bronze	✓	✓	✓	✓
Hardox / Scandia	—	—	✓	✓
Rough / Uneven material	—	—	✓	✓
Railroad Track	—	—	✓	✓
CHARACTERISTICS				
Cutting Speed	Fast	Very Fast	Very Fast	Extra Fast
Cutter Life	Long	Very Long	Very Long	Extra Long

✓ Highly Recommended
 ✓ Recommended

*Metric line available

Produce large diameter holes efficiently and quickly with less energy

Rather than drilling out the metal with a solid drill, Drillco cutters remove only the periphery of the hole, ejecting a slug at the end of the cut.

- ▷ For a wide range of materials
- ▷ Up to 4" diameter and 4" depth of cut
- ▷ Weldon Shank



9100SE
High Speed Steel
1" Depth of Cut
Fractional



3/4" SHANK		
Size	HSS 9100SE Order No.	HSS 9100SE WITH PINS
7/16"	91SE128	91SE128K
1/2"	91SE132	91SE132K
9/16"	91SE136	91SE136K
5/8"	91SE140	91SE140K
11/16"	91SE144	91SE144K
3/4"	91SE148	91SE148K
13/16"	91SE152	91SE152K
7/8"	91SE156	91SE156K
15/16"	91SE160	91SE160K
1"	91SE164	91SE164K
1-1/16"	91SE204	91SE204K
1-1/8"	91SE208	91SE208K
1-3/16"	91SE212	91SE212K
1-1/4"	91SE216	91SE216K
1-5/16"	91SE220	91SE220K
1-3/8"	91SE224	91SE224K
1-7/16"	91SE228	91SE228K
1-1/2"	91SE232	91SE232K
1-9/16"	91SE236	-
1-5/8"	91SE240	-
1-11/16"	91SE244	-
1-3/4"	91SE248	-
1-13/16"	91SE252	-
1-7/8"	91SE256	-
1-15/16"	91SE260	-
2"	91SE264	-
2-1/16"	91SE304	-
2-1/8"	91SE308	-
2-3/16"	91SE312	-
2-1/4"	91SE316	-
2-5/16"	91SE320	-
2-3/8"	91SE324	-
2-7/16"	91SE328	-
2-1/2"	91SE332	-
2-9/16"	91SE336	-
2-5/8"	91SE340	-
2-11/16"	91SE344	-
2-3/4"	91SE348	-
2-13/16"	91SE352	-
2-7/8"	91SE356	-
2-15/16"	91SE360	-
3"	91SE364	-

1-1/4" SHANK	
Size	HSS 9100SE Order No.
3-1/16"	91SE404
3-1/8"	91SE408
3-3/16"	91SE412
3-1/4"	91SE416
3-5/16"	91SE420
3-3/8"	91SE424
3-7/16"	91SE428
3-1/2"	91SE432
3-9/16"	91SE436
3-5/8"	91SE440
3-11/16"	91SE444
3-3/4"	91SE448
3-13/16"	91SE452
3-7/8"	91SE456
3-15/16"	91SE460
4"	91SE464

HSS & Cobalt Annular Cutter Pilot Pins	
Description	Order No.
1" depth of cut pilot pin for 1/2" - 2-1/4"	91SE001
1" depth of cut pilot pin for 7/16"	91SE002
1" depth of cut pilot pin for 2-5/16" & larger sizes	91SE003



91SE7S

9200SE
High Speed Steel
2" Depth of Cut
Fractional



3/4" SHANK		
Size	HSS 9200SE Order No.	HSS 9200SE WITH PINS
7/16"	92SE128	92SE128K
1/2"	92SE132	92SE132K
9/16"	92SE136	92SE136K
5/8"	92SE140	92SE140K
11/16"	92SE144	92SE144K
3/4"	92SE148	92SE148K
13/16"	92SE152	92SE152K
7/8"	92SE156	92SE156K
15/16"	92SE160	92SE160K
1"	92SE164	92SE164K
1-1/16"	92SE204	92SE204K
1-1/8"	92SE208	92SE208K
1-3/16"	92SE212	92SE212K
1-1/4"	92SE216	92SE216K
1-5/16"	92SE220	92SE220K
1-3/8"	92SE224	92SE224K
1-7/16"	92SE228	92SE228K
1-1/2"	92SE232	92SE232K
1-9/16"	92SE236	-
1-5/8"	92SE240	-
1-11/16"	92SE244	-
1-3/4"	92SE248	-
1-13/16"	92SE252	-
1-7/8"	92SE256	-
1-15/16"	92SE260	-
2"	92SE264	-
2-1/16"	92SE304	-
2-1/8"	92SE308	-
2-3/16"	92SE312	-
2-1/4"	92SE316	-
2-5/16"	92SE320	-
2-3/8"	92SE324	-
2-7/16"	92SE328	-
2-1/2"	92SE332	-
2-9/16"	92SE336	-
2-5/8"	92SE340	-
2-11/16"	92SE344	-
2-3/4"	92SE348	-
2-13/16"	92SE352	-
2-7/8"	92SE356	-
2-15/16"	92SE360	-
3"	92SE364	-

1-1/4" SHANK	
Size	9200SE Order No.
3-1/16"	92SE404
3-1/8"	92SE408
3-3/16"	92SE412
3-1/4"	92SE416
3-5/16"	92SE420
3-3/8"	92SE424
3-7/16"	92SE428
3-1/2"	92SE432
3-9/16"	92SE436
3-5/8"	92SE440
3-11/16"	92SE444
3-3/4"	92SE448
3-13/16"	92SE452
3-7/8"	92SE456
3-15/16"	92SE460
4"	92SE464

HSS & Cobalt Annular Cutter Pilot Pins	
Description	Order No.
2" depth of cut pilot pin for 1/2" - 2-1/4"	92SE001
2" depth of cut pilot pin for 7/16" only	92SE002
2" depth of cut pilot pin for 2-5/16" & larger sizes	92SE003

9300SE
High Speed Steel
3" Depth of Cut
Fractional



3/4" SHANK	
Size	HSS 9300SE Order No.
3/4"	93SE148
13/16"	93SE152
7/8"	93SE156
15/16"	93SE160
1"	93SE164
1-1/16"	93SE204
1-1/8"	93SE208
1-3/16"	93SE212
1-1/4"	93SE216
1-5/16"	93SE220
1-3/8"	93SE224
1-7/16"	93SE228
1-1/2"	93SE232
1-9/16"	93SE236
1-5/8"	93SE240
1-11/16"	93SE244
1-3/4"	93SE248
1-13/16"	93SE252
1-7/8"	93SE256
1-15/16"	93SE260
2"	93SE264
2-1/16"	93SE304
2-1/8"	93SE308
2-3/16"	93SE312
2-1/4"	93SE316
2-5/16"	93SE320
2-3/8"	93SE324
2-7/16"	93SE328
2-1/2"	93SE332
2-9/16"	93SE336
2-5/8"	93SE340
2-11/16"	93SE344
2-3/4"	93SE348
2-13/16"	93SE352
2-7/8"	93SE356
2-15/16"	93SE360
3"	93SE364

1-1/4" SHANK	
Size	9300SE Order No.
3-1/16"	93SE404
3-1/8"	93SE408
3-3/16"	93SE412
3-1/4"	93SE416
3-5/16"	93SE420
3-3/8"	93SE424
3-7/16"	93SE428
3-1/2"	93SE432
3-9/16"	93SE436
3-5/8"	93SE440
3-11/16"	93SE444
3-3/4"	93SE448
3-13/16"	93SE452
3-7/8"	93SE456
3-15/16"	93SE460
4"	93SE464

Annular Cutter Pilot Pin	
Description	Order No.
3" depth of cut pilot pin for 2-5/16" & larger sizes	93SE003

Annular Cutter Pilot Pin	
Description	Order No.
3" depth of cut pilot pin for 1/2" - 2-1/4"	93SE001



9400SE
High Speed Steel
4" Depth of Cut
Fractional



3/4" SHANK	
Size	9400SE Order No.
3/4"	94SE148
13/16"	94SE152
7/8"	94SE156
15/16"	94SE160
1"	94SE164
1-1/16"	94SE204
1-1/8"	94SE208
1-3/16"	94SE212
1-1/4"	94SE216
1-5/16"	94SE220
1-3/8"	94SE224
1-7/16"	94SE228
1-1/2"	94SE232
1-9/16"	94SE236
1-5/8"	94SE240
1-11/16"	94SE244
1-3/4"	94SE248
1-13/16"	94SE252
1-7/8"	94SE256
1-15/16"	94SE260
2"	94SE264
2-1/16"	94SE304
2-1/8"	94SE308
2-3/16"	94SE312
2-1/4"	94SE316
2-5/16"	94SE320
2-3/8"	94SE324
2-7/16"	94SE328
2-1/2"	94SE332
2-9/16"	94SE336
2-5/8"	94SE340
2-11/16"	94SE344
2-3/4"	94SE348
2-13/16"	94SE352
2-7/8"	94SE356
2-15/16"	94SE360
3"	94SE364

1-1/4" SHANK	
Size	9400SE Order No.
3-1/16"	94SE404
3-1/8"	94SE408
3-3/16"	94SE412
3-1/4"	94SE416
3-5/16"	94SE420
3-3/8"	94SE424
3-7/16"	94SE428
3-1/2"	94SE432
3-9/16"	94SE436
3-5/8"	94SE440
3-11/16"	94SE444
3-3/4"	94SE448
3-13/16"	94SE452
3-7/8"	94SE456
3-15/16"	94SE460
4"	94SE464

Annular Cutter Pilot Pin	
Description	Order No.
4" depth of cut pilot pin for 1/2" thru 1-7/16" sizes	94SE001
4" depth of cut pilot pin for 1-1/2" and larger sizes	94SE003



Annular Cutters 32.pc Fractional Sizes display			
Material	Series	Includes	Item Number
Nitro® (Cobalt)	9100N & 9200N	1 each of the following: 1/2, 5/8, 11/16, 3/4,	912N32D
High Speed Steel	9100SE & 9200SE	13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins	912SE32D
Carbide Tipped	9100CT & 9200CT	1 each of the following: 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins	912CT32D



SST™ Core Cut Annular Cutters

Guaranteed to outperform all uncoated cutters

Super Speed Tip (SST) Core Cutters are made with state-of-the-art surface treatment technology that removes porosity during the fabrication process. This creates a perfectly smooth finish which allows for a better evacuation of material while cutting. It also helps to improve product life and reduce cutting time as it decreases friction with the work surface, which in turn reduces the amount of heat generated.

- ▷ *Cuts faster*
- ▷ *Lasts longer*
- ▷ *Universal shank*
- ▷ *Exclusive SST surface treatment*
- ▷ *Multiple tooth design*
- ▷ *Packaged in reusable plastic packaging*



Diameter		Std pkg	Weldon Shank			Universal Shank	
Inches	mm		1" cutters Order No.	2" cutters Order No.	3" cutters Order No.	1" cutters Order No.	2" cutters Order No.
Use with pilot pin			05-Z 001	05-Z 002	05-Z 018	05-Z 029	05-Z 002
7/16"	11.1	1				05-E 007	
						05-Z 001	
1/2"	12.7	1	05-A 008	05-A 308		05-E 008	05-E 308
9/16"	14.3	1	05-A 009	05-A 309		05-E 009	05-E 309
5/8"	15.9	1	05-A 010	05-A 310		05-E 010	05-E 310
1-1/16"	17.5	1	05-A 011	05-A 311	05-A 611	05-E 011	05-E 311
3/4"	19.0	1	05-A 012	05-A 312		05-E 012	05-E 312
13/16"	20.6	1	05-A 013	05-A 313	05-A 613	05-E 013	05-E 313
7/8"	22.2	1	05-A 014	05-A 314		05-E 014	05-E 314
15/16"	23.8	1	05-A 015	05-A 315	05-A 615	05-E 015	05-E 315
1"	25.4	1	05-A 100	05-A 400		05-E 100	05-E 400
1-1/16"	27.0	1	05-A 101	05-A 401	05-A 701	05-E 101	05-E 401
1-1/8"	28.6	1	05-A 102	05-A 402		05-E 102	05-E 402
1-3/16"	30.2	1	05-A 103	05-A 403		05-E 103	05-E 403
1-1/4"	31.8	1	05-A 104	05-A 404		05-E 104	05-E 404
1-5/16"	33.3	1	05-A 105	05-A 405		05-E 105	05-E 405
1-3/8"	34.9	1	05-A 106	05-A 406		05-E 106	05-E 406
1-7/16"	36.5	1	05-A 107	05-A 407		05-E 107	05-E 407
1-1/2"	38.1	1	05-A 108	05-A 408		05-E 108	05-E 408
1-9/16"	39.7	1	05-A 109	05-A 409			05-E 409
1-5/8"	41.3	1	05-A 110	05-A 410			
1-3/4"	44.5	1	05-A 112	05-A 412			
1-13/16"	46.0	1	05-A 113	05-A 413			
1 7/8"	47.6	1	05-A 114	05-A 414			
1-15/16"	49.2	1	05-A 115	05-A 415			
2"	51.0	1	05-A 200	05-A 500			
2-1/16"	52.4	1	05-A 201	05-A 501			
2-1/8"	54.0	1	05-A 202	05-A 502			
2-3/16"	55.6	1	—	05-A 503			
2-1/4"	57.2	1		05-A 504			
2-5/16"	58.7	1		05-A 505			
2-3/8"	60.3	1		05-A 506			

Other sizes are available upon special request. Please speak with your Walter sales representative.



SST Core Cut Kits	
Material	
Special bronze SST surface treatment Weldon shank	
Includes	
1 of each diameter: 9/16", 11/16", 13/16", 15/16", 1", 1-1/16" and pilot pin"	
Depth of Cut	Item Number
1" annular cutter kit	05-A 991
2" annular cutter kit	05-A 992

ICECUT™ Annular Core Cutters

Guaranteed to cut more holes in less time!

ICECUT™ annular cutters are coated with an exclusive mixture of chromium and aluminum (AlCrN) and are designed to be used where lubricants are not permitted or problematic to apply. This technology outperforms any annular core cutters coated with Titanium Nitride (TiN) or Titanium Aluminum Nitride (TiAlN). By incorporating a chromium aluminum blend into the coating, Walter ICECUT™ annular cutters generate less heat and can withstand temperatures at least 200°C higher than conventional TiAlN cutters. This exclusive coating makes the ICECUT™ more resistant to higher stress under load and impact.

- ▷ Well-known quality and durability
- ▷ Lasts longer than uncoated core cutters
- ▷ Exclusive ICECUT™ AlCrN coating
- ▷ Fully ground extra large flutes
- ▷ Packaged in reusable plastic packaging



ICECUT™ Core Cut Kits

Material
Exclusive ICECUT™ surface coating
Weldon shank

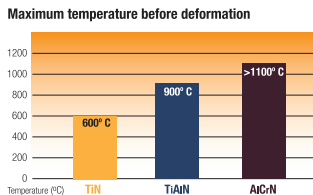
Includes
1 of each diameter:
9/16", 11/16", 13/16", 15/16", 1",
1-1/16" and pilot pin

Depth of Cut	Item Number
1" annular cutter kit	05-B 991
2" annular cutter kit	05-B 992



Diameter		Std pkg	Weldon Shank				Universal Shank	
			1" cutters	2" cutters	3" cutters	4" cutters	1" cutters	2" cutters
Inches	mm		Order No.	Order No.	Order No.	Order No.	Order No.	Order No.
Use with pilot pin			05-Z 001	05-Z 002	05-Z 018 05-Z 032	05-Z 031 05-Z 033	05-Z 001	05-Z 002
7/16"	11.1	1					05-F 007* *Use with pilot pin 05-Z 029	05-F 307* *Use with pilot pin 05-Z 030
1/2"	12.7	1	05-B 008	05-B 308			05-F 008	05-F 308
9/16"	14.3	1	05-B 009	05-B 309			05-F 009	05-F 309
5/8"	15.9	1	05-B 010	05-B 310			05-F 010	05-F 310
11/16"	17.5	1	05-B 011	05-B 311	05-B 611	05-B 811	05-F 011	05-F 311
3/4"	19.0	1	05-B 012	05-B 312			05-F 012	05-F 312
13/16"	20.6	1	05-B 013	05-B 313	05-B 613	05-B 813	05-F 013	05-F 313
7/8"	22.2	1	05-B 014	05-B 314			05-F 014	05-F 314
15/16"	23.8	1	05-B 015	05-B 315	05-B 615	05-B 815	05-F 015	05-F 315
1"	25.4	1	05-B 100	05-B 400			05-F 100	05-F 400
1-1/16"	27.0	1	05-B 101	05-B 401	05-B 701	05-B 901	05-F 101	05-F 401
1-1/8"	28.6	1	05-B 102	05-B 402			05-F 102	05-F 402
1-3/16"	30.2	1	05-B 103	05-B 403			05-F 103	05-F 403
1-1/4"	31.8	1	05-B 104	05-B 404			05-F 104	05-F 404
1-5/16"	33.3	1	05-B 105	05-B 405			05-F 105	05-F 405
1-3/8"	34.9	1	05-B 106	05-B 406			05-F 106	05-F 406
1-7/16"	36.5	1	05-B 107	05-B 407			05-F 107	05-F 407
1-1/2"	38.1	1	05-B 108	05-B 408			05-F 108	05-F 408
1-9/16"	39.7	1	05-B 109	05-B 409				
1-5/8"	41.3	1	05-B 110	05-B 410				
1-3/4"	44.5	1	05-B 112	05-B 412				
1-13/16"	46.0	1	05-B 113	05-B 413				
1-7/8"	47.6	1	05-B 114	05-B 414				
1-15/16"	49.2	1	05-B 115	05-B 415				
2"	51.0	1	05-B 200	05-B 500				
2-1/16"	52.4	1	05-B 201	05-B 501				
2-1/8"	54.0	1	05-B 202	05-B 502				
2-3/16"	55.6	1		05-B 503				
2-1/4"	57.2	1		05-B 504				
2-5/16"	58.7	1		05-B 505				
2-3/8"	60.3	1		05-B 506				

Other sizes are available upon special request. Please speak with your Walter sales representative.



Offer even better performance over the standard High Speed Steel ranges

- ▷ Cobalt substrate helps deflect heat, allowing for faster speeds and feeds than HSS annular cutters
- ▷ Suitable for more demanding applications, such as stainless steel and titanium
- ▷ Bronze surface treatment for added lubricity



9100N

Cobalt

1" Depth of Cut
Fractional



3/4" SHANK	
Size	Nitro® 9100N Order No.
7/16"	91N128
1/2"	91N132
9/16"	91N136
5/8"	91N140
11/16"	91N144
3/4"	91N148
13/16"	91N152
7/8"	91N156
15/16"	91N160
1"	91N164
1-1/16"	91N204
1-1/8"	91N208
1-3/16"	91N212
1-1/4"	91N216
1-5/16"	91N220
1-3/8"	91N224
1-7/16"	91N228
1-1/2"	91N232
1-9/16"	91N236
1-5/8"	91N240
1-11/16"	91N244
1-3/4"	91N248
1-13/16"	91N252
1-7/8"	91N256
1-15/16"	91N260
2"	91N264
2-1/16"	91N304
2-1/8"	91N308
2-3/16"	91N312
2-1/4"	91N316



3/4" SHANK	
Size	Nitro® 9100N Order No.
2-5/16"	91N320
2-3/8"	91N324
2-7/16"	91N328
2-1/2"	91N332

HSS & Cobalt Annular Cutter Pilot Pins	
Description	Order No.
1" depth of cut pilot pin for 1/2" – 2-1/4"	91SE001
1" depth of cut pilot pin for 7/16"	91SE002
1" depth of cut pilot pin for 2-5/16" & larger sizes	91SE003

9200N

Cobalt

2" Depth of Cut
Fractional



3/4" SHANK	
Size	Nitro® 9200N Order No.
7/16"	92N128
1/2"	92N132
9/16"	92N136
5/8"	92N140
11/16"	92N144
3/4"	92N148
13/16"	92N152
7/8"	92N156
15/16"	92N160
1"	92N164
1-1/16"	92N204
1-1/8"	92N208
1-3/16"	92N212
1-1/4"	92N216
1-5/16"	92N220
1-3/8"	92N224
1-7/16"	92N228
1-1/2"	92N232
1-9/16"	92N236
1-5/8"	92N240
1-11/16"	92N244
1-3/4"	92N248
1-13/16"	92N252
1-7/8"	92N256
1-15/16"	92N260
2"	92N264
2-1/16"	92N304
2-1/8"	92N308
2-3/16"	92N312
2-1/4"	92N316

9300N

Cobalt

3" Depth of Cut
Fractional



3/4" SHANK	
Size	Nitro® 9300N Order No.
3/4"	93N148
13/16"	93N152
7/8"	93N156
15/16"	93N160
1"	93N164
1-1/16"	93N204
1-1/8"	93N208
1-3/16"	93N212
1-1/4"	93N216
1-5/16"	93N220
1-3/8"	93N224
1-7/16"	93N228
1-1/2"	93N232
1-9/16"	93N236
1-5/8"	93N240
1-11/16"	93N244
1-3/4"	93N248
1-13/16"	93N252
1-7/8"	93N256
1-15/16"	93N260
2"	93N264
2-1/16"	93N304
2-1/8"	93N308
2-3/16"	93N312
2-1/4"	93N316

Maximize the performance of any Magnetic Drill Machine

- ▷ Deliver reamer-quality, burr free holes in a fraction of the time of a twist drill
- ▷ Eliminates the need for costly pilot holes & step drilling
- ▷ Larger diameters and depths available by special order

9100CT

Carbide Tipped
1-3/8" Depth of Cut
Fractional



3/4" SHANK	
Size	Carbide Tip 9100CT Order No.
7/16"	-
1/2"	-
9/16"	91CT136
5/8"	91CT140
11/16"	91CT144
3/4"	91CT148
13/16"	91CT152
7/8"	91CT156
15/16"	91CT160
1"	91CT164
1-1/16"	91CT204
1-1/8"	91CT208
1-3/16"	91CT212
1-1/4"	91CT216
1-5/16"	91CT220
1-3/8"	91CT224

Annular Cutter Pilot Pin	
Description	Order No.
1-3/8" depth of cut pilot pin for 3/4" and above	91CT001
1-3/8" depth of cut pilot pin for 9/16" - 11/16"	91CT002



9200CT

Carbide Tipped
2" Depth of Cut
Fractional



3/4" SHANK	
Size	Carbide Tip 9200CT Order No.
7/16"	-
1/2"	-
9/16"	92CT136
5/8"	92CT140
11/16"	92CT144
3/4"	92CT148
13/16"	92CT152
7/8"	92CT156
15/16"	92CT160
1"	92CT164
1-1/16"	92CT204
1-1/8"	92CT208
1-3/16"	92CT212
1-1/4"	92CT216
1-5/16"	92CT220
1-3/8"	92CT224
1-7/16"	92CT228
1-1/2"	92CT232
1-9/16"	92CT236
1-5/8"	92CT240
1-11/16"	92CT244
1-3/4"	92CT248
1-13/16"	92CT252
1-7/8"	92CT256
1-15/16"	92CT260
2"	92CT264
2-1/16"	-
2-1/8"	92CT308
2-3/16"	-
2-1/4"	92CT316

Annular Cutter Pilot Pin	
Description	Order No.
2" depth of cut pilot pin for 3/4" and above	92CT001
2" depth of cut pilot pin for 9/16" - 11/16"	92CT002



912SE32D



Material	Series	Includes	Order No.
32 pc. Fractional Sizes Display			
Nitro® (Cobalt)	9100N & 9200N	1 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912N32D
Carbide Tipped*	9100CT & 9200CT	1 each of the following: 9/16, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912CT32D
High Speed Steel	9100SE & 9200SE	1 each of the following: 1/2, 5/8, 11/16, 3/4, 13/16, 7/8, 15/16, 1, 1-1/16, 1-1/8, and 6 pins.	912SE32D



91SE7S

Material	Series	Includes	Order No.
Annular Cutter Sets, 7 pc.			
Nitro® (Cobalt)	9100N	9/16, 5/8, 11/16, 3/4, 13/16, 15/16, and 1 pin.	91N7S
High Speed Steel	9100SE	9/16, 5/8, 11/16, 3/4, 13/16, 15/16, and 1 pin.	91SE7S

*also available with Walter 05E annular cutters series

Top performance and maximum productivity on hard metals and uneven surfaces!

Walter Carbide Core Cut annular cutters accurately drill large diameter holes in a variety of hard or abrasive materials such as stainless steel, cast iron, tough alloys or composite materials. They outperform and outlast conventional HSS cutters and allow for higher speed and feed rates while requiring less effort to cut through some of the industry's toughest metals.

3/4" Weldon Shank							
Diameter	1 1/2" cutters	2" cutters	3" cutters	4" cutters	Diameter	30 mm	55 mm
Inches	Order No.	Order No.	Order No.	Order No.	mm	Order No.	Order No.
Use with pilot pin	05-Z 019	05-Z 021	05-Z 018	05-Z 031		05-Z 019	05-Z 021
1/2"	05-D 008	05-D 308			12 mm	05-F 112	05-F 212
9/16"	05-D 009	05-D 309			13 mm	05-F 113	05-F 213
5/8"	05-D 010	05-D 310			14 mm	05-F 114	05-F 214
11/16"	05-D 011	05-D 311			15 mm	05-F 115	05-F 215
					16 mm	05-F 116	05-F 216
					17 mm	05-F 117	05-F 217
Use with pilot pin	05-Z 020	05-Z 022	05-Z 032	05-Z 033		05-Z 020	05-Z 022
3/4"	05-D 012	05-D 312		05-D 812	18 mm	05-F 118	05-F 218
13/16"	05-D 013	05-D 313	05-D 613	05-D 813	19 mm	05-F 119	05-F 219
7/8"	05-D 014	05-D 314			20 mm	05-F 120	05-F 220
15/16"	05-D 015	05-D 315	05-D 615	05-D 815	21 mm	05-F 121	05-F 221
1"	05-D 100	05-D 400	05-D 700	05-D 900	22 mm	05-F 122	05-F 222
1-1/16"	05-D 101	05-D 401	05-D 701	05-D 901	23 mm	05-F 123	05-F 223
1-1/8"	05-D 102	05-D 402			24 mm	05-F 124	05-F 224
1-3/16"	05-D 103	05-D 403			25 mm	05-F 125	05-F 225
1-1/4"	05-D 104	05-D 404			26 mm	05-F 126	05-F 226
1-5/16"	05-D 105	05-D 405			27 mm	05-F 127	05-F 227
1-3/8"	05-D 106	05-D 406			28 mm	05-F 128	05-F 228
1-7/16"	05-D 107	05-D 407			29 mm	05-F 129	05-F 229
1-1/2"	05-D 108	05-D 408			30 mm	05-F 130	05-F 230
1-9/16"	05-D 109	05-D 409			31 mm	05-F 131	05-F 231
1-5/8"	05-D 110	05-D 410			32 mm	05-F 132	05-F 232
1-3/4"	05-D 112	05-D 412			33 mm	05-F 133	05-F 233
1-13/16"	05-D 113	05-D 413			34 mm	05-F 134	05-F 234
1-7/8"	05-D 114	05-D 414			35 mm	05-F 135	05-F 235
1-15/16"	05-D 115	05-D 415			36 mm	05-F 136	05-F 236
2"	05-D 200	05-D 500	05-D 716	05-D 916	37 mm	05-F 137	05-F 237
2-1/16"	05-D 201	05-D 501			38 mm	05-F 138	05-F 238
2-1/8"	05-D 202	05-D 502			39 mm	05-F 139	05-F 239
2-3/16"		05-D 503			40 mm	05-F 140	05-F 240
2-1/4"		05-D 504	05-D 720	05-D 920	41 mm	05-F 141	05-F 241
2-5/16"		05-D 505			42 mm	05-F 142	05-F 242
2-3/8"		05-D 506			43 mm	05-F 143	05-F 243
					44 mm	05-F 144	05-F 244
					45 mm	05-F 145	05-F 245
					46 mm	05-F 146	05-F 246
					47 mm	05-F 147	05-F 247
					48 mm	05-F 148	05-F 248
					49 mm	05-F 149	05-F 249
					50 mm	05-F 150	05-F 250
					51 mm	05-F 151	05-F 251

1-1/4" Weldon Shank				
Use with pilot pin	05-Z 019	05-Z 034	05-Z 035	05-Z 036
2-7/16"		05-D 507		
2-1/2"		05-D 508	05-D 724	05-D 924
2-9/16"		05-D 509	05-D 725	05-D 925
2-5/8"		05-D 510		
2-3/4"		05-D 512	05-D 728	05-D 928
2-7/8"		05-D 514		
3"		05-D 532	05-D 732	05-D 932
3-1/4"		05-D 536	05-D 736	05-D 936
3-1/2"		05-D 540	05-D 740	
3-3/4"		05-D 544	05-D 744	
4"		05-D 548	05-D 748	

Universal Shank		
Dia.	1" cutters	2" cutters
Inches	Order No.	Order No.
Use with pilot pin	05-Z 027	05-Z 021
1/2"	05-H 008	05-H 308
9/16"	05-H 009	05-H 309
5/8"	05-H 010	05-H 310
11/16"	05-H 011	05-H 311
Use with pilot pin	05-Z 028	05-Z 022
3/4"	05-H 012	05-H 312
13/16"	05-H 013	05-H 313
7/8"	05-H 014	05-H 314
15/16"	05-H 015	05-H 315
1"	05-H 100	05-H 400
1-1/16"	05-H 101	05-H 401
1-11/8"	05-H 102	05-H 402
1-13/16"	05-H 103	05-H 403
1-11/4"	05-H 104	05-H 404
1-15/16"	05-H 105	05-H 405
1-13/8"	05-H 106	05-H 406
1-17/16"	05-H 107	05-H 407
1-1/2"	05-H 108	05-H 408



Carbide Core Cut Kits

Material
Highest quality TCT for premium performance
Weldon shank

Includes
1 of each diameter:
9/16", 11/16", 13/16", 15/16", 1",
1-1/16" and pilot pin

Depth of Cut	Item Number
1-3/8" annular cutter kit	05-D 991
2" annular cutter kit	05-D 992

Pilot Pins

Precisely position annular cutters over drilling spot and eject slug after drilling is completed. All Walter pilot pins are hardened and precision ground to provide the longest life in the industry.



Cutter family	Diameter	Max. drilling depth	Order No.	Std. Pkg.	Std. Ctn.
For use with these cutters					
SST Core Cut and ICECUT™	1/2" – 2 3/8" dia.	1"	05-Z 001	1	10
SST Core Cut and ICECUT™	1/2" – 2 3/8" dia.	2"	05-Z 002	1	10
SST Core Cut and ICECUT™	13/16" – 1 1/16" dia.	3"	05-Z 018	1	10
SST Core Cut and ICECUT™	11/16" – 2" dia.	4"	05-Z 031	1	10
SST Core Cut and ICECUT™	7/16" dia.	1"	05-Z 029	1	10
SST Core Cut and ICECUT™	7/16" dia.	2"	05-Z 030	1	10
2-piece, SST and ICECUT™	11/16" – 2" dia.	3"	05-Z 032	1	10
2-piece, SST and ICECUT™	11/16" – 2" dia.	4"	05-Z 033	1	10
For use with these cutters					
CARBIDE core cutters	1/2" – 11/16" dia.	1"	05-Z 027	1	10
	1/2" – 11/16" dia.	1 1/2"	05-Z 019	1	10
	1/2" – 11/16" dia.	2"	05-Z 021	1	10
	3/4" – 1 1/2" dia.	1"	05-Z 028	1	10
	3/4" – 2 3/8" dia.	1 1/2"	05-Z 020	1	10
	3/4" – 2 3/8" dia.	2"	05-Z 022	1	10
	2 7/16" – 4" dia.	2"	05-Z 034	1	10
	13/16" – 1 1/16" dia.	3"	05-Z 018	1	10
	2 7/16" – 4" dia.	3"	05-Z 035	1	10
	2 7/16" – 4" dia.	4"	05-Z 036	1	10



Morse taper shank adaptors with coolant inducer

For use of Walter annular cutters on drilling units with a Morse taper spindle. Coolant inducer feeds coolant through the pilot pin to increase cutter life.

Morse taper	Order No.	Std. Pkg.	Std. Ctn.
No. 2	05-Z 012	1	10
No. 3	05-Z 013	1	10
No. 3 (with 1 1/4" Weldon)	05-Z 037	1	10
No. 3 Extra Length (with 1 1/4" Weldon)	05-Z 038	1	10



Morse taper shank adaptors without coolant inducer

For use of Walter annular cutters on drilling units with a Morse taper spindle. Ideal for all drilling machines that are equipped with an external cooling source.

Morse taper	Order No.	Std. Pkg.	Std. Ctn.
No. 2	05-Z 010	1	10
No. 3	05-Z 011	1	10



Fein and Nitto adaptors

For use of Walter annular cutters on all Fein and Nitto magnetic drills.

Drilling Unit	Order No.	Std. Pkg.	Std. Ctn.
Fein	05-Z 014	1	10
Nitto	05-Z 015	1	10



Extension adaptors

Leverage an arbor adaptor with your Walter core cutters to drill deeper holes. These durable arbor adaptors allow you to drill up to 4" for a fraction of the price of a full size core cutter.

Extension Length	Description	Order No.	Std. Pkg.	Std. Ctn.
1"	Adaptor	05-Z 023	1	10
	Pilot pin	05-Z 025	1	10
2"	Adaptor	05-Z 024	1	10
	Pilot pin	05-Z 026	1	10

Technical Information

Feeds and Speeds for Annular Cutters

Material to Be Drilled	HSS Cutter	SST Cutter	ICECUT™ Cutter	Nitro® Cutter	CT Cutter
Cutting Speed in Feet/Min. (SFPM)					
Freecutting-Leaded	100	100	100	150	175
Up To 180 Brinell	80 to 110	80 to 110	80 to 110	130	165
A-36	80 to 110	80 to 110	80 to 110	130	165
180 To 285 Brinell	45 to 70	45 to 70	45 to 70	80	90
285 To 375 Brinell	30 to 45	30 to 45	30 to 45	55	60
375 & Up Brinell	15 to 25	15 to 25	15 to 25	35	40
Manganese (low)	15 to 20	15 to 20	15 to 20	25	30
Stainless-Freecutting	30 to 60	30 to 60	30 to 60	70	100
Stainless 304,316,	-	-	-	-	-
320 & Tougher	20 to 40	20 to 40	20 to 40	50	60
Inconel, Hastelloy	25 to 40	25 to 40	25 to 40	55	70
Inconel - X	20 to 25	20 to 25	20 to 25	35	45
Titanium	30 to 40	30 to 40	30 to 40	50	60
A-286	25 to 35	25 to 35	25 to 35	50	60

Material To Be Drilled	HSS Cutter	SST Cutter	ICECUT™ Cutter	Nitro® Cutter	CT Cutter
Cutting Speed in Feet/Min. (SFPM)					
Aluminum	150	150	150	250	450-600
Brass	Ordinary	150	150	250	250-550
	Leaded	200	200	300	300-600
Bronze	Ordinary	100	100	200	200-500
	Hi-tensile	70	70	100	100-200
Cast Iron	Soft	100	100	150	175
	Medium	80	80	90	100
	Hard	50	50	70	80
Chilled	25	25	25	35	40
Copper	100	100	100	200	250
Magnesium	Up to 300	Up to 300	Up to 300	400	400-800
Malleable Iron	70	70	70	80	100-130
Monel	40	40	40	50	50

Cutter Dia.	Feed Ins./Rev.
Operating Feed*	
7/16" to 9/16"	.002 to .006
5/8" to 3/4"	.003 to .003
1-3/16" - 1-1/16"	.004 to .008
1-1/8" - 1-7/16"	.006 to .010
1-1/2" to 2"	.008 to .012
2" to 2-1/2"	.012 to .025

*Always commence operations at the lower end of RPM.

	DIAMETER																		
	7/16"	1/2"	9/16"	5/8"	11/16"	3/4"	13/16"	7/8"	15/16"	1"	1-1/8"	1-1/4"	1-3/8"	1-1/2"	1-5/8"	1-3/4"	2"	2-1/4"	2-1/2"
10	87	76	68	61	56	51	47	44	41	38	34	31	28	25	24	22	19	17	15
20	175	153	136	122	111	102	94	87	82	76	68	61	56	51	47	44	38	34	31
30	262	229	204	183	167	153	141	131	122	115	102	92	83	76	71	65	57	51	46
40	349	306	272	245	222	204	188	175	163	153	136	122	111	102	94	87	76	68	61
50	437	382	339	306	278	255	235	218	204	191	170	153	140	127	118	109	95	85	76
60	524	458	407	367	333	306	282	353	245	229	204	183	167	153	141	131	115	102	92
70	611	535	475	428	389	357	329	306	285	267	238	214	194	178	165	153	134	119	107
80	700	611	543	489	444	408	376	350	326	306	272	244	222	204	188	175	153	136	122
90	786	688	611	550	500	458	426	393	367	344	306	275	250	229	212	196	172	153	138
100	873	764	679	611	556	509	470	436	408	382	340	306	278	255	235	218	191	170	153
120	1048	917	815	733	667	611	564	524	489	458	407	367	333	306	282	262	229	204	183
140	1222	1070	950	856	778	713	658	611	571	535	475	428	390	356	329	306	267	238	214
150	1310	1146	1018	917	833	764	705	655	611	573	509	458	417	382	353	327	286	255	229
160	1397	1222	1086	978	889	815	752	698	652	611	543	490	444	407	376	350	306	272	244
180	1572	1375	1222	1100	1000	917	846	786	734	688	611	550	500	458	423	393	344	306	275
200	1747	1528	1358	1222	1111	1020	940	874	815	764	680	611	556	510	470	437	382	340	306
220	1920	1681	1494	1345	1222	1121	1034	960	897	840	747	672	611	560	517	480	420	374	336
240	2096	1833	1630	1467	1333	1222	1128	1048	978	917	815	733	667	611	564	524	458	407	367
250	2183	1910	1697	1528	1389	1274	1175	1091	1020	955	850	764	694	637	588	546	477	424	382
260	2270	1986	1765	1590	1444	1325	1221	1135	1060	993	883	795	722	662	611	568	497	441	397
280	2445	2140	1900	1712	1556	1426	1316	1222	1140	1070	950	856	778	713	658	611	535	475	428
300	2620	2292	2037	1834	1667	1528	1410	1310	1222	1146	1020	917	833	7	705	655	573	510	458

Speed and Feed Formulas

SPEED OF CUTTER IN SURFACE FEET PER MINUTE (SFM)
SFM = D x .26 x RPM

REVOLUTIONS PER MINUTE (RPM)
RPM = SFM x 3.82 divided b Dia.

FEED IN INCHES PER MINUTE (IPM) OR (F)
F = f x T x RPM



Technical Information

Recommended Cutting Speed for CARBIDE CORE CUT Annular Cutter (RPM)								
Diameter		Mild Steel	Steel	Steel	Steel	Steel	Stainless Steel	Aluminium
mm	Inch	500N/mm ²	750N/mm ²	900N/mm ²	1200N/mm	1400N/mm ²		
11.1	7/16"	1147	1061	1003	860	717	573	2580
12.7	1/2"	1003	928	878	752	627	502	2257
14.3	9/16"	892	825	781	669	558	446	2007
15.9	5/8"	802	742	702	602	501	401	1805
17.5	11/16"	730	675	638	547	456	365	1642
19.1	3/4"	669	619	585	502	418	334	1505
20.6	13/16"	617	571	540	463	386	309	1389
22.2	7/8"	573	530	502	430	358	287	1290
23.8	15/16"	535	495	468	401	334	268	1204
25.4	1"	502	464	439	376	313	251	1128
27.0	1-1/16"	472	437	413	354	295	236	1062
28.6	1-1/8"	446	412	390	334	279	223	1003
30.2	1-3/16"	422	391	370	317	264	211	950
31.8	1-1/4"	401	371	351	301	251	201	903
33.3	1-5/16"	382	353	334	287	239	191	860
34.9	1-3/8"	365	337	319	274	228	182	821
36.5	1-7/16"	349	323	305	262	218	174	785
38.1	1-1/2"	334	309	293	251	209	167	752
39.7	1-9/16"	321	297	281	241	201	161	722
41.3	1-5/8"	309	285	270	231	193	154	694
42.9	1-11/16"	297	275	260	223	186	149	669
44.5	1-3/4"	287	265	251	215	179	143	645
46.0	1-13/16"	277	256	242	208	173	138	623
47.6	1-7/8"	267	247	234	201	167	134	602
49.2	1-15/16"	259	239	227	194	162	129	582
50.8	2"	251	232	219	188	157	125	564
52.4	2-1/16"	243	225	213	182	152	122	547
54.0	2-1/8"	236	218	207	177	148	118	531
55.6	2-3/16"	229	212	201	172	143	115	516
57.2	2-1/4"	223	206	195	167	139	111	502
58.7	2-5/16"	217	201	190	163	136	108	488
60.4	2-3/8"	211	195	185	158	132	106	475
61.9	2-7/16"	206	190	180	154	129	103	463
63.5	2-1/2"	201	186	176	150	125	100	451
65.1	2-9/16"	196	181	171	147	122	98	440
66.7	2-5/8"	191	177	167	143	119	96	430
68.3	2-11/16"	187	173	163	140	117	93	420
69.9	2-3/4"	182	169	160	137	114	91	410
71.4	2-13/16"	178	165	156	134	111	89	401
73.0	2-7/8"	174	161	153	131	109	87	393
74.6	2-15/16"	171	158	149	128	107	85	384
76.2	3"	167	155	146	125	104	84	376
77.8	3-1/16"	164	151	143	123	102	82	368
79.4	3-1/8"	160	148	140	120	100	80	361
81.0	3-3/16"	157	146	138	118	98	79	354
82.6	3-1/4"	154	143	135	116	96	77	347
84.1	3-5/16"	151	140	132	114	95	76	341
85.7	3-3/8"	149	137	130	111	93	74	334
87.3	3-7/16"	146	135	128	109	91	73	328
88.9	3-1/2"	143	133	125	107	90	72	322
90.5	3-9/16"	141	130	123	106	88	70	317
92.1	3-5/8"	138	128	121	104	86	69	311
93.7	3-11/16"	136	126	119	102	85	68	306
95.3	3-3/4"	134	124	117	100	84	67	301
96.8	3-13/16"	132	122	115	99	82	66	296
98.4	3-7/8"	129	120	113	97	81	65	291
100.0	3-15/16"	127	118	111	96	80	64	287
101.6	4"	125	116	110	94	78	63	282

Technical Information

Recommended Cutting Speed for SST™ CORE CUT and ICECUT™ Annular Cutter (RPM)

Diameter		Mild Steel	Steel	Steel	Steel	Steel	Stainless Steel	Aluminium
mm	Inch	500N/mm ²	750N/mm ²	900N/mm ²	1200N/mm	1400N/mm ²		
11.1	7/16"	717	573	373	287	201	344	1433
12.7	1/2"	627	502	326	251	176	301	1254
14.3	9/16"	558	446	290	223	156	268	1115
15.9	5/8"	501	401	261	201	140	241	1003
17.5	11/16"	456	365	237	182	128	219	912
19.1	3/4"	418	334	217	167	117	201	836
20.6	13/16"	386	309	201	154	108	185	771
22.2	7/8"	358	287	186	143	100	172	717
23.8	15/16"	334	268	174	134	94	161	669
25.4	1"	313	251	163	125	88	150	627
27.0	1-1/16"	295	236	153	118	83	142	590
28.6	1-1/8"	279	223	145	111	78	134	557
30.2	1-3/16"	264	211	137	106	74	127	528
31.8	1-1/4"	251	201	130	100	70	120	502
33.3	1-5/16"	239	191	124	96	67	115	478
34.9	1-3/8"	228	182	119	91	64	109	456
36.5	1-7/16"	218	174	113	87	61	105	436
38.1	1-1/2"	209	167	109	84	59	100	418
39.7	1-9/16"	201	161	104	80	56	96	401
41.3	1-5/8"	193	154	100	77	54	93	386
42.9	1-11/16"	186	149	97	74	52	89	372
44.5	1-3/4"	179	143	93	72	50	86	358
46.0	1-13/16"	173	138	90	69	48	83	346
47.6	1-7/8"	167	134	87	67	47	80	334
49.2	1-15/16"	162	129	84	65	45	78	324
50.8	2"	157	125	81	63	44	75	313
52.4	2-1/16"	152	122	79	61	43	73	304
54.0	2-1/8"	148	118	77	59	41	71	295
55.6	2-3/16"	143	115	75	57	40	69	287
57.2	2-1/4"	139	111	72	56	39	67	279
58.7	2-5/16"	136	108	70	54	38	65	271
60.4	2-3/8"	132	106	69	53	37	63	264

Recommended Feed for Annular Cutter

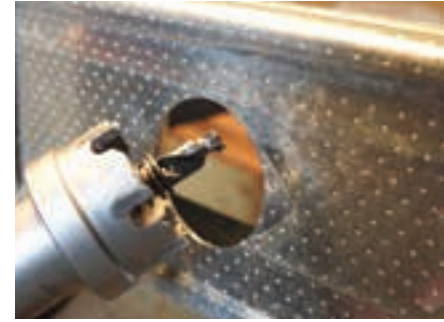
Material	Feed (mm/r)	Coolant (ml/min)
Steel 500N/mm ²	0.08-0.13	60-80
Steel 750N/mm ²	0.08-0.13	60-80
Steel 900N/mm ²	0.05-0.1	80-100
Steel 1200N/mm ²	0.05-0.1	80-100
Steel 1400N/mm ²	0.05-0.1	80-100
Stainless Steel	0.05-0.1	150-200
Aluminum	0.1-0.15	80-100

Ideal for drilling large diameter holes in both ferrous and non-ferrous materials

Drillco's line of carbide tipped hole cutters are ideal for drilling large diameter holes in both ferrous and non-ferrous materials such as sheet metal, steel, aluminum, copper, plastics, brass, cast iron, and the difficult to machine stainless steel.

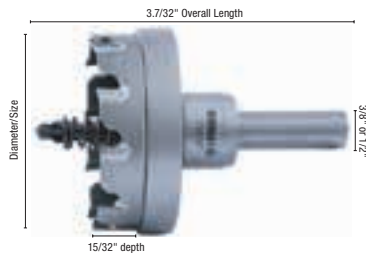
9500CT = thinner material, up to 3/16" depth of cut / 9600CT = thicker material, up to 1" depth of cut

- ▷ Ultra-hard teeth increase performance and tool life
- ▷ Cost effective alternative to bi-metal hole saws
- ▷ Excellent portability
- ▷ Premium grade tungsten carbide
- ▷ Ideal for plumbers, electricians, mechanics, general contractors, HVAC technicians, DIY'ERS
- ▷ 3-flat shank. Diameters 9/16" to 2-5/8" have a 3/8" shank; 2-11/16" to 4-1/2" have a 1/2" shank



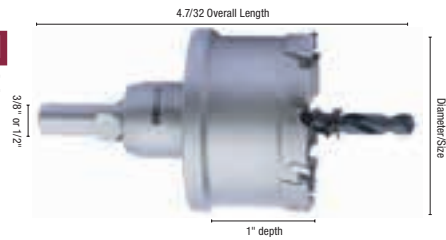
9500CT

Carbide Tipped
3/16" Depth of Cut
Fractional



9600CT

Carbide Tipped
1" Depth of Cut
Fractional



Size	9500CT Order No.
9/16"	95CT136
5/8"	95CT140
11/16"	95CT144
3/4"	95CT148
13/16"	95CT152
7/8"	95CT156
15/16"	95CT160
1"	95CT164
1-1/16"	95CT204
1-1/8"	95CT208
1-3/16"	95CT212
1-1/4"	95CT216
1-5/16"	95CT220
1-3/8"	95CT224
1-7/16"	95CT228
1-1/2"	95CT232
1-9/16"	95CT236
1-5/8"	95CT240
1-11/16"	95CT244
1-3/4"	95CT248
1-13/16"	95CT252
1-7/8"	95CT256
1-15/16"	95CT260

Size	9500CT Order No.
2"	95CT264
2-1/16"	95CT304
2-1/8"	95CT308
2-3/16"	95CT312
2-1/4"	95CT316
2-5/16"	95CT320
2-3/8"	95CT324
2-7/16"	95CT328
2-1/2"	95CT332
2-9/16"	95CT336
2-5/8"	95CT340
2-11/16"	95CT344
2-3/4"	95CT348
2-13/16"	95CT352
2-7/8"	95CT356
2-15/16"	95CT360
3"	95CT364
3-1/4"	95CT416
3-1/2"	95CT432
3-5/8"	95CT440
3-3/4"	95CT448
4"	95CT464

Size	9600CT Order No.
9/16"	96CT136
5/8"	96CT140
11/16"	96CT144
3/4"	96CT148
13/16"	96CT152
7/8"	96CT156
15/16"	96CT160
1"	96CT164
1-1/16"	96CT204
1-1/8"	96CT208
1-3/16"	96CT212
1-1/4"	96CT216
1-5/16"	96CT220
1-3/8"	96CT224
1-7/16"	96CT228
1-1/2"	96CT232
1-9/16"	96CT236
1-5/8"	96CT240
1-11/16"	96CT244

Size	9600CT Order No.
1-3/4"	96CT248
1-13/16"	96CT252
1-7/8"	96CT256
1-15/16"	96CT260
2"	96CT264
2-1/8"	96CT308
2-1/4"	96CT316
2-3/8"	96CT324
2-1/2"	96CT332
2-5/8"	96CT340
2-3/4"	96CT348
2-7/8"	96CT356
3"	96CT364
3-1/4"	96CT416
3-1/2"	96CT432
3-5/8"	96CT440
3-3/4"	96CT448
4"	96CT464
4-1/2"	96CT532

All sizes are individually packaged. Sizes up to 2-5/8" have a tab for hanging on a wall display.

All sizes are individually packaged. Sizes up to 3" have a tab for hanging on a wall display.

Set	
Description	Order No.
6pc Set: 7/8", 1", 1-1/8", 1-3/8", 1-3/4", 2" + Two Pilot Drills	95CT6S

Spare Parts	
Description	Order No.
HSS Pilot Drill 4.35mm	95CT001
M6 Screw	95CT002
Spring M8.5 x 20mm	95CT003
Allen Wrench	95CT004



Set	
Description	Order No.
6pc Set: 9/16", 5/8", 11/16", 3/4", 7/8", 1-1/16" + Two Pilot Drills	96CT6S

Spare Parts	
Description	Order No.
HSS Pilot Drill 6mm	96CT001
M6 Screw	96CT002
Spring M8.5 x 35mm	96CT003
Allen Wrench	96CT004

Technical Information

Speed Recommendations

Cutter Size	Aluminum	Copper	Steel	Stainless Steel	Alloy Steel	Non-Metallic Material
Revolution Per Minute (RPM)						
< 13/16"	1500-1800	800-1000	700-1000	700-800	700-900	1500-1800
13/16" - 1-3/16"	1500-1800	800-1000	700-800	400-600	600-700	1500-1800
1-7/32" - 1-9/16"	1500-1800	800-1000	500-600	350-450	450-500	1500-1800
1-5/8" - 2"	800-1000	600-800	400-500	250-400	300-400	1000-1500
2-1/16" - 2-3/8"	600-850	400-600	300-400	200-300	200-300	800-1000
2-7/16" - 3"	400-600	200-400	150-200	150-200	150-200	500-800
> 3"	200-400	100-200	100-150	100-150	100-150	5000-80

Drilling Recommendations

- Inspect the hole cutter to ensure it is properly assembled and complete before use.
- To operate, use cutters on an electric hand drill, impact drill (rotary type), drill press or similar. Consult your power drill manufacturer's manual to see RPM ranges on low and high settings.
- Let the tool do the work! When beginning the drilling process, use a lower feed rate. Do not apply too much pressure or force onto the cutter or you may damage the carbide teeth.
- During operation, ensure the revolving speed is not too slow. This will help to prevent locking which can damage the tool.
- Shanks have 3-flats to reduce slippage in the chuck. Shank sizes of Drillco's TCT Hole Cutters are as follows: 9/16" to 2-5/8" have 3/8" shank; 2-11/16" to 4" have a 1/2" shank.
- Can be used in a wide range of materials including aluminum, copper, steel, alloy steel, stainless steel, brass, and non-metallic materials such as plastics.
- To ensure optimal performance and extend tool life, a cutting fluid should always be used. Drillco offers a wide range of sizes and styles of environmentally safe heavy-duty cutting fluid.

Magnetic Drills



High Speed Steel + Aluminum (M2Al)

Light, powerful and safe

Product name	Series	Catalog page reference
ICECUT MINI™	39-D	221
ICECUT 100™		222
ICECUT 200		224
ICECUT 200PM™		224
ICECUT 250 AUTO™		225
ICECUT 250™		226, 227
ICECUT 250P™		226, 227
ICECUT 300™		228, 229
ICECUT 400™		228, 229



Magnetic Drills

Walter Surface Technologies magnetic drills are the most reliable and versatile workhorses on the market. Their compact design allows for easy portability, and the added magnetized safety switch keeps you operating safely. With the addition of the central lubricating system that delivers cutting lubricant directly to the cutter and a complete offering of High Speed Steel, Cobalt, and Carbide Tipped Annular Cutters you have the most complete solution for your hole making needs.



Annular Cutters



Cutting Fluids



Video

Watch the video to learn more about the ICECUT™!

Mag Drill Selection Chart

Model	Order No.	No Load RPM	Dynamax Variable Speed Control	Twist Drill Capacity	Annular Cutter Capacity (Diameter)	Annular Cutter Capacity (Depth)	Accudrill Integrated Ampmeter	Tapping Functionality	Special Features
ICECUT MINI™	39-D 050	200-500 RPM	Yes	N/A	2"	2"	Yes	No	Largest drilling capacity for a machine of its size
ICECUT 100™	39-D 100	600 RPM	No	1/2" (stub length only)	1-3/8"	1-1/2"	Yes	No	Compact and Mobile
ICECUT 200™	39-D 200	Speed #1: 300 RPM Speed #2: 600 RPM	No	1/2"	2"	2"	Yes	No	2 speeds for versatile cutting
ICECUT 200PM™	39-D 201	Speed #1: 300 RPM Speed #2: 600 RPM	No	1/2"	2"	2"	Yes	No	Permanent Magnet for additional safety
ICECUT 250™	39-D 250	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	Yes	1/2"	2-3/8"	3"	Yes	Yes (up to 3/4")	Tapping capabilities & variable speed selection
ICECUT 250P™	39-D 251	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	Yes	1/2"	2-3/8"	3"	Yes	Yes (up to 3/4")	Permanent Magnet perfect for curved surfaces
ICECUT 250 AUTO™	39-D 252	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	Yes	1/2"	2-3/8"	3"	Yes	Yes (up to 3/4")	Manual and Auto-feed modes
ICECUT 300™	39-D 300	Speed #1: 70-180 RPM Speed #2: 200-500 RPM	Yes	1-1/4"	3"	3"	Yes	Yes (up to 1-1/8")	120° swivel, 2" sliding magnetic base
ICECUT 400™	39-D 400	Speed #1: 45-129 RPM Speed #2: 70-208 RPM Speed #3: 150-434 RPM Speed #4: 240-700 RPM	Yes	1-1/4"	4"	4"	Yes	Yes (up to 1-1/8")	120° swivel, 2" sliding magnetic base 4 speed gearbox

ICECUT 200PM™



NEW PRODUCT ALERT

Designed with user safety in mind, our new ICECUT 200PM™ magnetic drill unit features a permanent magnet base. The base operates and keeps hold even during power interruption.

ICECUT 250 AUTO™



NEW PRODUCT ALERT

Designed with productivity in mind, our new ICECUT 250 AUTO™ magnetic drilling unit features an autofeed function that allows for automatic drilling. The quill can be pushed inwards to allow for automatic, effortless, safe and efficient drilling.



Features

All ICECUT™ Magnetic Drilling Units



1 Centered Control Panel
Centered positioning of the electronics for easy control from any position. Whether it's a personal preference, or if the operation requires drilling from a specific side, the central control panel allows for efficient and easy operation.



2 Mandrel Support
Absorbs vibration for added stability and easy centering. The ball bearing support ensures the motor and chuck are perfectly aligned. It also provides smooth and precise cutting operations, and reduces chipping or breakage of the cutter.



3 Full Body Integrated Wiring
For convenience and improved durability. No electrical wires will get in the way while drilling or moving your unit. Moreover, this prevents common failures due to mishandling (like carrying the unit by the wire, or the wire catching on an object).



4 Steel Sliding Guard
Easily accessible, and extra safe. Slide guard upwards, position unit, slide guard down and start drilling safely while containing chips and lubricant to prevent them from spilling out onto the rest of the work surface.



5 Direct Access
Direct access to carbon brushes makes maintenance simple. The powerful motor will always operate at maximum efficiency, and when it is time to change out the carbon brushes, their easily accessible location makes maintenance very convenient!



6 Ergonomic Handle
The ergonomic handle with a smooth grip – sturdy and lightweight - makes moving the unit easy. Its design further reduces overall weight, and the smooth grip ensures easy portability.



7 Quick Release Reversible Handle
Quick release reversible handle – allows for positioning in confined or restricted spaces. The handle can be removed and reattached on whichever side the operator prefers, making this a very user friendly system.



8 Material & Thickness Detector
Unit will not start when the magnetic holding power is insufficient to secure the unit to the workpiece and operate safely. Prevents accidental starts: unit will not start on any non-ferrous material like wood, plastic, or when held in the air.



9 Mechanical Clutch
The ICECUT 200™ has a safety slip clutch, built into the gear drive, that will neutralize momentum and eliminate dangerous backlash for added safety. Prevents cutter breakage.



Lightweight
At 10 kg (22 lbs.) and 12.2 kg (27 lbs.) respectively, the ICECUT 100™ and ICECUT 200™ are the lightweight champions in their category. With a slim body, simplified carrying handle and powerful magnet, these units were designed with portability and ergonomics in mind.



Swivel Base
As a feature for the ICECUT 300™ and ICECUT 400™, it allows to swivel the magnetic drill by 60° on each side, and also slide by 3" for a perfect and easy alignment.



Equipped with SAFETY strap
For added security when hung upside down or for frame drilling operations.

ICECUT MINI™

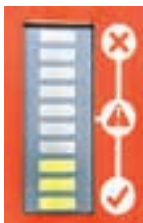
Low profile magnetic drilling unit for confined spaces

Measuring in at only 7-inches tall, the ICECUT MINI™ is the ultimate compact, low-profile magnetic drilling unit for making holes in tight spaces from H-beams to truck frames, and other applications where space may be limited. This unit has a powerful electromagnet for safety while drilling and has a 2" x 2" drilling capacity, making it the most versatile unit in its class.

- ▷ **Lightweight unit**
- ▷ **Electromagnet for safety and functionality**
- ▷ **Low profile and compact body allows for making holes in extremely tight spaces (7" tall)**
- ▷ **Walter's Dynamax™ speed control ensures RPM speeds remain constant even under load**
- ▷ **Accudrill™ system protects unit from overload and the risk of cutter breakage**
- ▷ **2" x 2" drilling capacity!—Largest on the market!**



**2" x 2" drilling capacity!
The largest on the market!**



"Accudrill" system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.

Order No.	39-D 050
Watts	1200 W
Rated Amperage	10.0 A
Speeds	1-speed variable
DYNAMAX speed control	YES
No load RPM	250-500 RPM
Rated current	110-120V
Total stroke	61 mm (2-3/8")
Core cutter capacity (diameter)	2" (50 mm)
Core cutter capacity (depth)	2" (50 mm)
Twist drill capacity (diameter)	N/A
Weight	23.14 lbs (10.5 kg)
Swivel and sliding magnet	NO
Magnetic holding force (at 1")	10,000N
Max drill point pressure	2248 lbs (1020 kg)
Reversible handle	Tool-free ratchet handle
Powerguard motor overload protection	YES
Short-Circuit protection	YES
ACCUDRILL LED Torque display	Integrated Ampmeter (both sides)
Magnetic field sensor	NO
Guard	YES, pivoting
Wiring	Internal
Lubrication	Not integrated
Control board	Rear, S/S switches with LED
Arbor	3/4" Weldon arbor fixed
Maintenance	Easy access to carbon brushes

 **YouTube**
Video available at The Walter Network
www.youtube.com/user/TheWalterNetwork

ICECUT 100™

Compact and portable

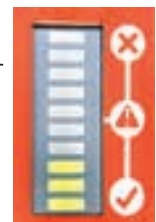
When you pair the best drilling machines with highly engineered annular cutters and superior cooling solutions, you know you have the best overall system for consistently drilling holes quickly and precisely with minimal interruption for changing out worn tooling.

- ▷ Compact
- ▷ Extra lightweight
- ▷ Perfect when mobility is key.

Drilling Made Easy and Safe



Order No.	39-D 100
Watts	850 W
Speed	1-speed
No load RPM	600 RPM
Rated current	8 A
Core cutter capacity (diameter)	1 3/8" (35 mm)
Core cutter capacity (depth)	1 1/2" (38 mm)
Twist drill capacity (diameter)	1/2" (stub length only)
Tapping function	NO
Weight	22 lbs (10 kg)
Swivel and sliding magnet	NO
Max drill point pressure	1875 lbs (850 kg)
Reversible handle	Tool free press-button
Powerguard electronic overload protection	15 A
Motor overload protection	NO
Short-Circuit protection	Integrated fuse
Accudrill LED torque display	Integrated Ampmeter
Magnetic field sensor	Material and thickness detector
Tool free guard	Metal, sliding up
Wiring	Internal
Lubrication	On motor head
Control board	Centered, S/S switches with LED
Handle	Open on main housing
Arbor	Weldon shank with support
Maintenance	Easy access to carbon brushes
Total Stroke	2.6"



"Accudrill" system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.

 **YouTube**
 Video available at The Walter Network
www.youtube.com/user/TheWalterNetwork



ICECUT 200™

The versatile unit

Powerful – 2-speed – yet only 27 lbs – ideal for a wide range of production or job site operations.



ICECUT 200PM™

Permanent Magnet Magnetic Drill

Operator safety is the number 1 priority with the new ICECUT 200PM™. By swapping the electromagnetic base for permanent magnet, the machine does not need electricity to be securely fixed in place. This is the perfect unit to use on job sites or any applications that may involve inconsistent power sources.



Permanent Magnet for additional safety. With its double action lever, accidental magnet deactivation can be avoided. The magnet will also remain activated in the event of sudden power loss.

Order No.	39-D 200	39-D 201
Watts	1200 W	1200 W
Speed	2-speeds	2-speeds
No load RPM	Speed #1: 300 RPM / Speed #2: 600 RPM	Speed #1: 300 RPM / Speed #2: 600 RPM
Rated Amperage	10 A	10 A
Core cutter capacity (diameter)	2" (50 mm)	2" (50 mm)
Core cutter capacity (depth)	2" (50 mm)	2" (50 mm)
Twist drill capacity (diameter)	1/2"	1/2"
Tapping function	NO	NO
Weight	27 lbs (12.2 kg)	28.6 lbs (13 kg)
Swivel and sliding magnet	NO	NO
Max drill point pressure	1875 lbs (850 kg)	1875 lbs (850 kg)
Reversible handle	Tool-Free press button	Tool-Free press button
Powerguard electronic overload protection	15 A	15 A
Motor overload protection	Mechanical clutch	15 A
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Integrated Ampmeter	Integrated Ampmeter
Magnetic field sensor	Material and thickness detector	Material thickness detector
Tool free guard	Metal, sliding up	Metal, sliding
Wiring	Internal	Internal
Lubrication	On motor head	Internal thru feed, on motor head
Control board	Centered, S/S switches with LED	Centered, S/S switches with LED
Handle	Open with anti-slip support	Open with anti-slip support
Arbor	Weldon shank with support	Weldon shank with support
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	2.9"	2.9"

ICECUT 250 AUTO™

Continuous Feed Magnetic Drill

Building off the most versatile drilling platform Walter has to offer, ICECUT 250 AUTO™ comes with all the great features of the 250 model as well as a new continuous feed setting. Just push in the machine's quill and watch the drill do all the work. Automatic feed, automatic return and automatic safety shut off after the hole is completed. This is the unit of choice for working in production style environments. A single operator can operate several machines at once to improve productivity.

- ▷ **Automatic feed and auto-retract**
- ▷ **Twist drilling, core cutting & tapping functionality**
- ▷ **ACCUDRILL system protects unit from overload and the risk of cutter breakage**
- ▷ **Walter's DYNAMAX speed control ensures RPM remains constant even under load**

TIPS!

Always ensure the coolant tank is filled and a constant stream of ICECUT™ (53-C 055) is flowing when drilling automatically.



Thanks to the drills optimized autofeed system, cutter life can be extended. The continuous feed also allows for improved productivity and the operation of multiple units at once.

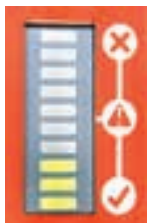
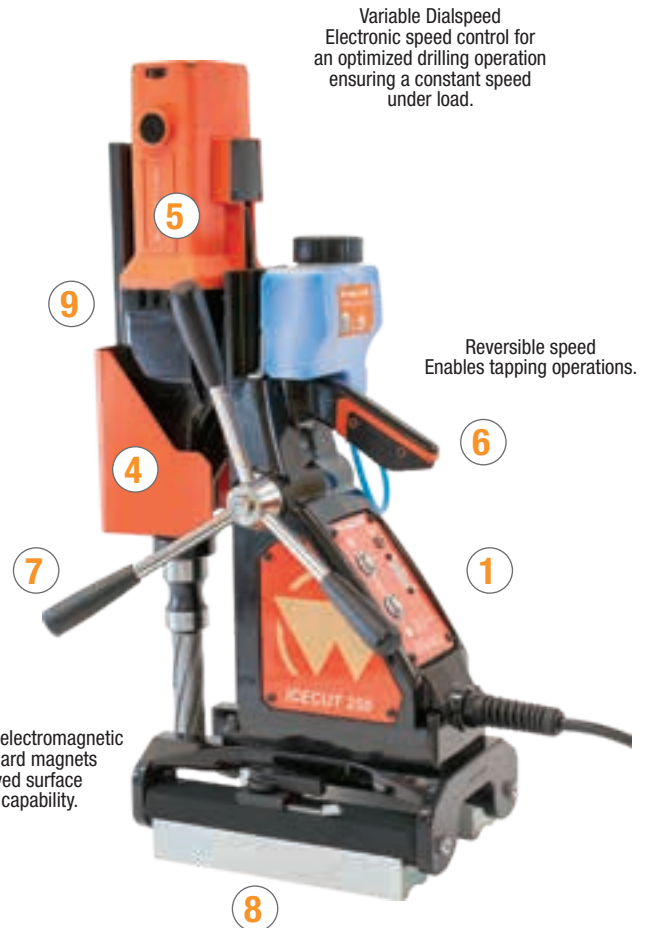
Order No.	39-D 252
Watts	1500 W
Rated Amperage	15.0 A
Speeds	2-speeds variable
No load RPM	Speed #1: 100-265 RPM Speed #2: 200-500 RPM
Rated current	110-120V
Core cutter capacity (diameter)	2-3/8" (in manual), 2" (in auto)
Core cutter capacity (depth)	3" (in manual), 2" (in auto)
Twist drill capacity (diameter)	1"
Tapping function	YES (up to 3/4")
Weight	40.78 lbs (18.5 kg)
Swivel and sliding magnet	NO
Max drill point pressure	3035 lbs (1377 kg)
Reversible handle	NO
Powerguard motor overload protection	20 A
Powerguard electronic overload protection	27 A
Short-Circuit protection	Integrated fuse
Accudrill LED torque display	Integrated Ampmeter
Magnetic field sensor	YES
Tool free guard	Metal, sliding
Wiring	Internal
Lubrication	Internal thru feed, on motor head
Control board	Centered, S/S switches with LED
Handle	1 on main housing, 1 pistol grip
Arbor	Morse Taper 2 shank; 3/4" Weldon
Maintenance	Easy access to carbon brushes
Total stroke	6.65"

ICECUT 250™ AND ICECUT 250P™

Features

Get all the power and versatility from the ICECUT™ magnetic drilling systems, now available in a more compact size for easy portability. Use the ICECUT 250™ for ultimate versatility when drilling or tapping larger holes. The ICECUT 250P™ is the unit of choice for working on curved surfaces or pipes thanks to a convenient permanent magnet.

Weighs only 35 pounds!



"Accudrill" system protects against overload and reduces the risk of cutter breakage. When you want to achieve the most productive drilling operation, you need to make sure you use the most power. This prevents the motor from overloading to reduce damage to the tool itself while also minimizing the risk of eventual damage to the cutter from overheating or movement.



Video available at The Walter Network
www.youtube.com/user/TheWalterNetwork

ICECUT 250™

Lightweight, powerful with variable speed

The powerful, intuitive and lightweight ICECUT 250™ is a truly versatile machine, especially for its size.



TIPS!

Use carbide core cutter 05-D 518 with included morse Tape Shank no. 2 to drill to 2-1/2" large holes.
3/4" Weldon shank
Diameter: 2-1/2"
Length: 1-1/2"

ICECUT 250P™

Drill faster and easier on pipe-related jobs

The double magnet ICECUT 250P™ sets up fast for pipe applications and is curved surface-ready.



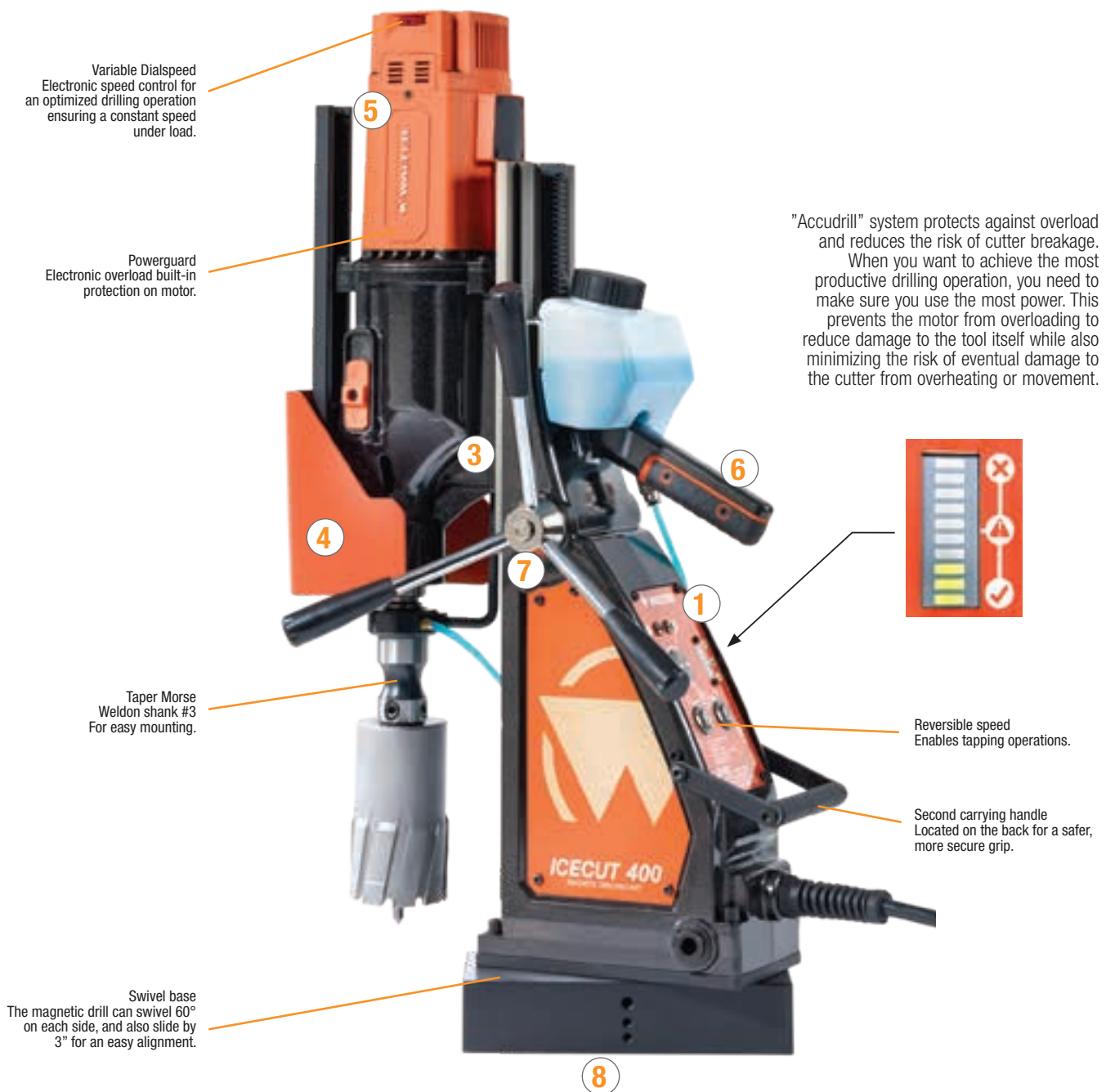
Order No.	39-D 250	39-D 251
Watts	1550 W	1500 W
Speed	2-speeds + Reversible	2-speeds + Reversible
Dynamax variable speed control	YES	YES
No load RPM	100-500 RPM	100-500 RPM
Rated current	15 A	15 A
Core cutter capacity (diameter)	2-1/2"	2-1/2"
Core cutter capacity (depth)	3" (w/ 2-piece pilot pin)	3" (w/ 2-piece pilot pin)
Twist drill capacity (diameter)	1/2"	1/2"
Tapping function	YES, up to 3/4" - 16	YES, up to 3/4" - 16
Weight	34.1 lbs (15.4 kg)	39.6 lbs (18 kg)
Swivel and sliding magnet	NO	NO
Max drill point pressure	3035 lbs (1376 kg)	3035 lbs (1376 kg)
Reversible handle	Tool-Free press button	Tool-Free press button
Powerguard motor overload protection	20 A	20 A
Powerguard electronic overload protection	27 A	27 A
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Intergrated Ampmeter	Intergrated Ampmeter
Magnetic field sensor	Material & thickness detector	NO (Permanent Magnet)
Tool free guard	Metal, sliding	Metal, sliding
Wiring	Internal	Internal
Lubrication	Internal thru feed, on motor head	Internal thru feed, on motor head
Control board	Centered, S/S switches with LEDs	Centered, S/S switches with LED
Handle	1 reversible on main housing, 1 pistol grip	1 reversible on main housing, 1 pistol grip
Arbor	Morse Taper 2 shank; 3/4" Weldon	Morse Taper 2 shank; 3/4" Weldon
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	5.5"	5.5"

ICECUT 300™ and ICECUT 400™

Features

Now you can get all the benefits of using an ICECUT™ magnetic drilling machine while using annular cutters up to 4" wide and a depth of up to 4". To make the drilling operation even safer and easier, each machine features a swivel base for easy positioning of the tool along with our top-of-the-line safety features such as DIALSPEED™, POWERGUARD™ and DYNAMAX™.

Drill more, bigger, faster and safer!



ICECUT 300™

For deeper, wider holes

With a swivel base and electronic speed control, allows you to drill safer and faster.



ICECUT 400™

The most powerful and most versatile unit

With 4 mechanically-controlled speeds and a wider RPM range, this powerful tool can tackle any drilling operation with ease.



Order No.	39-D 300	39-D 400
Watts	1800 W	2000 W
Speed	2-speeds + reversible	4-speeds + reversible
Dynamax variable speed control	YES	YES
No load RPM	Speed #1: 70-180 RPM / Speed #2: 200-500 RPM	Speed #1: 45-129 RPM / Speed #2: 70-208 RPM Speed #3: 150-434 RPM / Speed #4: 240-700 RPM
Rated current	18 A	20 A
Core cutter capacity (diameter)	3" (75 mm)	4" (100 mm)
Core cutter capacity (depth)	3" (75 mm)	4" (100 mm)
Twist drill capacity (diameter)	1-1/4" (31.75 mm)	1-1/4" (31.75 mm)
Tapping function	YES (1-1/8")	YES (1-1/8")
Weight	52 lbs (23.5 kg)	54.5 lbs (24.8 kg)
Swivel and sliding magnet	Swivel 120°, sliding 2"	Swivel 120°, sliding 2"
Max drill point pressure	4160 lbs (1890 kg)	4950 lbs (2240 kg)
Reversible handle	Tool free press-button	Tool free press-button
Powerguard motor overload protection	22 A	24 A
Powerguard electronic overload protection	25 A	27 A
Short-Circuit protection	Integrated fuse	Integrated fuse
Accudrill LED torque display	Integrated Ampmeter	Integrated Ampmeter
Magnetic field sensor	Material and thickness detector	Material and thickness detector
Tool free guard	Metal, sliding up	Metal, sliding up
Wiring	Internal	Internal
Lubrication	On motor head	On motor head
Control board	Centered, s/s switches with LEDS	Centered, S/S switches with LED
Handle	1 on main housing, 1 rear handle	1 on main housing, 1 rear handle
Arbor	Weldon taper morse #3	Weldon taper morse #3
Maintenance	Easy access to carbon brushes	Easy access to carbon brushes
Total Stroke	9.4"	10.2"

ICECUT™ Systems

ICECUT MINI™ - ICECUT 100™ - ICECUT 200™ - ICECUT 200PM™ - ICECUT 250™
 ICECUT 250 AUTO™ - ICECUT 250P™ - ICECUT 300™ - ICECUT 400™



Includes a 1/2" chuck adaptor for drilling smaller holes



For larger holes, 1/2" and above, use the magnetic base with the standard Weldon shank



Comes in a foam padded case for superior protection

ICECUT 300™ (39D300) DIALSPEED™ RPM Setting				
	RPM			
	SPEED 1 ↓	SPEED 2 ↑	SPEED 3	SPEED 4
1	70	200	x	x
2	92	260	x	x
3	114	320	x	x
4	136	380	x	x
5	158	440	x	x
6	180	500	x	x

ICECUT 400™ (39D400) DIALSPEED™ RPM Setting (Left/Right)				
	RPM			
	SPEED 1 ↓ / ↑	SPEED 2 ↓ / ↓	SPEED 3 ↑ / ↑	SPEED 4 ↑ / ↓
1	45	70	150	240
2	62	98	207	332
3	79	126	264	424
4	96	154	321	516
5	113	181	378	608
6	129	208	434	700

Model	Order No.	No load RPM	Motor	Amps	Twist drill capacity (diameter)	Annular cutter	Max. drilling depth	Magnet strength	Weight
ICECUT MINI™	39-D 050	250-500 RPM	120V .A.C.	10A	N/A	2"	2"	2248 lbs (1019.6 kg)	23.1 lbs (10.4 kg)
ICECUT 100™	39-D 100	600 RPM	120V .A.C.	8A	1/2" (stub length only)	1-3/8"	1-1/2"	1875 lbs (850.5 kg)	22 lbs (9.9 kg)
ICECUT 200™	39-D 200	Speed #1: 300 RPM Speed #2: 600 RPM	120V .A.C.	10A	1/2"	2"	2"	1875 lbs (850.5 kg)	27 lbs (12.2 kg)
ICECUT 200PM™	39-D 201	Speed #1: 300 RPM Speed #2: 600 RPM	120V .A.C.	10A	1/2"	2"	2"	1875 lbs (850.5 kg)	28 lbs (12.7 kg)
ICECUT 250™	39-D 250	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2-3/8"	3"	3035 lbs (1376.6 kg)	34.1 lbs (15.4 kg)
ICECUT 250 AUTO™	39-D 252	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2-3/8"	3"	3035 lbs (1376.6 kg)	40 lbs (18 kg)
ICECUT 250P™	39-D 251	Speed #1: 100-265 RPM Speed #2: 200-500 RPM	120V .A.C.	15A	1/2"	2-3/8"	3"	3035 lbs (1376.6 kg)	39.6 lbs (17.9 kg)
ICECUT 300™	39-D 300	Speed #1: 70-180 RPM Speed #2: 200-500 RPM	120V .A.C.	18A	1 1/4"	3"	3"	4160 lbs (1886.9 kg)	52 lbs (23.6 kg)
ICECUT 400™	39-D 400	Speed #1: 45-129 RPM Speed #2: 70-208 RPM Speed #3: 150-434 RPM Speed #4: 240-700 RPM	120V .A.C.	20A	1 1/4"	4"	4"	4950 lbs (2945.2 kg)	54.5 lbs (24.7 kg)

STANDARD EQUIPMENT FOR ICECUT 100 AND 200: Carrying case 48-H 423 (ICECUT 100), 48-H 422 (ICECUT 200), lubrication system (48-H 310), 1/2" keyed chuck (39-D 006), Chuck adaptor (39-D 005), M6 T-handle hexagonal key (48-Z 004), Allen key (48-Z 003), safety strap (48-H 329), safety glasses (48-H 424), reversible press button (48-H 324), triple handle (48-H 323), chuck key (39-D 009).

STANDARD EQUIPMENT FOR ICECUT 300 AND 400: Carrying case, chuck, arbor assembly, safety glasses, arbor shank, drift punch, safety belt, 3 mm hexagonal, spanner, stationary ring, spare carbon brushes, coolant bottle assembly.

Straight Drill 716-B – 5/8"

End handle drill with a heavy-duty 120V motor and 2-speed gear box. Use low speed to drill large holes with extra torque and high speed to drill small holes. The reversing feature makes this drill also suitable for tapping applications.

Capacities - Steel

Model	Order No.	Speed under load	Motor	Max. torque	Amps	Twist drill	Hole saw	Weight
716-B	38-A 716	0-430/760 rev.	120V A.C.	30/17 Nm	9.2	5/8"	3"	9 lbs (4 kg)

STANDARD EQUIPMENT: 5/8" capacity keyed chuck 22-A 072, chuck key 22-A 202, side handle (model 716) 48-E 063 and 9 ft. cord.





Reamers

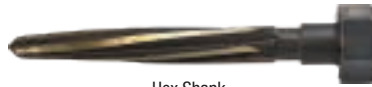


Reamers are available in car (shorter) and bridge (longer) length as:

Shank Styles



Taper Shank



Hex Shank



3-Flat Shank

Flute Styles



Spiral Flute



High-Spiral Flute



Straight Flute

Multi Steps Reamers

High Speed Steel

Black Oxide
For enlarging existing holes in steel to a new diameter

Type	Series	Catalog page reference
Step	4700SE	233



Bridge / Car Reamers

High Speed Steel

Black Oxide
For use with morse taper holders

Type	Series	Catalog page reference
Bridge Length	4200, 4250	233
Car Length	150H, 175H	234



Construction Reamers

High Speed Steel

Black Oxide
For better performance on low to medium tensile strength materials

Type	Series	Catalog page reference
3-Flat Shank	4275, 4275E, 4285	236
Hex Hut Shank	4290, 4290E, 100HX, 125HX, 150HX	237



Heavy-Duty Construction Reamers



High Speed Steel

Black and Gold
For heavy-duty reaming applications

Type	Series	Catalog page reference
3-Flat Shank	4275N, 4285N	235
Hex Nut Shank	125SF, 4290N	238



Alignment Reamers

High Speed Steel

Black and Gold Oxide
For Cast Iron, Non-Ferrous Metals, Stainless Steel

Type	Series	Catalog page reference
3-Flat Shank	TCR	239



Chucking Reamers

Bright & Black
Provides an accurate hole size with a smooth finish

Type	Series	Catalog page reference
Chucking	4300E, 4375E, 4350E	240



Hand Reamers

Bright & Black
Widely used for final sizing of drilled holes

Type	Series	Catalog page reference
Hand	4400E, 4450E	241



Taper Pin Reamers

Bright & Black
For reaming holes to allow a taper pin fastener to fit

Type	Series	Catalog page reference
Taper Pin	4500E, 4550E, 4570E	242



Multi-Steps Reamers

15 Sizes, 3 Tools, Clean, Burr Free Holes in Seconds!

- ▷ Feature 3-flat shanks to reduce slippage in the chuck
- ▷ Shanks are 3/8"
- ▷ Reamers are made from high quality M2 High Speed Steel (HSS)
- ▷ Black oxide surface treatment increases wear resistance



Special geometry split point reduces "walking" when beginning the reaming process. Can start a hole from scratch.



Available in 3 tools, with sizes from 5/16" thru 1-1/16"

4700SE High Speed Steel 3-Flats Reduced Shank

Tool#	Description	4700SE Order No.
1	5 Steps: 5/16", 3/8", 7/16", 1/2", 9/16"	470SE001
2	5 Steps: 9/16", 5/8", 11/16", 3/4", 13/16"	470SE002
3	5 Steps: 13/16", 7/8", 15/16", 1", 1-1/16"	470SE003
SET	3pcs: 1 of each Reamer	470SESET

Bridge Reamers

For enlarging or aligning holes in structural steel, truck and trailer body frames, ship building, and bridge construction applications.



- ▷ For use with morse taper holders
- ▷ Straight Flute- for a smoother finish;
Spiral Flute- for more aggressive reaming
- ▷ High Speed Steel
- ▷ All sizes are individually packaged



4200 Straight Flute



4250 Spiral Flute

4200 / 4250 High Speed Steel Taper Shank

Size	Point Dia.	Flute Length	Overall Length	Morse Taper	Straight Flute 4200 Order No.	Spiral Flute 4250 Order No.
5/16"	11/64"	4-3/8"	8-1/4"	2	420A120	425A120
11/32"	11/64"	4-3/8"	8-1/4"	2	420A122	425A122
3/8"	7/32"	4-3/8"	8-1/4"	2	420A124	425A124
13/32"	7/32"	4-3/8"	8-1/4"	2	420A126	425A126
7/16"	17/64"	4-3/8"	8-1/4"	2	420A128	425A128
15/32"	9/32"	5-1/8"	9"	2	420A130	425A130
1/2"	5/16"	5-1/8"	9"	2	420A132	425A132
17/32"	11/32"	5-1/8"	9"	2	420A134	425A134
9/16"	3/8"	5-1/8"	9"	2	420A136	425A136
19/32"	3/8"	5-1/8"	9"	2	420A138	425A138
5/8"	25/64"	6-1/8"	10"	2	420A140	425A140
21/32"	25/64"	7-1/8"	11-3/4"	3	420A142	425A142
11/16"	13/32"	7-1/8"	11-3/4"	3	420A144	425A144
3/4"	15/32"	7-3/8"	12"	3	420A148	425A148
25/32"	15/32"	7-3/8"	12"	3	420A150	425A150
13/16"	35/64"	7-3/8"	12"	3	420A152	425A152
27/32"	35/64"	7-3/8"	12"	3	420A154	425A154

Size	Point Dia.	Flute Length	Overall Length	Morse Taper	Straight Flute 4200 Order No.	Spiral Flute 4250 Order No.
7/8"	39/64"	7-3/8"	12"	3	420A156	425A156
29/32"	39/64"	7-3/8"	12"	3	420A158	425A158
15/16"	43/64"	7-3/8"	12"	3	420A160	425A160
31/32"	5/8"	7-3/8"	12"	3	-	425A162
1"	47/64"	7-3/8"	12"	3	420A164	425A164
1-1/32"	47/64"	7-3/8"	12"	3	420A202	425A202
1-1/16"	13/16"	7-3/8"	12"	3	420A204	425A204
1-1/8"	55/64"	7-3/8"	12"	3	420A208	425A208
1-3/16"	59/64"	7-3/8"	12"	3	420A212	425A212
1-1/4"	63/64"	7-3/8"	13"	4	420A216	425A216
1-5/16"	1-1/16"	7-3/8"	13"	4	420A220	425A220
1-3/8"	1-1/8"	7-3/8"	13"	4	420A224	425A224
1-7/16"	1-3/16"	7-3/8"	13"	4	420A228	425A228
1-1/2"	1-1/4"	7-3/8"	13"	4	420A232	425A232
1-9/16"	1-1/4"	7-3/8"	13"	4	420A236	425A236
1-5/8"	1-3/8"	7-3/8"	13"	4	420A240	425A240



Car Reamers

For enlarging or aligning holes in structural steel, ship building, and bridge construction applications

- ▷ Shorter length permits their use in cramped quarters where Bridge Reamers cannot enter
- ▷ The approximate length of the tapered section is 50% of the total flute length
- ▷ For use with morse taper holders
- ▷ High Speed Steel
- ▷ All sizes are individually packaged

150H / 175H

High Speed Steel

Straight Flute / Spiral Flute / Taper Shank



150H Straight Flute



175H Spiral Flute

Size	Flute Length	Overall Length	Morse Taper	Straight Flute 150H Order No.	Spiral Flute 175H Order No.
1/4"	2-1/2"	5-7/16"	1	150H116	175H116
9/32"	2-1/2"	5-7/16"	1	150H118	175H118
5/16"	2-3/4"	5-11/16"	1	150H120	175H120
11/32"	2-3/4"	5-11/16"	1	150H122	175H122
3/8"	2-3/4"	5-11/16"	1	150H124	175H124
13/32"	3-1/2"	6-15/16"	2	150H126	175H126
7/16"	3-1/2"	6-15/16"	2	150H128	175H128
15/32"	3-1/2"	7-1/16"	2	150H130	175H130
1/2"	4"	7-9/16"	2	150H132	175H132
17/32"	4"	7-9/16"	2	150H134	175H134
9/16"	4"	7-9/16"	2	150H136	175H136
19/32"	4-1/2"	8-1/16"	2	150H138	175H138
5/8"	4-1/2"	8-1/16"	2	150H140	175H140
21/32"	4-1/2"	8-13/16"	3	150H142	175H142
11/16"	4-1/2"	8-13/16"	3	150H144	175H144
23/32"	4-1/2"	8-13/16"	3	150H146	175H146
3/4"	5"	9-1/2"	3	150H148	175H148
25/32"	5"	9-1/2"	3	150H150	175H150

Size	Flute Length	Overall Length	Morse Taper	Straight Flute 150H Order No.	Spiral Flute 175H Order No.
13/16"	5"	9-1/2"	3	150H152	175H152
27/32"	5"	9-1/2"	3	150H154	175H154
7/8"	5"	9-1/2"	3	150H156	175H156
29/32"	5"	9-1/2"	3	150H158	175H158
15/16"	5"	9-1/2"	3	150H160	175H160
31/32"	5"	9-1/2"	3	150H162	175H162
1"	5"	9-1/2"	3	150H164	175H164
1-1/32"	5"	9-1/2"	3	150H202	175H202
1-1/16"	5"	9-1/2"	3	150H204	175H204
1-1/8"	5"	9-1/2"	3	150H208	175H208
1-3/16"	5"	9-1/2"	3	150H212	175H212
1-1/4"	5"	9-1/2"	3	150H216	175H216
1-5/16"	5"	10-1/2"	4	150H220	175H220
1-3/8"	5"	10-1/2"	4	150H224	175H224
1-7/16"	5"	10-1/2"	4	150H228	175H228
1-1/2"	5"	10-1/2"	4	150H232	175H232
1-9/16"	5"	10-1/2"	4	150H236	175H236
1-5/8"	5"	10-1/2"	4	150H240	175H240



Construction Reamers

For enlarging or aligning holes in structural steel, truck and trailer body framers, ship building, and bridge construction applications

- ▷ Especially adapted for heavy duty reaming
- ▷ Tapered at the point to facilitate entering of holes which are out of alignment
- ▷ Available in Spiral Flute and High Spiral Flute with 3-Flats Straight Shanks, or with Hex Nut Shanks
- ▷ Safety collar added on 4285 / 4285N series to help prevent over penetration
- ▷ All sizes are individually packaged



4275N / 4285N
High Speed Steel
3-Flats Reduced Shank



Size	Shank Dia.	Flute Length	Overall Length	Spiral Flute 4275N Order No.	High Spiral Flute 4285N Order No.
1/4"	1/4"	2-1/2"	4-3/8"	427N116	428N116
5/16"	5/16"	2-3/4"	4-5/8"	427N120	428N120
3/8"	3/8"	2-3/4"	4-5/8"	427N124	428N124
13/32"	13/32"	3-1/2"	5-3/8"	427N126	428N126
7/16"	7/16"	3-1/2"	5-3/8"	427N128	428N128
15/32"	15/32"	3-3/4"	5-7/8"	427N130	428N130
1/2"	1/2"	4"	5-7/8"	427N132	428N132
17/32"	1/2"	4"	5-7/8"	427N134	428N134
9/16"	1/2"	4"	5-7/8"	427N136	428N136
19/32"	1/2"	4-1/2"	6-3/8"	427N138	428N138
5/8"	1/2"	4-1/2"	6-3/8"	427N140	428N140
.652	1/2"	4-1/2"	6-3/8"	427N141	428N141
21/32"	1/2"	4-1/2"	6-3/8"	427N142	428N142
11/16"	1/2"	4-1/2"	6-3/8"	427N144	428N144
23/32"	1/2"	4-1/2"	6-3/8"	427N146	428N146
3/4"	1/2"	5"	6-7/8"	427N148	428N148
.776	1/2"	5"	6-7/8"	427N149	428N149

Size	Shank Dia.	Flute Length	Overall Length	Spiral Flute 4275N Order No.	High Spiral Flute 4285N Order No.
25/32"	1/2"	5"	6-7/8"	427N150	428N150
13/16"	1/2"	5"	6-7/8"	427N152	428N152
27/32"	1/2"	5"	6-7/8"	427N154	428N154
7/8"	1/2"	5"	6-7/8"	427N156	428N156
29/32"	1/2"	5"	6-7/8"	427N158	428N158
15/16"	1/2"	5"	6-7/8"	427N160	428N160
31/32"	1/2"	5"	6-7/8"	427N162	428N162
1"	1/2"	5"	6-7/8"	427N164	428N164
1.027	1/2"	5"	6-7/8"	427N201	428N201
1-1/16"	1/2"	5"	6-7/8"	427N204	428N204
1-1/8"	3/4"	5"	6-7/8"	427N208	428N208
1-3/16"	3/4"	5"	6-7/8"	427N212	428N212
1-1/4"	3/4"	5"	6-7/8"	427N216	428N216
1-5/16"	3/4"	5"	6-7/8"	427N220	428N220
1-3/8"	3/4"	5"	6-7/8"	427N224	428N224
1-7/16"	3/4"	5"	6-7/8"	427N228	428N228
1-1/2"	3/4"	5"	6-7/8"	427N232	428N232

Sizes 1-1/8" and above also available with 1/2" shank.
 Please call for price and availability.



No. of Pcs.	Sizes	4275N Order No.	4285N Order No.
Nitro® Construction Reamer Display Sets			
8	1 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N8D	428N8D
16	2 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N16D	428N16D
24	3 each of: 3/8, 7/16, 1/2, 9/16, 5/8, 11/16, 3/4, 13/16	427N24D	428N24D



4275 / 4275E*

High Speed Steel

Spiral Flute / 3-Flats Reduced Shank



4275

Size	Shank Dia.	Flute Length	Overall Length	4275 Order No.	4275E Order No.
1/4"	1/4"	2-1/2"	4-3/8"	427A116	-
5/16"	5/16"	2-3/4"	4-5/8"	427A120	427E120
3/8"	3/8"	2-3/4"	4-5/8"	427A124	427E124
13/32"	13/32"	3-1/2"	5-3/8"	427A126	-
7/16"	7/16"	3-1/2"	5-3/8"	427A128	427E128
1/2"	1/2"	4"	5-7/8"	427A132	427E132
17/32"	1/2"	3-3/4"	5-7/8"	427A134	-
9/16"	1/2"	4"	5-7/8"	427A136	427E136
19/32"	1/2"	4-1/4"	6-3/8"	427A138	-
39/64"	1/2"	4-1/4"	6-3/8"	427A139	-
5/8"	1/2"	4-1/2"	6-3/8"	427A140	427E140
.652	1/2"	4-1/2"	6-3/8"	427A141	-
21/32"	1/2"	4-1/2"	6-3/8"	427A142	-
11/16"	1/2"	4-1/2"	6-3/8"	427A144	427E144
23/32"	1/2"	4-1/2"	6-3/8"	427A146	-
3/4"	1/2"	5"	6-7/8"	427A148	427E148
.776"	1/2"	5"	6-7/8"	427A149	-
25/32"	1/2"	5"	6-7/8"	427A150	-
13/16"	1/2"	5"	6-7/8"	427A152	427E152
7/8"	1/2"	5"	6-7/8"	427A156	427E156
15/16"	1/2"	5"	6-7/8"	427A160	427E160
1"	1/2"	5"	6-7/8"	427A164	427E164
1-027	1/2"	5"	6-7/8"	427A201	-
1-1/16"	1/2"	5"	6-7/8"	427A204	427E204
1-3/32"	1/2"	5"	6-7/8"	427A206	-
1-1/8"	3/4"	5"	6-7/8"	427A208	-
1-3/16"	3/4"	5"	6-7/8"	427A212	-
1-1/4"	3/4"	5"	6-7/8"	427A216	-
1-5/16"	3/4"	5"	6-7/8"	427A220	-
1-3/8"	3/4"	5"	6-7/8"	427A224	-
1-7/16"	3/4"	5"	6-7/8"	427A228	-
1-1/2"	3/4"	5"	6-7/8"	427A232	-

Sizes 1-1/8" and above also available with 1/2" shank.
Please call for price and availability.
*Not Made in USA

4285

High Speed Steel

High Spiral Flute / 3-Flats Reduced Shank



4285

Size	Shank Dia.	Flute Length	Overall Length	4285 Order No.
1/4"	1/4"	2-1/2"	4-3/8"	428A116
5/16"	5/16"	2-3/4"	4-5/8"	428A120
3/8"	3/8"	2-3/4"	4-5/8"	428A124
13/32"	13/32"	3-1/2"	5-3/8"	428A126
7/16"	7/16"	3-1/2"	5-3/8"	428A128
15/32"	15/32"	3-3/4"	5-7/8"	428A130
1/2"	1/2"	4"	5-7/8"	428A132
17/32"	1/2"	4"	5-7/8"	428A134
9/16"	1/2"	4"	5-7/8"	428A136
19/32"	1/2"	4-1/2"	6-3/8"	428A138
5/8"	1/2"	4-1/2"	6-3/8"	428A140
.652	1/2"	4-1/2"	6-3/8"	428A141
21/32"	1/2"	4-1/2"	6-3/8"	428A142
11/16"	1/2"	4-1/2"	6-3/8"	428A144
23/32"	1/2"	4-1/2"	6-3/8"	428A146
3/4"	1/2"	5"	6-7/8"	428A148
.776"	1/2"	5"	6-7/8"	428A149
25/32"	1/2"	5"	6-7/8"	428A150
13/16"	1/2"	5"	6-7/8"	428A152
27/32"	1/2"	5"	6-7/8"	428A154
7/8"	1/2"	5"	6-7/8"	428A156
15/16"	1/2"	5"	6-7/8"	428A160
1"	1/2"	5"	6-7/8"	428A164
1.027	1/2"	5"	6-7/8"	428A201
1-1/32"	1/2"	5"	6-7/8"	428A202
1-1/16"	1/2"	5"	6-7/8"	428A204
1-1/8"	3/4"	5"	6-7/8"	428A208
1-3/16"	3/4"	5"	6-7/8"	428A212
1-1/4"	3/4"	5"	6-7/8"	428A216
1-5/16"	3/4"	5"	6-7/8"	428A220
1-3/8"	3/4"	5"	6-7/8"	428A224
1-7/16"	3/4"	5"	6-7/8"	428A228
1-1/2"	3/4"	5"	6-7/8"	428A232

Sizes 1-1/8" and above also available with 1/2" shank.
Please call for price and availability.



4290 / 4290E*

High Speed Steel

Spiral Flute / Hex Nut / Car Length



4290

Size	Hex Dia.	Flute Length	Overall Length	4290 Order No.	4290E Order No.
1/2"	1-1/16"	4"	5-1/2"	429A132	
9/16"	1-1/16"	4"	5-7/8"	429A136	
5/8"	1-1/16"	4-1/2"	6"	429A140	
11/16"	1-1/16"	4-1/2"	6-3/8"	429A144	429E144
3/4"	1-1/4"	5"	7"	429A148	
13/16"	1-1/4"	5"	7"	429A152	429E152
7/8"	1-7/16"	5"	7"	429A156	
15/16"	1-7/16"	5"	7"	429A160	429E160
1"	1-7/16"	5"	7"	429A164	
1-1/16"	1-5/8"	5"	7"	429A204	429E204
1-1/8"	1-5/8"	5"	5"	429A208	
1-3/16"	1-13/16"	5"	7"	429A212	
1-1/4"	1-13/16"	5"	7"	429A216	
1-5/16"	2"	5"	7-7/8"	429A220	
1-3/8"	2"	5"	7-7/8"	429A224	
1-7/16"	2"	5"	7-7/8"	429A228	
1-1/2"	2"	5"	7-7/8"	429A232	
1-9/16"	2"	5"	7-7/8"	429A236	

*Not Made in USA

125HX

High Speed Steel

Spiral Flute / Hex Nut / Bridge Length



125HX

Size	Hex Dia.	Flute Length	Overall Length	125HX Order No.
9/16"	1-1/16"	5-1/8"	6-7/8"	125HX136
5/8"	1-1/16"	6-1/8"	7-7/8"	125HX140
11/16"	1-1/16"	7-1/8"	9-1/4"	125HX144
3/4"	1-1/4"	7-3/8"	9-3/8"	125HX148
13/16"	1-1/4"	7-3/8"	9-3/8"	125HX152
7/8"	1-7/16"	7-3/8"	9-3/8"	125HX156
15/16"	1-7/16"	7-3/8"	9-3/8"	125HX160
1"	1-7/16"	7-3/8"	9-3/8"	125HX164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	125HX204
1-1/8"	1-5/8"	7-3/8"	9-3/8"	125HX208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	125HX212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	125HX216
1-5/16"	2"	7-3/8"	10"	125HX220
1-3/8"	2"	7-3/8"	10"	125HX224
1-7/16"	2"	7-3/8"	10"	125HX228
1-1/2"	2"	7-3/8"	10"	125HX232
1-9/16"	2"	7-3/8"	10"	125HX236
1-5/8"	2"	7-3/8"	10"	125HX240

150HX

High Speed Steel

Straight Flute / Hex Nut / Car Length



150HX

Size	Hex Dia.	Flute Length	Overall Length	150HX Order No.
1/2"	1-1/16"	4"	5-1/2"	150HX132
9/16"	1-1/16"	4"	5-1/2"	150HX136
5/8"	1-1/16"	4-1/2"	6"	150HX140
11/16"	1-1/16"	4-1/2"	6-3/8"	150HX144
3/4"	1-1/4"	5"	7"	150HX148
13/16"	1-1/4"	5"	7"	150HX152
7/8"	1-7/16"	5"	7"	150HX156
15/16"	1-7/16"	5"	7"	150HX160
1"	1-7/16"	5"	7"	150HX164
1-1/16"	1-5/8"	5"	7"	150HX204
1-1/8"	1-5/8"	5"	7"	150HX208
1-3/16"	1-13/16"	5"	7"	150HX212
1-1/4"	1-13/16"	5"	7"	150HX216
1-5/16"	2"	5"	7-7/8"	150HX220

100HX

High Speed Steel

Straight Flute / Hex Nut / Bridge Length



100HX

Size	Hex Dia.	Flute Length	Overall Length	100HX Order No.
9/16"	1-1/16"	5-1/8"	6-7/8"	100HX136
5/8"	1-1/16"	6-1/8"	7-7/8"	100HX140
11/16"	1-1/16"	7-1/8"	9-1/4"	100HX144
3/4"	1-1/4"	7-3/8"	9-3/8"	100HX148
13/16"	1-1/4"	7-3/8"	9-3/8"	100HX152
7/8"	1-7/16"	7-3/8"	9-3/8"	100HX156
15/16"	1-7/16"	7-3/8"	9-3/8"	100HX160
1"	1-7/16"	7-3/8"	9-3/8"	100HX164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	100HX204
1-1/8"	1-5/8"	7-3/8"	9-3/8"	100HX208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	100HX212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	100HX216
1-5/16"	2"	7-3/8"	10"	100HX220
1-3/8"	2"	7-3/8"	10"	100HX224
1-7/16"	2"	7-3/8"	10"	100HX228
1-1/2"	2"	7-3/8"	10"	100HX232
1-9/16"	2"	7-3/8"	10"	100HX236
1-5/8"	2"	7-3/8"	10"	100HX240

Construction Reamers **NITRO SAFETY FIRST**

Protect against the danger and loss of a falling reamer

- ▷ Manufactured from a premium grade of high-speed steel
- ▷ Body and clearance are black and gold surface treated for maximum lubricity
- ▷ Two NE040 Magnets are placed 180 degrees apart in hex nut to reduce the risk of the reamer falling out of the socket while in use
- ▷ Meets OSHA 29CFR Part 1926.759 (falling objects protection)
- ▷ All sizes are individually packaged

125SF

High Speed Steel

Spiral Flute / Hex Nut / Bridge Length



125SF

Size	Hex Dia.	Flute Length	Overall Length	125SF Order No.
9/16"	1-1/16"	5-1/8"	6-7/8"	125SF136
5/8"	1-1/16"	6-1/8"	7-7/8"	125SF140
11/16"	1-1/16"	7-1/8"	9-1/4"	125SF144
3/4"	1-1/4"	7-3/8"	9-3/8"	125SF148
13/16"	1-1/4"	7-3/8"	9-3/8"	125SF152
7/8"	1-7/16"	7-3/8"	9-3/8"	125SF156
15/16"	1-7/16"	7-3/8"	9-3/8"	125SF160
1"	1-7/16"	7-3/8"	9-3/8"	125SF164
1-1/16"	1-5/8"	7-3/8"	9-3/8"	125SF204

Size	Hex Dia.	Flute Length	Overall Length	125SF Order No.
1-1/8"	1-5/8"	7-3/8"	9-3/8"	125SF208
1-3/16"	1-13/16"	7-3/8"	9-3/8"	125SF212
1-1/4"	1-13/16"	7-3/8"	9-3/8"	125SF216
1-5/16"	2"	7-3/8"	10"	125SF220
1-3/8"	2"	7-3/8"	10"	125SF224
1-7/16"	2"	7-3/8"	10"	125SF228
1-1/2"	2"	7-3/8"	10"	125SF232
1-9/16"	2"	7-3/8"	10"	125SF236
1-5/8"	2"	7-3/8"	10"	125SF240

4290N

High Speed Steel

Spiral Flute / Hex Nut / Car Length



4290N

Size	Hex Dia.	Flute Length	Overall Length	4290N Order No.
1/2"	1-1/16"	4"	5-1/2"	429N132
9/16"	1-1/16"	4"	5-7/8"	429N136
5/8"	1-1/16"	4-1/2"	6"	429N140
11/16"	1-1/16"	4-1/2"	6-3/8"	429N144
3/4"	1-1/4"	5"	7"	429N148
13/16"	1-1/4"	5"	7"	429N152
7/8"	1-7/16"	5"	7"	429N156

Size	Hex Dia.	Flute Length	Overall Length	4290N Order No.
15/16"	1-7/16"	5"	7"	429N160
1"	1-7/16"	5"	7"	429N164
1-1/16"	1-5/8"	5"	7"	429N204
1-1/8"	1-5/8"	5"	7"	429N208
1-3/16"	1-13/16"	5"	7"	429N212
1-1/4"	1-13/16"	5"	7"	429N216
1-5/16"	2"	5"	7-7/8"	429N220



Alignment Reamers

- ▷ Black and Gold surface treatment
- ▷ For Cast Iron, Non-Ferrous Metals, Stainless Steel
- ▷ All sizes are individually packaged

TCR
High Speed Steel
3-Flat Shank



Size	Decimal Equivalent	Flute Length	Overall Length	Order No.	Pkg Qty
7/16"	.4375	2-1/4"	4"	072279	1
3/8"*	.3750	3-1/16"	5-1/4"	072280	1
1/2"	.5000	3-3/4"	5-15/16"	072281	1
9/16"	.5625	4-5/16"	6-9/16"	072282	1
5/8"	.6250	4-5/16"	6-9/16"	072283	1
11/16"	.6875	4-13/16"	7"	072284	1
3/4"	.7500	4-13/16"	7"	072285	1
13/16"	.8125	5-1/8"	7-1/4"	072286	1
7/8"	.8750	5-1/8"	7-1/4"	072287	1
15/16"	.9375	5-1/8"	7-1/4"	072288	1
1"	1.0000	5-1/8"	7-1/4"	072289	1
1-1/16"	1.0625	5-1/4"	7-1/4"	072291	1
1-1/8"***	1.1250	5-1/4"	7-1/4"	072292	1
1-3/16"***	1.1875	5-1/4"	7-1/4"	072293	1
1-1/4"***	1.2500	5-1/2"	7-1/2"	072294	1
1-5/16"***	1.3125	5-1/2"	7-1/2"	072295	1
1-3/8"***	1.3750	5-1/2"	7-1/2"	072296	1
1-7/16"***	1.4375	5-1/2"	7-1/2"	072297	1
1-1/2"***	1.5000	5-1/2"	7-1/2"	072298	1

*3/8" shank
 **3/4" shank

Set				
Style	Description	Pieces	Size Range	Order No.
TCR3	Resealable Plastic Tube	3 Piece	1/2", 5/8", 3/4"	072290



Chucking Reamers

Provides a smooth, accurate finish to a hole

- ▷ Designed for general purpose reaming in machines such as drill presses, turret lathes, and screw machines
- ▷ Shorter and deeper flutes than hand reamers
- ▷ Regularly pointed with a 45° chamfer
- ▷ Suitable for machine reaming a wide range of materials
- ▷ All sizes are individually packaged



4300E Straight Flute



4375E Spiral Flute

4300E / 4375E

Straight Shank / Right Hand Cut

Size	Flute Length	Overall Length	Straight Flute 4300E Order No.	Spiral Flute 4375E Order No.
1/8"	7/8"	3-1/2"	430E108	437E108
9/64"	1"	3-1/2"	430E109	437E109
5/32"	1"	4"	430E110	437E110
11/64"	1-1/8"	4"	430E111	437E111
3/16"	1-1/8"	4-1/2"	430E112	437E112
13/64"	1-1/4"	4-1/2"	430E113	437E113
7/32"	1-1/4"	5"	430E114	437E114
15/64"	1-1/2"	5"	430E115	437E115
1/4"	1-1/2"	6"	430E116	437E116
17/64"	1-1/2"	6"	430E117	437E117
9/32"	1-1/2"	6"	430E118	437E118
19/64"	1-1/2"	6"	430E119	437E119
5/16"	1-1/2"	6"	430E120	437E120
21/64"	1-1/2"	6"	430E121	437E121
11/32"	1-1/2"	6"	430E122	437E122
23/64"	1-3/4"	6"	430E123	437E123
3/8"	1-3/4"	7"	430E124	437E124
25/64"	1-3/4"	7"	430E125	437E125
13/32"	1-3/4"	7"	430E126	437E126
27/64"	1-3/4"	7"	430E127	437E127
7/16"	1-3/4"	7"	430E128	437E128
15/32"	1-3/4"	7"	430E130	437E130
1/2"	2"	8"	430E132	437E132
17/32"	2"	8"	430E134	437E134
9/16"	2"	8"	430E136	437E136

Size	Flute Length	Overall Length	Straight Flute 4300E Order No.	Spiral Flute 4375E Order No.
19/32"	2"	8"	430E138	437E138
5/8"	2-1/4"	9"	430E140	437E140
21/32"	2-1/4"	9"	430E142	437E142
11/16"	2-1/4"	9"	430E144	437E144
23/32"	2-1/4"	9"	430E146	437E146
3/4"	2-1/2"	9-1/2"	430E148	437E148
25/32"	2-1/2"	9-1/2"	430E150	437E150
13/16"	2-1/2"	9-1/2"	430E152	437E152
27/32"	2-1/2"	9-1/2"	430E154	437E154
7/8"	2-5/8"	10"	430E156	437E156
29/32"	2-5/8"	10"	430E158	437E158
15/16"	2-5/8"	10"	430E160	437E160
31/32"	2-5/8"	10"	430E162	437E162
1"	2-3/4"	10-1/2"	430E164	437E164
1-1/32"	2-3/4"	10-1/2"	430E202	-
1-1/16"	2-3/4"	10-1/2"	430E204	437E204
1-3/32"	2-3/4"	10-1/2"	430E206	-
1-1/8"	2-7/8"	11"	430E208	437E208
1-5/32"	2-7/8"	11"	430E210	-
1-3/16"	2-7/8"	11"	430E212	437E212
1-1/4"	3"	11-1/2"	430E216	437E216
1-5/16"	3"	11-1/2"	430E220	437E220
1-3/8"	3-1/4"	12"	430E224	437E224
1-7/16"	3-1/4"	12-1/2"	430E228	437E228
1-1/2"	3-1/2"	12-1/2"	430E232	437E232

4350E

Straight Flute / Straight Shank / Right Hand Cut



4350E

Size (mm)	Shank Dia.	Flute Length	Overall Length	4350E Order No.
2.5	2.5	20	70	435E025
3.0	3.0	20	70	435E030
3.2	3.2	22	80	435E032
3.5	3.5	22	80	435E035
4.0	4.0	22	80	435E040
4.5	4.5	22	80	435E045
5.0	5.0	25	90	435E050
6.0	6.0	28	100	435E060
7.0	7.0	30	110	435E070
8.0	8.0	32	120	435E080
9.0	9.0	36	130	435E090
10.0	10.0	40	140	435E110
11.0	9.0	40	145	435E111

Size (mm)	Shank Dia.	Flute Length	Overall Length	4350E Order No.
12.0	10.0	40	155	435E112
13.0	11.0	45	160	435E113
14.0	11.0	45	170	435E114
15.0	13.0	45	175	435E115
16.0	13.0	45	180	435E116
17.0	14.0	50	190	435E117
18.0	14.0	50	195	435E118
19.0	16.0	50	205	435E119
20.0	16.0	50	210	435E120
21.0	18.0	55	215	435E121
22.0	18.0	55	225	435E122
23.0	18.0	60	230	435E123
24.0	20.0	60	240	435E124

Hand Reamers

Widely used for final sizing of drilled holes, by hand

- ▷ The square on the shank-end is suitable for holding in a tap wrench or vise
- ▷ The cutting edge is ground with a starting taper to provide easy entry
- ▷ All sizes are individually packaged

4400E / 4450E

Straight Shank with Square



4400E Straight Flute

4450E Spiral Flute

Size	Flute Length	Overall Length	Straight Flute 4400E Order No.	Spiral Flute 4450E Order No.
1/8"	1-1/2"	3"	440E108	445E108
5/32"	1-5/8"	3-1/4"	440E110	445E110
11/64"	1-3/4"	3-1/2"	440E111	-
3/16"	1-3/4"	3-1/2"	440E112	445E112
7/32"	1-7/8"	3-3/4"	440E114	445E114
1/4"	2"	4"	440E116	445E116
9/32"	2-1/8"	4-1/4"	440E118	445E118
5/16"	2-1/4"	4-1/2"	440E120	445E120
11/32"	2-3/8"	4-3/4"	440E122	445E122
3/8"	2-1/2"	5"	440E124	445E124
13/32"	2-5/8"	5-1/4"	440E126	445E126
7/16"	2-3/4"	5-1/2"	440E128	445E128
15/32"	2-7/8"	5-3/4"	440E130	445E130
1/2"	3"	6"	440E132	445E132
17/32"	3-1/8"	6-1/4"	440E134	445E134
9/16"	3-1/4"	6-1/2"	440E136	445E136
19/32"	3-3/8"	6-3/4"	440E138	445E138
5/8"	3-1/2"	7"	440E140	445E140
21/32"	3-11/16"	7-3/8"	440E142	445E142

Size	Flute Length	Overall Length	Straight Flute 4400E Order No.	Spiral Flute 4450E Order No.
11/16"	3-7/8"	7-3/4"	440E144	445E144
23/32"	4-1/16"	8-1/8"	440E146	445E146
3/4"	4-3/16"	8-3/4"	440E148	445E148
25/32"	4-3/8"	8-3/4"	440E150	445E150
13/16"	4-9/16"	9-1/8"	440E152	445E152
27/32"	4-11/16"	9-3/8"	440E154	445E154
7/8"	4-7/8"	9-3/4"	440E156	445E156
29/32"	5"	10"	440E158	445E158
15/16"	5-1/8"	10-1/4"	440E160	445E160
31/32"	5-5/16"	10-5/8"	440E162	445E162
1"	5-7/16"	10-7/8"	440E164	445E164
1-1/16"	5-5/8"	11-1/4"	440E204	445E204
1-1/8"	5-13/16"	11-5/8"	440E208	445E208
1-3/16"	6"	12"	440E212	445E212
1-1/4"	6-1/8"	12-1/4"	440E216	445E216
1-5/16"	6-1/4"	12-1/2"	440E220	445E220
1-3/8"	6-5/16"	12-5/8"	440E224	445E224
1-7/16"	6-7/16"	12-7/8"	440E228	445E228
1-1/2"	6-1/2"	13"	440E232	445E232

Taper Pin Reamers

Used to finish, shape, or increase the size of holes for a near perfect fit when inserting taper pins into your work piece.

STRAIGHT FLUTE – for hand use in easy to ream materials

SPIRAL FLUTE – for hand use in hard to ream materials

HELICAL FLUTE – for machine reaming on a production basis. Helical design throws the chips forward to relieve packing of the flutes.

- ▷ *Designed to ream holes into which standard taper pins will fit*
- ▷ *Taper Pin Reamers are manufactured with a taper of 1/4" per foot*
- ▷ *Square shank allows hand (straight and spiral flute) reamers to be held in a tap wrench or vise*
- ▷ *All sizes are individually packaged*

4500E / 4550E / 4570E

Straight Shank with Square



4500E Straight Flute

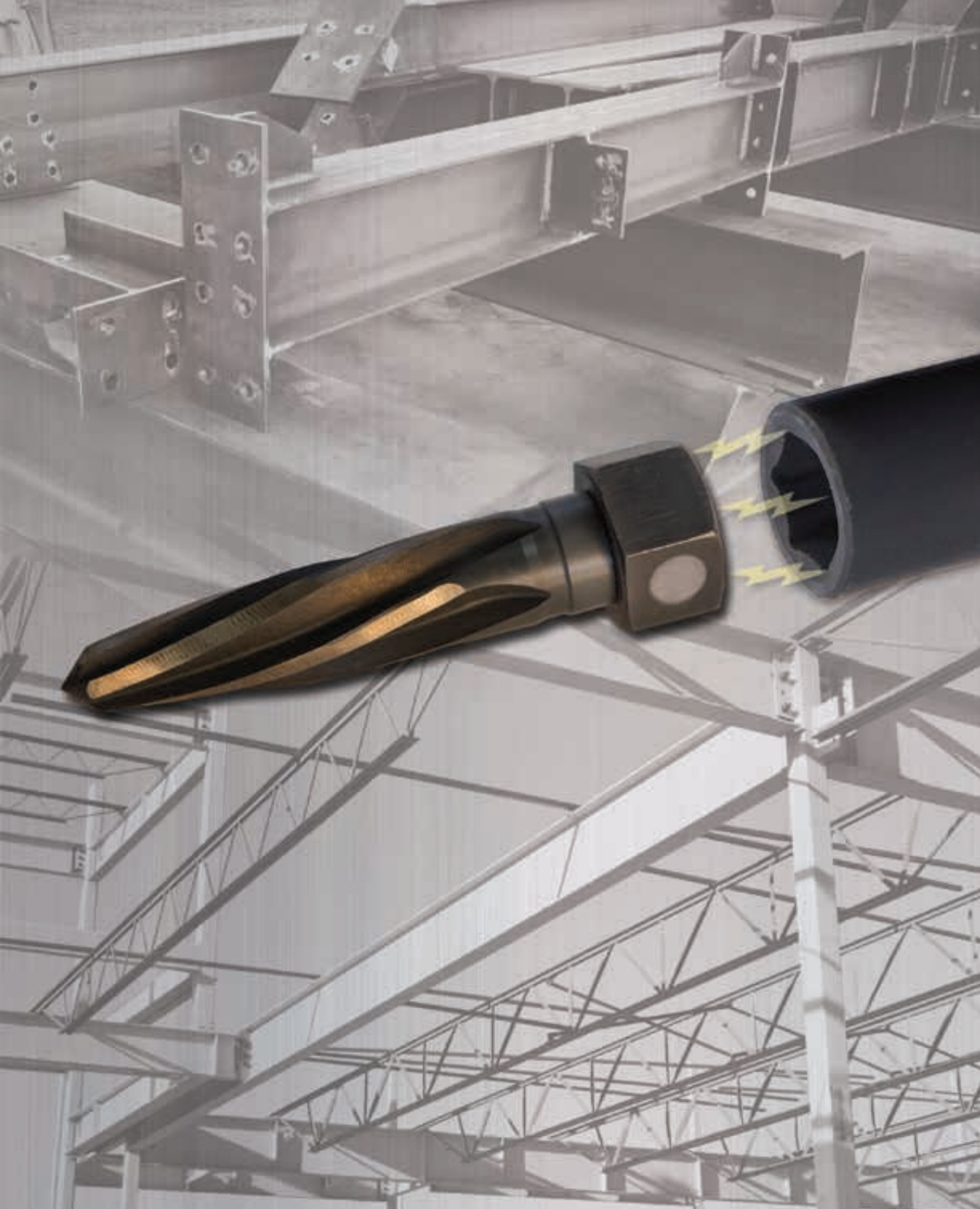


4550E Spiral Flute



4570E Helical Flute

Size	Shank Dia.	Flute Length	Overall Length	Small End Dia.	Large End Dia.	Straight Flute 4500E Order No.	Spiral Flute 4550E Order No.	Helical Flute 4570E Order No.
0	11/64"	1-11/16"	2-15/16"	.1287	.1638	450E000	455E000	457E000
2/0	5/32"	1-9/16"	2-9/16"	.1137	.1462	450E002	455E002	457E002
3/0	9/64"	1-5/16"	2-5/16"	.1029	.1302	450E003	455E003	457E003
4/0	1/8"	1-5/16"	2-5/16"	.0869	.1142	450E004	455E004	457E004
5/0	7/64"	1-3/16"	2-3/16"	.0719	.0966	450E005	455E005	457E005
6/0	3/32"	15/16"	1-15/16"	.0611	.0806	450E006	455E006	457E006
7/0	5/64"	13/16"	1-13/16"	.0497	.0666	450E007	455E007	457E007
1	3/16"	1-11/16"	2-15/16"	.1447	.1798	450E010	455E010	457E010
2	13/64"	1-15/16"	3-3/16"	.1605	.2008	450E020	455E020	457E020
3	15/64"	2-5/16"	3-11/16"	.1813	.2294	450E030	455E030	457E030
4	17/64"	2-9/16"	4-1/16"	.2071	.2604	450E040	455E040	457E040
5	5/16"	2-13/16"	4-5/16"	.2409	.2994	450E050	455E050	457E050
6	23/64"	3-11/16"	5-7/16"	.2773	.3540	450E060	455E060	457E060
7	13/32"	4-7/16"	6-5/16"	.3297	.4220	450E070	455E070	457E070
8	7/16"	5-3/16"	7-3/16"	.3971	.505	450E080	455E080	457E080
9	9/16"	6-1/16"	8-5/16"	.4805	.6066	450E090	455E090	457E090
10	5/8"	6-13/16"	9-5/16"	.5799	.7219	450E100	455E100	457E100



End Mills

Heavy-Duty Solid Carbide

Bright Finish
For steel, stainless steel, titanium, cast iron, brass, bronze

Type	Series	Catalog page reference
2 & 4-Flute Finishing	7200/7300	245
	7250/7350	
	7400/7500	
Ball Nose	7600/7700 7650/7750	246



Heavy-Duty Cobalt

Bright Finish
For most materials

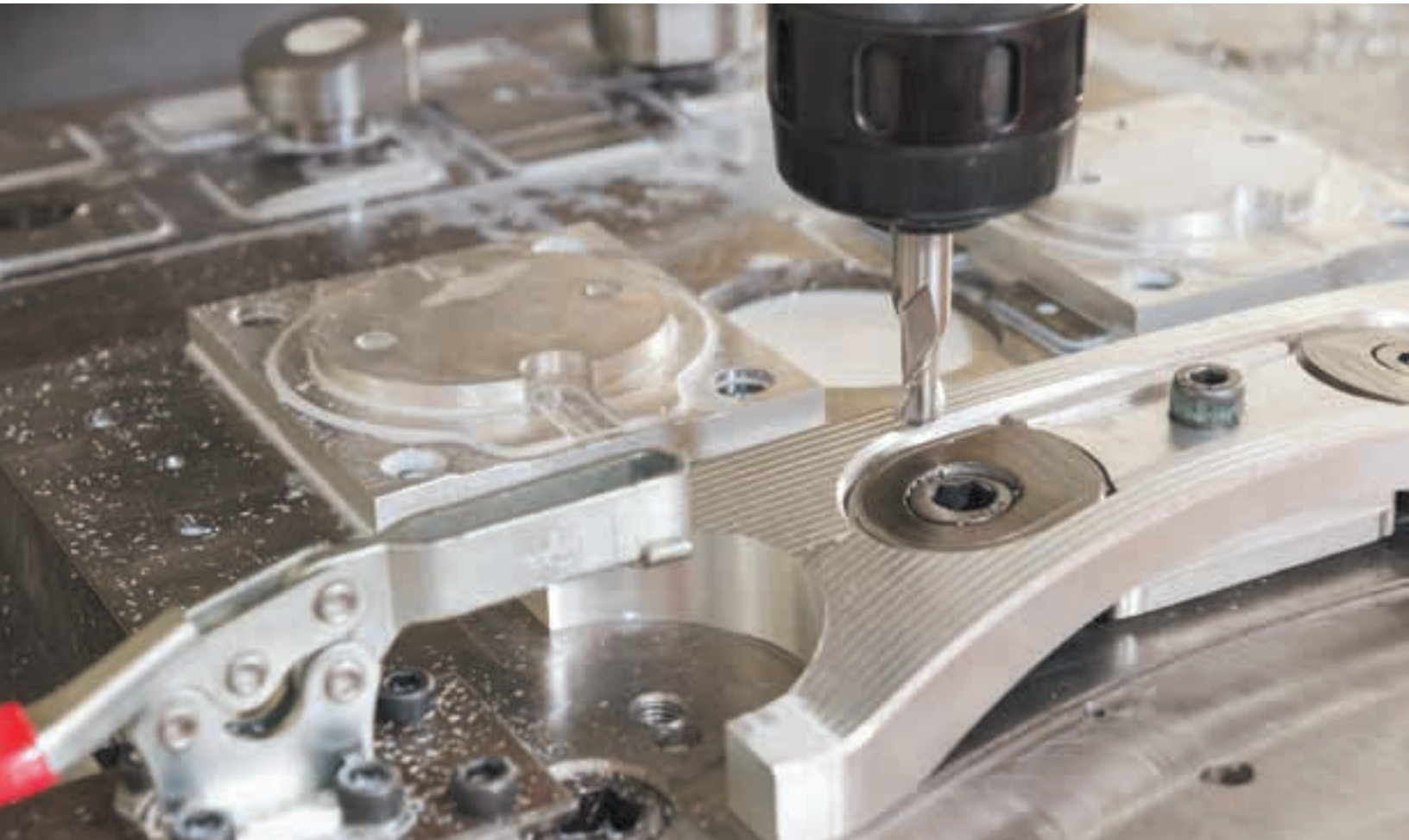
Type	Series	Catalog page reference
2-Flute Finishing	6500A, 6900A	253
Multi-Flute Finishing	6700A, 6725A 6750A, 6950A	254
Ball Nose	6650A	255
Roughing	7140	255



General Purpose High Speed Steel

Bright Finish
For low to medium tensile strength materials

Type	Series	Catalog page reference
2-Flute Finishing	5075A, 5000A	247
	5600A, 5400A	248
Multi-Flute Finishing	5100A	249
	5150A, 5250A, 5350A	250
	5650A, 5500A	251
Ball Nose	6400A, 6420A	252





2 & 4-Flute Finishing End Mills

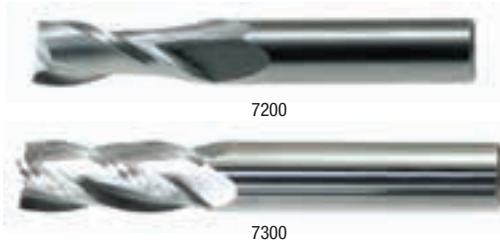
Solid carbide end mills often result in the lowest cost per operation. They can be run at impressive feed and speed rates, and offer impressive tool life.

- ▷ Run at extremely impressive feed and speed rates - 3x the rates of HSS end mills
- ▷ Better surface finish on the workpiece
- ▷ Extended tool life over conventional HSS and Cobalt end mills

7200 / 7300 2 & 4-Flute Finishing End Mills

Solid Carbide

Regular Length / Center Cutting / Single End Fractional / Bright



Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7200 Order No.	4-Flutes 7300 Order No.
1/32"	1/8"	5/64"	1-1/2"	72A102C	73A102C
3/64"	1/8"	7/64"	1-1/2"	72A103C	73A103C
1/16"	1/8"	3/16"	1-1/2"	72A104C	73A104C
5/64"	1/8"	3/16"	1-1/2"	72A105C	73A105C
3/32"	1/8"	9/32"	1-1/2"	72A106C	73A106C
7/64"	1/8"	3/8"	1-1/2"	72A107C	73A107C
1/8"	1/8"	3/8"	1-1/2"	72A108C	73A108C
9/64"	3/16"	1/2"	2"	72A109C	73A109C
5/32"	3/16"	1/2"	2"	72A110C	73A110C
11/64"	3/16"	5/8"	2"	72A111C	73A111C
3/16"	3/16"	5/8"	2"	72A112C	73A112C
7/32"	1/4"	5/8"	2-1/2"	72A114C	73A114C
1/4"	1/4"	3/4"	2-1/2"	72A116C	73A116C
9/32"	5/16"	3/4"	2-1/2"	72A118C	73A118C
5/16"	5/16"	13/16"	2-1/2"	72A120C	73A120C
11/32"	3/8"	1"	2-1/2"	72A122C	73A122C
3/8"	3/8"	1"	2-1/2"	72A124C	73A124C
13/32"	7/16"	1"	2-3/4"	72A126C	73A126C
7/16"	7/16"	1"	2-3/4"	72A128C	73A128C
15/32"	1/2"	1"	3"	72A130C	73A130C
1/2"	1/2"	1"	3"	72A132C	73A132C
9/16"	9/16"	1-1/8"	3-1/2"	72A136C	73A136C
5/8"	5/8"	1-1/4"	3-1/2"	72A140C	73A140C
11/16"	3/4"	1-3/8"	4"	72A144C	73A144C
3/4"	3/4"	1-1/2"	4"	72A148C	73A148C
7/8"	7/8"	1-1/2"	4"	72A156C	73A156C
1"	1"	1-1/2"	4"	72A164C	73A164C

7250 / 7350 2 & 4-Flute Finishing End Mills

Solid Carbide

Extra Long Length / Center Cutting / Single End Fractional / Bright



Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7250 Order No.	4-Flutes 7350 Order No.
1/8"	1/8"	1"	3"	725A108C	735A108C
3/16"	3/16"	1-1/8"	3"	725A112C	735A112C
1/4"	1/4"	1-1/2"	4"	725A116C	735A116C
5/16"	5/16"	1-5/8"	4"	725A120C	735A120C
3/8"	3/8"	1-3/4"	4"	725A124C	735A124C
7/16"	7/16"	3"	6"	725A128C	735A128C
1/2"	1/2"	3"	6"	725A132C	735A132C
5/8"	5/8"	3"	6"	725A140C	735A140C
3/4"	3/4"	3"	6"	725A148C	735A148C
1"	1"	3"	6"	725A164C	735A164C

7400 / 7500 2 & 4-Flute Finishing End Mills

Solid Carbide

Stub Length / Center Cutting / Double End Fractional / Bright



Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7400 Order No.	4-Flutes 7500 Order No.
1/32"	1/8"	5/64"	1-1/2"	74A102C	75A102C
3/64"	1/8"	3/32"	1-1/2"	74A103C	75A103C
1/16"	1/8"	1/8"	1-1/2"	74A104C	75A104C
5/64"	1/8"	5/32"	1-1/2"	74A105C	75A105C
3/32"	1/8"	3/16"	1-1/2"	74A106C	75A106C
7/64"	1/8"	7/32"	1-1/2"	74A107C	75A107C
1/8"	1/8"	1/4"	1-1/2"	74A108C	75A108C
9/64"	3/16"	9/32"	2"	74A109C	75A109C
5/32"	3/16"	5/16"	2"	74A110C	75A110C
3/16"	3/16"	3/8"	2"	74A112C	75A112C
7/32"	1/4"	1/2"	2-1/2"	74A114C	75A114C
1/4"	1/4"	1/2"	2-1/2"	74A116C	75A116C
5/16"	5/16"	1/2"	2-1/2"	74A120C	75A120C
3/8"	3/8"	1/2"	2-1/2"	74A124C	75A124C
7/16"	7/16"	9/16"	2-3/4"	74A128C	75A128C
1/2"	1/2"	5/8"	3"	74A132C	75A132C



Ball Nose End Mills

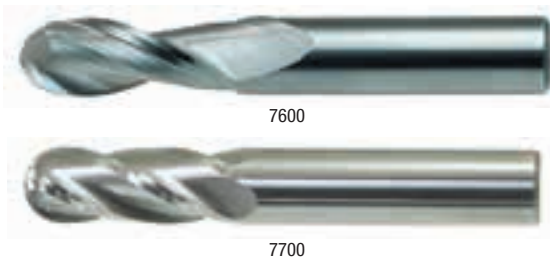
Ball nose end mills are used where rounded details must be machined in a part (for example, a slot with a rounded bottom). They are also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

- ▷ Have rounded end cutting edges
- ▷ Available as a center cutting tool only
- ▷ All sizes are individually packaged

7600 / 7700 Ball Nose End Mills

Solid Carbide

Regular Length / Center Cutting / Single End
Fractional / Bright



7600

7700

7650 / 7750 Ball Nose End Mills

Solid Carbide

Extra Long Length / Center Cutting / Single End
Fractional / Bright



7650

7750

Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7600 Order No.	4-Flutes 7700 Order No.
1/32"	1/8"	5/64"	1-1/2"	76A102C	77A102C
3/64"	1/8"	7/64"	1-1/2"	76A103C	77A103C
1/16"	1/8"	3/16"	1-1/2"	76A104C	77A104C
5/64"	1/8"	3/16"	1-1/2"	76A105C	77A105C
3/32"	1/8"	9/32"	1-1/2"	76A106C	77A106C
7/64"	1/8"	3/8"	1-1/2"	76A107C	77A107C
1/8"	1/8"	3/8"	1-1/2"	76A108C	77A108C
9/64"	3/16"	1/2"	2"	76A109C	77A109C
5/32"	3/16"	1/2"	2"	76A110C	77A110C
11/64"	3/16"	5/8"	2"	76A111C	77A111C
3/16"	3/16"	5/8"	2"	76A112C	77A112C
7/32"	1/4"	5/8"	2-1/2"	76A114C	77A114C
1/4"	1/4"	3/4"	2-1/2"	76A116C	77A116C
9/32"	5/16"	3/4"	2-1/2"	76A118C	77A118C
5/16"	5/16"	1"	2-1/2"	76A120C	77A120C
11/32"	3/8"	1"	2-1/2"	76A122C	77A122C
3/8"	3/8"	1"	2-1/2"	76A124C	77A124C
13/32"	7/16"	1"	2-3/4"	76A126C	77A126C
7/16"	7/16"	1"	2-3/4"	76A128C	77A128C
15/32"	1/2"	1"	3"	76A130C	77A130C
1/2"	1/2"	1"	3"	76A132C	77A132C
9/16"	9/16"	1-1/8"	3-1/2"	76A136C	77A136C
5/8"	5/8"	1-1/4"	3-1/2"	76A140C	77A140C
11/16"	3/4"	1-3/8"	4"	76A144C	77A144C
3/4"	3/4"	1-1/2"	4"	76A148C	77A148C
7/8"	7/8"	1-1/2"	4"	76A156C	77A156C
1"	1"	1-1/2"	4"	76A164C	77A164C

Size	Shank Dia.	Length of Cut	Overall Length	2-Flutes 7650 Order No.	4-Flutes 7750 Order No.
1/8"	1/8"	1"	3"	765A108C	775A108C
3/16"	3/16"	1-1/8"	3"	765A112C	775A112C
1/4"	1/4"	1-1/2"	4"	765A116C	775A116C
5/16"	5/16"	1-5/8"	4"	765A120C	775A120C
3/8"	3/8"	1-3/4"	4"	765A124C	775A124C
7/16"	7/16"	3"	6"	765A128C	775A128C
1/2"	1/2"	3"	6"	765A132C	775A132C
5/8"	5/8"	3"	6"	765A140C	775A140C
3/4"	3/4"	3"	6"	765A148C	775A148C
1"	1"	3"	6"	765A164C	775A164C



2-Flute Finishing End Mills

For general purpose milling in all types of materials.

- ▷ *Hard working center cutting tool*
- ▷ *Can be used for multiple operations, plunge cutting, slot milling, and profiling*
- ▷ *Ideal tool for milling operations that begin with a plunge cut and heavy cuts where the tool is "buried"*
- ▷ *2-flute end mills provide more efficient chip removal than multi-flute end mills*
- ▷ *All sizes are individually packaged*

5075A 2-Flute Finishing End Mills

High Speed Steel

Long Length / Center Cutting / Single End Fractional / Bright



5075A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5075A Order No.
1/4"	3/8"	1-1/4"	3-1/16"	2	507A116A
5/16"	3/8"	1-3/8"	3-1/8"	2	507A120A
3/8"	3/8"	1-1/2"	3-1/4"	2	507A124A
1/2"	1/2"	2"	4"	2	507A132B

5000A 2-Flute Finishing End Mills

High Speed Steel

Regular Length / Center Cutting / Single End Fractional / Bright



5000A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A Order No.
1/8"	3/8"	3/8"	2-5/16"	2	50A108A
11/64"	3/8"	7/16"	2-5/16"	2	50A111A
3/16"	3/8"	7/16"	2-5/16"	2	50A112A
13/64"	3/8"	1/2"	2-5/16"	2	50A113A
7/32"	3/8"	1/2"	2-5/16"	2	50A114A
15/64"	3/8"	1/2"	2-5/16"	2	50A115A
1/4"	3/8"	1/2"	2-5/16"	2	50A116A
17/64"	3/8"	9/16"	2-5/16"	2	50A117A
9/32"	3/8"	9/16"	2-5/16"	2	50A118A
19/64"	3/8"	9/16"	2-5/16"	2	50A119A
5/16"	3/8"	9/16"	2-5/16"	2	50A120A
21/64"	3/8"	9/16"	2-5/16"	2	50A121A
11/32"	3/8"	9/16"	2-5/16"	2	50A122A
23/64"	3/8"	9/16"	2-5/16"	2	50A123A
3/8"	3/8"	9/16"	2-5/16"	2	50A124A
25/64"	3/8"	13/16"	2-1/2"	2	50A125A
13/32"	3/8"	13/16"	2-1/2"	2	50A126A
27/64"	3/8"	13/16"	2-1/2"	2	50A127A
7/16"	3/8"	13/16"	2-1/2"	2	50A128A
29/64"	3/8"	13/16"	2-1/2"	2	50A129A
15/32"	3/8"	13/16"	2-1/2"	2	50A130A
1/2"	3/8"	13/16"	2-1/2"	2	50A132A
1/2"	1/2"	1"	3"	2	50A132B
17/32"	1/2"	1-1/8"	3-1/8"	2	50A134B
9/16"	1/2"	1-1/8"	3-1/8"	2	50A136B
19/32"	1/2"	1-1/8"	3-1/8"	2	50A138B
5/8"	1/2"	1-1/8"	3-1/8"	2	50A140B
5/8"	5/8"	1-5/16"	3-7/16"	2	50A140C
21/32"	5/8"	1-5/16"	3-5/16"	2	50A142C

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5000A Order No.
11/16"	1/2"	1-5/16"	3-5/16"	2	50A144B
11/16"	5/8"	1-5/16"	3-7/16"	2	50A144C
23/32"	3/4"	1-5/16"	3-5/16"	2	50A146D
3/4"	1/2"	1-5/16"	3-5/16"	2	50A148B
3/4"	5/8"	1-5/16"	3-7/16"	2	50A148C
3/4"	3/4"	1-5/16"	3-7/16"	2	50A148D
25/32"	3/4"	1-1/2"	3-5/8"	2	50A150D
13/16"	5/8"	1-1/2"	3-5/8"	2	50A152C
13/16"	3/4"	1-1/2"	3-3/4"	2	50A152D
27/32"	7/8"	1-1/2"	3-5/8"	2	50A154E
7/8"	5/8"	1-1/2"	3-5/8"	2	50A156C
7/8"	3/4"	1-1/2"	3-3/4"	2	50A156D
7/8"	7/8"	1-1/2"	3-3/4"	2	50A156E
29/32"	7/8"	1-1/2"	3-3/4"	2	50A158E
15/16"	5/8"	1-1/2"	3-5/8"	2	50A160C
15/16"	3/4"	1-1/2"	3-3/4"	2	50A160D
15/16"	7/8"	1-1/2"	3-3/4"	2	50A160E
31/32"	1"	1-1/2"	3-3/4"	2	50A162F
1"	5/8"	1-1/2"	3-5/8"	2	50A164C
1"	3/4"	1-1/2"	3-3/4"	2	50A164D
1"	7/8"	1-1/2"	3-3/4"	2	50A164E
1"	1"	1-5/8"	4-1/8"	2	50A164F
1-1/16"	3/4"	1-5/8"	3-7/8"	2	50A204D
1-1/8"	3/4"	1-5/8"	3-7/8"	2	50A208D
1-1/8"	1"	1-5/8"	4-1/8"	2	50A208F
1-3/16"	3/4"	1-5/8"	3-7/8"	2	50A212D
1-1/4"	3/4"	1-5/8"	3-7/8"	2	50A216D
1-1/4"	7/8"	1-5/8"	3-7/8"	2	50A216E
1-1/4"	1"	1-5/8"	4-1/8"	2	50A216F
1-1/4"	1-1/4"	1-5/8"	4-1/8"	2	50A216G
1-3/8"	3/4"	1-5/8"	3-7/8"	2	50A224D
1-3/8"	1"	1-5/8"	4-1/8"	2	50A224F
1-1/2"	3/4"	1-5/8"	4-1/8"	2	50A232D
1-1/2"	1"	1-5/8"	4-1/8"	2	50A232F
1-1/2"	1-1/4"	1-5/8"	4-1/8"	2	50A232G
1-5/8"	1-1/4"	1-5/8"	4-1/8"	2	50A240G
1-3/4"	3/4"	1-5/8"	4-1/8"	2	50A248D
1-3/4"	1-1/4"	1-5/8"	4-1/8"	2	50A248G
1-7/8"	1-1/4"	1-5/8"	4-1/8"	2	50A256G
2"	3/4"	1-5/8"	4-1/8"	2	50A264D
2"	1-1/4"	1-5/8"	4-1/8"	2	50A264G

5600A 2-Flute Finishing End Mills

High Speed Steel

Regular Length / Center Cutting / Single End
Metric / Bright



5600A

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5600A Order No.
3.0	3/8"	5/16"	2-5/16"	2	560A030
3.5	3/8"	7/16"	2-5/16"	2	560A035
4.0	3/8"	7/16"	2-5/16"	2	560A040
4.5	3/8"	1/2"	2-5/16"	2	560A045
5.0	3/8"	1/2"	2-5/16"	2	560A050
5.5	3/8"	1/2"	2-5/16"	2	560A055
6.0	3/8"	1/2"	2-5/16"	2	560A060
6.5	3/8"	9/16"	2-5/16"	2	560A065
7.0	3/8"	9/16"	2-5/16"	2	560A070
8.0	3/8"	9/16"	2-5/16"	2	560A080
9.0	3/8"	9/16"	2-5/16"	2	560A090
10.0	3/8"	13/16"	2-1/2"	2	560A100
10.5	3/8"	13/16"	2-1/2"	2	560A105
11.0	3/8"	13/16"	2-1/2"	2	560A110
12.0	3/8"	13/16"	2-1/2"	2	560A120

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5600A Order No.
12.5	1/2"	1-1/8"	3-1/8"	2	560A125
13.0	1/2"	1-1/8"	3-1/8"	2	560A130
13.5	1/2"	1-1/8"	3-1/8"	2	560A135
14.0	1/2"	1-1/8"	3-3/8"	2	560A140
14.5	1/2"	1-1/8"	3-1/8"	2	560A145
15.0	1/2"	1-1/8"	3-1/2"	2	560A150
16.0	5/8"	1-5/16"	3-7/16"	2	560A160
18.0	5/8"	1-5/16"	3-7/16"	2	560A180
20.0	5/8"	1-1/2"	3-3/4"	2	560A200
22.0	3/4"	1-1/2"	3-3/4"	2	560A220
23.0	7/8"	1-1/2"	3-3/4"	2	560A230
24.0	3/4"	2"	4-1/2"	2	560A240
25.0	1"	2"	4-1/2"	2	560A250
32.0	1"	2"	4-1/2"	2	560A320

5400A 2-Flute Finishing End Mills

High Speed Steel

Regular Length / Center Cutting / Double End
Fractional / Bright



5400A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5400A Order No.
1/8"	3/8"	3/8"	3-1/16"	2	54A108A
5/32"	3/8"	7/16"	3-1/8"	2	54A110A
3/16"	3/8"	7/16"	3-1/8"	2	54A112A
7/32"	3/8"	1/2"	3-1/8"	2	54A114A
1/4"	3/8"	1/2"	3-1/8"	2	54A116A
9/32"	3/8"	9/16"	3-1/8"	2	54A118A
5/16"	3/8"	9/16"	3-1/8"	2	54A120A
11/32"	3/8"	9/16"	3-1/8"	2	54A122A
3/8"	3/8"	9/16"	3-1/8"	2	54A124A
13/32"	1/2"	13/16"	3-3/4"	2	54A126B
7/16"	1/2"	13/16"	3-3/4"	2	54A128B

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5400A Order No.
15/32"	1/2"	13/16"	3-3/4"	2	54A130B
1/2"	1/2"	13/16"	3-3/4"	2	54A132B
9/16"	5/8"	1-1/8"	4-1/2"	2	54A136C
5/8"	5/8"	1-1/8"	4-1/2"	2	54A140C
11/16"	3/4"	1-5/16"	5"	2	54A144D
3/4"	3/4"	1-5/16"	5"	2	54A148D
13/16"	7/8"	1-9/16"	5-1/2"	2	54A152E
7/8"	7/8"	1-9/16"	5-1/2"	2	54A156E
15/16"	1"	1-5/8"	5-7/8"	2	54A160F
1"	1"	1-5/8"	5-7/8"	2	54A164F



Multi-Flute Finishing End Mills

- ▷ Provide a better finishing capability than the 2-flute end mill
- ▷ Cutting action is smoother than that of the 2-flute end mill, with less chatter and flutter
- ▷ Have ample chip carrying capacity
- ▷ Multi-flute end mills are preferred for profiling, side milling, and shallow slotting applications
- ▷ All sizes are individually packaged
- ▷ Non-center cutting end mills have cutting edges only on the sides and are used only for side milling

5100A Multi-Flute Finishing End Mills

High Speed Steel

Regular Length / Non-Center Cutting / Single End
Fractional / Bright



5100A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	51A108A
11/64"	3/8"	1/2"	2-3/8"	4	51A111A
3/16"	3/8"	1/2"	2-3/8"	4	51A112A
13/64"	3/8"	9/16"	2-7/16"	4	51A113A
7/32"	3/8"	9/16"	2-7/16"	4	51A114A
15/64"	3/8"	5/8"	2-7/16"	4	51A115A
1/4"	3/8"	5/8"	2-7/16"	4	51A116A
17/64"	3/8"	11/16"	2-7/16"	4	51A117A
9/32"	3/8"	11/16"	2-7/16"	4	51A118A
19/64"	3/8"	3/4"	2-1/2"	4	51A119A
5/16"	3/8"	3/4"	2-1/2"	4	51A120A
21/64"	3/8"	3/4"	2-1/2"	4	51A121A
11/32"	3/8"	3/4"	2-1/2"	4	51A122A
23/64"	3/8"	3/4"	2-1/2"	4	51A123A
3/8"	3/8"	3/4"	2-1/2"	4	51A124A
25/64"	3/8"	1"	2-11/16"	4	51A125A
13/32"	3/8"	1"	2-11/16"	4	51A126A
27/64"	3/8"	1"	2-11/16"	4	51A127A
7/16"	3/8"	1"	2-11/16"	4	51A128A
29/64"	1/2"	1-1/4"	3-1/4"	4	51A129A
15/32"	1/2"	1-1/4"	3-1/4"	4	51A130A
31/64"	1/2"	1-1/4"	3-1/4"	4	51A131A
1/2"	3/8"	1"	2-11/16"	4	51A132A
1/2"	1/2"	1-1/4"	3-1/4"	4	51A132B
17/32"	1/2"	1-3/8"	3-3/8"	4	51A134B
9/16"	1/2"	1-3/8"	3-3/8"	4	51A136B
19/32"	1/2"	1-3/8"	3-3/8"	4	51A138B
5/8"	1/2"	1-3/8"	3-3/8"	4	51A140B
5/8"	5/8"	1-5/8"	3-3/4"	4	51A140C
21/32"	5/8"	1-5/8"	3-3/4"	4	51A142C
11/16"	1/2"	1-5/8"	3-5/8"	4	51A144B
11/16"	5/8"	1-5/8"	3-3/4"	4	51A144C
23/32"	3/4"	1-5/8"	3-7/8"	4	51A146D
3/4"	1/2"	1-5/8"	3-5/8"	4	51A148B
3/4"	5/8"	1-5/8"	3-3/4"	4	51A148C
3/4"	3/4"	1-5/8"	3-7/8"	4	51A148D

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5100A Order No.
25/32"	3/4"	1-7/8"	4-1/8"	4	51A150D
13/16"	5/8"	1-7/8"	4"	6	51A152C
13/16"	3/4"	1-7/8"	4-1/8"	4	51A152D
27/32"	5/8"	1-7/8"	4"	4	51A154E
7/8"	1/2"	1-5/8"	3-5/8"	4	51A156B
7/8"	5/8"	1-7/8"	4"	6	51A156C
7/8"	3/4"	1-7/8"	4-1/8"	4	51A156D
7/8"	7/8"	1-7/8"	4-1/8"	4	51A156E
29/32"	7/8"	1-7/8"	4-1/8"	6	51A158E
15/16"	5/8"	1-7/8"	4"	6	51A160C
15/16"	3/4"	1-7/8"	4-1/8"	4	51A160D
15/16"	7/8"	1-7/8"	4-1/8"	4	51A160E
1"	5/8"	1-7/8"	4"	6	51A164C
1"	3/4"	1-7/8"	4-1/8"	4	51A164D
1"	7/8"	1-7/8"	4-1/8"	4	51A164E
1"	1"	2"	4-1/2"	4	51A164F
1-1/16"	3/4"	2"	4-1/4"	6	51A204D
1-1/8"	3/4"	2"	4-1/4"	6	51A208D
1-1/8"	7/8"	2"	4-1/2"	6	51A208E
1-1/8"	1"	2"	4-1/2"	6	51A208F
1-1/4"	3/4"	2"	4-1/4"	6	51A216D
1-1/4"	7/8"	2"	4-1/2"	6	51A216E
1-1/4"	1"	2"	4-1/2"	6	51A216F
1-1/4"	1-1/4"	2"	4-1/2"	6	51A216G
1-3/8"	3/4"	2"	4-1/4"	6	51A224D
1-3/8"	1"	2"	4-1/2"	6	51A224F
1-1/2"	1"	2"	4-1/2"	6	51A232F
1-1/2"	1-1/4"	2"	4-1/2"	4	51A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	51A232H
1-5/8"	1-1/4"	2"	4-1/2"	6	51A240G
1-3/4"	1-1/4"	2"	4-1/2"	4	51A248G
1-3/4"	1-1/4"	2"	4-1/2"	6	51A248H
1-7/8"	1-1/4"	2"	4-1/2"	6	51A256H
2"	3/4"	2"	4-1/2"	8	51A264D
2"	1-1/4"	2"	4-1/2"	6	51A264G
2"	1-1/4"	2"	4-1/2"	8	51A264H



5150A Multi-Flute Finishing End Mills

High Speed Steel

Regular Length / Center Cutting / Single End
Fractional / Bright



5150A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5150A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	515A108A
3/16"	3/8"	1/2"	2-3/8"	4	515A112A
7/32"	3/8"	5/8"	2-7/16"	4	515A114A
1/4"	3/8"	5/8"	2-7/16"	4	515A116A
9/32"	3/8"	11/16"	2-1/2"	4	515A118A
5/16"	3/8"	3/4"	2-1/2"	4	515A120A
11/32"	3/8"	3/4"	2-1/2"	4	515A122A
3/8"	3/8"	3/4"	2-1/2"	4	515A124A
13/32"	3/8"	1"	2-11/16"	4	515A126A
7/16"	3/8"	1"	2-11/16"	4	515A128A
15/32"	3/8"	1"	2-11/16"	4	515A130A
1/2"	1/2"	1-1/4"	3-1/4"	4	515A132B
9/16"	1/2"	1-3/8"	3-3/8"	4	515A136B
5/8"	1/2"	1-3/8"	3-3/8"	4	515A140B
5/8"	5/8"	1-5/8"	3-3/4"	4	515A140C

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5150A Order No.
11/16"	5/8"	1-5/8"	3-3/4"	4	515A144C
3/4"	3/4"	1-5/8"	3-7/8"	4	515A148D
3/4"	3/4"	1-5/8"	3-7/8"	6	515A148E
13/16"	3/4"	1-7/8"	4-1/8"	4	515A152D
7/8"	7/8"	1-7/8"	4-1/8"	4	515A156E
15/16"	3/4"	1-7/8"	4-1/8"	4	515A160E
1"	1"	2"	4-1/2"	4	515A164F
1"	1"	2"	4-1/2"	6	515A164G
1-1/8"	1"	2"	4-1/2"	4	515A208F
1-1/8"	1"	2"	4-1/2"	6	515A208G
1-1/4"	1-1/4"	2"	4-1/2"	6	515A216H
1-1/2"	1-1/4"	2"	4-1/2"	4	515A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	515A232H
1-3/4"	1-1/4"	2"	4-1/2"	6	515A248G
2"	1-1/4"	2"	4-1/2"	6	515A264G

5250A Multi-Flute Finishing End Mills

High Speed Steel

Long Length / Center Cutting / Single End
Fractional / Bright



5250A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5250A Order No.
1/4"	3/8"	1-1/4"	3-1/16"	4	525A116A
5/16"	3/8"	1-3/8"	3-1/8"	4	525A120A
3/8"	3/8"	1-1/2"	3-1/4"	4	525A124A
1/2"	1/2"	2"	4"	4	525A132B
5/8"	5/8"	2-1/2"	4-5/8"	4	525A140C
3/4"	3/4"	3"	5-1/4"	4	525A148D
3/4"	3/4"	3"	5-1/4"	6	525A148H
7/8"	7/8"	3-1/2"	5-3/4"	4	525A156E
7/8"	7/8"	3-1/2"	5-3/4"	6	525A156H

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5250A Order No.
1"	1"	4"	6-1/2"	4	525A164F
1"	1"	4"	6-1/2"	6	525A164H
1-1/4"	1-1/4"	4"	6-1/2"	4	525A216G
1-1/4"	1-1/4"	4"	6-1/2"	6	525A216H
1-1/2"	1-1/4"	4"	6-1/2"	4	525A232G
1-1/2"	1-1/4"	4"	6-1/2"	6	525A232H
2"	1-1/4"	4"	6-1/2"	6	525A264G
2"	2"	6"	9-3/4"	6	525A264J

5350A Multi-Flute Finishing End Mills

High Speed Steel

Extra-Long Length / Center Cutting / Single End
Fractional / Bright



5350A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5350A Order No.
1/4"	3/8"	1-3/4"	3-9/16"	4	535A116A
5/16"	3/8"	2"	3-3/4"	4	535A120A
3/8"	3/8"	2-1/2"	4-1/4"	4	535A124A
15/32"	1/2"	3"	5"	4	535A130A
1/2"	1/2"	3"	5"	4	535A132B
5/8"	5/8"	4"	6-1/8"	4	535A140C
3/4"	3/4"	4"	6-1/4"	4	535A148D
3/4"	3/4"	4"	6-1/4"	6	535A148H

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5350A Order No.
7/8"	7/8"	5"	7-1/4"	4	535A156E
7/8"	7/8"	5"	7-1/4"	6	535A156H
1"	1"	6"	8-1/2"	4	535A164F
1"	1"	6"	8-1/2"	6	535A164H
1-1/4"	1-1/4"	6"	8-1/2"	6	535A216H
2"	2"	6"	9-3/4"	6	535A264G



5650A Multi-Flute Finishing End Mills

High Speed Steel

Regular Length / Center Cutting / Single End
Metric / Bright



5650A

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5650A Order No.
3.0	3/8"	3/8"	2-5/16"	4	565A030
3.5	3/8"	1/2"	2-3/8"	4	565A035
4.0	3/8"	1/2"	2-3/8"	4	565A040
4.5	3/8"	9/16"	2-1/2"	4	565A045
5.0	3/8"	9/16"	2-1/2"	4	565A050
5.5	3/8"	5/8"	2-1/2"	4	565A055
6.0	3/8"	5/8"	2-1/2"	4	565A060
7.0	3/8"	11/16"	2-1/2"	4	565A070
8.0	3/8"	3/4"	2-1/2"	4	565A080
8.5	3/8"	3/4"	2-1/2"	4	565A085
9.0	3/8"	3/4"	2-1/2"	4	565A090
10.0	3/8"	1"	2-11/16"	4	565A100
10.5	3/8"	1"	2-11/16"	4	565A105
11.0	3/8"	1"	2-11/16"	4	565A110
12.0	1/2"	1"	2-11/16"	4	565A120
12.5	1/2"	1-1/4"	3-1/4"	4	565A125

Size (mm)	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5650A Order No.
13.0	1/2"	1-1/4"	3-1/4"	4	565A130
14.0	1/2"	1-3/8"	3-3/8"	4	565A140
15.0	1/2"	1-1/8"	3-3/8"	4	565A150
16.0	5/8"	1-5/8"	3-3/4"	4	565A160
18.0	5/8"	1-5/8"	3-3/4"	4	565A180
20.0	5/8"	1-7/8"	4-1/8"	4	565A200
21.0	5/8"	1-7/8"	4-1/8"	4	565A210
22.0	7/8"	1-7/8"	4-1/8"	4	565A220
23.0	7/8"	1-7/8"	4-1/8"	4	565A230
24.0	7/8"	2"	4-1/2"	4	565A240
25.0	7/8"	2"	4-1/2"	4	565A250
32.0	7/8"	2"	4-1/2"	4	565A320
36.0	7/8"	2"	4-1/2"	4	565A360
40.0	1-1/4"	2"	4-1/2"	4	565A400
45.0	1-1/4"	2"	4-1/2"	4	565A450

5500A Multi-Flute Finishing End Mills

High Speed Steel

Regular Length / Center Cutting / Double End
Fractional / Bright



5500A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5500A Order No.
1/8"	3/8"	3/8"	3-1/16"	4	55A108A
5/32"	3/8"	7/16"	3-1/8"	4	55A110A
3/16"	3/8"	1/2"	3-1/4"	4	55A112A
7/32"	3/8"	9/16"	3-1/4"	4	55A114A
1/4"	3/8"	5/8"	3-3/8"	4	55A116A
9/32"	3/8"	11/16"	3-3/8"	4	55A118A
5/16"	3/8"	3/4"	3-1/2"	4	55A120A
11/32"	3/8"	3/4"	3-1/2"	4	55A122A
3/8"	3/8"	3/4"	3-1/2"	4	55A124A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	5500A Order No.
13/32"	1/2"	1"	4-1/8"	4	55A126B
7/16"	1/2"	1"	4-1/8"	4	55A128B
15/32"	1/2"	1"	4-1/8"	4	55A130B
1/2"	1/2"	1"	4-1/8"	4	55A132B
5/8"	5/8"	1-3/8"	5"	4	55A140C
3/4"	3/4"	1-5/8"	5-5/8"	4	55A148D
7/8"	7/8"	1-7/8"	6-1/8"	4	55A156E
1"	1"	1-7/8"	6-3/8"	4	55A164F

Ball Nose End Mills

Ball nose end mills are used where rounded details must be machined in a part (for example, a slot with a rounded bottom). They are also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

- ▷ *Have rounded end cutting edges*
- ▷ *Available as a center cutting tool only*
- ▷ *All sizes are individually packaged*

6400A 2-Flute Ball Nose End Mills

High Speed Steel

Regular Length / Center Cutting / Single End
Fractional/Bright



6400A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6400A Order No.
1/8"	3/8"	3/8"	2-5/16"	2	640A108A
3/16"	3/8"	1/2"	2-3/8"	2	640A112A
1/4"	3/8"	5/8"	2-7/16"	2	640A116A
5/16"	3/8"	3/4"	2-1/2"	2	640A120A
3/8"	3/8"	3/4"	2-1/2"	2	640A124A
7/16"	1/2"	1"	3"	2	640A128B
1/2"	1/2"	1"	3"	2	640A132B
9/16"	1/2"	1-1/8"	3-1/8"	2	640A136B
5/8"	1/2"	1-1/8"	3-1/8"	2	640A140B
5/8"	5/8"	1-3/8"	3-1/2"	2	640A140C
3/4"	1/2"	1-5/16"	3-5/16"	2	640A148B
3/4"	3/4"	1-5/8"	3-7/8"	2	640A148D
13/16"	3/4"	2"	4-1/4"	2	640A152D
7/8"	3/4"	2"	4-1/4"	2	640A156D
7/8"	7/8"	2"	4-1/4"	2	640A156E
15/16"	3/4"	2-1/4"	4-1/2"	2	640A160D
1"	3/4"	2-1/4"	4-1/2"	2	640A164D
1"	1"	2-1/4"	4-3/4"	2	640A164F
1-1/8"	1"	2-1/4"	4-3/4"	2	640A208F
1-1/4"	1-1/4"	2-1/2"	5"	2	640A216G
1-1/2"	1-1/4"	2-1/2"	5"	2	640A232G

6420A 4-Flute Ball Nose End Mills

High Speed Steel

Regular Length / Center Cutting / Single End
Fractional/Bright



6420A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6420A Order No.
1/4"	3/8"	5/8"	2-7/16"	4	642A116A
5/16"	3/8"	3/4"	2-1/2"	4	642A120A
3/8"	3/8"	3/4"	2-1/2"	4	642A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	642A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	642A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	642A148D
1"	1"	2"	4-1/2"	4	642A164F



2-Flute Finishing End Mills

Cobalt end mills offer increased heat and wear resistance over standard HSS end mills. This results in faster operation rates, and longer tool life.

- ▷ Cobalt end mills run about 10% faster than conventional HSS end mills
- ▷ Shorter machining times and permits fuller utilization of available machine horsepower
- ▷ Retain their sharpness for longer, providing more cuts between grinds and less machine downtime, resulting in lower end mill tooling costs
- ▷ All sizes are individually packaged

6500A 2-Flute Finishing End Mills

Cobalt

Regular Length / Center Cutting / Single End
Fractional / Bright



6500A

6900A 2-Flute Finishing End Mills

Cobalt

Regular Length / Center Cutting / Double End
Fractional / Bright



6900A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6500A Order No.
1/8"	3/8"	3/8"	2-5/16"	2	650A108A
3/16"	3/8"	7/16"	2-5/16"	2	650A112A
1/4"	3/8"	1/2"	2-5/16"	2	650A116A
5/16"	3/8"	9/16"	2-5/16"	2	650A120A
3/8"	3/8"	9/16"	2-5/16"	2	650A124A
7/16"	3/8"	13/16"	2-1/2"	2	650A128A
1/2"	1/2"	1"	3"	2	650A132B
5/8"	5/8"	1-5/16"	3-7/16"	2	650A140C
3/4"	3/4"	2-1/4"	4-1/2"	2	650A148C
3/4"	3/4"	1-5/16"	3-7/16"	2	650A148D
1"	1"	1-5/8"	4-1/8"	2	650A164F

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6900A Order No.
1/8"	3/8"	3/8"	3-1/16"	2	690A108A
5/32"	3/8"	7/16"	3-1/8"	2	690A110A
3/16"	3/8"	7/16"	3-1/8"	2	690A112A
7/32"	3/8"	1/2"	3-1/4"	2	690A114A
1/4"	3/8"	1/2"	3-3/8"	2	690A116A
9/32"	3/8"	9/16"	3-3/8"	2	690A118A
5/16"	3/8"	9/16"	3-1/2"	2	690A120A
3/8"	3/8"	9/16"	3-1/2"	2	690A124A
1/2"	1/2"	13/16"	3-3/4"	2	690A132B
5/8"	5/8"	1-1/8"	4-1/2"	2	690A140C
3/4"	3/4"	1-5/16"	5"	2	690A148D

Multi-Flute Finishing End Mills

Cobalt end mills offer increased heat and wear resistance over standard HSS end mills. This results in faster operation rates, and longer tool life.

- ▷ Run about 10% faster than conventional HSS end mills
- ▷ Shorter machining times and permits fuller utilization of available machine horsepower
- ▷ All sizes are individually packaged

6700A Multi-Flute Finishing End Mills

Cobalt

Regular Length / Center Cutting / Single End Fractional / Bright



6700A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6700A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	670A108A
3/16"	3/8"	1/2"	2-3/8"	4	670A112A
1/4"	3/8"	5/8"	2-7/16"	4	670A116A
5/16"	3/8"	3/4"	2-1/2"	4	670A120A
3/8"	3/8"	3/4"	2-1/2"	4	670A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	670A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	670A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	670A148D
3/4"	3/4"	1-5/8"	3-7/8"	6	670A148J
1"	1"	2"	4-1/2"	4	670A164F
1-1/4"	1-1/4"	2"	4-1/2"	4	670A216G
1-1/4"	1-1/4"	2"	4-1/2"	6	670A216J
1-1/2"	1-1/4"	2"	4-1/2"	4	670A232G
1-1/2"	1-1/4"	2"	4-1/2"	6	670A232J
2"	1-1/4"	2"	4-1/2"	6	670A264G

6725A Multi-Flute Finishing End Mills

Cobalt

Medium Length / Center Cutting / Single End Fractional / Bright



6725A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6725A Order No.
3/8"	3/8"	1-1/2"	3-1/4"	4	672A124A
1/2"	1/2"	2"	4"	4	672A132B
5/8"	5/8"	2-1/2"	4-5/8"	4	672A140C

6750A Multi-Flute Finishing End Mills

Cobalt

Long Length / Center Cutting / Single End Fractional / Bright



6750A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6750A Order No.
3/8"	3/8"	2-1/2"	4-1/2"	4	675A124A
1/2"	1/2"	3"	5"	4	675A132B
3/4"	3/4"	3"	5-1/4"	4	675A148D
1"	1"	4"	6-1/2"	4	675A164F
1-1/4"	1-1/4"	4"	6-1/2"	6	675A216G

6950A 4-Flute Finishing End Mills

Cobalt

Regular Length / Center Cutting / Double End Fractional / Bright



6950A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6950A Order No.
1/8"	3/8"	3/8"	3-1/16"	4	695A108A
3/16"	3/8"	1/2"	3-1/4"	4	695A112A
1/4"	3/8"	5/8"	3-3/8"	4	695A116A
5/16"	3/8"	3/4"	3-1/2"	4	695A120A
3/8"	3/8"	3/4"	3-1/2"	4	695A124A
1/2"	1/2"	1"	4-1/8"	4	695A132B
5/8"	5/8"	1-3/8"	5"	4	695A140C
3/4"	3/4"	1-5/8"	5-5/8"	4	695A148D



Ball Nose End Mills

Ball nose end mills are used where rounded details must be machined in a part (for example, a slot with a rounded bottom). They are also used where sharp machined corners must be avoided. Ball nose end mills are also widely used for delicate cuts on contoured surfaces of molds and dies.

- ▷ Have rounded end cutting edges
- ▷ Available as a center cutting tool only
- ▷ All sizes are individually packaged

6650A Multi-Flute Ball Nose End Mills

Cobalt

Regular Length / Center Cutting / Single End
Fractional / Bright



6650A

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	6650A Order No.
1/8"	3/8"	3/8"	2-5/16"	4	665A108A
3/16"	3/8"	1/2"	2-3/8"	4	665A112A
1/4"	3/8"	5/8"	2-7/16"	4	665A116A
5/16"	3/8"	3/4"	2-1/2"	4	665A120A
3/8"	3/8"	3/4"	2-1/2"	4	665A124A
1/2"	1/2"	1-1/4"	3-1/4"	4	665A132B
5/8"	5/8"	1-5/8"	3-3/4"	4	665A140C
3/4"	3/4"	1-5/8"	3-7/8"	4	665A148D
1"	1"	2"	4-1/2"	4	665A164F
1-1/4"	1-1/4"	2"	4-1/2"	6	665A216G

Roughing End Mills

Roughing end mills are designed for extremely rapid stock removal. These end mills can remove material up to 3x the rate of regular end mills. Designed to machine low alloy, high strength steels at faster feed and speed rates. Utilizes a wavy tooth form cut. These teeth form many successive cutting edges producing many small chips, resulting in a relatively rough surface finish.

7140 Multi-Flute Roughing End Mills

Cobalt

Regular Length / Center Cutting / Single End
Fractional / Bright



7140

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	7140 Order No.
1/2"	1/2"	1-1/4"	3-1/4"	4	714A132B
1/2"	1/2"	2"	4"	4	714A132M
1/2"	1/2"	3"	5"	4	714A132L
5/8"	5/8"	3/4"	2-7/8"	4	714A140C
5/8"	5/8"	1-5/8"	3-3/4"	4	714A140M
5/8"	5/8"	3-1/8"	5-1/4"	4	714A140L
11/16"	5/8"	1-5/8"	3-3/4"	4	714A144C
3/4"	5/8"	1-5/8"	3-3/4"	4	714A148C
3/4"	3/4"	1-1/4"	3-1/2"	4	714A148D
3/4"	3/4"	2-1/2"	4-5/8"	4	714A148M
3/4"	3/4"	3"	5-1/4"	4	714A148L
13/16"	3/4"	1-7/8"	4-1/8"	5	714A152D
7/8"	3/4"	1-1/8"	3-3/8"	5	714A156D
7/8"	3/4"	1-7/8"	4-1/8"	5	714A156M
7/8"	3/4"	3-1/2"	5-5/8"	5	714A156L
7/8"	7/8"	1-1/8"	3-3/8"	5	714A156E
1"	3/4"	1-1/2"	3-3/8"	5	714A164D

Size	Shank Dia.	Length of Cut	Overall Length	No. of Flutes	7140 Order No.
1"	3/4"	2"	4-1/4"	5	714A164M
1"	3/4"	4"	6-1/4"	5	714A164L
1"	1"	2"	4-1/2"	5	714A164F
1"	1"	6"	8-1/2"	5	714A164N
1-1/8"	3/4"	2"	4-1/4"	6	714A208D
1-1/8"	1"	2"	4-1/2"	6	714A208F
1-1/8"	1"	3-1/2"	6"	6	714A208L
1-1/4"	3/4"	1-1/8"	3-3/8"	6	714A216D
1-1/4"	3/4"	2"	4-1/4"	6	714A216M
1-1/4"	1-1/4"	3"	5-1/2"	6	714A216G
1-1/4"	1-1/4"	6"	8-1/2"	6	714A216N
1-3/8"	3/4"	2"	4-1/4"	6	714A224D
1-1/2"	3/4"	1-1/8"	3-3/8"	6	714A232D
1-1/2"	1-1/4"	2"	4-1/2"	6	714A232G
1-1/2"	1-1/4"	3"	5-1/2"	6	714A232N
1-1/2"	1-1/4"	4"	6-1/2"	6	714A232L

Countersinks



General Purpose

High Speed Steel

Bright Finish

For low to medium tensile strength materials

Type	Series	Catalog page reference
Single flute	3600E	257
3-flute	3700E	257
4-flute	3800E	258
6-flute	3900E	258
Fluteless	4000E	258



Heavy-Duty

High Speed Steel + Aluminum (M2Al)

AlCrN Coated

For hard steel

Type	Series	Catalog page reference
4-flute	01-U	259



Single Flute

Single Flute Countersinks should be used when multi-flute countersinks chatter or the hole is too small for a multi-flute countersink to enter

- ▷ 60° Countersinks are used for centering
- ▷ 82° Countersinks are used for Countersinking flathead screws
- ▷ 90° Countersinks are used for chamfering and deburring
- ▷ 100° Countersinks are used to make screw and rivet holes
- ▷ All sizes are individually packaged

3600E Countersink Fractional / Bright



3600E

Size	Shank Dia.	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.	100° Order No.
3/16"	3/16"	1-1/2"	1	36E112A	36E112B	36E112C	36E112D
1/4"	1/4"	2"	1	36E116A	36E116B	36E116C	36E116D
5/16"	1/4"	2"	1	36E120A	36E120B	36E120C	36E120D
3/8"	1/4"	2"	1	36E124A	36E124B	36E124C	36E124D
1/2"	1/4"	2"	1	36E132A	36E132B	36E132C	36E132D
5/8"	1/2"	2-3/4"	1	36E140A	36E140B	36E140C	36E140D
3/4"	1/2"	2-3/4"	1	36E148A	36E148B	36E148C	36E148D
7/8"	1/2"	2-3/4"	1	36E156A	36E156B	36E156C	36E156D
1"	1/2"	2-3/4"	1	36E164A	36E164B	36E164C	36E164D
1-1/4"	3/4"	3-3/8"	1	36E216A	36E216B	36E216C	36E216D
1-1/2"	3/4"	3-3/8"	1	36E232A	36E232B	36E232C	36E232D
2"	3/4"	3-3/8"	1	36E264A	36E264B	36E264C	36E264D

3-Flute

Center Reamers are designed for countersinking holes for flathead screws and rivets, in portable drilling applications

- ▷ All sizes are individually packaged

3700E Center Reamer Fractional / Bright



3700E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.	100° Order No.
1/4"	3/16"	3/4"	1-1/2"	3	37E116A	37E116B	37E116C	37E116D
3/8"	1/4"	7/8"	1-3/4"	3	37E124A	37E124B	37E124C	37E124D
1/2"	3/8"	1"	2"	3	37E132A	37E132B	37E132C	37E132D
5/8"	3/8"	1"	2-1/4"	3	37E140A	37E140B	37E140C	37E140D
3/4"	1/2"	1-1/4"	2-5/8"	3	37E148A	37E148B	37E148C	37E148D
1"	1/2"	1-1/4"	3-1/2"	3	37E164A	37E164B	37E164C	37E164D
1-1/4"	3/4"	1-1/2"	3-1/2"	3	37E216A	37E216B	37E216C	37E216D
1-1/2"	3/4"	1-1/2"	3-1/2"	3	37E232A	37E232B	37E232C	37E232D
2"	3/4"	1-1/2"	3-3/4"	3	37E264A	37E264B	37E264C	37E264D

4-Flute

Four flute machine countersinks have a longer shank to use in Turret lathes and for screw machine work

▷ All sizes are individually packaged

3800E Machine Countersink Fractional / Bright



3800E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.
1/2"	1/2"	2-1/4"	3-7/8"	4	38E132A	38E132B	38E132C
5/8"	1/2"	2-1/4"	4"	4	38E140A	38E140B	38E140C
3/4"	1/2"	2-1/4"	4-1/8"	4	38E148A	38E148B	38E148C
7/8"	1/2"	2-1/4"	4-1/4"	4	38E156A	38E156B	38E156C
1"	1/2"	2-1/4"	4-3/8"	4	38E164A	38E164B	38E164C
1-1/4"	1/2"	2-1/4"	5"	4	38E216A	38E216B	38E216C
1-1/2"	1/2"	2-1/4"	5-3/8"	4	38E232A	38E232B	38E232C

6-Flute

Six flute chatterless countersinks are designed for fast shearing cuts

▷ All sizes are individually packaged

3900E Chatterless Countersink Fractional / Bright



3900E

Size	Shank Dia.	Shank Length	Overall Length	No. of Flutes	60° Order No.	82° Order No.	90° Order No.
3/16"	3/16"	1"	1-1/2"	6	39E112A	39E112B	39E112C
1/4"	1/4"	1"	2"	6	39E116A	39E116B	39E116C
5/16"	1/4"	1"	2"	6	39E120A	39E120B	39E120C
3/8"	1/4"	1"	2"	6	39E124A	39E124B	39E124C
1/2"	1/4"	1"	2"	6	39E132A	39E132B	39E132C
5/8"	1/2"	1-1/8"	2-3/4"	6	39E140A	39E140B	39E140C
3/4"	1/2"	1-5/16"	2-3/4"	6	39E148A	39E148B	39E148C
7/8"	1/2"	1-5/16"	2-3/4"	6	39E156A	39E156B	39E156C
1"	1/2"	1-5/16"	2-3/4"	6	39E164A	39E164B	39E164C
1-1/4"	3/4"	1-5/8"	3-3/8"	6	39E216A	39E216B	39E216C
1-1/2"	3/4"	1-5/8"	3-1/2"	6	39E232A	39E232B	39E232C
1-3/4"	1"	2-1/8"	4-1/4"	6	39E248A	39E248B	39E248C
2"	1"	2-1/8"	4-3/8"	6	39E264A	39E264B	39E264C

Fluteless

Fluteless deburring tools have an angled hole that passes through the center of the tool to reduce vibration and chatter. This creates smooth cuts and prevents chips from clogging the tool

4000E Deburring Tools Fractional / Bright



4000E

Size	Inch Dia.	Shank Dia.	60° Order No.	82° Order No.	90° Order No.
0	1/16" - 15/64"	1/4"	40E000A	40E000B	40E000C
1	5/32" - 13/32"	1/4"	40E001A	40E001B	40E001C
2	3/16" - 17/32"	1/4"	40E002A	40E002B	40E002C
3	5/16" - 25/32"	1/2"	40E003A	40E003B	40E003C
4	9/16" - 1-1/16"	1/2"	40E004A	40E004B	40E004C
5	5/8" - 1-15/32"	1/2"	-	40E005B	-
6	3/4" - 1-3/4"	5/8"	-	40E006B	-
7	1" - 2"	5/8"	-	40E007B	-
8	1.1/4" - 2-1/2"	3/4"	-	40E008B	-
#0 - #4SET	-	-	40ESETA	40ESETB	40ESETC

4-Flute

Now with the exclusive ICECUT™ coating

Made of M2AI to minimize vibration and maximize product life. Also features an exclusive AlCrN coating to provide greater heat resistance to further extend product life. The 82° point angle is ideal for countersinking but they can also be used for deburring and chamfering in steel, stainless steel and non-ferrous metals

- ▷ Thicker teeth for added stability
- ▷ Special coating reducing frictional heat and optimizing tool life
- ▷ Special tip geometry for a uniform chamfer
- ▷ Packaged in reusable plastic packaging.



Recommended cutting speed for M2AI HSS Countersinks (82°)						
Cutter Dia.		Aluminium	Copper	Mild	Stainless Steel	Non-metallic Steel
Inch	mm					
1/4"	6.4	1505	1404	752	602	1755
5/16"	7.9	1203	1123	602	481	1404
3/8"	9.5	1004	937	502	401	1171
7/16"	11.1	861	803	430	344	1004
1/2"	12.7	752	702	376	301	878
9/16"	14.3	669	624	335	268	781
5/8"	15.9	602	562	301	241	702
11/16"	17.5	547	511	274	219	638
3/4"	19.1	502	468	251	201	585
13/16"	20.6	463	432	231	185	540
7/8"	22.2	430	401	215	172	502
15/16"	23.8	401	375	201	161	468
1"	25.4	376	351	188	150	439
1-1/16"	27	354	331	177	142	413
1-1/8"	28.6	334	312	167	134	390
1-3/16"	30.2	317	296	158	127	370
1-1/4"	31.8	251	234	125	100	293
1-9/16"	39.7	241	225	120	96	281
1-5/8"	41.3	231	216	116	93	270
1-11/16"	42.9	223	208	111	89	260
1-3/4"	44.5	215	201	107	86	251
1-13/16"	46	208	194	104	83	242
1 7/8"	47.6	201	187	100	80	234
1-15/16"	49.2	194	181	97	78	227
2"	50.8	188	176	94	75	219

Dia.	Angle	Overall Length	Shank Dia.	Order No.	Std. Pkg.	Std. Ctn.
1/4"	82°	2"	3/16"	01-U 004	1	10
5/16"	82°	2"	1/4"	01-U 005	1	10
3/8"	82°	2"	5/16"	01-U 006	1	10
1/2"	82°	2"	5/16"	01-U 008	1	10
5/8"	82°	2-1/4"	3/8"	01-U 010	1	10
3/4"	82°	2-3/4"	3/8"	01-U 012	1	10
1"	82°	2-3/4"	3/8"	01-U 100	1	10
1"	82°	1-3/4"	3/4"	01-U 400	1	10
1-1/2"	82°	2"	3/4"	01-U 408	1	10
2"	82°	2-1/4"	3/4"	01-U 500	1	10

TIPS!

For increased cutting efficiency and tool life, use COOLCUT™ solid stick lubricant Order No.: 53-B 013

Countersink Set

Contains the five most popular countersinks (sizes 1/4", 3/8", 1/2", 3/4", 3/8") and cutting lubricant. Packaged in a reclosable resistant plastic case.

Countersink Set	
Each kit contains	Item Number
01-U 004, 01-U 006, 01-U 008, 01-U 012, 01-U 100	01-U 950



01-U 950

Cutting Fluids and Lubricants



High Performance Lubricants		
Name	Series	Catalog page reference
COOLCUT™	53-B	261
STAINLESSCUT™	53-B	262
ALUCUT™	53-B	262
TAPCUT™	53-A	263
ICECUT™	53-C	263

COOLCUT™ Metalworking Fluids



High Performance Lubricants		
	Series	Catalog page reference
COOLCUT™ 150	58-A	265
COOLCUT™ 250	58-A	266
COOLCUT™ 200 BF	58-A	266
COOLCUT™ 400 U	58-A	267
COOLCUT™ 500 BF	58-A	267
COOLCUT™ SYN 400 BF	58-A	269
COOLCUT™ SYN GRIND	58-A	269
COOLCUT™ NEO AP	58-B	271
COOLCUT™ NEO 3724 N	58-B	271
COOLCUT™ SYN NEO HP	58-B	272
COOLCUT™ PROTEC	58-C	272
COOLCUT™	53-B	270
COOLCUT™ S-30	53-C	268
COOLCUT™ S-50	53-C	268
COOLCUT™ Cutting Fluids Proportioning System		273
SB 30 System Booster		273
COOLCUT™ System Cleaner		273



COOLCUT™

Metal cutting lubricant

COOLCUT™ is a ready-to-use, high-performance metal cutting lubricant that stands up to pressure and heat to reduce tool wear and prevent tool breakage.

Applications

- ▷ Machining operations
- ▷ Drilling



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	312 g	11 oz.	53-B 002	L-01	12
Solid stick	300 g	300 g	53-B 013	L-22	12
Liquid/Squeeze bottle	350 ml	11.8 fl.oz.	53-B 003	L-09	12
Sprayer	500 ml	16.9 oz.	53-B 004	L-09	12
Liquid	3.78 L	1 gal	53-B 005	L-09	1
Liquid	20 L	5.2 gal	53-B 007	L-09	1
Liquid	208 L	55 gal	53-B 008	L-09	1

Accessories	Order no.
Spout for 20 L square plastic pail	53-L 207
Spout for 208 L plastic drum 2" NPT	53-L 209
Spout for 208 L plastic drum 3/4" NPT	53-L 210



Benefits

- ▷ Reduces friction and heat
- ▷ Extends cutting tool life
- ▷ Improves finish
- ▷ Increases productivity

Features

- ▷ Contains extreme pressure additives (EP)
- ▷ Suitable for all ferrous and non-ferrous metals
- ▷ Non hazardous, biodegradable
- ▷ Free of solvents and chlorinated ingredients



STAINLESSCUT™

Stainless steel cutting lubricant

STAINLESSCUT™ is a heavy-duty cutting lubricant designed for tough metal cutting operations. Formulated for stainless steel, alloys, and ferrous alloys.

Applications

- ▷ Machining operations
- ▷ Drilling

Benefits

- ▷ Washes off completely with water
- ▷ Easy clean-up
- ▷ Improves finish to prolong tool life



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Aerosol	312 g	11 oz.	53-B 202	L-53	12
Liquid/Squeeze bottle	350 ml	11.8 fl.oz.	53-B 203	L-114	12
Liquid	3.78 L	1 gal	53-B 205	L-114	1
Liquid	20 L	5.2 gal	53-B 207	L-114	1

Accessories		Order no.
Spout for 20 L square plastic pail		53-L 207



Features

- ▷ Contains extreme pressure additives (EP)
- ▷ Solvent-free, sulfur-free, and chlorine-free
- ▷ High lubricity and cooling properties
- ▷ Non hazardous

ALUCUT™

Solid stick aluminum cutting lubricant

ALUCUT™ is a high-performance lubricant that extends cutting tool life. Specially formulated for use with aluminum and other non-ferrous metals.

Applications

- ▷ Cutting with circular chopsaws
- ▷ Drilling

Benefits

- ▷ Reduces scoring and chatter marks
- ▷ Improves finish
- ▷ Increases productivity
- ▷ Minimizes waste



Description	Size		Order No.	(M)SDS	Std. Pkg.
	Metric	US Gal			
Solid stick	300 g	10.5 oz.	53-B 303	L-04	12



Features

- ▷ Clean, precise, stain-free application
- ▷ Coats cutting edge or workpiece
- ▷ Ideal for inclined, vertical, and overhead surfaces

TAPCUT™

Thread cutting lubricant

TAPCUT™ lubricant is specially formulated for thread cutting with taps and dies.

Applications

- ▷ Hand tapping
- ▷ Machine tapping

Benefits

- ▷ Taps and dies cut faster and last longer
- ▷ Cleans up easily with water



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Liquid/Squeeze bottle	350 ml	11.8 fl.oz.	53-A 103	L-115	12
Liquid	3.78 L	1 gal	53-A 105	L-115	1
Liquid	20 L	5.2 gal	53-A 107	L-115	1

Accessories	Order no.
Spout for 20 L square plastic pail	53-L 207



Features

- ▷ Special antiwear additives for thread cutting
- ▷ Produces clean, accurate threads
- ▷ Non hazardous

ICECUT™

Ready-to-use coolant/lubricant

ICECUT™ is a ready-to-use coolant/lubricant specially formulated for use with magnetic drilling units to reduce tool wear and improve production rates.

Applications

- ▷ Drilling with annular cutters, carbide core cutters, and drill bits



Description	Size		Order No.	(M) SDS	Std. Pkg.
	Metric	US Gal			
Liquid	3.78 L	1 gal	53-C 055	L-122	1
Liquid	20 L	5.2 gal	53-C 057	L-122	1
Liquid	208 L	45 gal	53-C 058	L-122	1

Accessories	Order no.
Spout for 20 L square plastic pail	53-L 207
Spout for 208 L plastic drum 2" NPT	53-L 209
Spout for 208 L plastic drum 3/4" NPT	53-L 210



Benefits

- ▷ Reduces friction and heat
- ▷ Extends cutting tool life
- ▷ Increases productivity
- ▷ Improves finish

Features

- ▷ Nitrate-free, amine-free, boron-free, phenol-free and active sulfur-free

Better Performance and Productivity

Walter Surface Technologies COOLCUT™ cutting fluids can be used for almost any metalworking process. All of our products, from machine tool lubricants to water miscible coolants, special additives and corrosion protection solutions, are designed to work together, minimizing interface problems and achieving the highest process efficiency.

- ▷ *Water miscible coolants and neat cutting oils for machining with defined and non-defined cutting edges*
- ▷ *Spray mist lubricants for minimum quantity applications*
- ▷ *Forming lubricants with a variety of different formulations for sheet metal, tube and massive forming*

Liquids

Available Sizes



20 L / 5.2 gal.



3.78 L / 1 gal.



1000 L / 264 gal.



200 L / 52.8 gal.

CNC Cutting and Grinding Fluids

Water Miscible Coolants

Water miscible coolants for metalworking must meet a wide range of technical requirements to achieve best possible machining results and smooth operation. All Walter COOLCUT™ lubricants meet or exceed requirements to ensure:

Features

- ▷ Cutting performance for long tool life and optimal workpiece finish
- ▷ Corrosion protection for machine parts and workpieces
- ▷ Compatibility with sensitive materials for components without staining
- ▷ Stability and flushing action for clean machines and parts
- ▷ Low foaming even with high cooling lubricant pressure



COOLCUT™ 150

Very finely dispersed semisynthetic lubricant for circular and flat grinding and for light machining

COOLCUT™ 150 is a water miscible coolant for light to medium duty machining without high lubricity demands. It is most suited for steels and cast iron.

Name	Product Number	(M)SDS	Size
COOLCUT™ 150	58-A 157	C-01	20 L
COOLCUT™ 150	58-A 158	C-01	200 L
COOLCUT™ 150	58-A 159	C-01	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
				• Preferred	• Qualified

Features

- ▷ Semisynthetic
- ▷ Free of secondary amines
- ▷ Formaldehyde-free

Benefits

- ▷ Applicable for a wide range of water hardness

Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding

Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Yellow metals



COOLCUT™ 250

Very finely dispersed semisynthetic for grinding and for light- to medium-duty machining

COOLCUT™ 250 is a water miscible coolant for metal cutting processes on individual machine tools as well as centralized systems. Superior washing action ensures safe chip removal, perfect cooling, and clean working spaces. When it comes down to price, COOLCUT™ 250 offers an exceptional value.

Features

- ▷ Formaldehyde-free
- ▷ Semisynthetic
- ▷ Free of secondary amines

Benefits

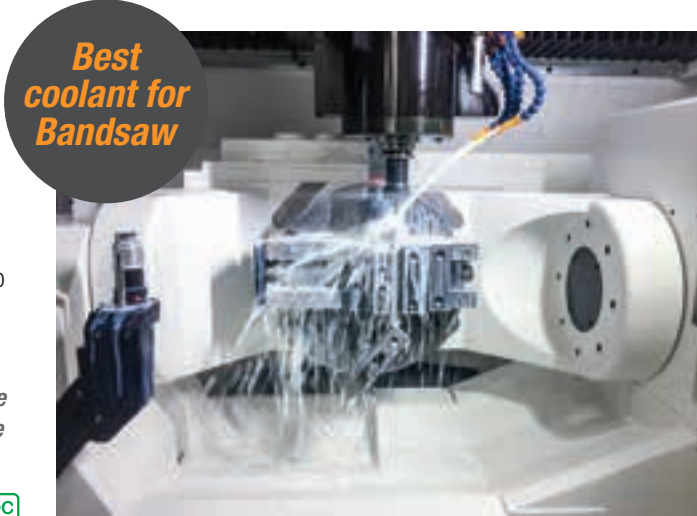
- ▷ Good grinding performance
- ▷ Ideal price-to-performance ratio



Name	Product Number	(M)SDS	Size
COOLCUT™ 250	58-A 255	C-02	3.78 L
COOLCUT™ 250	58-A 257	C-02	20 L
COOLCUT™ 250	58-A 258	C-02	200 L
COOLCUT™ 250	58-A 259	C-02	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•		•	•	•
				•	•

• Preferred • Qualified



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding

Materials

- ▷ Cast iron
- ▷ Steels
- ▷ Aluminum
- ▷ Yellow metals

COOLCUT™ 200 BF

Boron-free coolant for grinding and cutting operations

COOLCUT™ 200 BF is a very safe coolant that offers a great price to performance ratio. It's good washing action ensures a clean working area. This coolant is especially suitable for grinding processes as well as all medium-cutting operations like drilling and milling.

Features

- ▷ Semisynthetic
- ▷ Boron, Bactericide, and Monoethanolamine (MEA)-free

Benefits

- ▷ Very finely dispersed emulsion
- ▷ Excellent grinding performance
- ▷ Perfect price-to-performance ratio



Name	Product Number	(M)SDS	Size
COOLCUT™ 200 BF	58-A 295	C-09	3.78 L
COOLCUT™ 200 BF	58-A 297	C-09	20 L
COOLCUT™ 200 BF	58-A 298	C-09	200 L
COOLCUT™ 200 BF	58-A 299	C-09	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
				•	•

• Preferred • Qualified



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding

Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals

COOLCUT™ 400 U

Universal semisynthetic cooling lubricant, used for medium-duty machining and for grinding

Best solution for aluminum

COOLCUT™ 400 U is universally applicable for use in medium-severe cutting and grinding processes. It is suitable when processing mixed materials (cast iron, steels, yellow metals and aluminum). Its superior washing action ensures a clean working area.

Features

- ▷ Bactericide-free
- ▷ Semisynthetic

Benefits

- ▷ Very versatile



Name	Product Number	(M)SDS	Size
COOLCUT™ 400U	58-A 507	C-03E	20 L
COOLCUT™ 400U	58-A 508	C-03E	200 L
COOLCUT™ 400U	58-A 509	C-03E	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
				• Preferred	• Qualified



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Threading tapping
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding

Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals

COOLCUT™ 500 BF

Boron-free lubricant for severe machining processes

COOLCUT™ 500 BF offers excellent performance in extreme pressure conditions. Its special technology allows to work under severe conditions without costly extreme pressure (EP) additives. It is particularly suited for processes on high tensile materials like stainless steels and titanium grades.

Features

- ▷ Boron and bactericides-free
- ▷ Semi synthetic

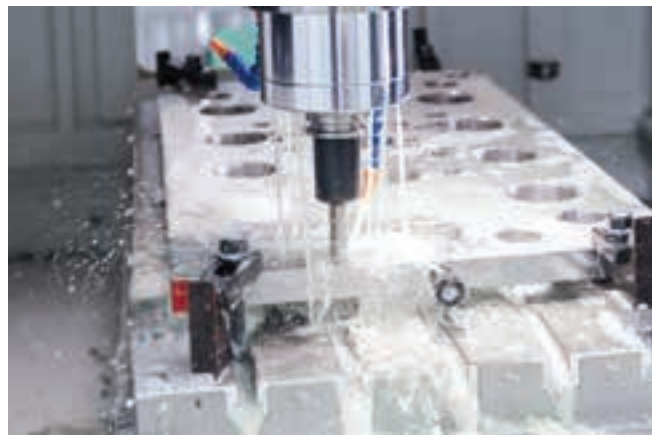
Benefits

- ▷ Extraordinary cutting performance for optimal tool life and surfaces
- ▷ Compatible with a variety of materials, particularly sensitive aluminum alloys
- ▷ Low foaming



Name	Product Number	(M)SDS	Size
COOLCUT™ 500BF	58-A 597	C-10	20 L
COOLCUT™ 500BF	58-A 598	C-10	200 L
COOLCUT™ 500BF	58-A 599	C-10	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	•
				• Preferred	• Qualified



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding

Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals

COOLCUT™ S-30

Premium water miscible cutting lubricant

COOLCUT™ S-30 is a ready-to-use, high-performance metal cutting lubricant specially designed for automatic and semiautomatic metal removing operations. For general machining.

Features

- ▷ Contains non-chlorinated EP additives
- ▷ Bactericides-free
- ▷ High oil content

Benefits

- ▷ Extraordinary cutting performance for optimal tool life and surfaces



Name	Product Number	(M)SDS	Size
COOLCUT™ S-30	53-C 005	L-119	3.78 L
COOLCUT™ S-30	53-C 007	L-119	20 L
COOLCUT™ S-30	53-C 008	L-119	208 L
COOLCUT™ S-30	53-C 009	L-119	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
•	•	•	•	•	•
		• Preferred	• Qualified		



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding
- ▷ Gear hobbing

Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals
- ▷ Titanium

COOLCUT™ S-50

Water-miscible cutting lubricant for high-pressure applications

COOLCUT™ S-50 is a high-performance metal cutting lubricant specially designed for automatic and semi-automatic metal removing operations, even in severe machining processes and high-pressure conditions. Ideal for hard-to-machine materials.

Features

- ▷ Formulated with extended corrosion protection
- ▷ Free of bactericides
- ▷ Contains non-chlorinated EP additives

Benefits

- ▷ Extends cutting tool life
- ▷ Works with pressures up to 1,100 psi



Name	Product Number	(M)SDS	Size
COOLCUT™ S-50	53-C 025	L-109	3.78 L
COOLCUT™ S-50	53-C 027	L-109	20 L
COOLCUT™ S-50	53-C 028	L-109	200 L
COOLCUT™ S-50	53-C 029	L-109	1000 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
•	•	•	•	•	•
		• Preferred	• Qualified		



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Broaching
- ▷ Surface and cylindrical grinding
- ▷ Profile grinding
- ▷ Gear hobbing

Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Titanium
- ▷ Hard metals

COOLCUT™ SYN 400 BF

Water-soluble cooling lubricant for grinding and machining of steel and aluminum with high lubrication requirements

COOLCUT™ SYN 400 BF is the most technologically advanced coolant on the market. This coolant is designed for severe grinding and cutting operations with high lubricity demand. It is most suitable for aluminum alloys of all kinds including sensitive aerospace alloys. It is also suitable for steels, stainless steels, titanium, yellow metals and other materials suitable for work with ferrous materials and glass.

Features

- ▷ Mineral oil-free, fully synthetic
- ▷ Free of formaldehyde, boron and secondary amines

Benefits

- ▷ Slightly hazy, colorless solution
- ▷ High lubricity for severe operations
- ▷ 30% longer sump life vs most coolants



Name	Product Number	(M)SDS	Size
COOLCUT™ SYN 400 BF	58-A 407	C-05	20 L
COOLCUT™ SYN 400 BF	58-A 408	C-05	200 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
•					

• Preferred • Qualified



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching
- ▷ Surface and cylindrical grinding
- ▷ Centerless grinding
- ▷ Profile grinding

Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals
- ▷ Titanium
- ▷ Glass ceramics

COOLCUT™ SYN GRIND

Water-soluble cooling lubricant for circular and flat grinding of ferrous metals

COOLCUT™ SYN GRIND is specially designed for grinding operations. It is most suitable for work with ferrous materials and glass.

Features

- ▷ Fully synthetic
- ▷ Free from secondary amines
- ▷ Long coolant life, even in poor conditions

Benefits

- ▷ Colorless solution
- ▷ Excellent grinding performance
- ▷ Ideal price-to-performance ratio



Name	Product Number	(M)SDS	Size
COOLCUT™ SYN GRIND	58-A 707	C-06	20 L
COOLCUT™ SYN GRIND	58-A 708	C-06	200 L

Suitable for water hardness (PPM)					
0-30	40-100	110-180	190-360	370-720	730-1080
	•	•	•	•	

• Preferred • Qualified



Processes

- ▷ Surface and cylindrical grinding

Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Titanium
- ▷ Glass ceramics

Neat Cutting Oils

When your application demands higher lubricating action than cooling capacity, non-water miscible, neat cutting oils are effective alternatives to water-mixed lubricants. For any specific application, achieving optimal performance with these cutting oils depends on their viscosity as well as the content and effectiveness of their active additives.

The Walter COOLCUT™ product range covers the entire bandwidth of viscosities, starting with low viscosity finish oils at approximately 3 mm²/s (40 °C/104 °F) to higher viscosity oils up to approximately 100 mm²/s (40 °C/104 °F) for the most difficult broaching operations. Using high-quality base oils and modern additive technologies, Walter's COOLCUT™ solutions are optimal for modern machining processes.

Features

- ▷ High cutting action for long tool life and good surfaces
- ▷ Low evaporation base oils reduce the risk of oil mist and fire hazards
- ▷ Will not irritate skin

COOLCUT™

Metal cutting lubricant

COOLCUT™ is a ready-to-use, high-performance metal cutting lubricant that stands up to pressure and heat to reduce tool wear and prevent tool breakage.

Features

- ▷ Contains extreme pressure EP additives
- ▷ Suitable for all ferrous and non-ferrous metals
- ▷ Non hazardous, biodegradable
- ▷ Free of solvents and chlorinated ingredients
- ▷ Viscosity= 42 mm²/s (400 C)

Benefits

- ▷ Reduces friction and heat
- ▷ Extends cutting tool life
- ▷ Improves finish
- ▷ Increases productivity



Name	Product Number	(M)SDS	Size
COOLCUT™	53-B 005	L-09	3.78 L
COOLCUT™	53-B 007	L-09	20 L
COOLCUT™	53-B 008	L-09	208 L

Processes

- ▷ Machining operations
- ▷ Drilling
- ▷ MQL systems

Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals

COOLCUT™ NEO AP

Cutting oil for machining with defined cutting edges

The COOLCUT™ NEO AP is a multifunction oil for medium-duty machining and cutting machine lubrication. COOLCUT™ NEO AP's chlorine free, chemically active, extreme pressure additives prevent buildup along the cutting edge, even on the most difficult materials such as stainless steel, nickel, and titanium alloys. These oils are suitable for severe cutting processes. They perform best with steels, stainless steels and aluminum. They may also be used in machining of copper alloys if workpieces are cleaned.

Features

- ▷ Formulated with low-emission base oils plus effective extreme-pressure additives
- ▷ Adequate viscosity per process requirements
- ▷ Viscosity = 25 mm²/s (400 C)
- ▷ Zinc-free, chlorine-free

Benefits

- ▷ Optimal price-to-performance ratio
- ▷ Good cutting performance, long tool life
- ▷ Low fog and evaporation loss
- ▷ Low drag out
- ▷ Easy removal with aqueous or hydrocarbon cleaners



Processes

- ▷ Turning
- ▷ Milling
- ▷ Gear hobbing
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching

Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Aluminum
- ▷ Yellow metals

Name	Product Number	(M)SDS	Size
COOLCUT™ NEO AP	58-B 305	C-07	3.78 L
COOLCUT™ NEO AP	58-B 307	C-07	20 L
COOLCUT™ NEO AP	58-B 308	C-07	200 L



COOLCUT™ NEO 3724 N

High performance cutting oil with EP-additives for severe cutting operations

COOLCUT™ NEO 3724 N is a very high-performance cutting oil made from low emission base oils and effective EP-additives for severe cutting operations. Universally applicable for turning, milling, broaching, deep drilling, threading and more, this fluid is designed for use specifically on high tensile materials like high alloyed steels, Nickel- and Titanium-alloyed steels and stainless steels.

Features

- ▷ Chlorine-free and Zinc-free
- ▷ Low emission base oils
- ▷ Built with EP-additives
- ▷ Kinematic viscosity= 16 mm²/s (400 C)

Benefits

- ▷ Highest performance for severe cutting applications
- ▷ Designed specially for stainless steel and high tensile alloys
- ▷ Low drag out, low fog, and low evaporation loss
- ▷ Easy to remove with aqueous or hydrocarbon cleaners



Processes

- ▷ Turning
- ▷ Milling
- ▷ Drilling
- ▷ Deep drilling
- ▷ Threading tapping
- ▷ Broaching, slotting

Materials

- ▷ Steels
- ▷ Cast iron
- ▷ Stainless steel
- ▷ Titanium

Name	Product Number	(M)SDS	Size
COOLCUT™ NEO 3724 N	58-B 377	C-14	20 L
COOLCUT™ NEO 3724 N	58-B 378	C-14	200 L
COOLCUT™ NEO 3724 N	53-B 379	C-14	1000 L



COOLCUT™ SYN NEO HP

Grinding and honing oil

The COOLCUT™ SYN NEO HP is a polyalphaolefin-based high-performance grinding oil. It is primarily for carbide tool grinding. These specially formulated grinding and honing oils allow maximum machining volumes without burning and perform precisely with exceptional grinding results.

Features

- ▷ Based on polyalphaolefins (PAO)
- ▷ Effective wetting agents
- ▷ Zinc-free, chlorine-free
- ▷ Kinematic viscosity= 6 mm²/s (400 C)

Benefits

- ▷ Optimal air separation for reliable cooling and maintaining the free wheel's porosity
- ▷ High grinding performance
- ▷ Minimal evaporation loss
- ▷ Extremely low drag out



Name	Product Number	(M)SDS	Size
COOLCUT™ SYN NEO HP	58-B 507	C-08	20 L
COOLCUT™ SYN NEO HP	58-B 508	C-08	200 L



Processes

- ▷ Turning
- ▷ Milling
- ▷ Centerless grinding
- ▷ Profile grinding

Materials

- ▷ Steels
- ▷ Stainless steel
- ▷ Yellow metals
- ▷ Titanium
- ▷ Carbide

Slideway Oil

COOLCUT™ PROTEC

High-performance slideway oil

COOLCUT™ PROTEC is a high-performance slideway oil with a special mineral oil base. Effective additives safely avoid stick-slip and ensure optimal prevention of oxidation, corrosion, and wear. This multipurpose oil can be used to lubricate slideways of all kinds under high load (e.g., machine tools, forming presses) and it is also suitable for hydraulic and general machine lubrication.

Features

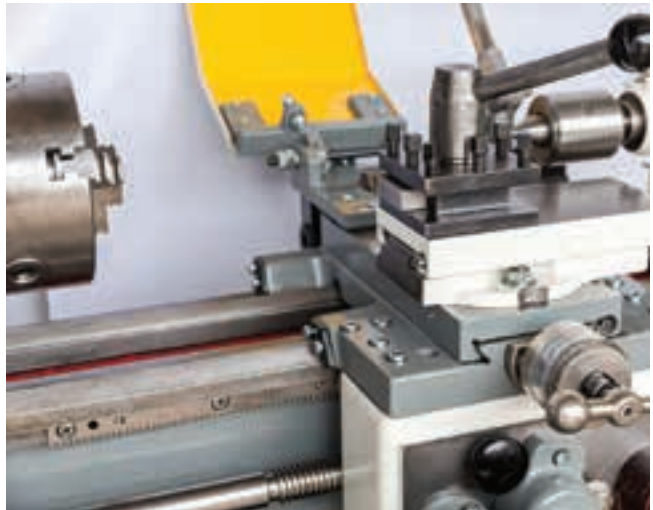
- ▷ Ash-free
- ▷ Reduced draining off vertical surfaces
- ▷ Minimal friction
- ▷ Compatible with all COOLCUT™ coolants
- ▷ Kinematic viscosity= 68 mm²/s (400 C)

Benefits

- ▷ Exact and safe positioning of tool and workpiece even under the highest loads, thanks to safe avoiding of stick-slip
- ▷ Minimization of friction saves energy and smooths movement
- ▷ Effective prevention of corrosion and wear
- ▷ Good compatibility with coolants



Name	Product Number	(M)SDS	Size
COOLCUT™ PROTEC	58-C 007	C-11	20 L
COOLCUT™ PROTEC	58-C 008	C-11	200 L



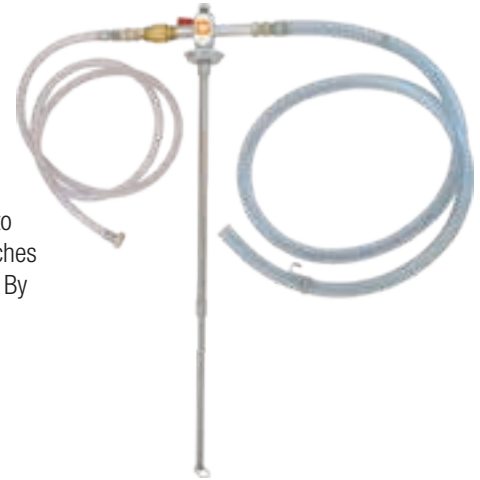
COOLCUT™ Cutting Fluids Proportioning System

Mixing device for water miscible coolants

Product Number: 53-L 165

The Walter COOLCUT™ proportioning system for water miscible coolants is an easy way to dilute concentrated coolant with water, to achieve the desired usage concentration. It attaches easily to Walter drums, and its simple dial guides the flow of concentrate into the solution. By attaching the water hose to your water supply, combined with the Venturi effect, out of the dispensing hose comes the diluted emulsion.

NOTE: It is recommended to always confirm the final concentration with a refractometer.



SB 30 System Booster

Preventive treatment for reduced downtime

Keep your coolant systems in peak working order with this bactericide for metalworking fluids.

Name	Product Number	(M)SDS	Size
SB 30 SYSTEM BOOSTER	53-C 011	L-14	950 ml

Applications

- ▷ Maintaining biocide action
- ▷ Maintaining efficiency and cleanliness

Features and benefits

- ▷ Eliminates bacteria, fungus and yeast
- ▷ Excellent corrosion protection
- ▷ Helps to maintain pH levels
- ▷ Reduces downtime and disposal costs

COOLCUT™ System Cleaner

System cleaner and decontaminator for CNC machine tools

The COOLCUT™ System Cleaner is the ideal product to add to your CNC machine tank before completing fluid changeovers and flushes. Biocidal agents help kill bacteria and fungus that might be growing in the machine or fluid reservoirs. Helps ensure your machine is totally clean and decontaminated before adding fresh coolant. Active ingredients help kill odour causing bacteria and ensure a clean machine before next replenishment. Add COOLCUT™ System Cleaner to your machine's coolant tank 12-24 hours before draining, then operate normally.



Features

- ▷ Ideal for cleaning machine tools
- ▷ Use before fluid changeovers and machine tank flushes
- ▷ Use at 3% volume of entire fluid tank
- ▷ Mechanical cleaning is encouraged as well
- ▷ Compatible with all brands of coolant

Name	Product Number	(M)SDS	Size
COOLCUT™ SYSTEM CLEANER	58-C 101	C-12E	950 ml
COOLCUT™ SYSTEM CLEANER	58-C 105	C-12E	3.78 L
COOLCUT™ SYSTEM CLEANER	58-C 107	C-12E	20 L

COOLCUT™ FLUIDS AT A GLANCE

Processes										
Name	Turning	Milling	Gear hobbing	Drilling	Deep drilling	Threading tapping	Broaching	Surface and cylindrical grinding	Centerless grinding	Profile grinding
COOLCUT™ 150	•	•		•		•		•		
COOLCUT™ 250	•	•		•		•		•	•	
COOLCUT™ 200BF	•	•		•		•		•	•	•
COOLCUT™ 400U	•	•		•		•		•	•	•
COOLCUT™ 500BF	•	•		•	•	•	•	•	•	
COOLCUT™ S-30	•	•	•	•	•	•	•	•	•	•
COOLCUT™ S-50	•	•		•	•		•	•		•
COOLCUT™ SYN 400 BF	•	•		•	•	•	•	•	•	•
COOLCUT™ SYN GRIND								•		
COOLCUT™				•	•	•	•			
COOLCUT™ NEO AP	•	•	•	•	•	•	•			
COOLCUT™ NEO 3724 N	•	•		•	•	•	•			
COOLCUT™ SYN NEO HP	•	•							•	•

Materials								
Name	Steels	Cast iron	Stainless steel	Aluminum	Yellow metals	Titanium	Carbide	Glass ceramics
COOLCUT™ 150	•	•			•			
COOLCUT™ 250	•	•		•	•			
COOLCUT™ 200BF	•	•	•	•	•			
COOLCUT™ 400U	•	•	•	•	•			
COOLCUT™ 500BF	•	•	•		•			
COOLCUT™ S-30	•		•	•	•	•		
COOLCUT™ S-50	•		•	•		•	•	
COOLCUT™ SYN 400 BF	•		•	•	•	•		•
COOLCUT™ SYN GRIND	•	•	•	•	•	•		•
COOLCUT™	•		•	•	•			
COOLCUT™ NEO AP	•	•	•	•	•			
COOLCUT™ NEO 3724 N	•	•	•			•		
COOLCUT™ SYN NEO HP	•		•		•	•	•	





PRODUCT LISTING

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13505	ThunderBit Cobalt Drills Jobber Cobalt Bronze 5/64	57
57707	Triumph Drills Extra Length HSS Black Oxide 7/64	89
57709	Triumph Drills Extra Length HSS Black Oxide 1/8	89
57710	Triumph Drills Extra Length HSS Black Oxide 5/32	89
57711	Triumph Drills Extra Length HSS Black Oxide 11/64	89
57713	Triumph Drills Extra Length HSS Black Oxide 13/64	89
57714	Triumph Drills Extra Length HSS Black Oxide 7/32	89
57715	Triumph Drills Extra Length HSS Black Oxide 15/64	89
57717	Triumph Drills Extra Length HSS Black Oxide 17/64	89
57718	Triumph Drills Extra Length HSS Black Oxide 9/32	89
57719	Triumph Drills Extra Length HSS Black Oxide 19/64	89
57721	Triumph Drills Extra Length HSS Black Oxide 21/64	89
57722	Triumph Drills Extra Length HSS Black Oxide 11/32	89
57723	Triumph Drills Extra Length HSS Black Oxide 23/64	89
93713	ThunderBit Sets Set 13 Piece HSS TiN Coated 1/16"-1/4" by 64 ^{ths}	51
93716	ThunderBit Sets Set 15 Piece HSS TiN Coated 1/16"-1/2" by 32 ^{nds}	51
93719	ThunderBit Sets Set 21 Piece HSS TiN Coated 1/16"-3/8" by 64 ^{ths}	51
93754	ThunderBit Sets Set 29 Piece HSS TiN Coated Clip On Index 1/16"-1/2" by 64 ^{ths}	51
99509	ThunderBit+ Sets Set 540 Piece HSS Black and Bronze Oxide DISPLAY	46
99804	Triumph Sets Set 29 Piece HSS Black Oxide 1/16"-1/2" by 64 ^{ths}	35
011001	Triumph Drills Jobber HSS Bright 1/64	26
011002	Triumph Drills Jobber HSS Bright 1/32	26
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011003	Triumph Drills Jobber HSS Bright 3/64	26
011003.20	Triumph Drills Jobber HSS Bright 3/64	26
011004	Triumph Drills Jobber HSS Bright 1/16	26
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011005	Triumph Drills Jobber HSS Bright 5/64	26
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011007	Triumph Drills Jobber HSS Bright 7/64	26
011007.20	Triumph Drills Jobber HSS Bright 7/64	26
011008	Triumph Drills Jobber HSS Bright 1/8	26
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011009	Triumph Drills Jobber HSS Bright 9/64	26
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011016.20	Triumph Drills Jobber HSS Bright 1/4	26
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011031.20	Triumph Drills Jobber HSS Bright 31/64	26
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011032.20	Triumph Drills Jobber HSS Bright 1/2	26
011104	Triumph Drills Jobber HSS Bright 1/16	30
011105	Triumph Drills Jobber HSS Bright 5/64	30
011106	Triumph Drills Jobber HSS Bright 3/32	30
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011108	Triumph Drills Jobber HSS Bright 1/8	30
011109	Triumph Drills Jobber HSS Bright 9/64	30
011110	Triumph Drills Jobber HSS Bright 5/32	30
011111	Triumph Drills Jobber HSS Bright 11/64	30
011112	Triumph Drills Jobber HSS Bright 3/16	30
011113	Triumph Drills Jobber HSS Bright 13/64	30
011114	Triumph Drills Jobber HSS Bright 7/32	30
011115	Triumph Drills Jobber HSS Bright 15/64	30
011116	Triumph Drills Jobber HSS Bright 1/4	30
011117	Triumph Drills Jobber HSS Bright 17/64	30
011118	Triumph Drills Jobber HSS Bright 9/32	30
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011122	Triumph Drills Jobber HSS Bright 11/32	30
011123	Triumph Drills Jobber HSS Bright 23/64	30
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011125	Triumph Drills Jobber HSS Bright 25/64	30
011126	Triumph Drills Jobber HSS Bright 13/32	30
011127	Triumph Drills Jobber HSS Bright 27/64	30
011128	Triumph Drills Jobber HSS Bright 7/16	30
011129	Triumph Drills Jobber HSS Bright 29/64	30
011130	Triumph Drills Jobber HSS Bright 15/32	30
011131	Triumph Drills Jobber HSS Bright 31/64	30
011132	Triumph Drills Jobber HSS Bright 1/2	30
011199	Triumph Sets Set 29 Piece HSS Bright Finish 1/16"-1/2" by 64 ^{ths}	30
011201	Triumph Drills Jobber HSS Black Oxide 1/64	24
011202	Triumph Drills Jobber HSS Black Oxide 1/32	24
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011203	Triumph Drills Jobber HSS Black Oxide 3/64	24
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011207	Triumph Drills Jobber HSS Black Oxide 7/64	24
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011232.20	Triumph Drills Jobber HSS Black Oxide 1/2	24
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011308	Triumph Drills Jobber HSS Black Oxide 1/8	24
011309	Triumph Drills Jobber HSS Black Oxide 9/64	24
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011311	Triumph Drills Jobber HSS Black Oxide 11/64	24
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011321	Triumph Drills Jobber HSS Black Oxide 21/64	24
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057716	Triumph Drills Extra Length Drill HSS Black Oxide 1/4	89
057720	Triumph Drills Extra Length Drill HSS Black Oxide 5/16	89
057724	Triumph Drills Extra Length Drill HSS Black Oxide 3/8	89
057728	Triumph Drills Extra Length Drill HSS Black Oxide 7/16	89
057732	Triumph Drills Extra Length Drill HSS Black Oxide 1/2	89
058408	Triumph Drills Extra Length Drill HSS Black Oxide 1/8	91
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058416	Triumph Drills Extra Length Drill HSS Black Oxide 1/4	91
058420	Triumph Drills Extra Length Drill HSS Black Oxide 5/16	91
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058508	Triumph Drills Extra Length HSS Bright Finish 1/8	91
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059812	Triumph Drills Extra Length HSS Bright Finish 3/16	95
059814	Triumph Drills Extra Length HSS Bright Finish 7/32	95
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05-B 503	2 3/16 X 2 ICECUT	207
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05-D 202	2 1/8 X 1.5 CARBIDE CORE CUT	210
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092863	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 63/64	100
092864	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1"	100
092866	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-1/32	100
092868	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-1/16	100
092870	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-3/32	100
092872	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-1/8	100
092874	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-5/32	100
092876	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-3/16	100
092878	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-7/32	100
092880	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-1/4	100
092884	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-5/16	100
092888	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-3/8	100
092892	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-7/16	100
092896	Triumph Drills 1/2" Reduced Shank 3-Flats HSS Black Oxide Flutes 1-1/2	100
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094134	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 17/32	100
094135	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 35/64	100
094136	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 9/16	100
094137	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 37/64	100
094138	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 19/32	100
094139	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 39/64	100
094140	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 5/8	100
094141	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 41/64	100
094142	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 21/32	100
094143	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 43/64	100
094144	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 11/16	100

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094147	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 47/64	100
094148	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 3/4	100
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094153	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 53/64	100
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094155	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 55/64	100
094156	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 7/8	100
094157	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 57/64	100
094158	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 29/32	100
094159	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 59/64	100
094160	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 15/16	100
094161	ThunderBit Drills 1/2" Reduced Shank 3-Flats HSS Black & Bronze Oxide 61/64	100
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1000E5	5PC S&D DRILL SET 9/16-1" BY 8 TH - 1000E	87, 96
1000E8	8PC S&D DRILL BIT SET 9/16-1" BY 16 TH	87, 96
1000EC133	33/64,COBALT S&D DRILL - 1000EC	105
1000EC134	17/32,COBALT S&D DRILL - 1000EC	105
1000EC135	35/64,COBALT S&D DRILL - 1000EC	105
1000EC136	9/16,COBALT S&D DRILL - 1000EC	105
1000EC137	37/64,COBALT S&D DRILL - 1000EC	105
1000EC138	19/32,COBALT S&D DRILL - 1000EC	105
1000EC139	39/64,COBALT S&D DRILL - 1000EC	105
1000EC140	5/8,COBALT S&D DRILL - 1000EC	105
1000EC141	41/64,COBALT S&D DRILL - 1000EC	105
1000EC142	21/32,COBALT S&D DRILL - 1000EC	105
1000EC143	43/64,COBALT S&D DRILL - 1000EC	105
1000EC144	11/16,COBALT S&D DRILL - 1000EC	105
1000EC145	45/64,COBALT S&D DRILL - 1000EC	105
1000EC146	23/32,COBALT S&D DRILL - 1000EC	105
1000EC147	47/64,COBALT S&D DRILL - 1000EC	105
1000EC148	3/4,COBALT S&D DRILL - 1000EC	105
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1000EC152	13/16,COBALT S&D DRILL - 1000EC	105
1000EC153	53/64,COBALT S&D DRILL - 1000EC	105
1000EC154	27/32,COBALT S&D DRILL - 1000EC	105
1000EC155	55/64,COBALT S&D DRILL - 1000EC	105
1000EC156	7/8,COBALT S&D DRILL - 1000EC	105
1000EC157	57/64,COBALT S&D DRILL - 1000EC	105
1000EC158	29/32,COBALT S&D DRILL - 1000EC	105
1000EC159	59/64,COBALT S&D DRILL - 1000EC	105
1000EC160	15/16,COBALT S&D DRILL - 1000EC	105
1000EC161	61/64,COBALT S&D DRILL - 1000EC	105
1000EC162	31/32,COBALT S&D DRILL - 1000EC	105
1000EC163	63/64,COBALT S&D DRILL - 1000EC	105
1000EC164	1",COBALT S&D DRILL - 1000EC	105
1000EC202	1-1/32,COBALT S&D DRILL - 1000EC	105
1000EC204	1-1/16,COBALT S&D DRILL - 1000EC	105
1000EC206	1-3/32,COBALT S&D DRILL - 1000EC	105
1000EC208	1-1/8,COBALT S&D DRILL - 1000EC	105
1000EC210	1-5/32,COBALT S&D DRILL - 1000EC	105
1000EC212	1-3/16,COBALT S&D DRILL - 1000EC	105
1000EC214	1-7/32,COBALT S&D DRILL - 1000EC	105
1000EC216	1-1/4,COBALT S&D DRILL - 1000EC	105
1000EC218	1-9/32,COBALT S&D DRILL - 1000EC	105
1000EC220	1-5/16,COBALT S&D DRILL - 1000EC	105
1000EC222	1-11/32,COBALT S&D DRILL - 1000EC	105
1000EC224	1-3/8,COBALT S&D DRILL - 1000EC	105
1000EC226	1-13/32,COBALT S&D DRILL - 1000EC	105
1000EC228	1-7/16,COBALT S&D DRILL - 1000EC	105
1000EC230	1-15/32,COBALT S&D DRILL - 1000EC	105
1000EC232	1-1/2,COBALT S&D DRILL - 1000EC	105
1000EC5	5PC IMP COB DRILL SET 9/16-1" B 8T 1000EC	94, 96
1000EC8	8PC IMP COB S&D DRILL SET 9/16-1" BY 16T	94, 96
1000EF133	33/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF134	17/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF135	35/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF136	9/16,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF137	37/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF138	19/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF139	39/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF140	5/8,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF141	41/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF142	21/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF143	43/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF144	11/16,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF145	45/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF146	23/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF147	47/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF148	3/4,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF149	49/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF150	25/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF151	51/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF152	13/16,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF153	53/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF154	27/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF155	55/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF156	7/8,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF157	57/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF158	29/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF159	59/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF160	15/16,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF161	61/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF162	31/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF163	63/64,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF164	1",3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF202	1-1/32,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF204	1-1/16,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF206	1-3/32,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF208	1-1/8,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF210	1-5/32,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF212	1-3/16,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF214	1-7/32,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF216	1-1/4,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF218	1-9/32,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF220	1-5/16,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF222	1-11/32,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99
1000EF224	1-3/8,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF226	1-13/32,3-FLAT S&D DRILL 1/2"SHANK/1000EF	99

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1000EF230	1-15/32,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF232	1-1/2,3-FLAT S&D DRILL 1/2" SHANK/1000EF	99
1000EF32	32PC S&D IMP FLT STD SET 1/2-1 W/DRILL	89,96
1000EF5	5PC IMP DRILL SET 9/16-1 BY 8TH 1000EF	89,96
1000EF8	8PC IMP FLAT DRILL SET 9/16-1 BY 16 ^{THS}	89,96
1000F133	33/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F134	17/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F135	35/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F136	9/16,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F137	37/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F138	19/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F139	39/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F140	5/8,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F141	41/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F142	21/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F143	43/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F144	11/16,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F145	45/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F146	23/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F147	47/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F148	3/4,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F149	49/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F150	25/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F151	51/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F152	13/16,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F153	53/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F154	27/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F155	55/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F156	7/8,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F157	57/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F158	29/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F159	59/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F160	15/16,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F161	61/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F162	31/32,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F163	63/64,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F164	1,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F202	1.1/32,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F204	1.1/16,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F206	1.3/32,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F208	1.1/8,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F210	1.5/32,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F212	1.3/16,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F214	1.7/32,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F216	1.1/4,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F220	1.5/16,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F224	1.3/8,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F228	1.7/16,3-FLAT S&D DRILL 1/2" SHNK - 1000F	96
1000F232	1.1/2,3-FLAT S&D DRILL 1/2" SHANK - 1000F	96
1000F32	32PC S&D FLAT STAND SET 1/2-1 W/DRILL	106
1000F5	5PC S & D FLAT DRILL SET 9/16-1 1000F	106
1000F8	8PC S&D FLAT DRILL SET 9/16-1 BY 16 ^{THS}	106
1000N133	33/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N134	17/32,S&D DRILL 1/2" SHANK - 1000N	98
1000N135	35/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N136	9/16,S&D DRILL 1/2" SHANK - 1000N	98
1000N137	37/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N138	19/32,S&D DRILL 1/2" SHANK - 1000N	98
1000N139	39/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N140	5/8,S&D DRILL 1/2" SHANK - 1000N	98
1000N141	41/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N142	21/32,S&D DRILL 1/2" SHANK - 1000N	98
1000N143	43/64,S&D DRILL 1/2" SHANK - 1000N	98
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1000N145	45/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N146	23/32,S&D DRILL 1/2" SHANK - 1000N	98
1000N147	47/64,S&D DRILL 1/2" SHANK - 1000N	98
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1000N149	49/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N150	25/32,S&D DRILL 1/2" SHANK - 1000N	98
1000N151	51/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N152	13/16,S&D DRILL 1/2" SHANK - 1000N	98
1000N153	53/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N154	27/32,S&D DRILL 1/2" SHANK - 1000N	98
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1000N161	61/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N162	31/32,S&D DRILL 1/2" SHANK - 1000N	98
1000N163	63/64,S&D DRILL 1/2" SHANK - 1000N	98
1000N164	1",S&D DRILL 1/2" SHANK - 1000N	98
1000N32	32PC S&D DRILL BIT STAND 1/2-1 W/DRILL	88,96
1000N5	5PC NITRO DRILL BIT SET 9/16-1 8 ^{THS}	88,96
1000N8	8PC S&D NITRO DRILL SET 9/16-1 BY 16 ^{THS}	88,96
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100HX140	5/8 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX144	11/16 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX148	3/4 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX152	13/16 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX156	7/8 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX160	15/16 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX164	1 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX204	1-1/16 HEX NUT BRIDGE CNSTR REAMER 100HX	237
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100HX212	1-3/16 HEX NUT BRIDGE CNSTR REAMER 100HX	237
100HX216	1-1/4 HEX NUT BRIDGE CNSTR REAMER - 100HX	237
100HX220	1-5/16 HEX NUT BRIDGE CNSTR REAMER 100HX	237
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1035N125	25/64, REDUCED SH DRILL 3/8" SHANK - 1035N	39
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1100A106	3/32,6" AIRCRAFT EXT DRILLS - 1100	88
1100A107	7/64,6" AIRCRAFT EXT DRILLS - 1100	88
1100A108	1/8,6" AIRCRAFT EXT DRILLS - 1100	88
1100A109	9/64,6" AIRCRAFT EXT DRILLS - 1100	88
1100A110	5/32,6" AIRCRAFT EXT DRILLS - 1100	88
1100A111	11/64,6" AIRCRAFT EXT DRILLS - 1100	88
1100A112	3/16,6" AIRCRAFT EXT DRILLS - 1100	88
1100A113	13/64,6" AIRCRAFT EXT DRILLS - 1100	88
1100A114	7/32,6" AIRCRAFT EXT DRILLS - 1100	88
1100A115	15/64,6" AIRCRAFT EXT DRILLS - 1100	88
1100A116	1/4,6" AIRCRAFT EXT DRILLS - 1100	88
1100A117	17/64,6" AIRCRAFT EXT DRILLS - 1100	88
1100A118	9/32,6" AIRCRAFT EXT DRILLS - 1100	88
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1100A123	23/64,6" AIRCRAFT EXT DRILLS - 1100	88
1100A124	3/8,6" AIRCRAFT EXT DRILLS - 1100	88
1100A125	25/64,6" AIRCRAFT EXT DRILLS - 1100	88
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28A016AB	1.6MM-0.35 2FL BOTTOM TAP - 2800	146
28A016AP	1.6MM-0.35 2FL PLUG TAP - 2800	146
28A016AS	1.6MM-0.35 2FL TAP SET - 2800	146
28A016AT	1.6MM-0.35 2FL TAPER TAP - 2800	146
28A018AB	1.8MM-0.35 2FL BOTTOM TAP - 2800	146
28A018AP	1.8MM-0.35 2FL PLUG TAP - 2800	146
28A018AS	1.8MM-0.35 2FL TAP SET - 2800	146
28A018AT	1.8MM-0.35 2FL TAPER TAP - 2800	146
28A020AB	2.0MM-0.40 3FL BOTTOM TAP - 2800	146
28A020AP	2.0MM-0.40 3FL PLUG TAP - 2800	146
28A020AS	2.0MM-0.40 3FL TAP SET - 2800	146
28A020AT	2.0MM-0.40 3FL TAPER TAP - 2800	146
28A022AB	2.2MM-0.45 3FL BOTTOM TAP - 2800	146
28A022AP	2.2MM-0.45 3FL PLUG TAP - 2800	146
28A022AS	2.2MM-0.45 3FL TAP SET - 2800	146
28A022AT	2.2MM-0.45 3FL TAPER TAP - 2800	146
28A025AB	2.5MM-0.45 3FL BOTTOM TAP - 2800	146
28A025AP	2.5MM-0.45 3FL PLUG TAP - 2800	146
28A025AS	2.5MM-0.45 3FL TAP SET - 2800	146
28A025AT	2.5MM-0.45 3FL TAPER TAP - 2800	146
28A030AB	3.0MM-0.50 3FL BOTTOM TAP - 2800	146
28A030AP	3.0MM-0.50 3FL PLUG TAP - 2800	146
28A030AS	3.0MM-0.50 3FL TAP SET - 2800	146
28A030AT	3.0MM-0.50 3FL TAPER TAP - 2800	146
28A035AB	3.5MM-0.60 3FL BOTTOM TAP - 2800	146
28A035AP	3.5MM-0.60 3FL PLUG TAP - 2800	146
28A035AS	3.5MM-0.60 3FL TAP SET - 2800	146
28A035AT	3.5MM-0.60 3FL TAPER TAP - 2800	146
28A040AB	4.0MM-0.70 4FL BOTTOM TAP - 2800	146
28A040AP	4.0MM-0.70 4FL PLUG TAP - 2800	146
28A040AS	4.0MM-0.70 4FL TAP SET - 2800	146
28A040AT	4.0MM-0.70 4FL TAPER TAP - 2800	146
28A045AB	4.5MM-0.75 4FL BOTTOM TAP - 2800	146
28A045AP	4.5MM-0.75 4FL PLUG TAP - 2800	146
28A045AS	4.5MM-0.75 4FL TAP SET - 2800	146
28A045AT	4.5MM-0.75 4FL TAPER TAP - 2800	146
28A050AB	5.0MM-0.80 4FL BOTTOM TAP - 2800	146
28A050AP	5.0MM-0.80 4FL PLUG TAP - 2800	146
28A050AS	5.0MM-0.80 4FL TAP SET - 2800	146
28A050AT	5.0MM-0.80 4FL TAPER TAP - 2800	146
28A060AB	6.0MM-1.00 4FL BOTTOM TAP - 2800	146
28A060AP	6.0MM-1.00 4FL PLUG TAP - 2800	146
28A060AS	6.0MM-1.00 4FL TAP SET - 2800	146
28A060AT	6.0MM-1.00 4FL TAPER TAP - 2800	146
28A063AB	6.3MM-1.00 4FL BOTTOM TAP - 2800	146
28A063AP	6.3MM-1.00 4FL PLUG TAP - 2800	146
28A063AS	6.3MM-1.00 4FL TAP SET - 2800	146
28A063AT	6.3MM-1.00 4FL TAPER TAP - 2800	146
28A070AB	7.0MM-1.00 4FL BOTTOM TAP - 2800	146
28A070AP	7.0MM-1.00 4FL PLUG TAP - 2800	146
28A070AS	7.0MM-1.00 4FL TAP SET - 2800	146
28A070AT	7.0MM-1.00 4FL TAPER TAP - 2800	146
28A080AB	8.0MM-1.25 4FL BOTTOM TAP - 2800	146
28A080AP	8.0MM-1.25 4FL PLUG TAP - 2800	146
28A080AS	8.0MM-1.25 4FL TAP SET - 2800	146
28A080AT	8.0MM-1.25 4FL TAPER TAP - 2800	146
28A080BB	8.0MM-1.00 4FL BOTTOM TAP - 2800	146

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28A080BP	8.0MM-1.00 4FL PLUG TAP - 2800	146
28A080BS	8.0MM-1.00 4FL TAP SET - 2800	146
28A080BT	8.0MM-1.00 4FL TAPER TAP - 2800	146
28A100AB	10MM-1.50 4FL BOTTOM TAP - 2800	146
28A100AP	10MM-1.50 4FL PLUG TAP - 2800	146
28A100AS	10MM-1.50 4FL TAP SET - 2800	146
28A100AT	10MM-1.50 4FL TAPER TAP - 2800	146
28A100BB	10MM-1.25 4FL BOTTOM TAP - 2800	146
28A100BP	10MM-1.25 4FL PLUG TAP - 2800	146
28A100BS	10MM-1.25 4FL TAP SET - 2800	146
28A100BT	10MM-1.25 4FL TAPER TAP - 2800	146
28A120AB	12MM-1.75 4FL BOTTOM TAP - 2800	146
28A120AP	12MM-1.75 4FL PLUG TAP - 2800	146
28A120AS	12MM-1.75 4FL TAP SET - 2800	146
28A120AT	12MM-1.75 4FL TAPER TAP - 2800	146
28A120CB	12MM-1.25 4FL BOTTOM TAP - 2800	146
28A120CP	12MM-1.25 4FL PLUG TAP - 2800	146
28A120CS	12MM-1.25 4FL TAP SET - 2800	146
28A120CT	12MM-1.25 4FL TAPER TAP - 2800	146
28A140AB	14MM-2.00 4FL BOTTOM TAP - 2800	146
28A140AP	14MM-2.00 4FL PLUG TAP - 2800	146
28A140AS	14MM-2.00 4FL TAP SET - 2800	146
28A140AT	14MM-2.00 4FL TAPER TAP - 2800	146
28A140BB	14MM-1.50 4FL BOTTOM TAP - 2800	146
28A140BP	14MM-1.50 4FL PLUG TAP - 2800	146
28A140BS	14MM-1.50 4FL TAP SET - 2800	146
28A140BT	14MM-1.50 4FL TAPER TAP - 2800	146
28A160AB	16MM-2.00 4FL BOTTOM TAP - 2800	146
28A160AP	16MM-2.00 4FL PLUG TAP - 2800	146
28A160AS	16MM-2.00 4FL TAP SET - 2800	146
28A160AT	16MM-2.00 4FL TAPER TAP - 2800	146
28A160BB	16MM-1.50 4FL BOTTOM TAP - 2800	146
28A160BP	16MM-1.50 4FL PLUG TAP - 2800	146
28A160BS	16MM-1.50 4FL TAP SET - 2800	146
28A160BT	16MM-1.50 4FL TAPER TAP - 2800	146
28A180AB	18MM-2.50 4FL BOTTOM TAP - 2800	146
28A180AP	18MM-2.50 4FL PLUG TAP - 2800	146
28A180AS	18MM-2.50 4FL TAP SET - 2800	146
28A180AT	18MM-2.50 4FL TAPER TAP - 2800	146
28A180CB	18MM-2.00 4FL BOTTOM TAP - 2800	146
28A180CP	18MM-2.00 4FL PLUG TAP - 2800	146
28A180CS	18MM-2.00 4FL TAP SET - 2800	146
28A180CT	18MM-2.00 4FL TAPER TAP - 2800	146
28A180DB	18MM-1.50 4FL BOTTOM TAP - 2800	146
28A180DP	18MM-1.50 4FL PLUG TAP - 2800	146
28A180DS	18MM-1.50 4FL TAP SET - 2800	146
28A180DT	18MM-1.50 4FL TAPER TAP - 2800	146
28A200AB	20MM-2.50 4FL BOTTOM TAP - 2800	146
28A200AP	20MM-2.50 4FL PLUG TAP - 2800	146
28A200AS	20MM-2.50 4FL TAP SET - 2800	146
28A200AT	20MM-2.50 4FL TAPER TAP - 2800	146
28A200BB	20MM-1.50 4FL BOTTOM TAP - 2800	146
28A200BP	20MM-1.50 4FL PLUG TAP - 2800	146
28A200BS	20MM-1.50 4FL TAP SET - 2800	146
28A200BT	20MM-1.50 4FL TAPER TAP - 2800	146
28A220AB	22MM-2.50 4FL BOTTOM TAP - 2800	146
28A220AP	22MM-2.50 4FL PLUG TAP - 2800	146
28A220AS	22MM-2.50 4FL TAP SET - 2800	146
28A220AT	22MM-2.50 4FL TAPER TAP - 2800	146
28A220BB	22MM-1.50 4FL BOTTOM TAP - 2800	146
28A220BP	22MM-1.50 4FL PLUG TAP - 2800	146
28A220BS	22MM-1.50 4FL TAP SET - 2800	146
28A220BT	22MM-1.50 4FL TAPER TAP - 2800	146
28A240AB	24MM-3.00 4FL BOTTOM TAP - 2800	146
28A240AP	24MM-3.00 4FL PLUG TAP - 2800	146
28A240AS	24MM-3.00 4FL TAP SET - 2800	146
28A240AT	24MM-3.00 4FL TAPER TAP - 2800	146
28A240BB	24MM-2.00 4FL BOTTOM TAP - 2800	146
28A240BP	24MM-2.00 4FL PLUG TAP - 2800	146
28A240BS	24MM-2.00 4FL TAP SET - 2800	146
28A240BT	24MM-2.00 4FL TAPER TAP - 2800	146
28A270AB	27MM-3.00 4FL BOTTOM TAP - 2800	146
28A270AP	27MM-3.00 4FL PLUG TAP - 2800	146
28A270AS	27MM-3.00 4FL TAP SET - 2800	146
28A270AT	27MM-3.00 4FL TAPER TAP - 2800	146
28A270BB	27MM-2.00 4FL BOTTOM TAP - 2800	146
28A270BP	27MM-2.00 4FL PLUG TAP - 2800	146
28A270BS	27MM-2.00 4FL TAP SET - 2800	146

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28A300AB	30MM-3.50 4FL BOTTOM TAP - 2800	146
28A300AP	30MM-3.50 4FL PLUG TAP - 2800	146
28A300AS	30MM-3.50 4FL TAP SET - 2800	146
28A300AT	30MM-3.50 4FL TAPER TAP - 2800	146
28A300BB	30MM-2.00 4FL BOTTOM TAP - 2800	146
28A300BP	30MM-2.00 4FL PLUG TAP - 2800	146
28A300BS	30MM-2.00 4FL TAP SET - 2800	146
28A300BT	30MM-2.00 4FL TAPER TAP - 2800	146
28A330AB	33MM-3.50 4FL BOTTOM TAP - 2800	146
28A330AP	33MM-3.50 4FL PLUG TAP - 2800	146
28A330AS	33MM-3.50 4FL TAP SET - 2800	146
28A330AT	33MM-3.50 4FL TAPER TAP - 2800	146
28A330BB	33MM-2.00 4FL BOTTOM TAP - 2800	146
28A330BP	33MM-2.00 4FL PLUG TAP - 2800	146
28A330BS	33MM-2.00 4FL TAP SET - 2800	146
28A330BT	33MM-2.00 4FL TAPER TAP - 2800	146
28A360AB	36MM-4.00 4FL BOTTOM TAP - 2800	146
28A360AP	36MM-4.00 4FL PLUG TAP - 2800	146
28A360AS	36MM-4.00 4FL TAP SET - 2800	146
28A360AT	36MM-4.00 4FL TAPER TAP - 2800	146
28A360BB	36MM-3.00 4FL BOTTOM TAP - 2800	146
28A360BP	36MM-3.00 4FL PLUG TAP - 2800	146
28A360BS	36MM-3.00 4FL TAP SET - 2800	146
28A360BT	36MM-3.00 4FL TAPER TAP - 2800	146
28A390AB	39MM-4.00 6FL BOTTOM TAP - 2800	146
28A390AP	39MM-4.00 6FL PLUG TAP - 2800	146
28A390AS	39MM-4.00 6FL TAP SET - 2800	146
28A390AT	39MM-4.00 6FL TAPER TAP - 2800	146
28A390BB	39MM-3.00 6FL BOTTOM TAP - 2800	146
28A390BP	39MM-3.00 6FL PLUG TAP - 2800	146
28A390BS	39MM-3.00 6FL TAP SET - 2800	146
28A390BT	39MM-3.00 6FL TAPER TAP - 2800	146
28E015AB	1.5MM X 0.35,METRIC BOTTOMING TAP - 2800	147
28E015AP	1.5MM X 0.35,METRIC PLUG - 2800E	147
28E015AS	1.5MM X 0.35,METRIC TAP SET - 2800E	147
28E015AT	1.5MM X 0.35,METRIC TAPER - 2800E	147
28E016AB	1.6MM X 0.35,METRIC BOTTOMING TAP - 2800E	147
28E016AP	1.6MM X 0.35,METRIC PLUG - 2800E	147
28E016AS	1.6MM X 0.35,METRIC TAP SET - 2800E	147
28E016AT	1.6MM X 0.35,METRIC TAPER - 2800E	147
28E018AB	1.8MM X 0.35,METRIC BOTTOMING TAP - 2800E	147
28E018AP	1.8MM X 0.35,METRIC PLUG - 2800E	147
28E018AS	1.8MM X 0.35,METRIC TAP SET - 2800E	147
28E018AT	1.8MM X 0.35,METRIC TAPER - 2800E	147
28E020AB	2MM X 0.40,METRIC BOTTOMING TAP - 2800E	147
28E020AP	2MM X 0.40,METRIC PLUG TAP - 2800E	147
28E020AS	2MM X 0.40,METRIC TAP SET - 2800E	147
28E020AT	2MM X 0.40,METRIC TAPER TAP - 2800E	147
28E020BB	2MM X 0.45,METRIC BOTTOMING TAP - 2800E	147
28E020BP	2MM X 0.45,METRIC PLUG TAP - 2800E	147
28E020BS	2MM X 0.45,METRIC TAP SET - 2800E	147
28E020BT	2MM X 0.45,METRIC TAPER TAP - 2800E	147
28E022AB	2.2MM X 0.45,METRIC BOTTOM TAP - 2800E	147
28E022AP	2.2MM X 0.45,METRIC PLUG - 2800E	147
28E022AS	2.2MM X 0.45,METRIC TAP SET - 2800E	147
28E022AT	2.2MM X 0.45,METRIC TAPER - 2800E	147
28E023AB	2.3MM X 0.40,METRIC BOTTOM TAP - 2800E	147
28E023AP	2.3MM X 0.40,METRIC PLUG - 2800E	147
28E023AS	2.3MM X 0.40,METRIC TAP SET - 2800E	147
28E023AT	2.3MM X 0.40,METRIC TAPER - 2800E	147
28E025AB	2.5MM X 0.45,METRIC BOTTOM TAP - 2800E	147
28E025AP	2.5MM X 0.45,METRIC PLUG - 2800E	147
28E025AS	2.5MM X 0.45,METRIC TAP SET - 2800E	147
28E025AT	2.5MM X 0.45,METRIC TAPER - 2800E	147
28E026AB	2.6MM X 0.45,METRIC BOTTOM TAP - 2800E	147
28E026AP	2.6MM X 0.45,METRIC PLUG - 2800E	147
28E026AS	2.6MM X 0.45,METRIC TAP SET - 2800E	147
28E026AT	2.6MM X 0.45,METRIC TAPER - 2800E	147
28E030AB	3MM X 0.50,METRIC BOTTOMING TAP - 2800E	147
28E030AP	3MM X 0.50,METRIC PLUG TAP - 2800E	147
28E030AS	3MM X 0.50,METRIC TAP SET - 2800E	147
28E030AT	3MM X 0.50,METRIC TAPER TAP - 2800E	147
28E030BB	3MM X 0.60,METRIC BOTTOMING TAP - 2800E	147
28E030BP	3MM X 0.60,METRIC PLUG TAP - 2800E	147
28E030BS	3MM X 0.60,METRIC TAP SET - 2800E	147
28E030BT	3MM X 0.60,METRIC TAPER TAP - 2800E	147
28E035AB	3.5MM X 0.60,METRIC BOTTOM TAP - 2800E	147

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28E035AP	3.5MM X 0.60,METRIC PLUG - 2800E	147
28E035AS	3.5MM X 0.60,METRIC TAP SET - 2800E	147
28E035AT	3.5MM X 0.60,METRIC TAPER - 2800E	147
28E040AB	4MM X 0.70,METRIC BOTTOMING TAP - 2800E	147
28E040AP	4MM X 0.70,METRIC PLUG TAP - 2800E	147
28E040AS	4MM X 0.70,METRIC TAP SET - 2800E	147
28E040AT	4MM X 0.70,METRIC TAPER TAP - 2800E	147
28E040BB	4MM X 0.50,METRIC BOTTOMING TAP - 2800E	147
28E040BP	4MM X 0.50,METRIC PLUG TAP - 2800E	147
28E040BS	4MM X 0.50,METRIC TAP SET - 2800E	147
28E040BT	4MM X 0.50,METRIC TAPER TAP - 2800E	147
28E045AB	4.5MM X 0.75,METRIC BOTTOM TAP - 2800E	147
28E045AP	4.5MM X 0.75,METRIC PLUG - 2800E	147
28E045AS	4.5MM X 0.75,METRIC TAP SET - 2800E	147
28E045AT	4.5MM X 0.75,METRIC TAPER - 2800E	147
28E050AB	5MM X 0.80,METRIC BOTTOMING TAP - 2800E	147
28E050AP	5MM X 0.80,METRIC PLUG TAP - 2800E	147
28E050AS	5MM X 0.80,METRIC TAP SET - 2800E	147
28E050AT	5MM X 0.80,METRIC TAPER TAP - 2800E	147
28E050BB	5MM X 0.90,METRIC BOTTOMING TAP - 2800E	147
28E050BP	5MM X 0.90,METRIC PLUG TAP - 2800E	147
28E050BS	5MM X 0.90,METRIC TAP SET - 2800E	147
28E050BT	5MM X 0.90,METRIC TAPER TAP - 2800E	147
28E050CB	5MM X 0.50,METRIC BOTTOMING TAP - 2800E	147
28E050CP	5MM X 0.50,METRIC PLUG TAP - 2800E	147
28E050CS	5MM X 0.50,METRIC TAP SET - 2800E	147
28E050CT	5MM X 0.50,METRIC TAPER TAP - 2800E	147
28E055AB	5.5MM X 0.90,METRIC BOTTOM TAP - 2800E	147
28E055AP	5.5MM X 0.90,METRIC PLUG TAP - 2800E	147
28E055AS	5.5MM X 0.90,METRIC TAP SET - 2800E	147
28E055AT	5.5MM X 0.90,METRIC TAPER TAP - 2800E	147
28E060AB	6MM X 1.0,METRIC BOTTOMING TAP - 2800E	147
28E060AP	6MM X 1.0,METRIC PLUG TAP - 2800E	147
28E060AS	6MM X 1.0,METRIC TAP SET - 2800E	147
28E060AT	6MM X 1.0,METRIC TAPER TAP - 2800E	147
28E060BB	6MM X 0.75,METRIC BOTTOMING TAP - 2800E	147
28E060BP	6MM X 0.75,METRIC PLUG TAP - 2800E	147
28E060BS	6MM X 0.75,METRIC TAP SET - 2800E	147
28E060BT	6MM X 0.75,METRIC TAPER TAP - 2800E	147
28E063AB	6.3MM X 1.0,METRIC BOTTOMING TAP - 2800E	147
28E063AP	6.3MM X 1.0,METRIC PLUG TAP - 2800E	147
28E063AS	6.3MM X 1.0,METRIC TAP SET - 2800E	147
28E063AT	6.3MM X 1.0,METRIC TAPER - 2800E	147
28E070AB	7MM X 1.0,METRIC BOTTOMING TAP - 2800E	147
28E070AP	7MM X 1.0,METRIC PLUG TAP - 2800E	147
28E070AS	7MM X 1.0,METRIC TAP SET - 2800E	147
28E070AT	7MM X 1.0,METRIC TAPER TAP - 2800E	147
28E080AB	8MM X 1.25,METRIC BOTTOMING TAP - 2800E	147
28E080AP	8MM X 1.25,METRIC PLUG TAP - 2800E	147
28E080AS	8MM X 1.25,METRIC TAP SET - 2800E	147
28E080AT	8MM X 1.25,METRIC TAPER TAP - 2800E	147
28E080BB	8MM X 1.0,METRIC BOTTOMING TAP - 2800E	147
28E080BP	8MM X 1.0,METRIC PLUG TAP - 2800E	147
28E080BS	8MM X 1.0,METRIC TAP SET - 2800E	147
28E080BT	8MM X 1.0,METRIC TAPER TAP - 2800E	147
28E100AB	10MM X 1.5,METRIC BOTTOMING TAP - 2800E	147
28E100AP	10MM X 1.5,METRIC PLUG TAP - 2800E	147
28E100AS	10MM X 1.5,METRIC TAP SET - 2800E	147
28E100AT	10MM X 1.5,METRIC TAPER TAP - 2800E	147
28E100BB	10MM X 1.25,METRIC BOTTOMING TAP - 2800E	147
28E100BP	10MM X 1.25,METRIC PLUG TAP - 2800E	147
28E100BS	10MM X 1.25,METRIC TAP SET - 2800E	147
28E100BT	10MM X 1.25,METRIC TAPER TAP - 2800E	147
28E100CB	10MM X 1.0,METRIC BOTTOMING TAP - 2800E	147
28E100CP	10MM X 1.0,METRIC PLUG TAP - 2800E	147
28E100CS	10MM X 1.0,METRIC TAP SET - 2800E	147
28E100CT	10MM X 1.0,METRIC TAPER TAP - 2800E	147
28E110AB	11MM X 1.5,METRIC BOTTOMING TAP - 2800E	147
28E110AP	11MM X 1.5,METRIC PLUG TAP - 2800E	147
28E110AS	11MM X 1.5,METRIC TAP SET - 2800E	147
28E110AT	11MM X 1.5,METRIC TAPER TAP - 2800E	147
28E120AB	12MM X 1.75,METRIC BOTTOMING TAP - 2800E	147
28E120AP	12MM X 1.75,METRIC PLUG TAP - 2800E	147
28E120AS	12MM X 1.75,METRIC TAP SET - 2800E	147
28E120AT	12MM X 1.75,METRIC TAPER TAP - 2800E	147
28E120BB	12MM X 1.5,METRIC BOTTOMING TAP - 2800E	147
28E120BP	12MM X 1.5,METRIC PLUG TAP - 2800E	147
28E120BS	12MM X 1.5,METRIC TAP SET - 2800E	147

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290A124	3/8-18, PIPE TAPS - 2900	164
290A132	1/2-14, PIPE TAPS - 2900	164
290A148	3/4-14, PIPE TAPS - 2900	164
290A164	1" -- 11-1/2, PIPE TAPS - 2900	164
290A216	1-1/4 -- 11-1, PIPE TAPS - 2900	164
290A232	1-1/2 -- 11-1, PIPE TAPS - 2900	164
290A264	2" -- 11-1/2, PIPE TAPS - 2900	164
290A332	2-1/2-8, PIPE TAPS - 2900	164
290A364	3"-8, PIPE TAPS - 2900	164
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290E124	3/8-18, PIPE TAPS - 2900E	164
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435E080	8.0MM,S/S STR FLUTE CHUCK REAMER - 4350E	240
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435E110	10.0MM,S/S STR FLUTE CHUCK REAMER - 4350E	240
435E111	11.0MM,S/S STR FLUTE CHUCK REAMER - 4350E	240
435E112	12MM,S/S STR FLUTE CHUCK REAMER - 4350E	240
435E113	13MM,S/S STR FLUTE CHUCK REAMER - 4350E	240
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435E116	16MM,S/S STR FLUTE CHUCK REAMER - 4350E	240
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435E124	24MM S/S STR FLUTE CHUCK REAMER - 4350E	240
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437E110	5/32,HELICAL FLUT CHUCK REAMER - 4375E	240
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437E114	7/32,HELICAL FLUT CHUCK REAMER - 4375E	240
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437E124	3/8,S/S HELI CL FLUTE CHUCK REAMER - 4375E	240
437E125	25/64,S/S HEL FLUT CHUCK REAMER - 4375E	240
437E126	13/32,S/S HEL FLUT CHUCK REAMER - 4375E	240
437E127	27/64,S/S HEL FLUT CHUCK REAMER - 4375E	240
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437E130	15/32,S/S HEL FLUT CHUCK REAMER - 4375E	240
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670A124A	3/8,COB 4 FL END- MIL 3/8 SHK USA - 6700A	254
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680A016	#16,CARBIDE TIPPED DRILL - 680	110
680A017	#17,CARBIDE TIPPED DRILL - 680	110
680A018	#18,CARBIDE TIPPED DRILL - 680	110
680A019	#19,CARBIDE TIPPED DRILL - 680	110
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680A021	#21,CARBIDE TIPPED DRILL - 680	110
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695A116A	1/4,COB 4 FL END- MIL 3/8 SHK D/E 6950A	254
695A120A	5/16,COB 4 FL END- MIL 3/8 SHK D/E 6950A	254
695A124A	3/8,COB 4 FL END- MIL 3/8 SHK D/E 6950A	254
695A132B	1/2,COB 4 FL END- MIL 1/2 SHK D/E 6950A	254
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700A009	#9,SOLID CARBIDE DRILL - 700	112
700A010	#10,SOLID CARBIDE DRILL - 700	112
700A011	#11,SOLID CARBIDE DRILL - 700	112
700A012	#12,SOLID CARBIDE DRILL - 700	112
700A013	#13,SOLID CARBIDE DRILL - 700	112
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700A051	#51,SOLID CARBIDE DRILL - 700	112
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96CT216	1-1/4 X 1 DOC CARB TIP CUTER - 9600CT	216
96CT220	1-5/16 X 1 DOC CARB TIP HOLE CUT 9600CT	216
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