DRILL MASTERS
Eldorado Tool

Deep Hole Gundrills and Associated Products

1-800-658-8855

ISO 9001:2008 CERTIFIED

All products proudly Made in USA

WORLDWIDE SUPPLIER

Product Catalog & Price List

Prices Effective September 1, 2013

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DRILL MASTERS Eldorado Tool

Until after World War II, there were no domestic manufacturers of gundrilling tools or machines in the United States. In 1948, this gap was filled when Eldorado Tool was founded to manufacture cutting tools and mandrels for deep hole drilling. As they were recognized for the quality of their work and innovation of their designs, Eldorado was asked to design and develop tools for deep holes in a variety of metals used in a wide variety of manufacturing fields.

The company's reputation and range of products grew through the 1950s. In 1961, Eldorado developed a full line of standard gundrilling machines. In the 1970s they became the first to introduce a complete line of deep hole drilling tools, machines, fixtures and accessories for the metalworking industry.

During this period, Drill Masters, which had originally been founded as a tool manufacturer, evolved into a respected supplier of deep hole drills and accessories for the automotive, aerospace, firearm and molding industries. Both companies developed customer demonstration and training lab facilities, then added gundrilling production services.

By the year 2000 Drill Masters and Eldorado had become two of the leading designers and manufacturers of deep hole drilling tools, machines, fixtures and accessories. Their experience and knowledge of deep hole drilling techniques in almost any material and configuration had made their products and services sought after by a wide range of industries throughout the United States and the entire world.

The combining of these two leaders in 2002 has made Drill Masters-Eldorado Tool one of the largest suppliers and manufacturers of deep hole drilling tools, fixtures and accessories in the world. Our combined experience and resources offers you the widest selection of in-stock drills, and the greatest range of products, services, and experience... all made in the U.S.A. Add our rapid delivery and expanded customer service facilities, and you'll see why we're the leader in gundrilling for parts, service, and innovative assistance.

The Gundrilling Process

Deep hole drilling was first developed for the manufacturing of firearms, hence the name gundrilling. Originally a time-consuming and expensive process, technological advances have made it a highly efficient manufacturing process utilized in all metal cutting industries, including automotive, aircraft, aerospace, construction, medical, tool and die, petro chemical, hydraulics, pneumatics and more.

Gundrilling is an ideal solution for most deep hole and high precision drilling projects. This operation produces accurate, repeatable holes with excellent surface finishes. Gundrills hold location to precise tolerances, are sized to exact specifications, produce burr-free holes and can be formed to produce specific shapes in blind holes and bottom forming with a minimum of machine adaptation. These systems can be easily integrated with CNC machining centers, lathes and milling machines for a relatively small investment, making it affordable for large or small shops with production requirements varying from one piece to hundreds of thousands.

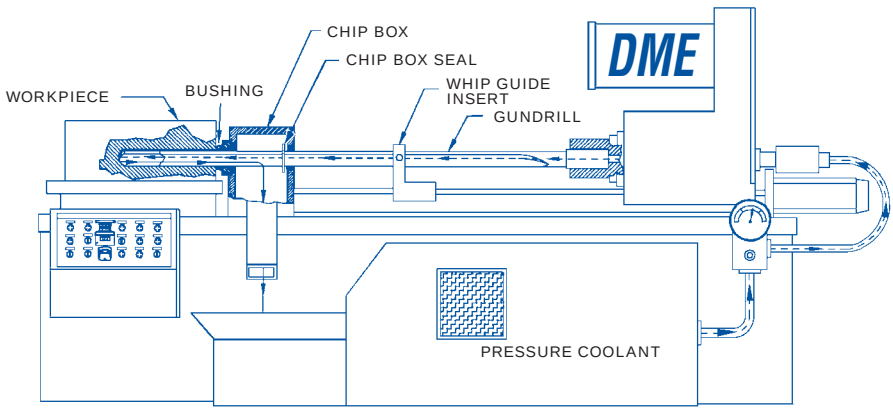
The gundrill's function

Gundrilling is a metal removal process involving a drilling machine, a high pressure coolant system and a high quality drill with a single or double flute along the shank. In operation, the drill is positioned and held in the spindle nose, then guided into the workpiece through a prestarted hole or guide bushing to prevent vibration and ensure accuracy. The drill tip's cutting edges produce thin curled chips that are carried back along the shank by the high pressure coolant and deposited in the chip box. The off-center design of the cutting edges creates pressure within the bore, which is carried by pads behind the drill tip. The coolant that flushes out the chips also lubricates these pads, which burnish the surface and develop the fine finish for which gundrilling is known.

The gundrilling machine

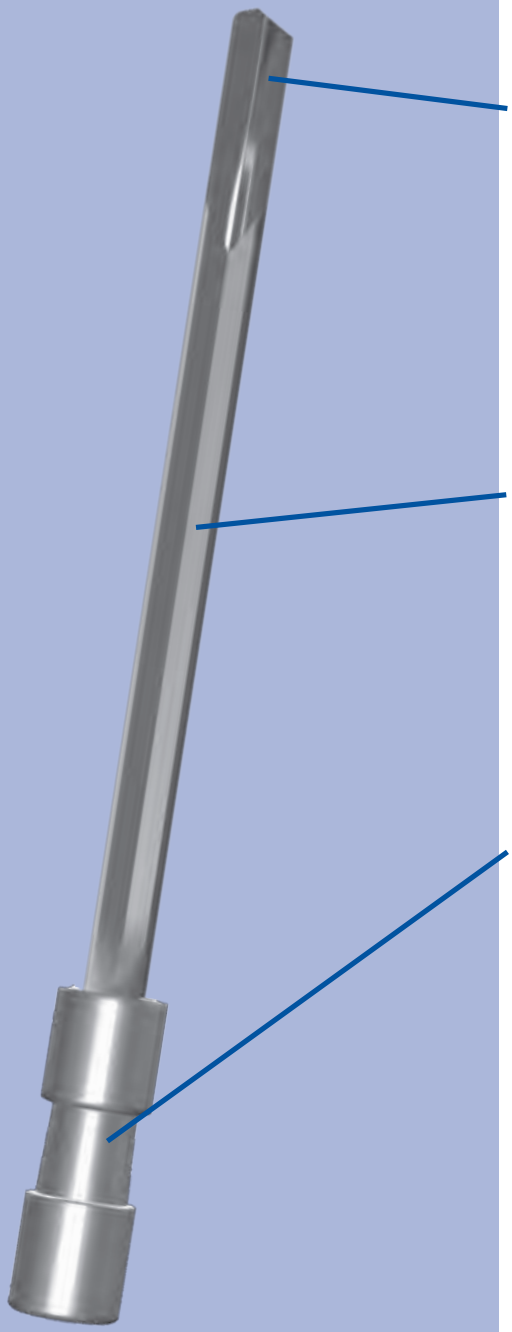
Designed to provide optimum conditions for gundrill operation, the gundrilling machine's high pressure pump delivers lubricant to the rear of the drill. The drill can be driven by the spindle or be held stationary if the workpiece is rotated. During drilling, the workpiece can be advanced or the drill can advance.

The gundrill is supported by anti-whip devices along the shank and at the rear of the chip box. The chip box contains chip deflectors and a front end bushing, which guides the drill into the workpiece.



- Straightness tolerances of .001" (.025mm) per foot.
- Concentricity tolerances of .001" (.025mm) per inch or better.
- Hole diameter tolerances of +/- .0005" (.0127mm)
- Finish tolerances as low as 4 Ra.
- Burr-free intersections
- Consistent reproduction from hole to hole.

The anatomy of a gundrill

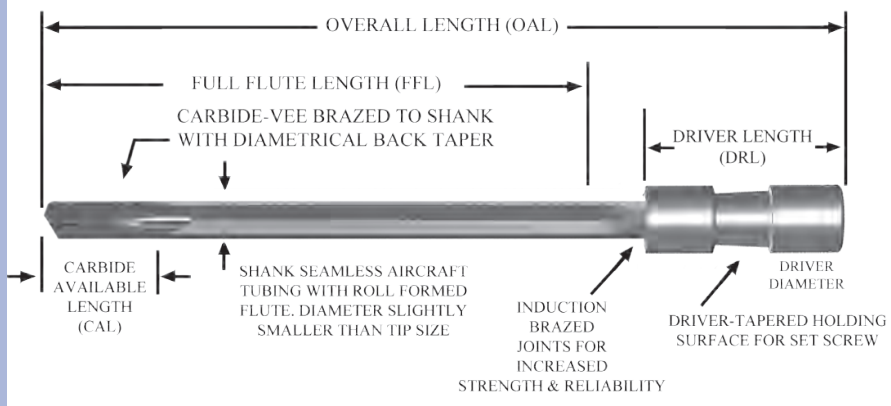


The gun drill is a simple basic tool consisting of a carbide tip, a heat treated alloy shank, and a steel driver, typically silver brazed together into one precision unit.

Tip: The most critical element, the tip cuts the hole as it pilots the drill through the workpiece, producing precision holes in a single pass. The drill's point, or nosegrind, has two basic angles that may be varied for optimum results depending upon the material being drilled. These angles balance cutting forces, distributing them to the tip's bearing pads to keep the drill concentric. The tip is slightly larger than the shank, so the shank can rotate freely without contacting the hole wall. A round, kidney-shaped, or two round holes through the tip line up with the shank's channel to allow the flow of coolant at high pressures.

Shank: The shank is made from aircraft grade alloy steel tubing with a 110°-120° vee-flute formed to the center of the shank's diameter. Coolant is forced from the driver through the center of the shank to the tip, where it is flushed back along the shank's flute. The shank maintains proper gundrill alignment and must be strong enough to absorb cutting torque and thrust. If the shank is too stiff it may transfer minor mis-alignment in the machine to the tip, but it must not be flexible enough to sag or whip at high RPMs.

Driver: Drivers are cylindrical, with an undercut or flat section for the set screw, which holds in the spindle bore. They are manufactured to industry standards or to special diameters and a concentric hole through the driver's length allows coolant to pass through to the shank and tip.



Gundrill and Reamer Types

Solid carbide tip & shank, single kidney oil hole, single flute

Solid carbide shank and tip, available from .0490" (1.244mm) to .2400" (6.096mm)

Single round oil hole, single flute

Carbide tip, available from .075" (1.905mm) to 2.500" (63.5.00mm) diameters. Inserted carbide style gundrills available from 1.2600" (32.00mm) to 3.000" (76.20mm) diameters for same-day shipment.

Two round oil holes, single flute

Carbide tip, available from .3018" (7.665mm) to 1.500" (38.1mm) diameter. Use when more cutting fluid is desired to the cutting edge and for additional chip evacuation.

Kidney shaped oil hole, single flute

Carbide tip, available from .0750" (1.905mm) diameter to .3174" (8.062mm) diameter. This range includes over 100 sizes and lengths for same-day shipment.

Two oil holes, two flute

Carbide tip with two cutting edges for twice the feed rates of a single flute. The flute channels are not as deep as on single flute drills, applications are limited to very small chip formation type material such as cast iron, cast aluminum and ductile materials. Available in diameters from .1875" (4.75mm) to .750" (19.05mm)

Single oil hole, chips ahead reamer

Carbide tip, available from .1875" (4.75mm) diameter to 1.2500" (31.75mm) diameter. This end cutting tool forces chips out ahead of the tool and requires an existing thru hole in the workpiece. Primarily used to open up predrilled or cored holes to close tolerances. Available in butt-braze or vee-style braze.

Designed to penetrate twice as fast as the single flute reamer. For special applications only where an intersecting core hole might need to be opened.

Single Flute Gundrill Types

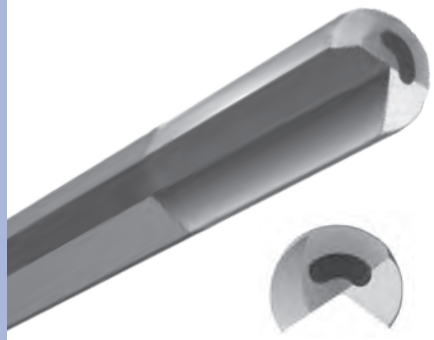
Drill Masters-Eldorado single flute gundrills are available in diameters from .039” (1.00 mm) to 3.000” (76.20 mm). Included in this range are over 800 sizes and lengths available for same day delivery. We also offer an expedited service for non-stock gundrills to satisfy your urgent requests. As part of our Quality Assurance program, our carbide and steel tubing are subjected to complete metallurgical analysis prior to manufacturing the final product. In addition to the single flute design, we offer two flute, solid carbide tip and shank, Opti-Flo (kidney oil hole), and Opti-Flo II (two oil hole) gundrills. Shown here are some of the popular gundrills and gunbores we manufacture.

Single round hole, **single flute**

Solid carbide tip, available from .0750” (1.905mm) to 0.1875” (4.762mm) in over 800 standard sizes and lengths for immediate delivery and as special orders to 3.000” (76.2mm) in diameter “inserted”.

Two round holes, **single flute**

The Opti-Flo II features a carbide tip, available from .3018”(7.665mm) to 1.500” (38.1mm) in standard stock sizes and lengths for immediate delivery and as special orders to 3.000” (76.2mm) in diameter “inserted”.



Single kidney hole, **single flute**

The Opti-Flo features a carbide tip, available from .0750” (1.905mm) to 0.3174” (8.062mm) in standard stock sizes and lengths for immediate delivery and as special orders to customer specifications.

DME Tool offers a

3-5 Day Special Delivery

on non-standard sizes.

Call for details.

Two hole, two flute

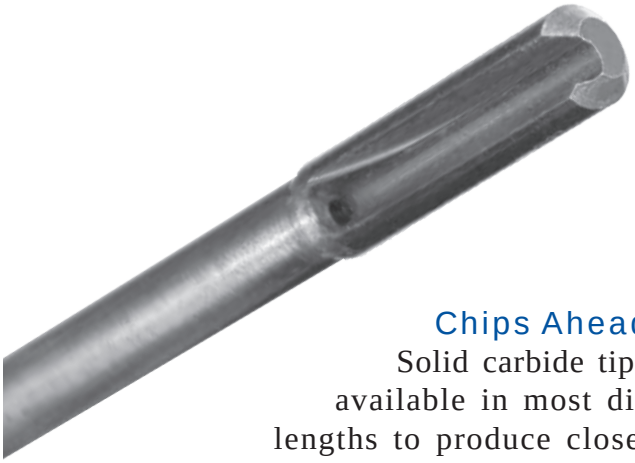
Solid carbide tip with tube (shank) manufactured from 4135 aircraft grade tubing. Diameters available from .375” (4.75mm) to 1.25” (31.75mm) and lengths to 84” (2133mm)

Step Tools

Step tools may be incorporated in an application to eliminate two to three subsequent operations in a single hole. The use of a step tool dramatically reduces cycle time, scrap, and eccentricity between diameters.

Step drills have manufacturing limitations depending on extreme diameter ranges in the steps. Special carbide developing may sometimes be necessary due to the coolant hole location. Additionally chip breakers may be required due to the lack of an inside angle which curls and breaks the chips under normal circumstances. Ideally using this type of drill yields virtually no eccentricity between diameters.

Step Drill are also used with a non-cutting pilot to follow an existing hole and minimize Eccentricity between two diameters.



Chips Ahead Reamers

Solid carbide tip reamers are available in most diameters and lengths to produce close tolerances, eliminating the need for honing.

Two Flute Gundrill

The two flute gundrill design incorporates two cutting edges, which reduces chip load and increases penetration rate up to 100% over single flute drills in various non-ferrous applications. They can be used in conventional gundrilling machines and in CNC lathes and machining centers. Two flute gundrill features include:

- Sub-micro grain carbide tips for greater tool life
- 4135 aircraft grade shanks
- Dual oil holes for optimum chip evacuation

Multi-Diameter Step Gundrills

Many parts require as many as two, three, or four various size holes in a single bore. Certain applications may allow a single multi-diameter gundrill to produce all or some of these holes, reducing machining time.

Reamers

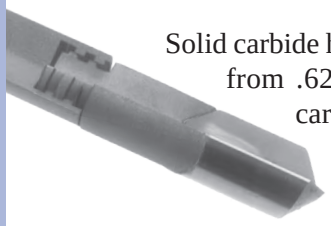
Chips ahead and behind reamers are commonly used to obtain very tight ID bore sizes. Drilling an initial hole .015” - .030” under the desired finished diameter yields the perfect amount of material to be removed with this type of tool. The result is a hole size to .0002” in diameter and finishes to 16 RMS or better in a single pass, usually eliminating the need for honing.

Steel Head Drill Tips with Carbide Inserts

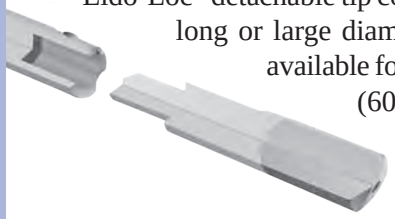
Steel head drill tips with carbide inserts are available as standard items from 1.261” (32.03mm) to 3.000” (76.2mm) diameters.

Interlocking detachable cutting heads allow you to install a new head in minutes without removing the shaft from the assembly. Benefits include no down time, increased tool life and greater productivity. Order them to fit your existing drivers, shanks, and detachable heads. If your standard shanks are in good condition, you can convert to this system.

Interlocking Detachable Cutting Heads



Solid carbide heads are available as standard items in diameters from .625” (15.875mm)” to 1.375” (34.925mm), with carbide inserts from 1.396” (35.458mm) to 2.25” (57.15mm).



Eldo-Loc® detachable tip construction provides easier handling of extra long or large diameter gundrills. This is an optional method available for gundrills from .625” (15.875mm) to 2.375” (60.325mm) diameter

Rifle Buttons

Rifling buttons are precision ground for forming the rifling grooves in gun barrels. This is a specialized product for a specialized industry. Sizes range from 17 caliber to 10 gauge, and are available for rifle only, bore only, or combination push or pull. Let us titanium-nitrate coat your rifling buttons for increased tool life, better performance and finer finish. Rifle bore gauges are available upon request.

Rifle/Bore Gages

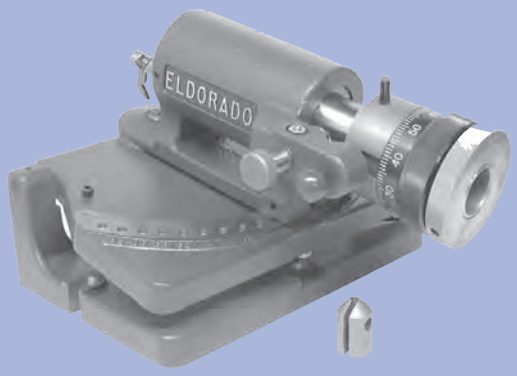
In order to check or qualify the inside of the barrel you need to use Rifle and Bore Air gage probes. We manufacture these in carbide to the SAMMI barrel specifications to give you the correct sizes throughout the barrel.

Hammer Forging Mandrels

Another means of producing rifling in barrels is by Hammer Forging Rifling Mandrels. We manufacture these very precision tools in high impact carbide. The carbide mandrel has the entire depth rifling pattern ground into its surface to reflect the exact interior of the barrel.

Model "B" Sharpening Fixture

Part #107245



The traditional Model B gundrill sharpening fixture is the most widely used in the world. The B fixture is used to sharpen single flute gundrills from .055" (1.39mm) to 1.062" (26.9mm) in diameter. The heavy duty construction of this unit assures repetitive grinding quality, lowers the cost per hole, eliminates down time, ends inefficiency and reduces costly rejects. The fixture mounts easily on conventional tool and cutter or surface grinders as well as our Universal Bench Top Grinder. Any shop personnel can quickly and accurately reproduce the required nose geometry without carbide and diamond wheel waste. Once the combination of angles and clearances are specified, the operation is routine.

The Facet Gundrill Sharpening Fixture

Part #FG-F-I
Part #FG-F-II

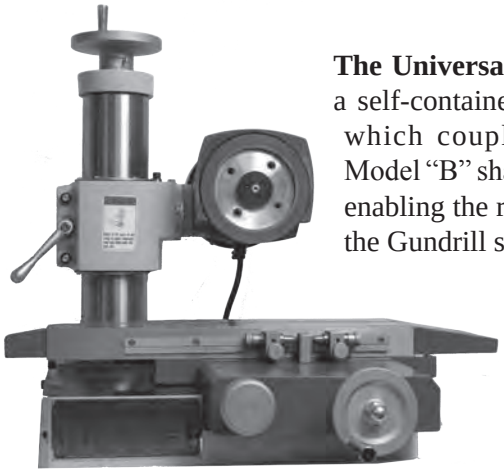
Model - I
3-Axis capable of re-grinding drill diameters to factory specifications from 1.0mm (.0393") - 3.5mm (.1380").

Model - II
3-Axis capable of re-grinding drill diameters to factory specifications with two different clamping ranges: 2.5mm (.0984") - 32mm (1.259") & 5.0mm (.1968") - 45mm (1.771")

Either model can be easily mounted to our Universal Bench Top Grinder for a complete turnkey package.

The Universal Bench Top Grinder

Part #FCG-610

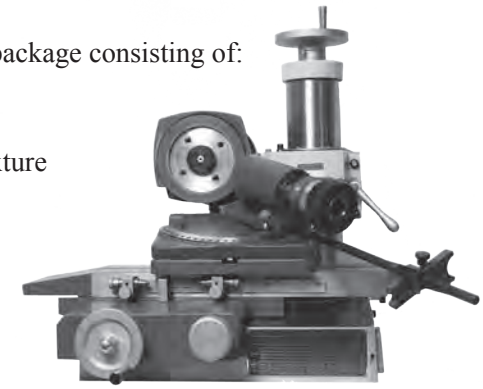


The Universal Bench Top Grinder is a self-contained manual cutter grinder which couples with the Eldorado Model "B" sharpening fixture therefore enabling the regrinding of Gundrills at the Gundrill station!

The Universal Bench Top Grinder Complete Package

Is the complete package turn key package consisting of:
The Universal Bench Top Grinder

- A Diamond Wheel
- The Model "B" Sharpening Fixture
- One Collet



AVYAC NC-18

AVYAC NC-18 4 Axis with Siemens 810D Numerical Control Available w/ optional auto loader.

Re-Tipping

RE-TIPPING
When a tool reaches the point where it can no longer be utilized due to the carbide being re-ground too many times, chipping, or misused, send them back to us for re-tipping. This saves our customers as much as 20% the cost of a new tool. This service can also be done on competitors' tools.

Re-Sharpening

RE-SHARPENING
When a tool reaches its maximum re-sharpen point we offer a re-sharpening service which enables our customers to return their used drills and have them re-ground to factory specifications and returned within 24 – 48 hours.
THIS SERVICE CAN ALSO BE DONE ON COMPETITORS' TOOLS.

Re-Conditioning

RE-CONDITIONING
If a tool is damaged due to accidental crashes, operator error or just misuse it can be returned and re-conditioned to the original manufacturers specifications. THIS SERVICE CAN ALSO BE DONE ON COMPETITORS' TOOLS.

Seminars

SEMINARS
We offer seminars detailed to your specific needs either at our facility or yours. These seminars can be formal or informal and contoured to upper management, purchasing, engineers, operators, and set-up and maintenance personnel.

Feasibility Studies, Tooling, Application and Machine Analysis

FEASIBILITY STUDIES, TOOLING, APPLICATION AND MACHINE ANALYSIS:
Is it right, can it be better, can we cut some costs, what are our options?
These are all of the questions we ask ourselves about our process, one option is to have an expert come in and evaluate your application and process to see what can be added, enhanced, or omitted to make it better. WE CAN HELP!

If you have a part that needs a hole produced prior to committing to a project, we can drill these parts and provide you with the feeds, speeds, coolant pressures, tool life, and cycle times.

Sulfurized, Chlorinated Gundrilling Oil

SULFURIZED, CHLORINATED GUNDRILLING OIL

Resharpening diamond wheels in 400, 320 or 220 grit are available in configurations for drills .055" (1.397mm) to 1.000" (25.4mm) and 1.000" (25.4mm) to 2.000" (50.8mm).

Collets are designed to work in conjunction with the Eldorado Model "B" sharpening fixture. Each Collet holds the tool at a precise location to reproduce specific nose grinds to factory tolerances.

Filter Bags (Upper & Lower) Direct fit for the Eldorado F-18 coolant systems, both upper and lower bags

Canister Filters Fit most F-18 Coolant Systems and provide either 5 or 15 micron filtration, sold by the case, 6 per case.

Drill Guides Flexible plastic Drill Guide bushings stop drill whipping and seal the chip box by stretching over the carbide drill tip and contracting onto the steel drill body.

Snap Guides A quick-change support held in place with a snap ring, Flexible plastic SnapGuide® bushings stretch over carbide gun drill tip and contract over steel tube to stop drill whipping and vibration. Contoured hole in SnapGuide® forms perfect seal on gun drill.

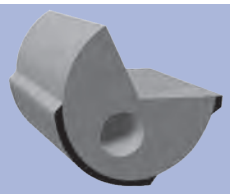
Chip Deflectors stop metal chips and cutting oil from exiting the back of the chip box. They provide sealing only and no drill support. They are used on gun drill machines on short rigid drills when whipping is not a problem.

Gundrill Inserts Are starter bushings manufactured to a tolerance of +.0002" (.005mm) / -.000 and designed to be inserted into the GDL (Gundrill Liner) to guide the drill precisely into the material being drilled.

Gundrill Liner Are inserted into the chip box or face of the Gundrill machine and hold the designated GDI (Gundrill Insert) in place.

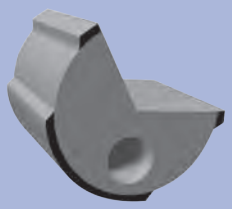
The Gundrilling HandBook: All the Answers at Your Fingertips for only $79.99! The most comprehensive book on the subject in forty years. Conventional, CNC & Misc. Applications Single Flute, Two Flute, "D" Drill, Etc. Tool Geometry, Coolant Selection Parameters, Process Planning Case Histories, Tips & Tricks & Process Optimization Tool Wear, Tool Life & Troubleshooting

Contour selection is made on the basis of the material to be drilled, and the details of the particular application. As a rule, the greater the bearing pad's area of contact, the better control of size and finish due to increased support and burnishing action.



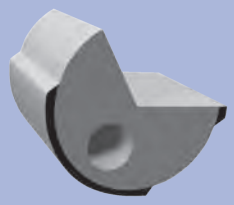
R1: Standard Bearing Pad

General purpose stock drill contour for steel, stainless steel, inconel and aluminum. Offers minimum bearing contact with the workpiece (non-micable).



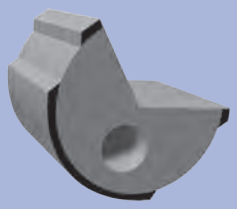
R2: Standard Bearing and Guide Pad

Recommended for all non-ferrous and cast iron up to gundrill diameter of .200" (non-micable).



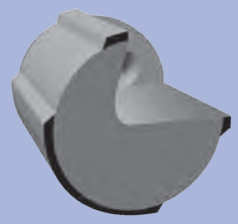
R3: High Bearing Pad

For good size control (including at exit) special purpose contour, where micable diameter is required or extra burnishing action is required, not for all materials (micable).



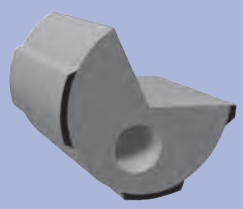
R4: High Bearing and Guide Pad

For use in aluminum and brass for best hole finish and for intersecting holes and interrupted cuts, or extra O.D. support and burnishing. Use with wood and plastic in combination with .0015/.002" back taper. Do not use in high nickel content materials due to high burnishing forces (micable).



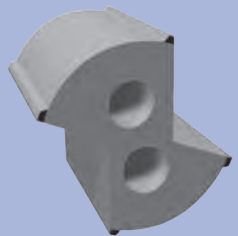
R6: High Bearing and Guide Pad Reamer

For chips ahead reaming applications when opening up existing holes, e.g., valve guides (micable).



R9: High Interrupted Bearing Pad

For good size control, including at exit. Special purpose contour where micable diameter is required, or extra burnishing action is required, not for all materials (micable).

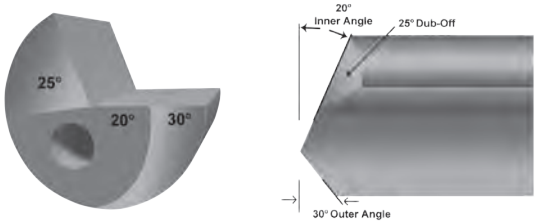


R10: Two Flute Bearing Pad

Used for high penetration rates in applications such as lubrication holes. Contour for aluminum shown (micable).

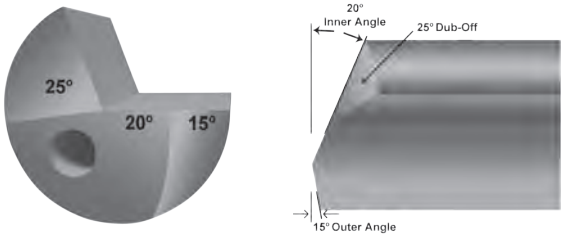
The center design of our gundrills allows for a wide range of nosegrinds from a full spherical radius to a flat bottom design. The nosegrind angles are important in attaining the best quality results. Angles can be modified to improve the flushing action of the high pressure oil and to improve chip control. Specific grinds have been developed for severe applications such as exit breakouts and interrupted or angular entries. Some of the most popular nosegrind configurations are shown here.

N-8 Nosegrind



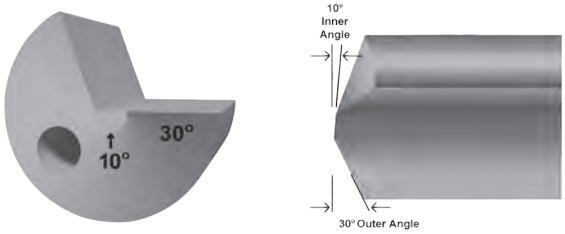
General purpose stock drill grind for steel, inconel and stainless steel, most often used with stock 'R1' O.D. contour.

N-4 Nosegrind



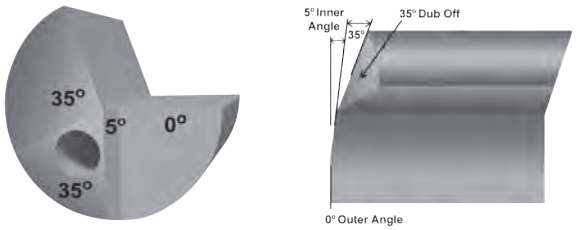
In aluminum and brass, use this grind with 'R4' O.D. contour for best hole finish.

N-73 Nosegrind



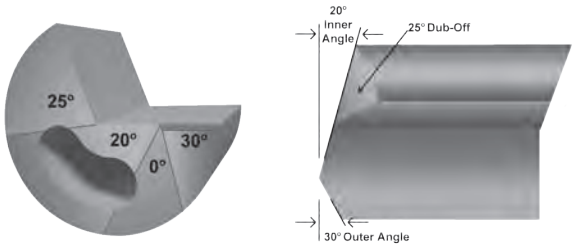
For drilling , stacked parts and angular entries. Due to the point's placement near the center of the drill, this is the strongest gundrill.

N-126 Nosegrind



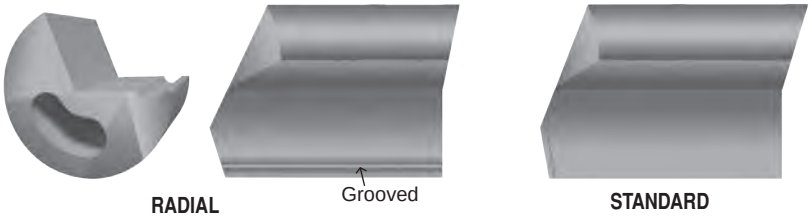
For applications requiring nearly flat bottoms. It can also be ground for a completely flat bottom, or on difficult materials, use to qualify bottoms only.

Facet Nosegrind



Facet grinds are preferred on specific applications, or when regrind fixtures limit the cam type sharpenings.
They can be ground to various slash type angles with good performance and allow a greater amount of clearance for coolant to cool the chip at the cutting edge. This grind is standard on most European applications.

Chip Breakers



Chip Breakers are generally used to break string type chips often attributed to gummy material or when machines limit the surface footage necessary to generate the heat needed to break a chip. There are two types of Chip Breakers:
The Radial Chip Breaker runs down the length of the carbide flat and lasts the life of the tool.
The Standard Chip Breaker is reproduced each time the tool is ground.

Stock Gundrills **Same Day Shipment** **Single Round Coolant Hole**

0.0781" Dia. To 0.1890" Dia.

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.0781	6	100004	146.00	128.00	118.00	110.00	100.00	
5/64"	10	104707	152.00	133.00	123.00	114.00	105.00	
0.0810	6	100005	148.00	130.00	120.00	112.00	102.00	
#46	10	112474	152.00	133.00	123.00	114.00	105.00	
0.0820	6	100006	139.00	122.00	114.00	105.00	96.00	
#45	10	112475	145.00	127.00	118.00	109.00	100.00	
0.0860	6	100007	129.00	113.00	104.00	97.00	88.00	
#44	10	104708	135.00	118.00	113.00	101.00	93.00	
0.0890	6	100008	121.00	106.00	99.00	92.00	84.00	
#43	10	112476	126.00	110.00	102.00	94.00	86.00	1/2" Dia. x 1 1/2" LONG TAPERED UNDERCUT
0.0937	6	100009	112.00	98.00	91.00	84.00	77.00	
3/32"	10	100010	115.00	101.00	94.00	86.00	79.00	
	16	104709	121.00	109.00	101.00	94.00	86.00	
0.0960	6	100011	118.00	103.00	96.00	88.00	81.00	
#41	10	100012	122.00	108.00	100.00	92.00	84.00	
0.0980	6	100013	118.00	103.00	96.00	88.00	81.00	
#40	10	100014	122.00	108.00	100.00	92.00	84.00	
0.0995	6	100015	118.00	103.00	96.00	88.00	81.00	
#39	10	100016	122.00	108.00	100.00	92.00	84.00	
0.1015	6	100017	104.00	92.00	85.00	78.00	72.00	
#38	10	100018	110.00	96.00	90.00	82.00	76.00	
0.1040	6	100019	113.00	99.00	92.00	85.00	78.00	
#37	10	100020	114.00	100.00	93.00	86.00	79.00	
0.1065	6	100021	113.00	99.00	92.00	84.00	78.00	
#36	10	100022	114.00	100.00	93.00	86.00	79.00	
0.1094	6	100023	113.00	99.00	92.00	84.00	78.00	
7/64"	10	100024	114.00	100.00	93.00	86.00	79.00	
	12	111520	116.00	101.00	94.00	86.00	80.00	
	16	111775	117.00	102.00	95.00	87.00	81.00	
0.1110	6	100025	100.00	87.00	82.00	76.00	69.00	
#34	10	100026	104.00	92.00	84.00	78.00	72.00	
0.1130	6	100027	100.00	87.00	82.00	76.00	69.00	
#33	10	100028	104.00	92.00	84.00	78.00	72.00	
0.1160	6	100029	111.00	97.00	91.00	83.00	77.00	
#32	10	100030	115.00	100.00	94.00	86.00	79.00	
0.1181	6	100031	111.00	97.00	91.00	83.00	77.00	
3mm	10	100032	115.00	100.00	94.00	86.00	79.00	
	16	112477	125.00	110.00	102.00	95.00	88.00	
0.1200	6	100033	111.00	97.00	91.00	83.00	77.00	
#31	10	100034	115.00	100.00	94.00	86.00	79.00	
0.1250	10	100035	81.00	72.00	66.00	61.00	56.00	
1/8"	12	111113	86.00	76.00	71.00	65.00	59.00	
	16	100036	87.00	77.00	72.00	66.00	60.00	
	22	100037	96.00	84.00	78.00	72.00	66.00	
	28	104710	99.00	86.00	81.00	75.00	68.00	
	36	111774	102.00	90.00	83.00	77.00	70.00	3/4" Dia. x 2 3/4"
0.1285	10	100038	81.00	74.00	68.00	63.00	56.00	
#30	16	100039	87.00	79.00	74.00	67.00	60.00	
	22	100040	96.00	87.00	81.00	74.00	66.00	
	28	111776	99.00	90.00	83.00	77.00	68.00	
0.1360	10	100041	83.00	76.00	70.00	64.00	57.00	
#29	16	100042	90.00	81.00	75.00	68.00	61.00	
	22	100043	97.00	88.00	82.00	75.00	67.00	
0.1406	10	100044	81.00	74.00	68.00	62.00	56.00	
9/64"	12	111530	85.00	77.00	72.00	65.00	58.00	
	16	100045	86.00	78.00	73.00	66.00	59.00	
	22	100046	93.00	84.00	78.00	72.00	63.00	

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.1440	10	100047	81.00	74.00	68.00	62.00	56.00	
#27	16	100048	86.00	78.00	73.00	66.00	59.00	
	22	100049	93.00	84.00	78.00	72.00	63.00	
0.1470	10	100050	81.00	74.00	68.00	62.00	56.00	
#26	16	100051	86.00	78.00	73.00	66.00	59.00	
	22	100052	93.00	84.00	78.00	72.00	63.00	
0.1495	10	100053	81.00	74.00	68.00	62.00	56.00	
#25	16	100054	87.00	79.00	74.00	67.00	60.00	
0.1520	10	100056	81.00	74.00	68.00	62.00	56.00	
#24	16	100057	87.00	79.00	74.00	67.00	60.00	3/4" Dia. x 2 3/4" LONG TAPERED UNDERCUT
	22	100058	92.00	82.00	77.00	70.00	63.00	
0.1562	10	100062	78.00	70.00	66.00	60.00	53.00	
5/32"	12	111115	81.00	73.00	67.00	62.00	55.00	
	16	100063	82.00	74.00	68.00	63.00	56.00	
	22	100064	88.00	80.00	75.00	68.00	61.00	
	28	104711	93.00	84.00	79.00	72.00	64.00	
	36	114079	98.00	90.00	83.00	76.00	67.00	
0.1575	10	100065	79.00	72.00	66.00	61.00	55.00	
4mm	16	100066	83.00	76.00	70.00	64.00	57.00	
	22	100067	90.00	81.00	76.00	69.00	61.00	
0.1590	10	100068	79.00	72.00	66.00	61.00	55.00	
#21	16	100069	83.00	76.00	70.00	64.00	57.00	
	22	100070	90.00	81.00	76.00	69.00	61.00	
0.1610	10	100071	79.00	72.00	66.00	61.00	55.00	
#20	16	100072	83.00	76.00	70.00	64.00	57.00	
	22	100073	90.00	81.00	76.00	69.00	61.00	
0.1660	10	100074	79.00	72.00	66.00	61.00	55.00	
#19	16	100075	83.00	76.00	70.00	64.00	57.00	
	22	100076	90.00	81.00	76.00	69.00	61.00	
0.1719	10	100080	79.00	72.00	66.00	61.00	55.00	
11/64"	12	111540	82.00	75.00	69.00	63.00	56.00	
	16	100081	83.00	76.00	70.00	64.00	57.00	
	22	100082	90.00	81.00	76.00	69.00	61.00	
0.1730	10	100083	78.00	70.00	65.00	60.00	53.00	
#17	16	100084	82.00	75.00	69.00	63.00	57.00	
	22	100085	87.00	80.00	74.00	67.00	60.00	
0.1770	10	100086	78.00	70.00	65.00	60.00	53.00	
#16	16	100087	82.00	75.00	69.00	63.00	57.00	
	22	100088	87.00	80.00	74.00	67.00	60.00	
0.1800	10	100089	78.00	70.00	65.00	60.00	53.00	
#15	16	100090	82.00	75.00	69.00	63.00	57.00	
	22	100091	87.00	80.00	74.00	67.00	60.00	
0.1820	10	100092	78.00	70.00	65.00	60.00	53.00	
#14	16	100093	82.00	75.00	69.00	63.00	57.00	
	22	100094	87.00	80.00	74.00	67.00	60.00	
0.1850	10	100095	78.00	70.00	65.00	60.00	53.00	
#13	16	100096	82.00	75.00	69.00	63.00	57.00	
	22	100097	87.00	80.00	74.00	67.00	60.00	
0.1875	10	100098	73.00	66.00	62.00	56.00	50.00	
3/16"	12	111117	77.00	69.00	64.00	59.00	52.00	
	16	100099	78.00	70.00	65.00	60.00	53.00	
	22	100100	80.00	73.00	67.00	61.00	55.00	
	28	100101	90.00	81.00	76.00	69.00	61.00	
	36	100102	97.00	88.00	82.00	75.00	67.00	
	48	100665	116.00	108.00	101.00	94.00	86.00	
0.1890	10	100103	75.00	67.00	63.00	58.00	51.00	
#12	16	100104	79.00	72.00	66.00	61.00	53.00	
	22	100105	81.00	74.00	68.00	63.00	56.00	

0.1910" Dia. To 0.3230" Dia.

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.1910	10	100106	75.00	67.00	63.00	58.00	51.00	
#11	16	100107	79.00	72.00	66.00	61.00	53.00	
	22	100108	81.00	74.00	68.00	63.00	56.00	
0.1935	10	100109	75.00	67.00	63.00	58.00	51.00	
#10	16	100110	79.00	72.00	66.00	61.00	53.00	
	22	100111	81.00	74.00	68.00	63.00	56.00	
01968	10	100112	75.00	67.00	63.00	58.00	51.00	
5mm	16	100113	79.00	72.00	66.00	61.00	53.00	
	22	100114	81.00	74.00	68.00	63.00	56.00	
0.1990	10	100115	75.00	67.00	63.00	58.00	51.00	3/4" Dia. x 2 3/4" LONG TAPERED UNDERCUT
#8	16	100116	79.00	72.00	66.00	61.00	53.00	
	22	100117	81.00	74.00	68.00	63.00	56.00	
0.2010	10	100118	75.00	67.00	63.00	58.00	51.00	
#7	16	100119	79.00	72.00	66.00	61.00	53.00	
	22	100120	81.00	74.00	68.00	63.00	56.00	
0.2031	10	100121	73.00	67.00	61.00	56.00	49.00	
13/64"	12	111550	75.00	67.00	62.00	57.00	50.00	
	16	100122	76.00	68.00	63.00	58.00	51.00	
	22	100123	81.00	74.00	68.00	62.00	53.00	
	28	100124	88.00	80.00	75.00	68.00	61.00	
	36	100125	96.00	87.00	81.00	74.00	66.00	
0.2090	10	100132	73.00	66.00	61.00	56.00	49.00	
#4	16	100133	77.00	69.00	65.00	59.00	52.00	
	22	100134	84.00	76.00	70.00	64.00	58.00	
0.2130	10	100135	73.00	66.00	61.00	56.00	49.00	
#3	16	100136	77.00	69.00	65.00	59.00	52.00	
	22	100137	84.00	76.00	70.00	64.00	58.00	
0.2187	10	100138	72.00	65.00	60.00	55.00	49.00	
7/32"	12	111777	74.00	66.00	62.00	56.00	49.00	
	16	100139	75.00	67.00	63.00	57.00	50.00	
	22	100140	79.00	72.00	66.00	61.00	55.00	
	28	100141	85.00	78.00	73.00	66.00	59.00	
	36	100142	93.00	84.00	78.00	72.00	64.00	
0.2210	10	100143	74.00	66.00	62.00	57.00	50.00	
#2	16	100144	76.00	68.00	64.00	59.00	52.00	
	22	100145	81.00	74.00	68.00	62.00	56.00	
0.2280	10	100146	74.00	66.00	62.00	57.00	50.00	
#1	16	100147	76.00	68.00	64.00	59.00	52.00	
	22	100148	81.00	74.00	68.00	62.00	56.00	
0.2344	10	100149	70.00	64.00	60.00	55.00	48.00	
15/64"	12	111560	73.00	65.00	61.00	56.00	49.00	
	16	100150	74.00	66.00	62.00	57.00	50.00	
	22	100151	78.00	70.00	65.00	60.00	53.00	
	28	100152	84.00	76.00	70.00	64.00	58.00	
	36	100153	92.00	83.00	77.00	70.00	63.00	
0.2362	10	100154	73.00	65.00	61.00	56.00	49.00	
6mm	16	100155	75.00	68.00	63.00	58.00	51.00	
	22	100156	80.00	73.00	67.00	61.00	55.00	
0.2380	10	100157	73.00	65.00	61.00	56.00	49.00	
Let. B	16	100158	75.00	68.00	63.00	58.00	51.00	
	22	100159	80.00	73.00	67.00	61.00	55.00	
0.2420	10	100160	73.00	65.00	61.00	56.00	49.00	
Let. C	16	100161	75.00	68.00	63.00	58.00	51.00	
	22	100162	80.00	73.00	67.00	61.00	55.00	
0.2460	10	100163	73.00	65.00	61.00	56.00	49.00	
Let. D	16	100164	75.00	68.00	63.00	58.00	51.00	
	22	100165	80.00	73.00	67.00	61.00	55.00	
0.2500	10	100166	70.00	63.00	59.00	53.00	48.00	
1/4" &	12	111118	72.00	65.00	60.00	55.00	48.00	
Let. E	16	100167	73.00	66.00	61.00	56.00	49.00	
	22	100168	77.00	69.00	64.00	59.00	52.00	
	28	100169	83.00	76.00	70.00	64.00	57.00	
	36	100170	90.00	81.00	76.00	69.00	62.00	
	48	100171	103.00	93.00	86.00	79.00	70.00	

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.2570	10	100172	72.00	65.00	60.00	55.00	49.00	
Let. F	16	100173	75.00	67.00	63.00	57.00	50.00	
	22	100174	78.00	70.00	66.00	60.00	53.00	
0.2610	10	100175	72.00	65.00	60.00	55.00	49.00	
Let.G	16	100176	75.00	67.00	63.00	57.00	50.00	
	22	100177	78.00	70.00	66.00	60.00	53.00	
	28	112478	84.00	77.00	72.00	65.00	58.00	
	36	114080	91.00	82.00	76.00	69.00	62.00	
0.2656	10	100178	72.00	64.00	60.00	55.00	48.00	
17/64"	12	111570	73.00	66.00	61.00	56.00	49.00	3/4" Dia. x 2 3/4" LONG TAPERED UNDERCUT
	16	100179	74.00	67.00	62.00	57.00	50.00	
	22	100180	78.00	70.00	65.00	60.00	53.00	
	28	100181	83.00	76.00	70.00	64.00	57.00	
	36	100182	91.00	82.00	76.00	69.00	62.00	
	48	114081	100.00	92.00	85.00	78.00	69.00	
0.2720	10	100183	73.00	66.00	61.00	56.00	49.00	
Let. I	16	100184	76.00	68.00	63.00	58.00	51.00	
	22	100185	78.00	70.00	66.00	60.00	53.00	
0.2756	10	100186	73.00	66.00	61.00	56.00	49.00	
7mm	16	100187	76.00	68.00	63.00	58.00	51.00	
	22	100188	78.00	70.00	66.00	60.00	53.00	
0.2770	10	100189	73.00	66.00	61.00	56.00	49.00	
Let. J	16	100190	76.00	68.00	63.00	58.00	51.00	
	22	100191	78.00	70.00	66.00	60.00	53.00	
0.2812	10	100192	73.00	66.00	61.00	56.00	50.00	
9/32"	12	111580	75.00	67.00	62.00	57.00	50.00	
	16	100193	76.00	68.00	63.00	58.00	51.00	
	22	100194	78.00	70.00	66.00	60.00	53.00	
	28	100195	85.00	77.00	72.00	65.00	59.00	
	36	100196	92.00	82.00	77.00	70.00	63.00	
	48	100197	104.00	95.00	88.00	81.00	72.00	
0.2900	10	100198	74.00	67.00	62.00	57.00	50.00	
Let. L	16	100199	76.00	68.00	64.00	59.00	52.00	
	22	100200	80.00	73.00	67.00	61.00	55.00	
0.2969	10	100204	74.00	65.00	60.00	56.00	50.00	
19/64"	12	111590	75.00	65.00	61.00	56.00	51.00	
	16	100205	76.00	66.00	62.00	57.00	52.00	
	22	100206	80.00	69.00	64.00	60.00	55.00	
	28	100207	85.00	75.00	69.00	64.00	59.00	
	36	100208	92.00	80.00	75.00	68.00	63.00	
0.3020	10	100209	76.00	68.00	64.00	59.00	51.00	
Let. N	16	100210	78.00	70.00	65.00	60.00	53.00	
	22	100211	81.00	74.00	68.00	62.00	56.00	
0.3125	10	100212	76.00	68.00	64.00	58.00	51.00	
5/16"	12	111120	77.00	69.00	64.00	59.00	52.00	
	16	100213	78.00	70.00	65.00	60.00	53.00	
	22	100214	81.00	74.00	68.00	62.00	57.00	
	28	100215	86.00	78.00	73.00	66.00	59.00	
	36	100216	92.00	83.00	78.00	70.00	63.00	
	48	100217	105.00	96.00	88.00	81.00	73.00	
0.3150	10	100218	76.00	68.00	64.00	58.00	51.00	
8mm	16	100219	78.00	70.00	65.00	60.00	53.00	
	22	100220	81.00	74.00	68.00	62.00	57.00	
	36	114082	92.00	83.00	78.00	70.00	63.00	
0.3160	10	100221	77.00	69.00	65.00	59.00	52.00	
Let. O	16	100222	80.00	73.00	67.00	61.00	55.00	
	22	100223	83.00	75.00	69.00	63.00	57.00	
0.3230	10	100225	80.00	73.00	67.00	61.00	55.00	
Let. P	16	100226	83.00	75.00	69.00	63.00	57.00	
	22	100646	85.00	77.00	72.00	65.00	59.00	

Price List

0.3281" Dia. To 0.5469" Dia.

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.3281	10	100227	76.00	68.00	64.00	58.00	51.00	
21/64"	12	111610	77.00	69.00	65.00	59.00	52.00	
	16	100228	78.00	70.00	66.00	60.00	53.00	
	22	100229	82.00	75.00	69.00	63.00	57.00	
	28	100230	87.00	79.00	74.00	67.00	60.00	
	36	100231	93.00	83.00	78.00	70.00	63.00	
0.3320	10	100232	77.00	69.00	65.00	59.00	52.00	
Let. Q	16	100233	80.00	70.00	67.00	61.00	55.00	
	22	100234	83.00	75.00	69.00	63.00	57.00	
0.3390	10	100235	77.00	69.00	65.00	59.00	52.00	3/4" Dia. x 2 3/4" LONG TAPERED UNDERCUT
Let. R	16	100236	80.00	73.00	67.00	61.00	55.00	
	22	100237	83.00	75.00	69.00	63.00	57.00	
0.3437	10	100238	78.00	70.00	65.00	60.00	53.00	
11/32"	12	111620	79.00	72.00	66.00	60.00	54.00	
	16	100239	80.00	73.00	67.00	61.00	55.00	
	22	100240	83.00	75.00	69.00	64.00	57.00	
	28	100241	87.00	79.00	74.00	67.00	60.00	
	36	100242	93.00	84.00	78.00	72.00	63.00	
	48	100243	105.00	96.00	90.00	82.00	73.00	
0.3480	10	100244	79.00	72.00	66.00	61.00	55.00	
Let. S	16	100245	81.00	74.00	68.00	62.00	57.00	
	22	100246	84.00	77.00	72.00	65.00	58.00	
0.3543	10	100438	79.00	72.00	66.00	61.00	55.00	
9mm	16	100439	81.00	74.00	68.00	62.00	57.00	
	22	100440	84.00	77.00	72.00	65.00	58.00	
0.3594	10	100253	79.00	72.00	66.00	61.00	53.00	
23/64"	12	111630	80.00	73.00	67.00	61.00	55.00	
	16	100254	81.00	74.00	68.00	62.00	56.00	
	22	100255	84.00	76.00	70.00	64.00	58.00	
	28	100256	88.00	80.00	75.00	67.00	60.00	
	36	100257	93.00	84.00	79.00	72.00	64.00	
0.3680	10	100258	80.00	73.00	67.00	62.00	55.00	
Let. U	16	100259	82.00	75.00	69.00	63.00	57.00	
	22	100260	85.00	77.00	72.00	65.00	59.00	
0.3750	10	100261	80.00	73.00	67.00	61.00	55.00	
3/8"	12	111122	81.00	73.00	67.00	62.00	55.00	
	16	100262	82.00	74.00	68.00	63.00	56.00	
	22	100263	87.00	79.00	74.00	67.00	60.00	
	28	100264	90.00	81.00	75.00	68.00	61.00	
	36	100265	94.00	85.00	79.00	73.00	64.00	
	48	100266	108.00	97.00	91.00	83.00	74.00	
0.3770	10	100668	80.00	73.00	67.00	61.00	55.00	
Let. V	16	100267	81.00	74.00	68.00	62.00	56.00	
	22	100268	83.00	76.00	70.00	64.00	57.00	
	36	100269	88.00	80.00	75.00	68.00	61.00	
0.3860	16	100270	82.00	75.00	69.00	63.00	57.00	
Let. W	22	100271	87.00	79.00	74.00	67.00	60.00	
	36	100272	95.00	85.00	80.00	73.00	65.00	
0.3906	10	100647	81.00	74.00	68.00	62.00	56.00	
25/64"	12	111640	81.00	74.00	68.00	62.00	56.00	
	16	100274	82.00	75.00	69.00	63.00	57.00	
	22	100275	87.00	79.00	74.00	67.00	60.00	
	28	100276	90.00	81.00	76.00	69.00	62.00	
	36	100277	95.00	85.00	80.00	73.00	65.00	
0.3937	10	114083	81.00	74.00	68.00	62.00	56.00	
10mm	16	100278	83.00	76.00	70.00	64.00	57.00	
	22	100279	88.00	80.00	75.00	68.00	61.00	
	36	100280	96.00	86.00	80.00	74.00	65.00	
	48	114084	109.00	98.00	92.00	83.00	75.00	
0.3970	16	100281	83.00	76.00	70.00	64.00	57.00	
Let. X	22	100282	88.00	80.00	75.00	68.00	61.00	
	36	100283	96.00	86.00	80.00	74.00	65.00	

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.4062	10	100287	81.00	74.00	68.00	62.00	56.00	
13/32"	12	111650	82.00	75.00	69.00	63.00	56.00	
	16	100288	83.00	76.00	70.00	64.00	57.00	
	22	100289	88.00	80.00	75.00	68.00	61.00	
	28	100290	91.00	82.00	76.00	69.00	62.00	
	36	100291	96.00	86.00	80.00	74.00	65.00	
	48	100292	109.00	98.00	92.00	83.00	75.00	
0.4219	10	100296	83.00	75.00	69.00	63.00	56.00	
27/64"	12	111660	85.00	75.00	69.00	63.00	57.00	
	16	100297	86.00	76.00	70.00	64.00	58.00	3/4" Dia. x 2 3/4" LONG TAPERED UNDERCUT
	22	100298	90.00	81.00	75.00	68.00	61.00	
	28	100299	91.00	82.00	77.00	69.00	62.00	
	36	100300	96.00	86.00	81.00	74.00	66.00	
	48	112479	110.00	99.00	93.00	84.00	75.00	
0.4331	16	100301	84.00	77.00	72.00	65.00	58.00	
11mm	22	100302	90.00	81.00	76.00	69.00	62.00	
	36	100303	96.00	86.00	81.00	74.00	66.00	
0.4375	10	100304	82.00	75.00	69.00	63.00	57.00	
7/16"	12	111123	83.00	76.00	71.00	64.00	57.00	
	16	100305	84.00	77.00	72.00	65.00	58.00	
	22	100306	90.00	81.00	76.00	69.00	62.00	
	28	100307	92.00	83.00	77.00	70.00	63.00	
	36	100308	97.00	87.00	81.00	75.00	67.00	
	48	100309	110.00	99.00	93.00	84.00	76.00	
0.4531	10	100310	83.00	75.00	69.00	64.00	57.00	
29/64"	12	111670	84.00	76.00	71.00	64.00	57.00	
	16	100311	85.00	77.00	72.00	65.00	58.00	
	22	100312	91.00	82.00	76.00	69.00	62.00	
	28	100313	92.00	83.00	78.00	70.00	63.00	
	36	100314	97.00	88.00	82.00	75.00	67.00	
	48	112480	111.00	100.00	94.00	85.00	76.00	
0.4687	10	100315	83.00	73.00	69.00	64.00	57.00	
15/32"	12	111680	84.00	74.00	71.00	65.00	58.00	
	16	100316	85.00	75.00	72.00	66.00	59.00	
	22	100317	91.00	82.00	77.00	69.00	62.00	
	28	100318	93.00	84.00	78.00	72.00	64.00	
	36	100319	98.00	88.00	82.00	76.00	67.00	
	48	100320	111.00	100.00	94.00	85.00	76.00	
0.4724	16	100321	85.00	75.00	72.00	66.00	59.00	
12mm	22	100322	91.00	82.00	77.00	69.00	62.00	
	36	100323	98.00	88.00	82.00	76.00	67.00	
0.4844	10	114085	84.00	76.00	70.00	64.00	57.00	
31/64"	12	111690	85.00	77.00	72.00	65.00	58.00	
	16	100325	86.00	78.00	73.00	66.00	59.00	
	22	100326	92.00	83.00	77.00	70.00	63.00	
	28	100327	94.00	85.00	79.00	73.00	65.00	
	36	100328	99.00	90.00	83.00	76.00	67.00	
0.5000	10	100329	85.00	77.00	72.00	65.00	58.00	
1/2"	12	111720	86.00	78.00	73.00	66.00	59.00	
	16	100330	87.00	79.00	74.00	67.00	60.00	
	22	100331	91.00	82.00	76.00	69.00	62.00	
	28	100332	94.00	85.00	79.00	74.00	65.00	
	36	100333	99.00	91.00	84.00	77.00	68.00	
	48	100334	113.00	102.00	95.00	86.00	78.00	
0.5156	16	100335	90.00	81.00	75.00	68.00	61.00	
33/64"	22	100336	93.00	83.00	78.00	70.00	63.00	
	36	100337	101.00	94.00	85.00	78.00	69.00	
0.5312	16	100338	90.00	81.00	76.00	69.00	62.00	1" Dia. x 2 3/4" Long Tap. Flat
17/32"	22	100339	93.00	84.00	79.00	72.00	64.00	
	36	100340	102.00	93.00	86.00	79.00	70.00	
	48	114086	116.00	105.00	98.00	90.00	80.00	
0.5469	16	100341	92.00	82.00	77.00	70.00	63.00	
35/64"	22	100342	95.00	85.00	80.00	73.00	65.00	
	36	100343	103.00	94.00	87.00	80.00	72.00	

0.5625" Dia. To 1.5000" Dia.

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.5625	16	100344	97.00	87.00	82.00	75.00	66.00	
9/16"	22	100345	99.00	91.00	84.00	77.00	68.00	
	28	119839	104.00	95.00	87.00	80.00	72.00	
	36	100346	109.00	99.00	92.00	84.00	75.00	
	48	100347	126.00	114.00	106.00	97.00	86.00	
0.5781	16	100348	103.00	95.00	87.00	79.00	70.00	
37/64"	22	100349	105.00	96.00	90.00	81.00	73.00	
	36	100350	114.00	103.00	97.00	88.00	79.00	
0.5937	16	100351	104.00	95.00	88.00	81.00	72.00	
19/32"	22	100352	108.00	97.00	91.00	82.00	74.00	
	36	100353	115.00	104.00	97.00	88.00	79.00	
	48	112481	132.00	120.00	112.00	102.00	92.00	
0.6094	16	100354	110.00	99.00	93.00	84.00	76.00	
39/64"	22	100355	113.00	102.00	95.00	86.00	78.00	
	36	100356	120.00	109.00	101.00	93.00	83.00	1" Dia. x 2 3/4" LONG TAPERED FLAT
0.6250	16	100357	111.00	100.00	94.00	85.00	77.00	
5/8"	22	100358	114.00	103.00	96.00	87.00	78.00	
	28	114087	117.00	106.00	99.00	91.00	81.00	
	36	100359	121.00	110.00	102.00	94.00	83.00	
	48	100360	138.00	126.00	117.00	106.00	96.00	
0.6406	16	100361	110.00	100.00	92.00	85.00	76.00	
41/64"	22	100362	115.00	104.00	97.00	88.00	79.00	
	36	100363	122.00	111.00	103.00	95.00	84.00	
0.6562	16	100364	114.00	103.00	96.00	87.00	78.00	
21/32"	22	100365	116.00	105.00	98.00	90.00	80.00	
	36	100366	123.00	112.00	104.00	95.00	85.00	
0.6719	16	100367	115.00	104.00	97.00	88.00	79.00	
43/64"	22	100368	117.00	106.00	99.00	91.00	81.00	
	36	100369	125.00	113.00	105.00	96.00	85.00	
0.6875	16	100370	116.00	105.00	98.00	90.00	80.00	
11/16"	22	100371	119.00	108.00	100.00	92.00	82.00	
	28	119840	122.00	111.00	103.00	95.00	84.00	
	36	100372	126.00	114.00	106.00	97.00	86.00	
	48	100373	143.00	129.00	120.00	110.00	98.00	
0.7031	16	100656	118.00	106.00	99.00	91.00	81.00	
45/64"	22	114088	120.00	109.00	101.00	93.00	83.00	
	36	100376	127.00	114.00	106.00	97.00	87.00	
	48	114089	144.00	131.00	121.00	111.00	99.00	
0.7187	16	100377	118.00	106.00	99.00	91.00	81.00	
23/32"	22	100378	120.00	110.00	102.00	93.00	83.00	
	36	100379	128.00	115.00	108.00	98.00	87.00	
	48	100669	147.00	134.00	127.00	117.00	106.00	
0.7344	16	100380	119.00	108.00	100.00	92.00	82.00	
47/64"	22	100381	121.00	111.00	103.00	94.00	84.00	
	36	100382	129.00	116.00	109.00	99.00	88.00	
0.7500	16	100383	125.00	113.00	105.00	96.00	85.00	
3/4"	22	100384	127.00	115.00	108.00	98.00	87.00	
	28	112482	130.00	118.00	110.00	100.00	90.00	
	36	100385	132.00	120.00	112.00	102.00	92.00	
	48	100386	151.00	137.00	128.00	117.00	104.00	
0.7656	22	100441	133.00	121.00	118.00	113.00	99.00	
49/64"	36	100442	140.00	128.00	125.00	119.00	105.00	
	48	100443	157.00	143.00	139.00	132.00	116.00	1 1/4" Dia. x 2 3/4" Long Tap. Flat
0.7812	22	100389	131.00	119.00	111.00	101.00	91.00	
25/32"	36	100390	137.00	125.00	116.00	106.00	95.00	
	48	100648	156.00	144.00	135.00	126.00	114.00	
0.7969	22	100391	132.00	120.00	112.00	102.00	92.00	
51/64"	36	100392	139.00	126.00	117.00	108.00	96.00	
	48	100649	158.00	145.00	136.00	127.00	115.00	
0.8125	22	100393	133.00	121.00	113.00	103.00	92.00	
13/16"	36	100394	140.00	128.00	118.00	109.00	98.00	
	48	100395	156.00	143.00	133.00	121.00	109.00	

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.8281	22	100444	139.00	127.00	118.00	108.00	96.00	
53/64"	36	100445	147.00	133.00	125.00	114.00	101.00	
	48	100446	166.00	152.00	144.00	133.00	121.00	
0.8437	22	100398	139.00	127.00	118.00	108.00	96.00	
27/32"	36	100399	147.00	133.00	125.00	114.00	101.00	
	48	100650	166.00	152.00	144.00	133.00	121.00	
0.8594	22	100400	139.00	127.00	118.00	108.00	96.00	
55/64"	36	100401	147.00	133.00	125.00	114.00	101.00	
	48	100651	166.00	152.00	144.00	133.00	121.00	
0.8750	22	100402	152.00	138.00	129.00	117.00	105.00	
7/8"	36	100403	161.00	146.00	135.00	123.00	111.00	
	48	100404	181.00	161.00	150.00	137.00	122.00	
0.8906	22	100447	159.00	143.00	140.00	135.00	118.00	
57/64"	36	100448	167.00	152.00	149.00	143.00	126.00	
	48	100449	187.00	170.00	166.00	157.00	138.00	
0.9062	22	100407	157.00	143.00	133.00	121.00	109.00	
29/32"	36	100408	165.00	150.00	139.00	128.00	114.00	
	48	100652	184.00	169.00	158.00	147.00	133.00	
0.9219	22	100409	161.00	146.00	135.00	123.00	111.00	
59/64"	36	100410	168.00	152.00	141.00	130.00	116.00	
	48	100653	187.00	171.00	161.00	149.00	135.00	
0.9375	16	114090	154.00	140.00	126.00	119.00	106.00	
15/16"	22	100411	163.00	148.00	137.00	126.00	113.00	
	36	100412	170.00	154.00	144.00	132.00	118.00	
	48	100654	189.00	173.00	163.00	151.00	137.00	
0.9531	22	100450	170.00	154.00	150.00	144.00	127.00	
61/64"	36	100451	178.00	162.00	158.00	152.00	133.00	
	48	100452	200.00	184.00	180.00	172.00	152.00	
0.9687	22	100655	170.00	154.00	150.00	144.00	127.00	
31/32"	36	100417	178.00	162.00	158.00	152.00	133.00	
	48	100670	200.00	184.00	180.00	172.00	152.00	
0.9844	22	100418	170.00	154.00	144.00	132.00	118.00	
63/64"	36	100419	179.00	162.00	151.00	138.00	123.00	
	48	100657	198.00	181.00	170.00	157.00	143.00	
1.0000	16	100690	181.00	165.00	154.00	140.00	126.00	
1"	22	100420	179.00	162.00	151.00	138.00	123.00	
	28	100689	181.00	165.00	154.00	140.00	126.00	
	36	100421	186.00	169.00	157.00	144.00	129.00	
	48	100422	206.00	188.00	175.00	161.00	144.00	
1.0625	22	100453	207.00	189.00	186.00	181.00	158.00	
1 1/16"	36	100454	221.00	203.00	197.00	184.00	162.00	
	48	100455	241.00	224.00	218.00	210.00	185.00	
1.1250	22	100658	227.00	206.00	192.00	175.00	157.00	
1 1/8"	36	100425	229.00	208.00	194.00	178.00	159.00	
	48	100426	263.00	239.00	223.00	204.00	183.00	
1.1875	22	100659	276.00	251.00	234.00	214.00	179.00	
1 3/16"	36	100660	278.00	253.00	236.00	216.00	181.00	
	48	100428	306.00	278.00	259.00	238.00	200.00	1 1/2" Dia. x 2 3/4" Long. Flat
1.2500	22	100661	276.00	251.00	234.00	214.00	191.00	
1 1/4"	36	100429	278.00	253.00	236.00	216.00	193.00	
	48	100430	306.00	278.00	259.00	238.00	212.00	
1.3125	22	100662	315.00	287.00	268.00	244.00	219.00	
1 5/16"	36	100431	317.00	289.00	270.00	246.00	221.00	
	48	100432	346.00	314.00	293.00	269.00	241.00	
1.3750	22	100663	356.00	323.00	302.00	276.00	246.00	
1 3/8"	36	100433	358.00	325.00	304.00	278.00	249.00	
	48	100434	385.00	350.00	327.00	299.00	269.00	
1.4375	36	100664	403.00	367.00	342.00	313.00	280.00	
7/16"	48	100436	422.00	386.00	361.00	332.00	299.00	
1.5000	36	100437	424.00	385.00	360.00	330.00	295.00	
1 1/2"	48	100667	452.00	412.00	384.00	352.00	315.00	

Price List

0.0781" Dia. To 0.3125" Dia.

For Maximum Coolant Flow

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.0781	6	112758	146.00	128.00	118.00	110.00	100.00	
5/64"	10	112759	152.00	133.00	123.00	114.00	105.00	
0.0810	6	100534	148.00	130.00	120.00	112.00	102.00	
#46	10	100535	152.00	133.00	123.00	114.00	105.00	
0.0937	6	112764	112.00	98.00	91.00	84.00	77.00	
3/32"	10	112765	115.00	101.00	94.00	86.00	79.00	
	12	111110	120.00	108.00	100.00	93.00	85.00	
	16	112766	121.00	109.00	101.00	94.00	86.00	
0.0960	6	100536	118.00	103.00	96.00	88.00	81.00	1/2" Dia. x 1 1/2"
#41	10	100537	122.00	106.00	99.00	92.00	84.00	
0.0980	6	100538	118.00	103.00	96.00	88.00	81.00	
#40	10	100539	122.00	106.00	99.00	92.00	84.00	
0.0995	6	100540	118.00	103.00	96.00	88.00	81.00	
#39	10	100541	122.00	106.00	99.00	92.00	84.00	
0.1015	10	100542	110.00	96.00	88.00	82.00	75.00	
#38								
0.1065	10	100543	114.00	100.00	93.00	85.00	78.00	
#37								
0.1094	6	112767	94.00	82.00	76.00	70.00	64.00	
7/64"	10	112768	104.00	85.00	79.00	73.00	67.00	
	16	112769	117.00	102.00	95.00	87.00	81.00	
0.1181	10	100544	115.00	100.00	94.00	86.00	79.00	
0.1250	10	112773	81.00	72.00	66.00	61.00	56.00	
1/8"	12	111112	86.00	76.00	71.00	65.00	59.00	
	16	112774	87.00	77.00	72.00	66.00	60.00	
	22	112775	96.00	84.00	78.00	72.00	66.00	
	28	112776	99.00	86.00	81.00	75.00	68.00	
	36	100666	102.00	90.00	83.00	77.00	70.00	
0.1285	10	100545	81.00	74.00	68.00	62.00	56.00	3/4" Dia. x 2 3/4" LONG TAPERED UNDERCUT
#30	16	100546	87.00	79.00	74.00	67.00	60.00	
	22	100547	96.00	86.00	81.00	74.00	65.00	
0.1360	10	100548	83.00	76.00	70.00	64.00	57.00	
#29	16	100549	90.00	81.00	75.00	68.00	61.00	
	22	100550	97.00	87.00	81.00	75.00	66.00	
0.1406	10	112778	81.00	74.00	68.00	62.00	56.00	
9/64"	16	112779	86.00	78.00	73.00	66.00	59.00	
	22	112780	93.00	84.00	78.00	72.00	63.00	
0.1470	10	100551	81.00	73.00	68.00	62.00	56.00	
#26	16	100552	85.00	78.00	73.00	66.00	59.00	
0.1495	10	100553	81.00	73.00	68.00	62.00	56.00	
#25	16	100554	87.00	78.00	73.00	66.00	59.00	
	22	100555	92.00	83.00	78.00	70.00	63.00	
0.1562	10	112781	78.00	70.00	65.00	61.00	55.00	
5/32"	12	111114	82.00	74.00	68.00	63.00	55.00	
	16	112782	83.00	75.00	69.00	64.00	56.00	
	22	112783	88.00	80.00	75.00	68.00	61.00	
	28	112784	93.00	84.00	79.00	72.00	64.00	
0.1575	10	112785	79.00	72.00	66.00	61.00	55.00	
4mm	16	112786	83.00	76.00	70.00	64.00	57.00	
	22	112787	90.00	81.00	76.00	69.00	61.00	
0.1719	10	112788	79.00	72.00	66.00	61.00	55.00	
11/64"	16	112789	83.00	76.00	70.00	64.00	57.00	
	22	112790	90.00	81.00	76.00	69.00	61.00	
0.1730	10	100556	79.00	72.00	66.00	60.00	53.00	
#17	16	100557	83.00	75.00	69.00	63.00	57.00	
0.1770	10	100558	79.00	72.00	66.00	60.00	53.00	
#16	16	100559	83.00	75.00	69.00	63.00	57.00	
0.1875	10	112791	73.00	66.00	62.00	56.00	50.00	
3/16"	12	111116	77.00	69.00	64.00	59.00	52.00	
	16	112792	78.00	70.00	65.00	60.00	53.00	
	22	112793	80.00	73.00	67.00	61.00	55.00	

(continued)

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.1875	28	112794	90.00	81.00	76.00	69.00	61.00	
3/16"	36	112795	97.00	88.00	82.00	75.00	67.00	
	48	112796	116.00	108.00	101.00	94.00	86.00	
0.1968	10	100560	75.00	67.00	62.00	57.00	50.00	
5mm	16	100561	79.00	70.00	66.00	60.00	53.00	
0.2031	10	112802	73.00	67.00	61.00	56.00	49.00	
13/64"	16	112803	76.00	68.00	63.00	58.00	51.00	
	22	112804	81.00	74.00	68.00	62.00	53.00	
	28	112805	88.00	80.00	75.00	68.00	61.00	
	36	112806	96.00	87.00	81.00	74.00	66.00	
0.2130	10	100562	73.00	65.00	61.00	56.00	49.00	
#3	16	100563	77.00	69.00	64.00	59.00	52.00	
	22	100564	83.00	76.00	70.00	64.00	57.00	
0.2187	10	112807	72.00	65.00	60.00	55.00	49.00	
7/32"	12	111778	74.00	66.00	62.00	56.00	49.00	
	16	112808	75.00	67.00	63.00	57.00	50.00	
	22	112809	79.00	72.00	66.00	61.00	55.00	
	28	112810	85.00	78.00	73.00	66.00	59.00	
	36	112811	93.00	84.00	78.00	72.00	64.00	
0.2210	10	100565	73.00	66.00	61.00	56.00	49.00	3/4" Dia. x 2 3/4" LONG TAPERED UNDERCUT
#2	16	100566	76.00	68.00	63.00	58.00	51.00	
	22	100567	80.00	73.00	67.00	62.00	55.00	
0.2344	10	112812	70.00	64.00	60.00	55.00	48.00	
15/64"	16	112813	74.00	66.00	62.00	57.00	50.00	
	22	112814	78.00	70.00	65.00	60.00	53.00	
	28	100568	83.00	76.00	70.00	64.00	57.00	
	36	100569	91.00	82.00	77.00	69.00	62.00	
0.2362	10	112817	73.00	65.00	61.00	56.00	49.00	
6mm	16	112818	75.00	68.00	63.00	58.00	51.00	
	22	112819	80.00	73.00	67.00	61.00	55.00	
0.2500	10	112823	70.00	63.00	59.00	53.00	48.00	
1/4" & Let. E	12	111118	72.00	65.00	60.00	55.00	48.00	
	16	112824	73.00	66.00	61.00	56.00	49.00	
	22	112825	77.00	69.00	64.00	59.00	52.00	
	28	112826	83.00	76.00	70.00	64.00	57.00	
	36	100570	90.00	81.00	75.00	68.00	61.00	
	48	100571	103.00	93.00	86.00	79.00	70.00	
0.2570	10	100572	72.00	64.00	60.00	55.00	48.00	
Let. F	16	100573	74.00	67.00	62.00	57.00	50.00	
	22	100574	78.00	70.00	65.00	60.00	53.00	
0.2656	10	100575	72.00	64.00	59.00	53.00	48.00	
17/64"	16	100576	74.00	66.00	62.00	57.00	50.00	
	22	100577	78.00	70.00	65.00	60.00	52.00	
	36	100578	91.00	81.00	76.00	69.00	61.00	
0.2812	16	100579	76.00	68.00	63.00	58.00	51.00	
9/32"	22	100580	78.00	70.00	65.00	60.00	53.00	
	36	100581	92.00	82.00	77.00	70.00	63.00	
	48	100582	104.00	95.00	87.00	80.00	72.00	
0.2900	22	100583	79.00	72.00	66.00	61.00	53.00	
0.2969	10	112846	74.00	65.00	60.00	56.00	50.00	
19/64"	16	112847	76.00	66.00	62.00	57.00	52.00	
	22	112848	80.00	69.00	64.00	60.00	55.00	
	28	112849	85.00	75.00	69.00	64.00	59.00	
	36	112850	92.00	80.00	75.00	68.00	63.00	
0.3125	10	112851	76.00	68.00	64.00	58.00	51.00	
5/16"	12	111121	77.00	69.00	64.00	59.00	52.00	
	16	112852	78.00	70.00	65.00	60.00	53.00	
	22	112853	81.00	74.00	68.00	62.00	55.00	
	28	112854	86.00	78.00	73.00	66.00	59.00	
	36	112855	92.00	83.00	78.00	70.00	63.00	
	48	112856	105.00	96.00	88.00	81.00	73.00	

0.2187 x 48”” Dia. To 1.5000 x 72”” Dia.

Dia.	Item #	1	2-3	4-7	Driver
2187 x 48	0.2187X48	112.00	96.00	88.00	
2187 x 60	0.2187X60	130.00	108.00	102.00	
2500 x 60	0.2500X60	134.00	113.00	104.00	
2500 x 72	0.2500X72	159.00	134.00	128.00	
2610 x 48	0.2610X48	112.00	96.00	88.00	
2610 x 60	0.2610X60	130.00	108.00	102.00	
2610 x 72	0.2610X72	154.00	131.00	123.00	
2656 x 60	0.2656X60	130.00	108.00	102.00	
2656 x 72	0.2656X72	154.00	131.00	123.00	
2812 x 60	0.2812X60	134.00	113.00	106.00	
2812 x 72	0.2812X72	159.00	135.00	127.00	
2969 x 60	0.2969X60	134.00	113.00	106.00	
2969 x 72	0.2969X72	159.00	135.00	127.00	
3125 x 60	0.3125X60	135.00	114.00	107.00	
3125 x 72	0.3125X72	160.00	136.00	128.00	
3150 x 60	0.3150X60	135.00	114.00	107.00	
3150 x 72	0.3150X72	160.00	136.00	128.00	
3437 x 60	0.3437X60	137.00	116.00	109.00	
3437 x 72	0.3437X72	162.00	138.00	131.00	
3750 x 60	0.3750X60	140.00	118.00	112.00	
3750 x 72	0.3750X72	164.00	141.00	133.00	
3937 x 60	0.3937X60	140.00	118.00	112.00	
3937 x 72	0.3937X72	164.00	141.00	133.00	
4062 x 60	0.4062X60	140.00	118.00	112.00	
4062 x 72	0.4062X72	164.00	141.00	133.00	
4219 x 60	0.4219X60	140.00	118.00	112.00	
4219 x 72	0.4219X72	164.00	141.00	133.00	
4375 x 60	0.4375X60	142.00	121.00	114.00	
4375 x 72	0.4375X72	166.00	143.00	135.00	
4687 x 60	0.4687X60	144.00	123.00	116.00	
4687 x 72	0.4687X72	169.00	145.00	137.00	
4724 x 60	0.4724X60	144.00	123.00	116.00	
4724 x 72	0.4724X72	169.00	145.00	137.00	
4844 x 60	0.4844X60	144.00	123.00	116.00	
4844 x 72	0.4844X72	169.00	145.00	137.00	
5000 x 60	0.5000X60	158.00	131.00	123.00	
5000 x 72	0.5000X72	181.00	153.00	145.00	
5156 x 60	0.5156X60	158.00	131.00	123.00	
5156 x 72	0.5156X72	181.00	153.00	145.00	
5312 x 60	0.5312X60	164.00	137.00	130.00	
5312 x 72	0.5314X72	188.00	160.00	152.00	
5512 x 60	0.5512X60	172.00	145.00	137.00	
5512 x 72	0.5512X72	196.00	168.00	160.00	
5625 x 60	0.5625X60	172.00	145.00	137.00	
5625 x 72	0.5625X72	196.00	168.00	160.00	
5781 x 60	0.5781X60	173.00	146.00	138.00	
5781 x 72	0.5781X72	197.00	169.00	161.00	
5937 x 60	0.5937X60	173.00	146.00	138.00	
5937 x 72	0.5937X72	197.00	169.00	161.00	
6250 x 60	0.6250X60	193.00	162.00	151.00	
6250 x 72	0.6250X72	218.00	183.00	172.00	
6299 x 60	0.6299X60	193.00	162.00	151.00	
6299 x 72	0.6299X72	218.00	183.00	172.00	
6875 X 60	0.6875X60	193.00	162.00	151.00	
6875 X 72	0.6875X72	218.00	183.00	172.00	
7031 X 60	0.7031X60	194.00	163.00	152.00	
7031 X 72	0.7031X72	219.00	184.00	173.00	
7187 X 60	0.7187X60	194.00	163.00	152.00	
7187 X 72	0.7187X72	219.00	184.00	173.00	
7500 X 60	0.7500X60	190.00	157.00	144.00	
7500 X 72	0.7500X72	210.00	177.00	164.00	
7874 x 60	0.7874X60	190.00	157.00	144.00	
7874x 72	0.7874X72	210.00	177.00	164.00	
8125 x 60	0.8125X60	205.00	170.00	158.00	
8125 x 72	0.8125X72	225.00	190.00	178.00	
8750 x 60	0.8750X60	226.00	191.00	179.00	
8750 x 72	0.8750X72	246.00	211.00	199.00	

IN STOCK WITHOUT DRIVERS - NEED DRIVER SPECS

Dia.	Item #	1	2-3	4-7	Driver
9062 x 60	0.9062X60	232.00	197.00	185.00	
9062 x 72	0.9062X72	252.00	217.00	205.00	
9375 x 60	0.9375X60	242.00	207.00	195.00	
9375 x 72	0.9375X72	262.00	217.00	205.00	
9844 x 60	0.9844X60	246.00	211.00	198.00	
9844 x 72	0.9844X72	266.00	222.00	209.00	
1.0000 x 60	1.0000X60	256.00	220.00	208.00	
1.0000 x 72	1.0000X72	276.00	241.00	228.00	
1.1250 x 60	1.1250X60	347.00	292.00	267.00	
1.1250 x 72	1.1250X72	367.00	312.00	278.00	
1.1562 x 48	1.1562X48	345.00	292.00	266.00	
1.1562 x 60	1.1562X60	365.00	312.00	276.00	
1.1562 x 72	1.1562X72	385.00	317.00	302.00	
1.1875 x 60	1.1875X60	364.00	295.00	281.00	
1.1875 x 72	1.1875X72	384.00	316.00	301.00	
1.2500 x 60	1.2500X60	398.00	337.00	310.00	
1.2500 x 72	1.2500X72	419.00	357.00	330.00	
1.2812 x 48	1.2812X48	441.00	392.00	368.00	
1.2812 x 60	1.2812X60	461.00	412.00	388.00	
1.3125 x 60	1.3125X60	478.00	403.00	368.00	
1.3125 x 72	1.3125X72	498.00	423.00	397.00	
1.3437 x 48	1.3437X48	476.00	405.00	370.00	
1.3437 x 60	1.3437X60	496.00	425.00	391.00	
1.3750 x 60	1.3750X60	478.00	403.00	368.00	
1.3750 x 72	1.3750X72	498.00	423.00	397.00	
1.4375 x 60	1.4375X60	509.00	421.00	392.00	
1.4375 x 72	1.4375X72	530.00	441.00	411.00	
1.5000 x 60	1.5000X60	547.00	451.00	419.00	
1.5000 x 72	1.5000X72	568.00	471.00	439.00	

IN STOCK W/O DRIVERS - NEED DRIVER SPECS

Stock Two-Flute Gundrills - Non Ferrous Material Only

0.1875” Dia. To 0.6250” Dia.

Round Coolant Hole

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.1875	10	120000S2	102.00	92.00	87.00	83.00	79.00	
3/16”								
0.2187	10	120001S2	102.00	92.00	87.00	83.00	79.00	
7/32”								
0.2500	10	120002S2	102.00	92.00	87.00	83.00	79.00	
1/4”								3/4” Dia. x 2 3/4”
0.2812	10	120003S2	105.00	95.00	90.00	86.00	82.00	
9/32”								
0.3125	10	120004S2	107.00	97.00	92.00	88.00	84.00	
5/16”	16	120010S2	113.00	103.00	98.00	94.00	90.00	
0.3437	10	120005S2	109.00	99.00	94.00	90.00	86.00	
11/32”	16	120011S2	115.00	105.00	100.00	96.00	92.00	
0.3750	10	120006S2	109.00	99.00	94.00	90.00	86.00	
3/8”	16	120012S2	115.00	105.00	100.00	96.00	92.00	
0.4062	10	120007S2	111.00	101.00	96.00	92.00	88.00	
13/32”	16	120013S2	117.00	107.00	102.00	98.00	96.00	
0.4375	10	120008S2	117.00	107.00	102.00	98.00	94.00	
7/16”	16	120014S2	123.00	113.00	108.00	104.00	102.00	
0.4687	10	120009S2	117.00	107.00	102.00	98.00	94.00	
15/32”	16	120015S2	123.00	113.00	108.00	104.00	102.00	
0.5000	16	120016S2	129.00	119.00	114.00	110.00	108.00	
1/2”	22	120021S2	135.00	125.00	120.00	116.00	114.00	
0.5312	16	120017S2	132.00	122.00	117.00	113.00	111.00	
17/32”	22	120022S2	138.00	128.00	123.00	119.00	117.00	
0.5625	16	120018S2	132.00	122.00	117.00	113.00	111.00	
9/16”	22	120023S2	138.00	128.00	123.00	119.00	117.00	1” Dia. x 2 3/4”
0.5937	16	120019S2	136.00	126.00	121.00	117.00	115.00	
19/32”	22	120024S2	142.00	132.00	127.00	123.00	121.00	
0.6250	16	120020S2	136.00	126.00	121.00	117.00	115.00	
5/8”	22	120025S2	142.00	132.00	127.00	123.00	121.00	

TAPERED

Price List

Interlocking Heads - Stock

0.6250" Dia. To 2.0000" Dia.

Dia.	Item#	1	2-3	4-5	6-11	12-25
0.6250	100584	204.00	184.00	175.00	162.00	158.00
0.7500	100585	218.00	196.00	187.00	178.00	164.00
0.8125	100586	246.00	222.00	211.00	201.00	193.00
0.8750	100587	275.00	248.00	235.00	224.00	213.00
0.9062	100588	292.00	263.00	250.00	238.00	227.00
0.9375	100589	292.00	263.00	250.00	238.00	227.00
0.9687	100590	297.00	268.00	255.00	243.00	231.00
0.9844	100591	297.00	268.00	255.00	243.00	231.00
1.0000	100592	307.00	277.00	264.00	251.00	239.00
1.0625	100593	307.00	277.00	264.00	251.00	239.00
1.1250	100594	319.00	287.00	273.00	261.00	248.00
1.1562	100595	319.00	287.00	273.00	261.00	248.00
1.1875	100596	319.00	287.00	273.00	261.00	248.00
1.2500	100597	373.00	337.00	320.00	305.00	289.00
1.2656	100598	373.00	337.00	320.00	305.00	289.00
1.3125	100599	373.00	337.00	320.00	305.00	289.00
1.3750	100600	386.00	347.00	331.00	315.00	300.00
1.4375	100601	405.00	365.00	347.00	330.00	314.00
1.5000	100602	484.00	437.00	415.00	395.00	376.00
1.6250	100603	513.00	462.00	439.00	418.00	397.00
1.7500	100604	545.00	491.00	465.00	443.00	421.00
1.8125	100605	550.00	496.00	471.00	448.00	427.00
1.8750	100606	550.00	496.00	471.00	448.00	427.00
1.9375	100607	575.00	519.00	494.00	475.00	446.00
2.0000	100608	607.00	548.00	520.00	495.00	471.00

Eldo-Lok Heads (602 Style)

1.2500" Dia. To 2.0000" Dia.

Dia.	Item#	1	2-3	4-5	6-11	12-25
1.2500	100681	359.00	326.00	311.00	297.00	283.00
1.3125	100609	359.00	326.00	311.00	297.00	283.00
1.3437	100610	359.00	326.00	311.00	297.00	283.00
1.3750	100611	371.00	336.00	321.00	306.00	293.00
1.4375	100612	388.00	352.00	335.00	320.00	305.00
1.4844	100613	388.00	352.00	335.00	320.00	305.00
1.5000	100614	460.00	417.00	399.00	379.00	362.00
1.5625	100615	460.00	417.00	399.00	379.00	362.00
1.6250	100616	486.00	440.00	419.00	400.00	381.00
1.6875	100617	486.00	440.00	419.00	400.00	381.00
1.7500	100618	515.00	466.00	443.00	423.00	403.00
1.8125	100619	520.00	471.00	449.00	427.00	408.00
1.8750	100620	520.00	471.00	449.00	427.00	408.00
1.9375	100621	543.00	492.00	469.00	447.00	425.00
2.0000	100622	572.00	518.00	493.00	470.00	448.00

DRILL MASTERS Eldorado Tool Inc.

Weld-On Tips - Stock

0.7187" Dia. To 2.0000" Dia.

Dia.	Item#	1	2-3	4-5	6-11	12-25
0.7187	100623	110.00	103.00	96.00	86.00	80.00
0.7500	100624	117.00	109.00	101.00	90.00	84.00
0.8125	100625	126.00	117.00	109.00	97.00	91.00
0.8750	100626	143.00	134.00	124.00	111.00	105.00
0.9375	100627	146.00	130.00	126.00	112.00	106.00
1.0000	100628	168.00	157.00	146.00	130.00	124.00
1.1250	100629	214.00	200.00	185.00	166.00	160.00
1.1562	100630	214.00	200.00	185.00	166.00	160.00
1.2500	100631	260.00	242.00	226.00	202.00	196.00
1.3125	100632	297.00	278.00	258.00	231.00	225.00
1.3437	100633	297.00	278.00	258.00	231.00	225.00
1.3750	100634	313.00	292.00	260.00	250.00	244.00
1.4375	100635	355.00	331.00	296.00	286.00	280.00
1.4844	100636	355.00	331.00	296.00	286.00	280.00
1.5000	100637	373.00	349.00	312.00	302.00	296.00
1.5625	100638	373.00	349.00	312.00	302.00	296.00
1.6250	100639	383.00	363.00	345.00	335.00	329.00
1.6875	100640	383.00	363.00	345.00	335.00	329.00
1.7500	100641	413.00	391.00	372.00	362.00	356.00
1.8125	100642	417.00	396.00	376.00	366.00	360.00
1.8750	100643	417.00	396.00	376.00	366.00	360.00
1.9375	100644	439.00	417.00	393.00	383.00	377.00
2.0000	100645	468.00	444.00	422.00	412.00	406.00

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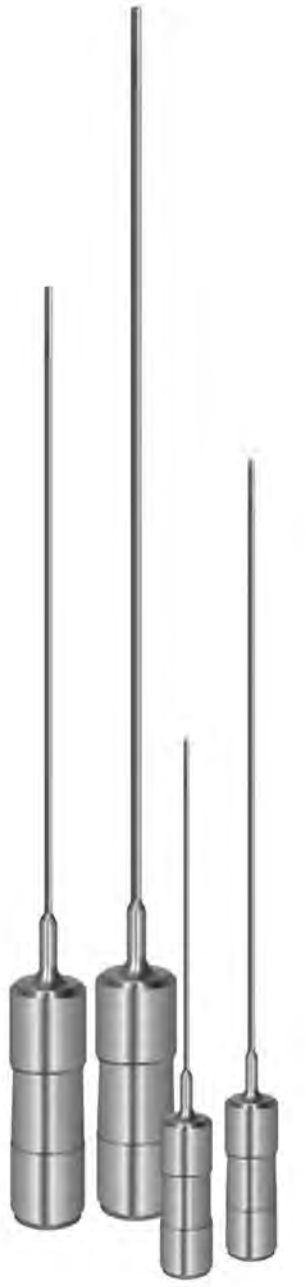
www.dmetool.com

Solid Carbide Gundrills

Solid Carbide Gundrills are constructed of one piece of carbide. The greater the rigidity and lack of torque while in the cut yield feed rates 2-3 times faster than conventional 3-piece construction tools. Solid Carbide tools are available in diameters from .039” to .3125”. Larger diameters are also available for certain applications, made to order. Stocking arrangements can be made upon request

Contact us today and find out how Solid Carbide Gundrills can improve your application.

ISO 9001:2008 CERTIFIED



ADVANTAGES

Increased Rigidity

Faster Feed Rates

Improved Tool Life

Better Oil Flow

CARBIDE SELECTION

Our carbide is industry proven to be the best, whatever your application we have a Carbide Grade for you.

We use only the *finest Carbide Grades* available from Europe and the USA.

Custom diameters & lengths available upon request.

Solid Carbide Gundrills

0.0394" Dia. To 0.1094" Dia.

Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.0394	5	101010SC	153.00	138.00	134.00	130.00	127.00	
1.0mm								
0.0472	5	101030SC	153.00	138.00	134.00	130.00	127.00	
1.2mm								
0.0550	6	100682SC	123.00	111.00	108.00	105.00	102.00	
	8	101051SC	129.00	117.00	114.00	111.00	108.00	
0.0591	6	101080SC	123.00	111.00	108.00	105.00	102.00	
1.5mm	8	101081SC	129.00	117.00	114.00	111.00	108.00	
0.0625	6	100683SC	123.00	111.00	108.00	105.00	102.00	
1/16"	8	101101SC	129.00	117.00	114.00	111.00	108.00	1/2" Dia.
	10	100687SC	135.00	122.00	119.00	116.00	113.00	x 2" LONG
0.0700	6	100684SC	127.00	115.00	112.00	109.00	106.00	
	8	101131SC	133.00	120.00	117.00	114.00	111.00	
	10	101132SC	139.00	126.00	123.00	120.00	117.00	
0.0781	6	100685SC	127.00	115.00	112.00	109.00	106.00	
5/64"	8	101151SC	133.00	120.00	117.00	114.00	111.00	
	10	100688SC	139.00	126.00	123.00	120.00	117.00	
0.0787	6	101170SC	127.00	115.00	112.00	109.00	106.00	
2mm	8	101171SC	133.00	120.00	117.00	114.00	111.00	TAPERED
	10	101172SC	139.00	126.00	123.00	120.00	117.00	
0.0890	6	101200SC	132.00	119.00	116.00	113.00	110.00	
#43	8	101201SC	138.00	125.00	122.00	119.00	116.00	
	10	101202SC	145.00	131.00	128.00	125.00	122.00	
0.0937	6	100686SC	132.00	119.00	116.00	113.00	110.00	
3/32"	8	101221SC	138.00	125.00	122.00	119.00	116.00	
	10	100692SC	145.00	131.00	128.00	125.00	122.00	UNDERCUT
0.0984	6	101250SC	132.00	119.00	116.00	113.00	110.00	
2.5mm	8	101251SC	138.00	125.00	122.00	119.00	116.00	
	10	101252SC	145.00	131.00	128.00	125.00	122.00	
0.0995	6	101255SC	132.00	119.00	116.00	113.00	110.00	
#39	8	101256SC	138.00	125.00	122.00	119.00	116.00	
	10	101257SC	145.00	131.00	128.00	125.00	122.00	
0.1015	6	101260SC	132.00	119.00	116.00	113.00	110.00	
#38	8	101261SC	138.00	125.00	122.00	119.00	116.00	
	10	101262SC	145.00	131.00	128.00	125.00	122.00	
0.1065	6	101265SC	132.00	119.00	116.00	113.00	110.00	
#36	8	101266SC	138.00	125.00	122.00	119.00	116.00	
	10	101267SC	145.00	131.00	128.00	125.00	122.00	
0.1094	6	100693SC	132.00	119.00	116.00	113.00	110.00	
7/64"	8	101271SC	138.00	125.00	122.00	119.00	116.00	
	10	100694SC	145.00	131.00	128.00	125.00	122.00	

Solid Carbide Gundrills

0.1181" Dia. To 0.3125" Dia.

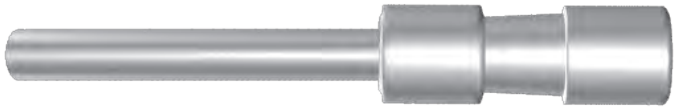
Dia.	OAL	Item#	1	2-3	4-5	6-11	12-25	Driver
0.1181	6	101300SC	125.00	113.00	110.00	107.00	104.00	
3mm	8	101301SC	129.00	117.00	114.00	111.00	108.00	
	10	101302SC	133.00	120.00	117.00	114.00	111.00	
0.1250	6	100696SC	130.00	117.00	114.00	111.00	108.00	
1/8"	8	101341SC	137.00	124.00	121.00	118.00	115.00	
	10	100697SC	143.00	129.00	126.00	123.00	120.00	
	12	101343SC	147.00	133.00	130.00	127.00	124.00	
0.1378	8	101381SC	137.00	124.00	121.00	118.00	115.00	
3.5mm	10	101382SC	143.00	129.00	126.00	123.00	120.00	
0.1406	8	101411SC	137.00	124.00	121.00	118.00	115.00	
9/64"	10	101412SC	143.00	129.00	126.00	123.00	120.00	
	12	101413SC	147.00	133.00	130.00	127.00	124.00	
0.1562	8	101441SC	132.00	119.00	116.00	113.00	110.00	1/2" Dia. x 2" LONG TAPERED UNDERCUT
5/32"	10	101442SC	139.00	126.00	123.00	120.00	117.00	
	12	101443SC	145.00	131.00	128.00	125.00	122.00	
0.1575	8	101471SC	132.00	119.00	116.00	113.00	110.00	
4mm	10	101472SC	139.00	126.00	123.00	120.00	117.00	
	12	101473SC	145.00	131.00	128.00	125.00	122.00	
0.1719	8	101501SC	142.00	128.00	125.00	122.00	119.00	
11/64"	10	101502SC	150.00	135.00	131.00	128.00	125.00	
	12	101503SC	157.00	142.00	138.00	134.00	130.00	
0.1875	10	101532SC	143.00	129.00	126.00	123.00	120.00	
3/16"	12	101533SC	150.00	135.00	131.00	128.00	125.00	
0.1968	10	101572SC	143.00	129.00	126.00	123.00	120.00	
5mm	12	101573SC	150.00	135.00	131.00	128.00	125.00	
0.2031	10	101602SC	143.00	129.00	126.00	123.00	120.00	
13/64"	12	101603SC	150.00	135.00	131.00	128.00	125.00	
0.2187	10	101632SC	143.00	129.00	126.00	123.00	120.00	
7/32"	12	101633SC	150.00	135.00	131.00	128.00	125.00	
0.2344	10	101662SC	149.00	135.00	131.00	128.00	125.00	
15/64"	12	101663SC	156.00	141.00	137.00	133.00	130.00	
0.2362	10	101692SC	149.00	135.00	131.00	128.00	125.00	
6mm	12	101693SC	156.00	141.00	137.00	133.00	130.00	
0.2500	10	101722SC	183.00	165.00	161.00	157.00	153.00	
1/4"	12	101723SC	192.00	173.00	168.00	163.00	159.00	
0.2656	10	101742SC	202.00	164.00	159.00	154.00	147.00	
17/64"	12	101743SC	212.00	174.00	169.00	164.00	157.00	
0.2812	10	101772SC	222.00	184.00	179.00	174.00	170.00	
9/32"	12	101773SC	232.00	194.00	189.00	184.00	177.00	
0.2969	10	101802SC	242.00	204.00	199.00	194.00	187.00	
19/64"	12	101803SC	252.00	214.00	209.00	204.00	197.00	
0.3125	10	101852SC	262.00	224.00	219.00	214.00	207.00	
5/16"	12	101853SC	272.00	234.00	229.00	224.00	217.00	

Drivers

* Stock Standard 3-piece construction
Tapered Under-cut
DR – A – 1/2" x 2 3/4" .0781" - .1249"
DR – B – 3/4" x 2 3/4" .1250" - .5000"

* Stock Standard 3-piece construction
Two Tapered Flats
DR – C – .5001" - .7500"
DR – D – .7501" - 1.000"
DR – E – 1.0010" - 1.5000"
DR – F – 1.5001" - 3.0000"

* Stock Solid Carbide
1/2" x 1 1/2" Plus 1/2" Ext



Extended Drivers
Used for reducing unsupported lengths
where applicable

Weldon – Single Flat Style

Weldon – Two Flat Style

European & DIN Style

Special – Tapped for Pre-Setting

* Supplied on stocked tooling

Special driver configurations
available at customers request.

GUNDRILL SPEEDS, FEEDS & COOLANT PRESSURES

STARTING PARAMETERS (Single Flute)

GUNDRILL DIAMETER	COOLANT PRESSURE	K-MONEL HASTELLOY TUNGSTEN INCOLOY 800-825 REFRACTALOY SFM=80			WASPALOY, A286, RENE, HAYNES INCONEL 600,625 NIMONIC SFM=100			TITANIUM 718 INCONEL MOLLY NITRONIC 40-80 SFM=135			NITRALLOY, GREEK ASCOLOY 400 MONEL 4340 SFM=200			ETD-150, COPPER SFM=275			DUCTILE* SFM=150			BRASS BRONZE SFM=550		
	PSI	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH
0.0550	1800	5556	0.3	4.0	6945	0.3	4.0	9376	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0
0.0781	1500	3913	0.4	7.2	4891	0.5	6.6	6603	0.7	5.8	9782	1.0	4.6	10000	1.0	4.6	8560	0.9	5.0	10000	1.0	5.0
0.0937	1500	3261	0.5	9.0	4077	0.6	8.0	5504	0.8	6.5	8154	1.2	3.6	10000	1.5	4.6	7134	1.1	6.1	10000	1.5	5.1
0.1250	1500	2445	0.4	12.0	3056	0.7	11.0	4126	0.9	9.0	6112	1.4	7.7	8404	1.9	6.5	5348	1.2	8.0	10000	2.3	6.0
0.1562	1300	1956	0.6	15.3	2446	0.7	13.7	3302	1.0	11.4	4891	1.5	9.7	6725	2.0	8.2	4280	1.3	10.0	10000	3.0	7.1
0.1875	1150	1630	0.6	18.5	2037	0.7	16.6	2750	1.0	14.0	4075	1.4	11.7	5603	2.0	9.9	3565	1.3	12.2	10000	3.5	7.4
0.2187	1050	1397	0.6	21.2	1747	0.7	19.0	2358	0.9	15.5	3493	1.4	13.4	4803	1.9	11.4	3057	1.2	14.0	9607	3.8	8.2
0.2500	925	1222	0.6	24.9	1528	0.8	22.3	2063	1.0	18.5	3056	1.5	15.7	4202	2.1	13.3	2674	1.3	16.4	8404	4.2	9.6
0.2812	850	1087	0.6	28.0	1358	0.8	24.0	1834	1.1	21.0	2717	1.6	17.7	3736	2.2	15.0	2377	1.4	19.0	7472	4.3	10.8
0.3125	775	978	0.6	31.2	1222	0.7	28.0	1650	1.0	24.0	2445	1.5	19.7	3362	2.0	16.8	2139	1.3	20.5	6723	4.0	12.0
0.3437	725	889	0.6	34.4	1111	0.7	30.0	1500	0.9	26.0	2223	1.4	21.7	3056	1.9	18.2	1945	1.2	23.0	6113	3.9	13.3
0.3750	675	815	0.5	37.0	1019	0.7	33.7	1375	0.9	29.5	2037	1.3	23.0	2801	1.8	20.0	1783	1.2	25.0	5603	3.6	14.5
0.4062	625	752	0.5	40.8	940	0.6	36.5	1270	0.9	32.0	1881	1.3	25.7	2586	1.8	21.9	1646	1.1	27.3	5172	3.5	15.0
0.4375	600	699	0.5	44.0	873	0.6	39.5	1179	0.8	35.0	1746	1.2	27.8	2401	1.6	23.6	1528	1.0	29.5	4802	3.3	17.0
0.4687	550	652	0.5	47.0	815	0.6	42.0	1100	0.8	35.0	1630	1.1	29.8	2241	1.6	25.3	1426	1.0	31.5	4483	3.1	18.2
0.5000	525	611	0.5	54.0	764	0.5	45.0	1031	0.7	38.0	1528	1.1	31.8	2101	1.5	27.0	1337	0.9	33.6	4202	2.9	19.0
0.5312	500	575	0.5	55.0	719	0.5	47.9	971	0.7	40.0	1438	1.0	33.8	1978	1.4	28.7	1258	0.9	36.3	3955	2.9	20.5
0.5625	500	543	0.5	56.0	679	0.5	50.8	917	0.7	42.3	1358	1.0	35.8	1868	1.4	30.4	1188	0.9	39.0	3735	2.7	22.0
0.5937	475	515	0.4	59.0	643	0.5	53.9	869	0.7	45.0	1287	1.0	38.0	1769	1.3	32.3	1126	0.8	40.7	3539	2.7	23.3
0.6250	475	489	0.4	63.6	611	0.5	57.0	825	0.6	48.0	1222	0.9	40.2	1681	1.3	34.2	1070	0.8	42.5	3362	2.5	24.6
0.6562	425	466	0.4	66.8	582	0.5	59.0	786	0.6	50.5	1164	0.9	42.0	1601	1.2	36.0	1019	0.8	45.0	3202	2.5	26.0
0.6875	425	445	0.4	70.0	556	0.4	62.7	750	0.6	53.0	1111	0.9	44.0	1528	1.2	38.0	972	0.8	50.0	3056	2.4	27.0
0.7187	400	425	0.4	73.0	532	0.4	65.0	718	0.6	55.0	1063	0.9	46.0	1462	1.2	39.5	930	0.7	51.0	2923	2.3	28.0
0.7500	400	407	0.4	76.3	509	0.4	68.0	688	0.6	57.0	1019	0.8	48.0	1401	1.1	41.0	891	0.7	52.0	2801	2.2	29.0
0.8750	350	349	0.4	89.0	437	0.4	79.0	589	0.5	73.0	873	0.8	56.0	1201	1.1	47.0	764	0.7	59.0	2401	2.2	34.0
1.0000	310	306	0.4	100	382	0.4	91.0	516	0.5	80.0	764	0.8	64.0	1051	1.1	54.0	669	0.7	68.0	2101	2.1	39.0
1.2500	270	244	0.4	126	306	0.4	113	413	0.5	95.0	611	0.6	80.0	840	0.8	68.0	535	0.5	86.0	1681	1.7	49.0
1.5000	230	204	0.4	154	255	0.4	138	344	0.5	120	509	0.5	91.0	700	0.7	82.0	446	0.5	105	1401	1.4	60.0

**Indicates a two flute drill may be used at two times the recommended feed rate*

$$RPM = \frac{3.82 \times SFM}{Diameter}$$

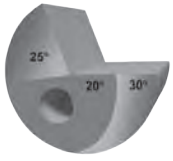
$$SFM = \frac{RPM \times Diameter}{3.82}$$

FPR = IPR/RPM

IPM = FPR x RPM

Dia	FPR	Dia	FPR
0.055-	0.00005	0.500-	0.00070
0.078-	0.00010	0.750-	0.00080
0.156-	0.00030	1.000-	0.00100
0.200-	0.00040	1.250-	0.00100
0.250-	0.00050	1.500-	0.00100

N-8 NOSEGRIND



General purpose stock drill grind for steel, inconel and stainless steel, most often used with stock 'R1' O.D. diameter.

N-4 NOSEGRIND

In aluminum and brass, use this grind with 'R4' O.D. contour for best hole finish.

N-73 NOSEGRIND

For drilling , stacked parts and angular entries. Due to the point's placement near the center of the drill, this is the strongest gundrill.

N-126 NOSEGRIND

For applications requiring nearly flat bottoms. It can also grind for a completely flat bottom. On difficult materials, use to qualify bottoms only.

GUNDRILL SPEEDS, FEEDS & COOLANT PRESSURES

STARTING PARAMETERS (Single Flute)

GUNDRILL DIAMETER	COOLANT PRESSURE	8620 SFM=550			416 STAINLESS 4140, 5120 SFM=325			TOOL STEEL SFM=175			15-5, 17-4, 13-8, H-13 455 CUSTOM 303, 304, 310, 316 341, 347, 420, 501 SFM=200			2024AL*, 6061AL* 7075AL* 1010, 1118, 1145 SFM=550			CAST ALUMINUM* SFM=600			GRAY CAST IRON* SFM=200		
	PSI	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH	RPM	IPM	MAX. UNSUP-PORTED LENGTH
0.0550	1800	10000	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0	10000	0.5	4.0
0.0781	1500	10000	1.0	4.6	10000	1.0	4.6	8560	0.9	4.6	9782	1.0	4.6	10000	1.0	4.6	10000	1.0	4.6	9782	1.0	4.6
0.0937	1500	10000	1.5	5.0	10000	1.5	5.0	7134	1.1	6.0	8154	1.2	5.0	10000	1.5	5.0	10000	1.5	5.0	8154	1.2	5.0
0.1250	1500	10000	2.0	6.0	9932	2.0	6.0	5348	1.1	8.0	6112	1.2	7.7	10000	2.0	6.0	10000	2.0	6.0	6112	1.2	7.7
0.1562	1300	10000	3.0	6.7	7948	2.4	7.7	4280	1.3	10.3	4891	1.5	9.7	10000	3.0	6.6	10000	3.0	6.6	4891	1.5	9.7
0.1875	1150	10000	3.5	7.5	6621	2.3	9.2	3565	1.2	12.4	4075	1.4	11.7	10000	3.5	7.5	10000	3.5	7.5	4075	1.4	11.7
0.2187	1050	9607	3.8	8.2	5677	2.3	10.6	3057	1.2	14.2	3493	1.4	13.4	9607	3.8	8.2	10000	4.0	7.8	3493	1.4	13.4
0.2500	925	8404	4.2	9.6	4966	2.5	12.4	2674	1.3	16.5	3056	1.5	15.7	8404	4.2	9.6	9168	4.6	9.1	3056	1.5	15.7
0.2812	850	7472	4.1	10.8	4415	2.3	14.0	2377	1.2	18.7	2717	1.4	17.7	7472	3.9	10.8	8151	4.2	10.3	2717	1.4	17.7
0.3125	775	6723	4.0	12.0	3973	2.4	15.6	2139	1.3	20.9	2445	1.5	19.7	6723	4.0	12.0	7334	4.4	11.5	2445	1.5	19.7
0.3437	725	6113	3.9	13.3	3612	2.3	17.2	1945	1.2	23.0	2223	1.4	21.7	6113	3.9	13.3	6669	4.2	12.6	2223	1.4	21.7
0.3750	675	5603	3.6	14.5	3311	2.2	18.8	1783	1.2	26.0	2037	1.3	23.2	5603	3.6	14.5	6112	4.0	13.8	2037	1.3	23.2
0.4062	625	5172	3.5	15.0	3056	2.1	19.6	1646	1.1	27.3	1881	1.3	25.7	5172	3.5	15.0	5643	3.8	14.2	1881	1.3	25.7
0.4375	600	4802	3.3	17.0	2838	1.9	21.9	1528	1.0	29.4	1746	1.2	27.8	4802	3.3	17.0	5239	3.6	16.1	1746	1.2	27.8
0.4687	550	4483	3.1	18.2	2649	1.9	23.5	1426	1.0	31.5	1630	1.1	29.8	4483	3.1	18.2	4890	3.4	17.3	1630	1.1	29.8
0.5000	525	4202	2.9	19.3	2483	1.7	25.1	1337	0.9	33.7	1528	1.1	31.8	4202	2.9	19.3	4584	3.2	18.5	1528	1.1	31.8
0.5312	500	3955	2.9	20.6	2337	1.7	26.7	1258	0.9	35.8	1438	1.0	33.8	3955	2.9	20.6	4315	3.1	19.6	1438	1.0	33.8
0.5625	500	3735	2.7	21.9	2207	1.6	28.3	1188	0.9	37.9	1358	1.0	35.8	3735	2.7	21.9	4075	3.0	20.8	1358	1.0	35.8
0.5937	475	3539	2.7	23.2	2091	1.6	30.0	1126	0.8	40.2	1287	1.0	38.0	3539	2.7	23.2	3861	2.9	22.1	1287	1.0	38.0
0.6250	475	3362	2.5	24.6	1986	1.5	31.8	1070	0.8	42.6	1222	0.9	40.2	3362	2.5	24.6	3667	2.8	23.4	1222	0.9	40.2
0.6562	425	3202	2.5	25.8	1892	1.5	37.8	1019	0.8	44.5	1164	0.9	42.2	3202	2.5	25.8	3493	2.7	24.5	1164	0.9	42.2
0.6875	425	3056	2.4	27.0	1806	1.4	39.0	972	0.8	46.5	1111	0.9	44.2	3056	2.4	27.0	3334	2.6	25.7	1111	0.9	44.2
0.7187	400	2923	2.3	28.2	1727	1.4	41.5	930	0.7	48.7	1063	0.9	46.2	2923	2.3	28.2	3189	2.6	26.8	1063	0.9	46.2
0.7500	400	2801	2.2	29.5	1655	1.3	42.7	891	0.7	51.0	1019	0.8	48.2	2801	2.2	29.5	3056	2.4	28.0	1019	0.8	48.2
0.8750	350	2401	2.2	34.4	1419	1.3	44.5	764	0.7	59.5	873	0.8	56.2	2401	2.2	34.4	2619	2.4	32.7	873	0.8	56.2
1.0000	310	2101	2.1	39.0	1242	1.2	50.9	669	0.7	68.0	764	0.8	64.0	2101	2.1	39.3	2292	2.3	37.0	764	0.8	64.0
1.2500	270	1681	1.7	49.0	993	1.0	63.0	535	0.5	84.0	611	0.6	80.0	1681	1.7	50.0	1834	1.8	46.0	611	0.6	80.0
1.5000	230	1401	1.4	59.0	828	0.8	77.0	446	0.4	102	509	0.5	91.0	1401	1.4	59.0	1528	1.5	56.0	509	0.5	97.0

**Indicates a two flute drill may be used at two times the recommended feed rate*

$$RPM = \frac{3.82 \times SFM}{Diameter}$$

$$SFM = \frac{RPM \times Diameter}{3.82}$$

$$FPR = IPR/RPM$$

$$IPM = FPR \times RPM$$

0.055-	0.00005	0.500-	0.00070
0.078-	0.00010	0.750-	0.00080
0.156-	0.00030	1.000-	0.00100
0.200-	0.00040	1.250-	0.00100
0.250-	0.00050	1.500-	0.00100

R-1 CONTOUR

General purpose stock drill contour for steel, stainless steel, inconel and aluminum. Offers minimum bearing contact with the workpiece (non-micable).

R-2 CONTOUR

Recommended for all non-ferrous and cast iron up to gundrill diameter of .200" (non-micable).

R-3 CONTOUR

For good size control (including at exit) special purpose contour, where micable diameter is required or extra burnishing action is required; not for all materials (micable).

R-4 CONTOUR

For use in aluminum and brass for best hole finish and for intersecting holes and interrupted cuts, or extra O.D. support and burnishing. (micable).

DRILL MASTERS Eldorado Tool

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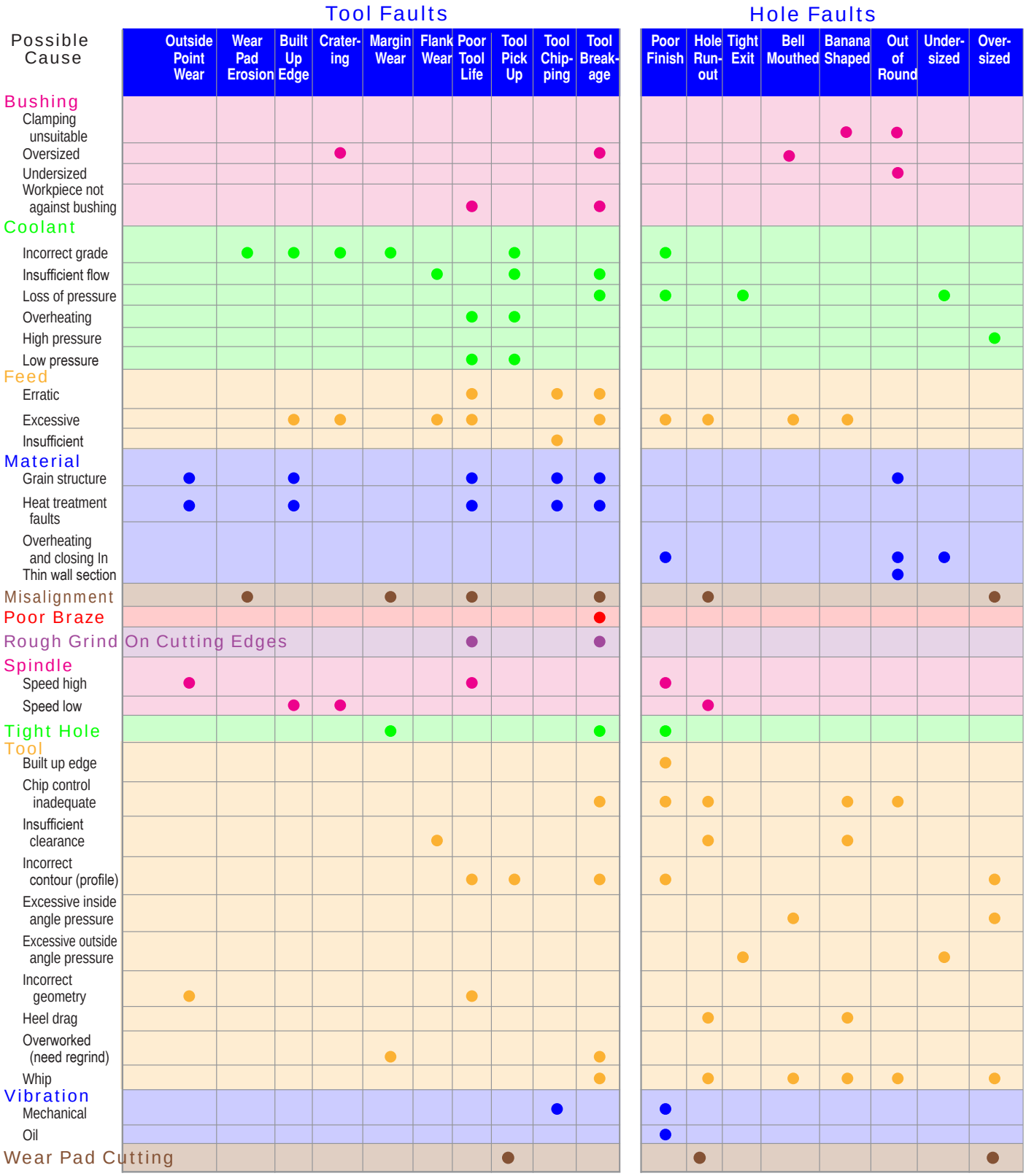
GUNDRILL PROBLEM SOLVING



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