

## Fish Tail Bits

For most soil conditions,  
including sand and clay

An economical bit for most soil conditions. The carbide cutting edges give the Fish Tail Bits aggressive cutting action and long life. Efficient relief and clearance angles for faster, easier drilling. Water holes in back of the cutting edges are standard and can be drilled in the center or in front of the cutting edges for sandy soil bores.

Specify "C" for Carbide or "H" for Hardface when ordering



All styles are not shown

Carbide edges for aggressive cutting action and long life

### Fish Tail Bits - Style 100

PART # for Carbide Bits	PART # for Hardfaced Bits	DIAMETER	THREAD
100-12P-C	100-12P-H	1-3/4"	3/4" pipe
100-02-C	100-02-H	1-3/4"	7/8"-9NC
100-03-C	100-03-H	1-3/4"	1"-8NC
101-12P-C	101-12P-H	2"	3/4" pipe
101-02-C	101-02-H	2"	7/8"-9NC
101-03-C	101-03-H	2"	1"-8NC
102-12P-C	102-12P-H	2-5/8"	3/4" pipe
102-02-C	102-02-H	2-5/8"	7/8"-9NC
102-03-C	102-03-H	2-5/8"	1"-8NC
102-16P-C	102-16P-H	2-5/8"	1" pipe
103-02-C	103-02-H	3-1/4"	7/8"-9NC
103-16P-C	103-16P-H	3-1/4"	1" pipe
103-24P-C	103-24P-H	3-1/4"	1-1/2" pipe
104-32P-C	104-32P-H	4"	2" pipe
104-40P-C	104-40P-H	4"	2-1/2" pipe
105-48P-C	105-48P-H	5"	3" pipe
106-64P-C	106-64P-H	6"	4" pipe

## Fish Tail Bits for conduit

Fish Tail bits are available with pipe threads for direct drilling with galvanized conduit.



## Clay Bits

Excellent for clay and working through tree roots

The economical Clay Bit is designed primarily for efficiently drilling through clay and tree roots. The large water holes allow the Clay Bit to function with a low pressure supply. Center-enclosed water hole protects against clogging in clay.

Specify "C" for Carbide or "H" for Hardface when ordering

### Clay Bits - Style 1300

PART # for Carbide Bits	PART # for Hardfaced Bits	DIAMETER	THREAD
1300-12P-C	1300-12P-H	2-1/4"	3/4" pipe
1300-02-C	1300-02-H	2-1/4"	7/8"-9NC
1300-03-C	1300-03-H	2-1/4"	1"-8NC



Center enclosed water hole

Call for our free  
2002 Directional Tooling Catalog  
For all your directional drilling needs

# Rock Bits

Excellent for hard, rocky soils, shale, and sandstone

This heavy duty bit is excellent for loose rock and hard soil boring. Melfred Borzall's Rock Bit features large carbides for exceptional wear resistance and massive blade construction for maximum strength and rigidity. Large protected water holes are standard.



Large protected water holes



Extra large carbides



32-02-C



31-02-C

All styles are not shown

Available in Carbide only

## Rock Bits - Style 30

PART #	DIAMETER	THREAD
31-02-C	2"	7/8"-9NC
31-03-C	2"	1"-8NC
32-02-C	2-1/4"	7/8"-9NC
32-03-C	2-1/4"	1"-8NC
32-05-C	2-1/4"	13/16"-Hex
32-06-C	2-1/4"	AW
32-16P-C	2-1/4"	1" pipe
33-06-C	3"	AW
34-24P-C	3-1/2"	1-1/2" pipe
34-32P-C	3-1/2"	2" pipe
35-48P-C	5"	3" pipe
36-64P-C	6"	4" pipe

# Pilot Bits

Heavy duty for hardpan, shale, sandstone and clay

The Pilot Bit will drill a variety of soils. The open, free-cutting design allows rapid penetration rates. Heavy duty cast steel blades and large, full edge carbides allow aggressive cutting action and longer life. The Pilot Bits feature large protected water holes to prevent clogging.



Large, protected water holes prevent clogging



Heavy duty blades and full edge carbides



Available in Carbide only

## Pilot Bits - Style 100

PART #	DIAMETER	THREAD
110-02	2"	7/8"-9NC
110-03	2"	1"-8NC
110-12P	2"	3/4" pipe
111-02	2-1/4"	7/8"-9NC
111-03	2-1/4"	1"-8NC
111-06	2-1/4"	AW
111-16P	2-1/4"	1" pipe
112-02	2-1/2"	7/8"-9NC
112-03	2-1/2"	1"-8NC
112-06	2-1/2"	AW

# Pulling Swivels

For pulling pipe, cable, and other utility lines

Cable swivels are used in pulling back pipe, cables, and other utility lines. They can be attached directly to the drill rod or in a combination with Borzall reamers. The swivels are designed specifically to hold up to the harsh demands of horizontal boring. Repair kits are available for both style swivels.

## Cable Swivels

PART #	CAPACITY	THREAD
1015-02	600 lbs.	7/8"-9NC-F
1015-03	600 lbs.	1"-8NC-F
1021-02	1750 lbs.	7/8"-9NC-F
1021-03	1750 lbs.	1"-8NC-F
1015-R	1015 REPAIR KIT	
1021-R	1021 REPAIR KIT	



Part # 1015 600 lb. Capacity



Part # 1021 1750 lb. Capacity

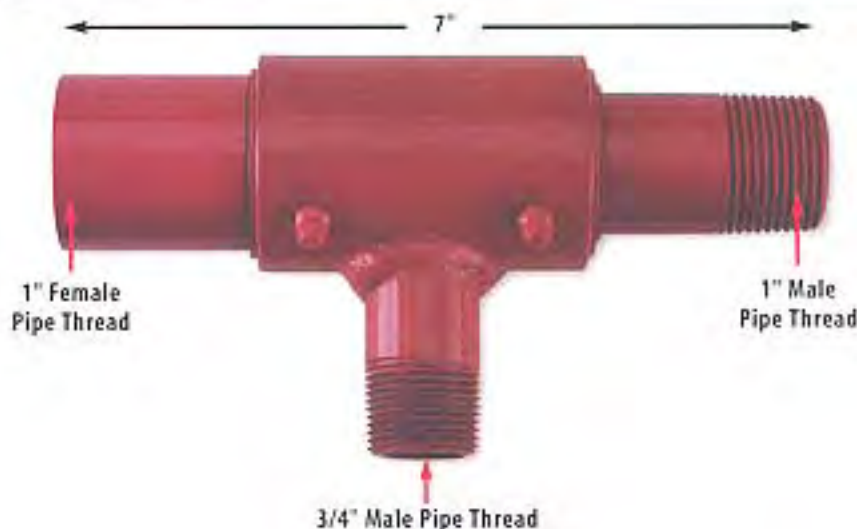
# Water Swivels

Designed for high speed, high torque boring tools

The Melfred Borzall water swivel has o-ring seals, grease fittings, and a heat-treated alloy shaft for longer life. It has been designed for high speed, high torque boring tools and can be used as a replacement swivel for trencher-mounted boring attachments.

## Water Swivels

PART #	TYPE
388	O Rings
388-R	Repair Kit



# Spline and Shank Adapters

The SPL-16PM adapter, along with the 388 water swivel, connects to the Ditch Witch Roto-Witch® boring units, upgrading them to high performance wet boring. The SHA-16PM adapter, along with the 388 water swivel, connects to Case® attachment mounted boring units.

## Water Swivels

PART #	TYPE
SPL-16PM	Spline Used with Ditch Witch Roto-Witch® boring units
SHA-16PM	Shank Used with Case® attachment mounted boring units



Turn your boring unit into a high performance wet boring unit with our adapters

1" Male Pipe Thread



1" Male Pipe Thread

# Drill Rod

## Series 188

### Flexible Drill Rod 1-3/16" O.D. Tube



Series 188 is a medium duty drill rod specially designed for long bores of 400 feet or more. The heavier walled tubing has the extra strength and rigidity required for drill tracks

and more powerful boring machines and attachments. Series 188 drill rod is also available with a coupling sleeve for added strength where the drill rod encounters the most stress.



188-10-02-SL F



188-10-02-SL M

188 Rod also available with welded sleeve for extra strength

### Flexible Drill Rod - Series 188

PART #	LENGTH	THREAD
188-5-02	5 ft.	7/8"-9NC
188-10-02	10 ft.	7/8"-9NC
188-15-02	15 ft.	7/8"-9NC
188-20-02	20 ft.	7/8"-9NC
188-5-03	5 ft.	1"-8NC
188-10-03	10 ft.	1"-8NC
188-15-03	15 ft.	1"-8NC
188-20-03	20 ft.	1"-8NC
188-5-05	5ft.	13/16"-Hex
188-10-05	10 ft.	13/16"-Hex
188-15-05	15 ft.	13/16"-Hex
188-20-05	20 ft.	13/16"-Hex
188-10-02-SL	10 ft.	7/8"-9NC w/sleeve
188-20-02-SL	20 ft.	7/8"-9NC w/sleeve

## Hex Drive Drill Rod

### 188 Flexible Drill Rod with Hex Connection

Now available—a low maintenance reversible dry boring system. Male and female 13/16" hex ends are machined for close tolerances. Heat treated alloy steel tool joints for maximum life. Replacement couplings also available.

**NEW!  
NEW!  
NEW!**



188-10-05-Hex

188 Flexible Drill Rod Series is now available with the new Hex-connection

## Auntie C's Thread Lube

Auntie C's Premium Copper Thread Lube is excellent for use in demanding drilling conditions. This lead free, environmentally safe drill pipe compound provides maximum protection against galling, seizing and down-hole makeup under even the most challenging conditions. Auntie C's Premium Copper Thread Lube contains copper flake, graphite, an extreme pressure additive, and rust and corrosion inhibitors in a water resistant aluminum complex grease carrier. Auntie C's thread lube contains no zinc or other materials which may be affected by elevated temperatures. Now available in a convenient 20 oz. size for grease guns.

### Thread Lube

PART #	SIZE
AS-402-JT	20 oz. tube
AS-410	10 lb. pail
AS-420	20 lb. pail
AS-445	45 lb. pail



Now available in 20 oz. tubes

# Drill Bits for Boring On-Target

Melfred Borzall drill bits have evolved through decades of on the job use. They are designed to meet a variety of soil conditions, including clay, sand, hardpan, shale, and borable rock. Our bits are made from cast steel and are designed with the cutting reliefs and clearances for maximum performance. MBI bits are available with hardfaced cutting edges for abrasion resistance or with carbide inserts for aggressive performance in harder soils and longer wear life. In addition to standard drill rod threads (7/8"-9NC, 1"-8NC, AW, and 13/16"-Hex Snap Pin), MBI bits are available in pipe thread sizes for use with extra heavy pipe (3/4" and 1") and direct drilling electrical conduit from 1-1/4 inches through 4 inches.

**Bits  
can be used with**

**Pneumatic bore motors**

**Hydra Bore\*    Roto Witch\***  
**Dyna Mole\*    Mighty Mole\***

## Three Bladed Bits

**Excellent for hardpan,  
shale, and sandstone**

Carbide edges for aggressive cutting action and long life



3 Bladed Bit also available with a closed center for sandstone drilling

Melfred Borzall's Three Bladed Bits are used for drilling harder soils such as decomposed granite, loose rock, or shale. They often achieve improved accuracy due to greater distribution of cutting area and additional fluid circulation. The carbide tipped version of this bit

actually improves with use! As the cast steel blades wear, carbide insert "fingers" are exposed, providing aggressive cutting action. Special styles can be ordered, including front or center located fluid holes, and a closed-center style, ideal for drilling sandstone and other continuous formations.



### 3 Bladed Bits - Style 1200

PART # for Carbide Bits	PART # for Hardfaced Bits	DIAMETER	THREAD
1200-12P-C	1200-12P-H	2"	3/4" pipe
1200-02-C	1200-02-H	2"	7/8"-9NC
1200-03-C	1200-03-H	2"	1"-8NC
1200-05-C	1200-05-H	2"	13/16"-Hex
1202-12P-C	1202-12P-H	2-3/4"	3/4" pipe
1202-02-C	1202-02-H	2-3/4"	7/8"-9NC
1202-03-C	1202-03-H	2-3/4"	1"-8NC
1202-16P-C	1202-16P-H	2-3/4"	1" pipe
1203-12P-C	1203-12P-H	3-1/2"	3/4" pipe
1203-02-C	1203-02-H	3-1/2"	7/8"-9NC
1203-03-C	1203-03-H	3-1/2"	1"-8NC
1203-16P-C	1203-16P-H	3-1/2"	1" pipe
1203-24P-C	1203-24P-H	3-1/2"	1-1/2" pipe
1203-32P-C	1203-32P-H	3-1/2"	2" pipe
1204-40P-C	1204-40P-H	4"	2-1/2" pipe
1205-48P-C	1205-48P-H	5-1/2"	3"
1206-64P-C	1206-64P-H	6"	4"

Specify "C" for Carbide, or "H" for Hardface when ordering



# A Reamer For Every Job, Every Soil

## The Adjuster

Features interchangeable blades for most soil types

With one Adjuster reamer body, you can build a reamer from 4" to 16"

Bolt-on blades make changing or replacing blades a snap



201-02

### Adjuster Reamer Body

PART #	THREAD
201-02	7/8"-9NC



Reamer body 201-02 shown with Pull Blades-Aggressive 6A-C. The Adjuster reamer uses three blades, below blades sold individually

Make your job easier with the Adjuster reamer body. Bolt-on blades make it easy to change worn out blades or to add on different size blades. With one Adjuster reamer body you

can build a reamer from 4 inches up to 16 inches. All blade styles shown below can be used on the same body, making it a very versatile and economical reamer.

## Pull Blades

Pull blades cut during return operation and are available in standard and aggressive styles. Blades are sold individually.

### Pull Blades - Standard

PART # for Carbide blades	PART # for Hardfaced blades	DIAMETER
45-C	45-H	4"
55-C	55-H	5"
65-C	65-H	6"
85-C	85-H	8"
105-C	105-H	10"
125-C	125-H	12"
145-C	145-H	14"
165-C	165-H	16"

Specify "C" for Carbide, "H" for Hardface when ordering

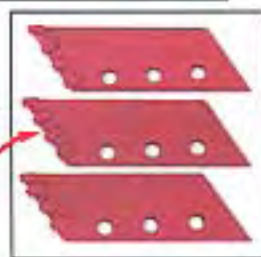
### Pull Blades - Aggressive

PART # for Carbide blades	PART # for Hardfaced blades	DIAMETER
4A-C	4A-H	4"
5A-C	5A-H	5"
6A-C	6A-H	6"
8A-C	8A-H	8"
10A-C	10A-H	10"

Standard Blades



Aggressive Blades



## Push-Pull Blades

Specify "C" for Carbide, "H" for Hardface when ordering

Push-Pull reamer blades cut either as a return reamer (pull) or while the drill string is being fed into the bore (push). The push-pull reamer can also be used to push back through, swabbing the hole and forcing soil to be deposited in the pot-hole or sump.

Available in Carbide or Hardface for aggressive cutting action



### Push-Pull Blades

PART # for Carbide blades	PART # for Hardfaced blades	DIAMETER
4PP-C	4PP-H	4"
5PP-C	5PP-H	5"
6PP-C	6PP-H	6"
8PP-C	8PP-H	8"
10PP-C	10PP-H	10"
12PP-C	12PP-H	12"
14PP-C	14PP-H	14"
16PP-C	16PP-H	16"

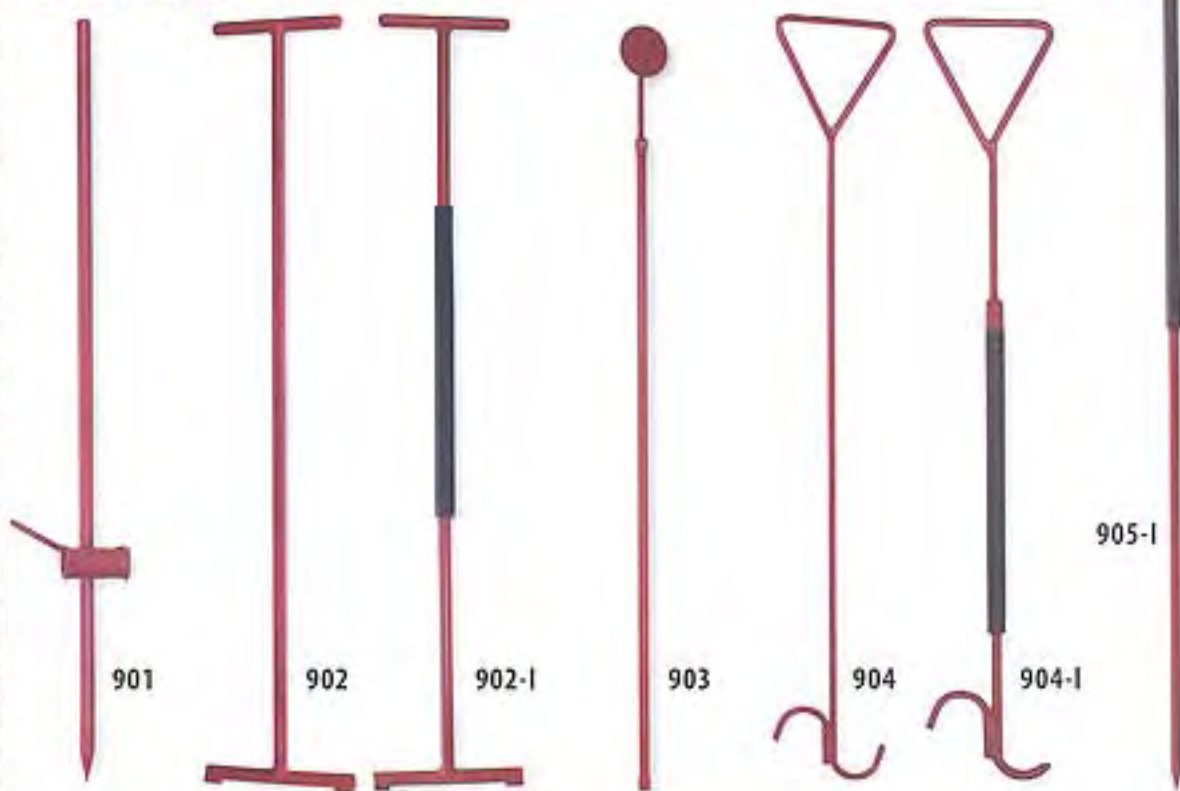
## Alignment Devices

Alignment devices are used to align the drill rod before and during drilling.

*Alignment Devices that come in direct contact with the drilling components and must be held by hand are available with an insulated fiberglass section.*

### Alignment Devices

PART #	DESCRIPTION
901	The Rod Guide Stakes are driven into the ground to secure the horizontal and vertical alignment.
902, 902-1, 903	The alignment of the drill rod is checked with the Sighting Device and the Target.
904, 904-1	The Grab Hook is used to assist in the alignment of the bore path. Available as standard or with the fiberglass insulated section.
905-1	The Insulated Pry Bar is used to help redirect the drill bit from side-to-side as it comes through the pit.



## Insul-Bor

The Insul-Bor is designed to significantly reduce the hazard of operators being electrocuted from boring into electric conductors such as distribution lines.

Primary protection is gained by using a solid section between the operators (bore motor) and the steel drill tube. The Insul-Bor is designed to withstand 600 ft.-lbs. of torque.

The voltage potential the Insul-Bor will protect against will vary with the cleanliness of the section and the weather. If the primary section is dirty or if the weather is humid or wet, the amount of protection will be reduced.



# Reamers

## The Turbo

For sand, sandstone, and sandy loam

The "Big Boy" for long bores in sand and unstable soils. The Turbo is designed for long life and productivity. Heavy duty blades and massive carbide cutters

provide an excellent cutting and mixing action. Spiraled packer blades provide the maximum in mixing and actually "pump" slurry through the bore hole

Spiraled turbo blades for amazing mixing and pumping action



### The Turbo - Style 83

PART #	DIAMETERS	THREAD
83-6-02	6" cut, 5-5/8" pack	7/8"-9NC
83-8-02	8" cut, 6-5/8" pack	7/8"-9NC
83-10-02	10" cut, 8-5/8" pack	7/8"-9NC
83-12-02	12" cut, 10-3/4" pack	7/8"-9NC

## The Compactor

For soft soils and clay

The Compactor comes standard as a dry reamer. The solid one-piece casting adds strength and durability. The Compactor can

be used in conjunction with a standard slurry reamer. Water holes can be added on request.



Spiraled flights feeds reamer back through the hole

### The Compactor - Style 35

PART #	DIAMETER	THREAD
35-350-02	3-1/2"	7/8"-9NC
35-350-03	3-1/2"	1"-8NC
35-350-05	3-1/2"	13/16"-Hex

## Push-Pull Reamer

Compact design

The Push-Pull Reamer is a compact design with special blades that cut either as a normal return reamer (pull) or while the drill string is being fed into the hole (push). During return reaming

in certain soil conditions, the Push-Pull Reamer can be fed back to swab out the hole, forcing soil to be deposited in the pot-hole or sump.

### Push-Pull Reamer

PART #	DIAMETER	THREAD
62-3-02-C	3"	7/8"-9NC
62-4-02-C	4"	7/8"-9NC
62-6-02-C	6"	7/8"-9NC





# Largest Selection of Top Quality Drill Rod for all your drilling needs



## Series 301

Flexible Drill Rod 1-1/8" O.D. Tube



Our most popular drill rod for conventional earth boring. Series 301 is the standard drill rod used for most normal drilling condi-

tions. It combines strength and flexibility. The drill rod can be used with water, slurry, air, or dry boring.

### Flexible Drill Rod - Series 301

PART #	LENGTH	THREAD
301-5-02	5ft.	7/8"-9NC
301-10-02	10 ft.	7/8"-9NC
301-15-02	15 ft.	7/8"-9NC
301-20-02	20 ft.	7/8"-9NC
301-5-03	5 ft.	1"-8NC
301-10-03	10 ft.	1"-8NC
301-15-03	15 ft.	1"-8NC
301-20-03	20 ft.	1"-8NC

*Custom lengths are available on request*

## Series 302

Flexible Drill Rod 15/16" O.D. Tube



Series 302 is designed for light duty applications such as the installation of telephone cable and copper tubing. Especially useful in

restricted areas where short trenches are desired and applications requiring greater drill rod flexibility.

### Flexible Drill Rod - Series 302

PART #	LENGTH	THREAD
302-10-02	10 ft.	7/8"-9NC
302-15-02	15 ft.	7/8"-9NC
302-20-02	20 ft.	7/8"-9NC

## Extend the Life of Your Drill Rod with replacement couplings form GRIFFITH AIR TOOL



### Thread Studs

PART #	THREAD
601	7/8"-9NC
609	1"-8NC
675	AW

The life of your drill rod can be extended by replacing worn couplings. Replaceable couplings eliminate the wear and breakage often experienced when using pipe threads and couplings. Melfred Borzall's couplings are designed to withstand the intense conditions encountered in earth boring.

### Replacement Couplings

PART #	TUBE	THREAD
401-M	301, 188	7/8"-9NC-M
401-F	301, 188	7/8"-9NC-F
402-M	3/4" X-H pipe	7/8"-9NC-M
402-F	3/4" X-H pipe	7/8"-9NC-F
403-M	1" std. pipe	7/8"-9NC-M
403-F	1" std. pipe	7/8"-9NC-F
404-M	1" X-H pipe	7/8"-9NC-M
404-F	1" X-H pipe	7/8"-9NC-F
408-M	302	7/8"-9NC-M
408-F	302	7/8"-9NC-F
409-M	301, 188	1"-8NC-M
409-F	301, 188	1"-8NC-F
415-M	188	13/16"-Hex
415-F	188	13/16"-Hex
175-M	277	AW-M
175-F	277	AW-F

# Reamers



## The Chopper

Clay Reamer for the stickiest types of clay



The Chopper cuts through the stickiest of clays without balling up. The forward swept blade design improves the cutting and mixing action. The Chopper's blades are tipped with

carbide teeth for aggressive cutting and wear resistance. The blades step-up in size at each stage to gradually increase hole diameter.

Step-up blade design gradually increases hole diameter

Carbide tipped blades for aggressive cutting action and wear resistance

Larger sizes can be made to order

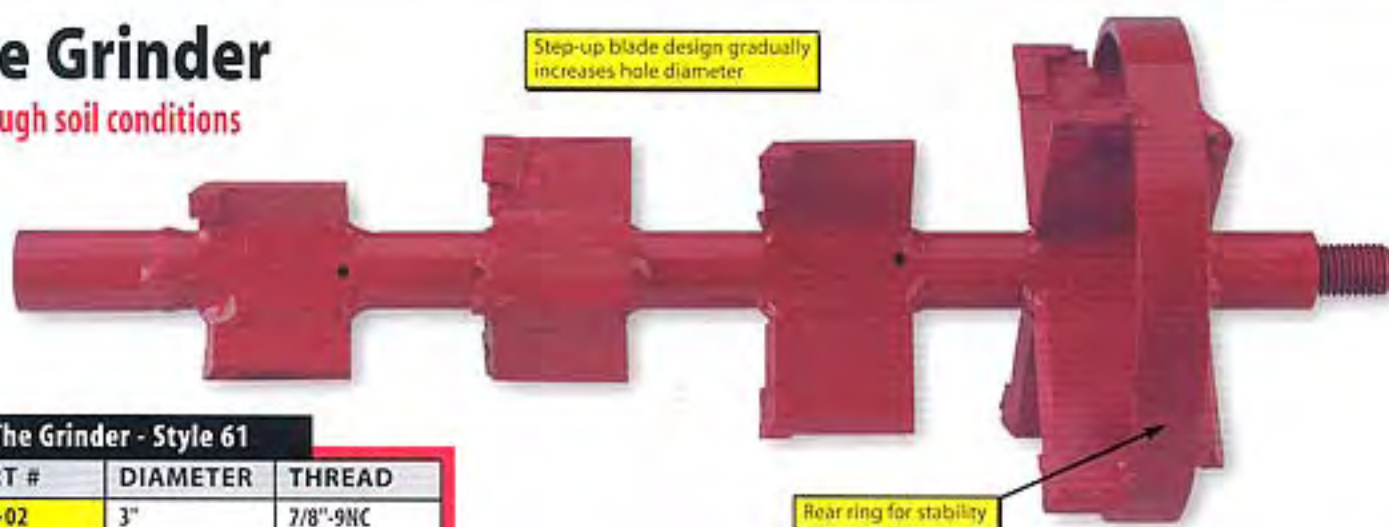
### The Chopper - Style 63

PART #	DIAMETER	THREAD
63-3-02-C	3"	7/8"-9NC
63-4-02-C	4"	7/8"-9NC
63-5-02-C	5"	7/8"-9NC
63-6-02-C	6"	7/8"-9NC
63-8-02-C	8"	7/8"-9NC
63-10-02-C	10"	7/8"-9NC
63-12-02-C	12"	7/8"-9NC

for all your Horizontal Drilling tools

## The Grinder

For tough soil conditions



Step-up blade design gradually increases hole diameter

Rear ring for stability

### The Grinder - Style 61

PART #	DIAMETER	THREAD
61-3-02	3"	7/8"-9NC
61-4-02	4"	7/8"-9NC
61-5-02	5"	7/8"-9NC
61-6-02	6"	7/8"-9NC
61-8-02	8"	7/8"-9NC

The Grinder features several stages of progressively larger carbide tipped blades. The heavy duty blades are designed to stand up to extremely difficult soil conditions. The

rear ring stabilizes the reamer in cobbles and strengthens the last stage of blades. The blades step up in size at each stage to gradually increase hole diameter.

# The Aggressor

Ideal for clay, sand, and most unstable soils



## The Aggressor - Style 73

PART #	DIAMETERS	THREAD
73-3-02	3" cut, 2-5/8" pack	7/8"-9NC
73-4-02	4" cut, 3-5/8" pack	7/8"-9NC
73-5-02	5" cut, 4-5/8" pack	7/8"-9NC
73-6-02	6" cut, 5-5/8" pack	7/8"-9NC
73-8-02	8" cut, 6-5/8" pack	7/8"-9NC
73-10-02	10" cut, 8-5/8" pack	7/8"-9NC
73-12-02	12" cut, 10-3/4" pack	7/8"-9NC

Packer blades provide an excellent mixing action

Back-up blades help in pushing the reamer back out of the hole

The Aggressor is ideal for clay and most unstable soils. The unique blade and packer combination cuts the hole and then packs it for stabilization. The Aggressor features

carbide-tipped cutting blades for longevity. Back-up blades help in pushing the reamer back out of the hole.

# The Mighty Mite

Ideal for clay, hardpan, and soft soils

This compact reamer is only six inches long, making it easy to install in a small receiving pit. Combining two compact reamers

together produces an outstanding tool for reaming clay. The blades are sharpened to allow cutting during push or pull operation.

Compact size makes it easy to install in a small receiving pit



## The Mighty Mite - Style 64

PART #	DIAMETER	THREAD
64-3-02-C	3"	7/8"-9NC
64-4-02-C	4"	7/8"-9NC
64-5-02-C	5"	7/8"-9NC
64-6-02-C	6"	7/8"-9NC

# The Razorback

For sandy loams and sticky clays

Contractors asked for a highly productive, inexpensive, yet durable reamer to use in a wide variety of soil conditions. The Razorback is the answer! Massive carbides completely

line the leading edge in an aggressive sawtooth pattern. The open blade design greatly improves the mixing action.

## The Razorback - Style 67

PART #	DIAMETER	THREAD
67-4-02	4"	7/8"-9NC
67-6-02	6"	7/8"-9NC
67-8-02	8"	7/8"-9NC
67-10-02	10"	7/8"-9NC
67-12-02	12"	7/8"-9NC

Open blade design greatly improves the mixing action

Carbide lined edge increases durability in a variety of soils



## Electrical Conduit Adapters

1 INCH PIPE FEMALE x CONDUIT THREAD

The Melfred Borzall Electrical Conduit Adapters are used for direct drilling conduit installations. On sizes up to 2", the male thread of the adapter is a standard straight pipe thread and is designed so that the straight pipe thread coupling contacts the shoulder of the adapter. Load shock and stress is transmitted to the adapter shoulder and not through the threads. Larger sizes have standard tapered pipe threads.

### Electrical Conduit Adapters

	1 inch	1-1/4 inch	1-1/2 inch	2 inch
1 inch Pipe-Female	16PF-105M	16PF-125M	16PF-155M	16PF-205M
	2-1/2 inch	3 inch	3-1/2 inch	4 inch
1 inch Pipe-Female	16PF-40PF	16PF-48PF	16PF-56PF	16PF-64PF



16PF-205M

## Air Motor Adapters

1 INCH PIPE MALE x AIR MOTOR THREAD

Air Motor Adapters are designed to fit most commonly used air motors including Thor, Ingersoll-Rand, Jet, and Uryu.

### Air Motor Adapters

	Thor 66	Thor 88 Jet JRD40	IR335MA IR44L	IR335MA IR55J	URYU32	URYU40
1 inch Pipe-Male	501-1	501-2	501-5	501-6	501-9	501-6U



501-6

## Thread Adapters

Other combinations available.  
Call 800-558-7500 for information.

### Thread Adapters

	Ditch Witch Roto Witch spline	Case 1" shank	7/8"-9NC Male	7/8"-9NC Female	1"-8NC Male	1"-8NC Female
1 inch Pipe-Male	SPL-16PM	SHA-16PM	02M-16PM	02F-16PM	03M-16PM	03F-16PM
1 inch Pipe-Female			02M-16PF	02F-16PF	03M-16PF	03F-16PF
7/8"-9NC Male			02M-02M		02M-03M	02M-03F
7/8"-9NC Female				02F-02F	02F-03M	02F-03F



### ELECTRICAL SAFETY BOOTS

These 18" Over-the-Shoe Safety Boots are made of high quality, tear resistant rubber. They are fitted with a non-conductive strap and buckle. Boots are tested to ANSI Z41-1983 Section 4, ensuring that each boot will withstand 14,000 volts AC with less than 5.0 milliamp leakage. Boot Sizing—specify men's whole sizes only.

### Electrical Safety Boots

PART #	DESCRIPTION
1820-BT	Safety Boot
1820-SH	Safety Shoe

### ELECTRICAL SAFETY GLOVES



These seamless, Dielectric Rubber Gloves are rated use at up to 17,000 volts. The gloves are visually inspected inside and out and tested at their proof voltage in accordance with ASTM specification D-120. Wear Leather Protectors (sold separately) over gloves to help prevent glove damage.

Glove Sizing—measure the circumference of the worker's hand below the base of the fingers, on a line parallel to the finger crotches, passing through the thumb crotch. Add one inch. Half and whole sizes available.

### Electrical Safety Gloves

PART #	DESCRIPTION
1820-GLV	Rubber Glove
1820-PRO	Leather Protector
1820-BAG	Glove storage bag