

HDD TOOLING CATALOG

CELEBRATING 80 YEARS IN HDD



**MELFRED
BORZALLI**

RUBY RED ANNIVERSARY



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THREE GENERATIONS OF MELSHEIMERS ACTIVE IN THE FAMILY BUSINESS

NEW TOOLING INSIDE!

THE TRI-CON SYSTEM

IS NOW AVAILABLE

1 TRI CON BITS & BODIES



FOUND ON PAGES

18, 26 & 28

2 TRI CON HOUSINGS



FOUND ON PAGE 16

3 TRI CON REAMERS



FOUND ON PAGE 33

AND DON'T MISS THE SILVER PULL-IT
BUNDLED MICRO-DUCT
PULLERS & INSERTS



PAGE 49

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THIS CATALOG IS A COMPANION TO THE WEBSITE

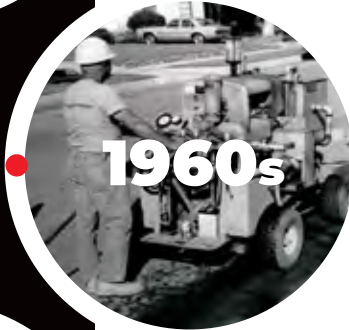
Scan any one of the QR codes in this catalog to pull up the product page and checkout. Once your tooling order is placed, our smart-order routing system mentioned on the next page, kicks into high gear!

80 YEARS OF HDD TOOLING



Fred Melsheimer launched Melfred Welding & Manufacturing that designed and created tools for the first horizontal directional drilling system

Fred's two sons, Ted and Dick Melsheimer, designed the DynaMole, a self-propelled boring machine and developed innovative tools for HDD drillers.



1960s



1990s

Melfred Welding joined forces with the Borzall Equipment to form Melfred Borzall. Dick Melsheimer sold the world's first commercial horizontal directional drilling system, the Sure Shot. They expanded across the U.S. and internationally into 5 continents.

Eric Melsheimer became President of Melfred Borzall and his brother, Peter, Vice President of Sales and Marketing as they made an impact with the tech boom of underground fiber optic utility with the FastBack System®.



2010s



TODAY

Moving into 2026 and the future, our mission remains unchanged: to enable a more efficient, cost-effective means of installing utilities underground so utility contractors can be as productive and profitable as possible.

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SHOP HDD TOOLING ONLINE



ORDER FROM ANYWHERE

www.melfredborzall.com is accessible from a desktop, tablet or smartphone so you can order from the office, truck, or right on the jobsite.



TOOLING REVIEW BY AN HDD SPECIALIST

Experienced HDD tooling specialists ensure every order is checked over for tooling connections, rig compatibility, and other factors only humans experienced in HDD tooling can provide.



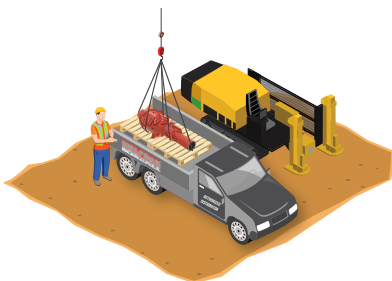
AUTOMATIC ROUTING TO NEAREST DISTRIBUTOR

Our smart technology then determines the nearest stocked distributor to your order's location to limit the distance (and cost) of shipping.



LOCAL SHIPPING DETAILS CONFIRMED

Your local distributor will confirm that order with you along with delivery updates or options.



ORDER DELIVERED WHERE YOU NEED IT

Your Melfred Borzall salesperson or local distributor will not only get your tooling to you fast, they also offer support for your tooling to ensure you are getting the most out of it.

1

2

SPEED ^{OF} LIGHT SMART ORDER ROUTING

EXPEDITING
DELIVERY
WITHOUT
RUSHING
SERVICE

3

4

5

**MELFRED
BORZALL**

HDD

DRILLHEAD SYSTEMS





INTRODUCING THE TRI-CON

Threadless Drilling System For HDD

Tri-Con™ features an innovative, patent-pending design with a rounded triangular shape. It's shape efficiently transfers the rotary torque, but without the sharp corners and stress concentrations of splined connections. The Tri-Con™ shape has shown longer life than other threadless connection types.

TRI-CON™ SYSTEM FEATURES:

- Faster & easier to swap out tooling for a pilot shot or pullback
- Ability to ream & pullback directly from the transmitter housing
- Transmitter housing has a standard API connection for quick-connect systems
- Eliminate the need for starter rods and adapters in some applications
- Two connection sizes available: 2-1/8" (-76) and 2-5/8" (-77)



DESIGNED FOR UP TO 30,000-POUND CLASS RIGS

Versatile tooling options available:

- DigiTrak™ compatible housings
- SubSite® compatible housings
- Iron Fist hard ground bits
- Eagle Claw hard ground bits
- Bit bodies with our patented Pit Bull™ feature
- Compact Tornado-style reamers
- Compact Sabretooth-style reamers
- Compact packer barrel reamers
- Tri-Con™ pulling eye & various adapters



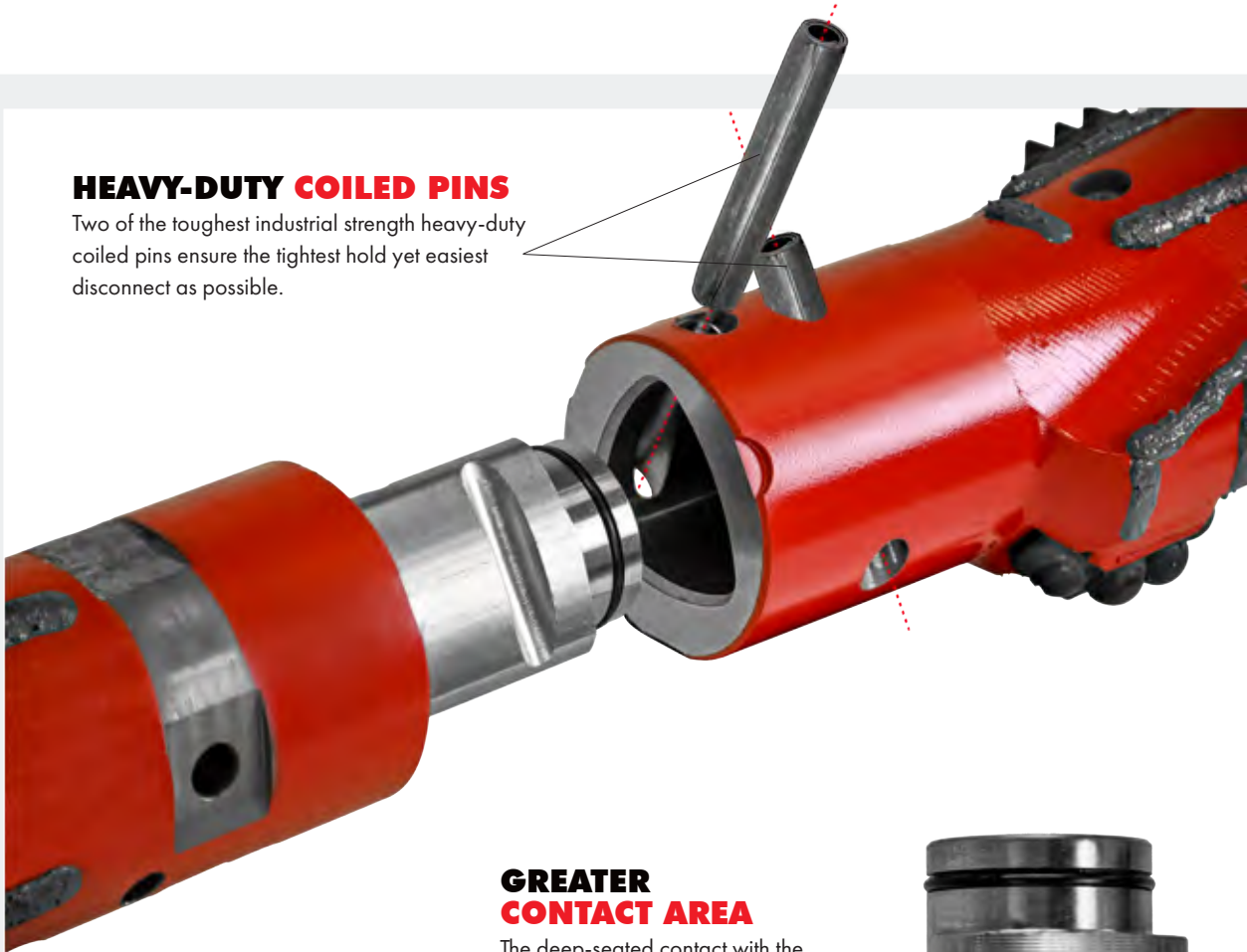
The Tri-Con connection is patent pending.



CONNECTING THE FUTURE OF HDD

HEAVY-DUTY COILED PINS

Two of the toughest industrial strength heavy-duty coiled pins ensure the tightest hold yet easiest disconnect as possible.



GREATER CONTACT AREA

The deep-seated contact with the body provides a more stable hold than many other systems.



ROUNDED CORNERS = LESS STRESS

There are less sharp edges or right angles that often contribute to stress fracture points which means longer drilling with less downtime.

THE TRI-CON SYSTEM PART LIST

Your Place To Find Tri-Con™ Part Numbers & Descriptions.

Tri-Con™ System Tooling		
Description	Part #	Details
Tri-Con Transmitter Housing (DigiTrak™)	5632-HT4-77M	3-1/4" Diameter Housing That Fits DigiTrak™ or U-Mag
Tri-Con Transmitter Housing (Subsite®)	5932-HD4-77M	3-1/4" Diameter Housing That Fits Subsite®
Tri-Con™ Bit Body VM 6-bolt Pattern	5632-13-77F	3-1/4" Diameter with Pit Bull Pins & (6) 1/2"-13 Bolts
Tri-Con™ Bit Body DW 5-bolt Pattern	5932-14-77F	3-1/4" Diameter with Pit Bull Pins & (5) 12MMx25MM Bolts
Tri-Con™ Bit Body VM 6-bolt Pattern	5932-15-77F	3-1/4" Diameter with Pit Bull Pins & (6) 16MMx35MM Bolts
4-1/4" Tri-Con™ Eagle Claw SD Bit	EC-42D3-77F	4-1/4" Cut Diameter with 2-5/8" Tri-Con™ Connection
5" Tri-Con™ Eagle Claw SD Bit	EC-50D3-77F	5" Cut Diameter with 2-5/8" Tri-Con™ Connection
4-1/4" Tri-Con™ Iron Fist Bit	IF-42DC1-77F	4-1/4" Cut Diameter with 2-5/8" Tri-Con™ Connection
5" Tri-Con™ Iron Fist Bit	IF-50DC4-77F	5" Cut Diameter with 2-5/8" Tri-Con™ Connection
4" Tri-Con™ Compact Barrel Reamer	80-04-77F-EYE310	3-1/4" Shaft Diameter 2-5/8" Tri-Con (box) x 310 Pulling Eye
6" Tri-Con™ Compact Barrel Reamer	80-06-77F-EYE310	3-1/4" Shaft Diameter 2-5/8" Tri-Con (box) x 310 Pulling Eye
6" Tri-Con™ Compact Sabretooth Reamer	96-06-77F-EYE310-C	3-1/4" Shaft Diameter 2-5/8" Tri-Con (box) x 310 Pulling Eye
8" Tri-Con™ Compact Sabretooth Reamer	96-08-77F-EYE310-C	3-1/4" Shaft Diameter 2-5/8" Tri-Con (box) x 310 Pulling Eye
6" Tri-Con™ Compact Tornado Reamer	90-06-77F-EYE310	3-1/4" Shaft Diameter 2-5/8" Tri-Con (box) x 310 Pulling Eye
8" Tri-Con™ Compact Tornado Reamer	90-08-77F-EYE310	3-1/4" Shaft Diameter 2-5/8" Tri-Con (box) x 310 Pulling Eye
10" Tri-Con™ Compact Tornado Reamer	90-10-77F-EYE310	3-1/4" Shaft Diameter 2-5/8" Tri-Con (box) x 310 Pulling Eye

**Only the transmitter housings include coiled pins or a punch tool. All bits, bit bodies & reamers use a 2 1/2" Heavy Duty Coiled Pin (CP-050-250-HD) for connection. All parts can be found throughout the catalog in relevant categories.*

DON'T SEE ALL TRI-CON SIZES OR OPTIONS?

Our rapidly expanding Tri-Con tooling options are out-pacing our ability to have a printed list complete with the most recent releases. We have integrated all 2 1/2" Tri-Con connection size tools throughout this catalog on the individual product pages, but you can scan this QR code for the most recent additions & a comprehensive up-to-date Tri-Con Parts list at any time.



TRI-CON ADAPTERS

Use The Tri-Con System With Your Current Housing Or Bits.

Tri-Con™ System Adapters		
Adapter Part #	Details	Application Use
21M-77F	2" IF (Pin) x Tri-Con (Box)	Convert standard reamer to Tri-Con™
23M-77M	2-3/8" Reg (Pin) x Tri-Con (Pin)	Convert thread-on housing to Tri-Con™
23M-77F	2-3/8" Reg (Pin) x Tri-Con (Box)	Convert standard reamer to Tri-Con™
23F-77F	2-3/8" Reg (Box) x Tri-Con (Box)	Convert threaded bit for use with Tri-Con™ Housing
77F-EYE310	Tri-Con (Box) x 310 Pulling Eye	Direct pullback with Tri-Con™ Housing

**Adapter purchases do not include coiled pin (CP-050-250-HD) or punch tool (PUNCH-RP-044).*





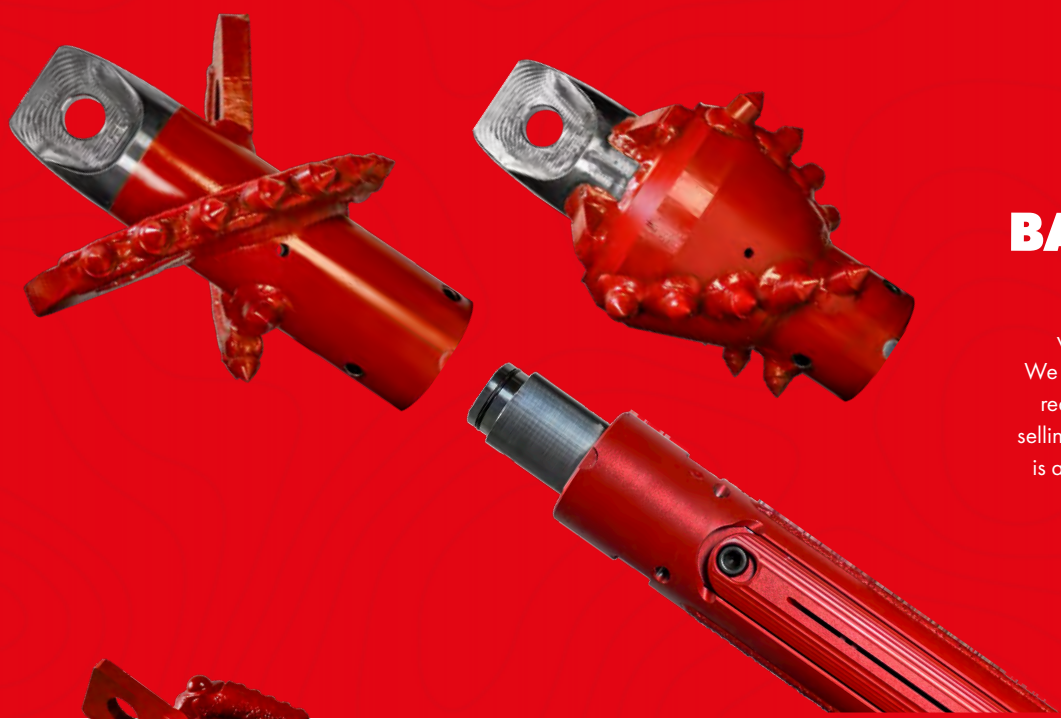
FASTER PILOT BORES

When time = production costs, speed matters. Tri-Con's patent-pending quick bit connection for Eagle Claw and Iron Fist bits can decrease breakout & make-up time, and our bit bodies provide versatility. Convert the housing to a bolt-on in a snap when a job's ground condition calls for a directional blade.



QUICKER BACKREAMING

Traditional backreaming is much faster without having to thread heavy reamers. We have engineered special compact-style reamers that are patterned after our best-selling Tornado & Sabretooth reamers. There is also a hardfaced-only (toothless) packer option for swabbing the hole.




DIRECT PULLBACK

There's no question that direct pullback will decrease your production time if the job condition's allow. Our Tri-Con™ transmitter housings are FastBack® System ready to attach cutter blocks and go! Don't forget to add a Tri-Con™ pulling eye to your next order with your Melfred Borzall salesperson!





THE SERVICE SHOT SYSTEM

Increase Production Speed On Those Shorter Service Installations.

The Service Shot System was designed to safely and efficiently expedite short, shallow bores. These are often residential service line shots from the street to a house, or across a driveway. These scenarios often involve many shots within a single day that require fast, easy steering around other utility lines underground and minimal cleanup between shots to keep production rates high. The Service Shot System provides a small diameter

housing and bit designed for optional fluid use that makes each shot quick and not-so-dirty.



Watch it in action & hear what drillers are saying.

WHEN IS SERVICE SHOT THE RIGHT CHOICE?

Go with the Service Shot System

Go with an SD Housing Setup

- I need an option to use limited fluid for faster cleanup
- I have a tight setup area & need a shorter, zero-point entry
- I need to decrease my rod time from 10 minutes to 2 minutes
- We have multiple short shots we need to get done in a day
- I want a threadless solution for connecting bits



- We are drilling over 150ft in a single shot
- I need to run high RPMs for the ground I'm in
- I need to run a lot of fluid with a special mud mix for my ground type
- I'm not locating with a Digitrak or U-Mag System
- I'll need more than 10,000 lbs of pullback capacity

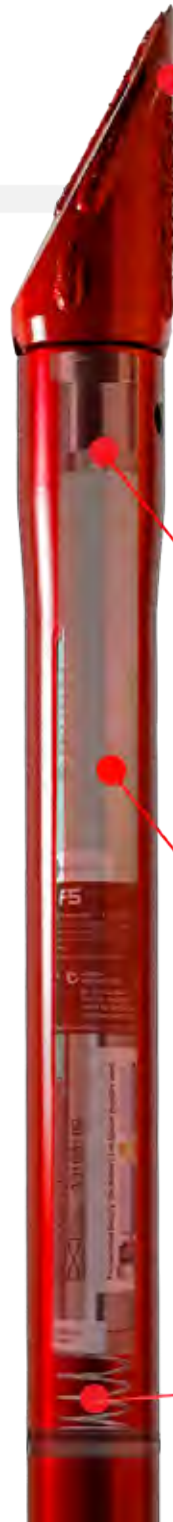


Service Shot System Parts		
Description	Part #	Details
End-load Service Shot Housing	2622-HT	FS200 rear thread x threadless front connection
2-3/4" Threadless Connection Bit	2622-BB27	Extra taper to steerface for quicker steering & hardfacing on high-wear areas
4" Threadless Connection Reamer	2622-RJD-44F	Designed after the juggernaut reamer style
Front Coil Pin (0.5 x 2.5")	CP-050-250-HD	Included with the 2622-HT (4)
Transmitter Compression Spring	2622-HT-SPRING	Included with the 2622-HT
7/16" Coiled Pin Punch Tool	PUNCH-RP-044	Included with the 2622-HT
Threadless Connection Pulling Eye	2622-EYE305	up to 10,000 lbs capacity



DIRECT-CONNECT PULLBACK

Threadless pulling eye option or reamer + pulling eye option with a Valu-DUB swivel



FASTER STEERING BIT

Increased angle on the steerface and tooth-free design decreases the risk of snagging unmarked utility



EASY SONDE CLOCKING

Bit tab mates DigiTrak™ notch for clocking in the right direction

COILED PIN SECURITY

Quick tap and go action to secure or release your sonde

DIGITRAK™ COMPATIBLE

Housing accommodates standard 15" DigiTrak™ & U-Mag Sondes



SHORTER LENGTH HOUSING

Creates a shorter setup area when a short, direct connect option is best



SPRING TENSION HOLD

Spring holds the transmitter in place to limit vibration



THE FASTBACK® SYSTEM

Direct pullback for shots up to 12" without ever removing the drillhead.

Reduce production time and cost when reaming up to a 12" hole in tight conditions by using direct pullback's best solution...the FastBack System. It is a complete solution comprising the SD Housing, detachable cutter blocks, pulling device, and optional swivel.

Drill Head



Cutter Blocks



Pullback Device



Swivel



Details and part numbers for the SD Housings are on pages 16-17.

WORK IN LIMITED SPACE

Using the FastBack System in tight spaces such as suburban street-to-house shots, will enable you to backream and pullback without having to remove the drill head.



SPEED UP PRODUCTION

Bolt-on FastReam® cutter blocks allow you to backream the hole without ever removing the drill head. That's right...you can make your installs faster than ever before when reaming a 12" hole or less.



INCREASE PRODUCTION.
DRILL IN TIGHTER SPACES.
BE MORE PROFITABLE.



Scan the QR code to watch the tutorial on how to assemble the FastBack System.



DRILLHEAD SYSTEMS | **FASTBACK®**

HOUSINGS

BITS & BLADES

QUICK-DISCONNECTS

REAMERS

SWIVELS

PULLERS

ADAPTERS & SUBS

PARTS



EAGLE EYES

Fast Pullback Using Your Eagle Claw Or Iron Fist Bit

Be ready for direct pullback in a matter of minutes. Bolt your Eagle Eye onto your Eagle Claw or 5" Iron Fist bit for direct pullbacks and provide a secure link that keeps the swivel straight and on the center line.

EAGLE EYE

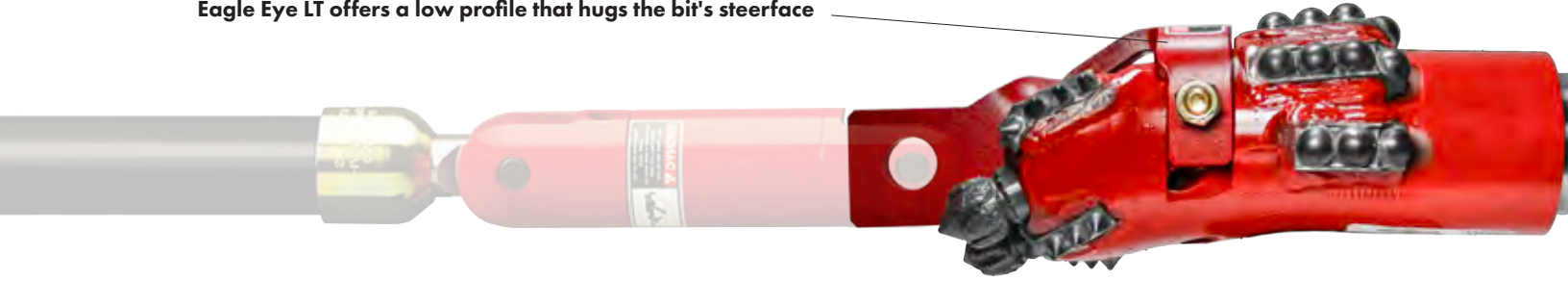


EAGLE EYE LT



Now there are 2 options for Eagle Eye Pullback

Eagle Eye LT offers a low profile that hugs the bit's steerface



NEW Eagle Eye LT		
Hard Ground Bit	Eagle Eye LT Part #	Replacement Bolt & Nut Part #
3.5" Eagle Claw	EC35-FBLT1-305	HHCS5/16X3.75, 5/16-NUT
4.25" Eagle Claw	EC42-FBLT1-305	HHCS7/16X4.50, 7/16-NUT
5" Eagle Claw	EC50-FBLT1-305	HHCS1/2X5.00, 1/2-13-NUT
5" Iron Fist	EC50-FBLT1-305	HHCS1/2X5.0, 1/2-13-NUT

Eagle Eye		
Eagle Claw Size	Eagle Eye Part#	Replacement Bolt
3.5"	EC35-FB42A1-305	FHHCS5/16X3.75
4.25"	EC42-FB50A1-305	FHHCS-.4375-4.25
5"	EC50-FB60-310	HHCS1/2X5.0



QUICK-SWIVEL & QUICK-LINK

Fast, & Secure Direct Pullback Without Removing The Blade. Engineered To Hold The Swivel Rotation On Center.

Quick Swivel				
Pullback Capacity	Part #	Replacement Bolt	Nut Part #	Washer Part #
5 ton	00503-205-QS	HHCS3/4X2.75	3/4-10 NUT	3/4 LOCK WASHER



Quick Link				
Swivel Being Used	Part #	Replacement Bolt	Nut Part #	Washer Part #
00503-205, 5-ton Valu-DUB Swivel	QL-305	HHCS-3/4-2.75-8	3/4-10-NUT	3/4 WASHER
00503-210, 10-ton Valu-DUB Swivel	QL-310	HHCS-3/4-2.75-8	3/4-10-NUT	3/4 WASHER





FASTREAM® CUTTER BLOCKS

Ream Up To A 12" Hole Without Ever Taking Off The Drill Head.

Fastream Cutter Blocks		
Housing Diameter	Cutting Diameter	Part Number
2.5"	4.5"	FR-250-EX-45
2.5"	6"	FR-250-TE-47-60
2.5"	8"	FR-250-TE-47-80
2.5"	10"	FR-250-TE-57-10
2.75"	6"	FR-275-TE-47-60
2.75"	8"	FR-275-TE-47-80
2.75"	10"	FR-275-TE-57-10
2.75"	12"	FR-275-TE-80-12
3.25"	6"	FR-325-EX-35-60
3.25"	8"	FR-325-TE-57-80
3.25"	10"	FR-325-TE-57-10
3.25"	12"	FR-325-TE-80-12

EX SERIES CUTTERS



EX series cutters are lower profile and use similar carbide blocks to our Iron Fist Bit.



TE SERIES CUTTERS



TE series cutters are designed after our best-selling reamer, the Tornado on pg. 35

FastReam Cutter Blocks are compatible with Bolt-on, Thread-on, and Tri-Con™ Melfred Borzall Housings found on pages 16-17.

TRANSMITTER HOUSINGS





THE SD HOUSING DIFFERENCE

We Didn't Design It...You Did.

We scoured the HDD landscape to pick the brains of drillers about every frustration they have with their housings, no matter the manufacturer. Our SD Housing is the result of applying our 80 years of manufacturing to your jobsite recommendations.



PIT BULL READY

Machined dowel pins that mate the steer face to your blade reduce the risk of losing a blade downhole.



TRI-CON™ READY

We have 3 1/4" SD Housings with our newest threadless connection (-77)...and more sizes coming soon!



FASTBACK® READY

All SD Housings come equipped with FastBack features & ready for direct pullback.



LID-LOCKING COILED PINS

Dual lid retention system uses a coiled pin for extra lid security

DUAL SUPERNOZZLES

Double the jet power with two SuperNozzles. All of our nozzles are designed and manufactured in-house here in California.



MORE HARDFACING

Robotically-applied carbide hardfacing on all high-wear areas, including 3X our standard hardfacing on the nose, which can increase the housing life up to 50%

Patents Pending



TRI-CON SD HOUSINGS



Compatible With Subsite[®], DigiTrak[™] & Underground Magnetics[™].



Using DigiTrak & UMag 2-cell Transmitters				Replacement Parts				
Drill Rig Thrust	Diameter	Thread (rear)	Thread (front)	Housing	O-Ring	Coiled Pins	Sonde Cavity Parts	Fluid Port
Up to 10,000 lbs	2.75"	2" IF	2-1/8" Tri-Con	5927-HT4-76M	O-RING-221	Front: CP-050-250-HD Lid: CP-038-200-SD	Lid: 5625-HT4-CP Lid Bolts: SHCS1/2X3/4 Bumpers: 5000-BUMPER1-S	NOZ-0.25-0.75 PLUG-0.75-16
Up to 30,000 lbs	3.25"	2.375" Reg	2-5/8" Tri-Con	5632-HT4-77F	O-RING-221	Front: CP-050-250-HD Lid: CP-038-200-SD	Lid: 5632-HT4-CP Lid Bolts: SHCS1/2X3/4 Bumpers: 5000-BUMPER1-S	NOZ-0.25-0.75 PLUG-0.75-16

Using Subsite [®] Transmitters				Replacement Parts				
Drill Rig Thrust	Diameter	Thread (rear)	Thread (front)	Housing	O-Ring	Coiled Pins	Sonde Cavity Parts	Fluid Port
Up to 10,000 lbs	2.75"	2" IF	2-1/8" Tri-Con	5927-HD4-76M	O-RING-221	Front: CP-050-250-HD Lid: CP-038-200-SD	Lid: 5927-HD4-CP Lid Bolts: SHCS1/2X3/4 Bumpers: 5000-BUMPER1-S	NOZ-0.25-0.75 PLUG-0.75-16
Up to 30,000 lbs	3.25"	2.375" Reg	2-5/8" Tri-Con	5932-HD4-77F	O-RING-221	Front: CP-050-250-HD Lid: CP-038-200-SD	Lid: 5932-HD4-CP Lid Bolts: SHCS16MMX25MM Bumpers: 5000-BUMPER1-S	NOZ-0.25-0.75 PLUG-0.75-16



THREAD-ON UNIVERSAL SD HOUSINGS

Compatible With Subsite[®], DigiTrak[™] & Underground Magnetics[™].



Universal Housings - Fits Most 2-cell & 4-cell Subsite, U-Mag or DigiTrak Transmitters									
Drill Rig Thrust	Diameter	Thread (rear)	Thread (front)	Housing	Bolt-On Bit Body	Housing Lid	LidLock Pin	Lid Bolt	Torque Limit (ft.-lbs.)*
25,000 - 40,000	3.5"	2.375" IF	2.375" Reg	5735-HU4	5635-13, 5935-15	5735-HU4-CP	CP-038-200-SD	SHCS1/2X3/4	Up to 4,568
50,000 - 80,000	4.25"	2.875" IF	2.875" Reg	5742-HU4	1742-23, 1942-25	5742-HU4-CP	CP-038-200-SD	SHCS1/2X3/4	Up to 10,148
80,000 - 150,000	4.75"	3.5" IF	3.5" Reg	5747-HU4	3748-33	5742-HU4-CP	CP-038-200-SD	SHCS1/2X3/4	Up to 13,879

*For each housing there are many drill rigs to choose from. The torque limitations are posed by the internal female threads found at the ends of each Large Universal Housing. Since each housing has two different sized female threads, the lowest torque limit from the two is shown for a conservative rating.

- Compatible with 17" Subsite[®], 15" & 19" DigiTrak[™], and Underground Magnetics[™] Transmitters
- Heat-treated, chrome-nickel-moly alloy material
- Large lid tabs for greater contact surface, reducing wear
- Compatible with Melfred Borzall's Eagle Claw SD, Iron Fist and Bolt-On Bit Bodies



BOLT-ON SD HOUSINGS



Pit Bull Features For Drilling With Your Favorite Directional Blade.



Using DigiTrak & UMag 2-cell Transmitters				Replacement Parts					
Drill Rig Thrust	Diameter	Thread (rear)	Bolt Pattern	Housing	Blade Bolts	Housing Lid	LidLock Pin	Lid Bolts	Pit Bull Dowel Pin
< 8,000 lb.	2.5"	FS200	VER 5, 3/8" bolts	5625-HT4-06	SHCS3/8X3/4	5625-HT4-CP	CP-038-175-SD	SHCS1/2X3/4	DP-0.50X0.75
6,000 - 10,000	2.5"	2" IF	VER 6, 1/2" bolts	5625-HT4-13	SHCS1/2X1	5625-HT4-CP	CP-038-175-SD	SHCS1/2X3/4	DP-0.75X0.75
10,000 - 20,000	2.75"	2" IF	VER 6, 1/2" bolts	5627-HT4-13	SHCS1/2X1	5625-HT4-CP	CP-038-175-SD	SHCS1/2X3/4	DP-0.75X1.00
20,000 - 35,000	3.25"	2.375" Reg	VER 6, 1/2" bolts	5632-HT4-13	SHCS1/2X1	5632-HT4-CP	CP-038-200-SD	SHCS1/2X3/4	DP-0.75X1.00

Using Subsite® Transmitters				Replacement Parts					
Drill Rig Thrust	Diameter	Thread (rear)	Bolt Pattern	Housing	Blade Bolts	Housing Lid	LidLock Pin	Lid Bolts	Pit Bull Dowel Pin
<10,000 lb.	2.5"	2" IF	DW 5, 12mm bolts	5925-HD4-14	SHCS12MMX25MM	5925-HD4-CP	CP-038-175-SD*	SHCS12MMX20MM	DP-0.50X0.75
6,000 - 20,000	2.75"	2" IF	DW 5, 12mm bolts	5927-HD4-14	SHCS12MMX25MM	5927-HD4-CP	CP-038-175-SD*	SHCS12MMX20MM	DP-0.50X0.75
20,000 - 35,000	3.25"	2.375" Reg	DW 6, 16mm bolts	5932-HD4-15	SHCS16MMX35MM	5932-HD4-CP	CP-038-200-SD	SHCS16MMX25MM	DP-0.75X1.00



THREAD-ON SD HOUSINGS



For Use With Eagle Claw, Iron Fist, Bolt-On Bit Bodies.



Using DigiTrak & UMag 2-cell Transmitters				Replacement Parts					
Drill Rig Thrust	Diameter	Thread (rear)	Thread (front)	Housing	Bolt-On Bit Body	Housing Lid	LidLock Pin	Lid Bolt	
6,000 - 10,000	2.5"	2" IF	2" IF	5625-HT4	4625-13	5625-HT4-CP	CP-038-175-SD	SHCS1/2X3/4	
10,000 - 20,000	2.75"	2" IF	2" IF	5627-HT4	4627-13	5625-HT4-CP	CP-038-175-SD	SHCS1/2X3/4	
20,000 - 35,000	3.25"	2.375" Reg	2.375" Reg	5632-HT4	5632-13	5632-HT4-CP	CP-038-200-SD	SHCS1/2X3/4	

Using Subsite® Transmitters				Replacement Parts					
Drill Rig Thrust	Diameter	Thread (rear)	Thread (front)	Housing	Bolt-On Bit Body	Housing Lid	LidLock Pin	Lid Bolt	
6,000 - 20,000	2.75"	2" IF	2" IF	5927-HD4	4927-14	5927-HD4-CP	CP-038-175-SD	SHCS12MMX20MM	
20,000 - 35,000	3.25"	2.375" Reg	2.375" Reg	5932-HD4	5932-15	5932-HD4-CP	CP-038-200-SD	SHCS16MMX25MM	

DRILLHEAD SYSTEMS

HOUSINGS

BITS & BLADES

QUICK-DISCONNECTS

REAMERS

SWIVELS

PULLERS

ADAPTERS & SUBS

REPLACEMENT PARTS



HIGH-FLOW HOUSINGS

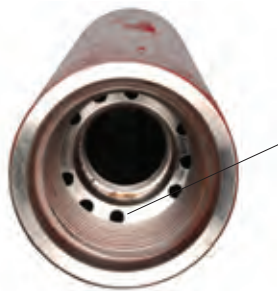
Ideal For Use With Mud Motors, Hard Ground Bits And Bolt-On Bit Bodies.

Maximum mud flow with minimum restriction. The Melfred Borzall End-Load, High Flow Housings are a perfect match for your next rock job when utilizing a mud motor or air hammer. They have the design, strength and flow capacity to handle the toughest rock bores. Run your mud motors at maximum power and efficiency, even on long bores.

End-Load, Thread-On, High Flow Housings				
Capacity	Diameter	Rear Thread	Front Thread	Part #
<40,000	3.5"	2.375" IF	2.375" Reg	ELH-350
40,000 - 80,000	4.25"	2.875" IF	2.875" Reg	ELH-425
80,000 - 140,000	4.875"	3.5" IF	3.5" Reg	ELH-487
140,000 - 300,000	6.375"	4.5" IF	4.5" Reg	ELH-638

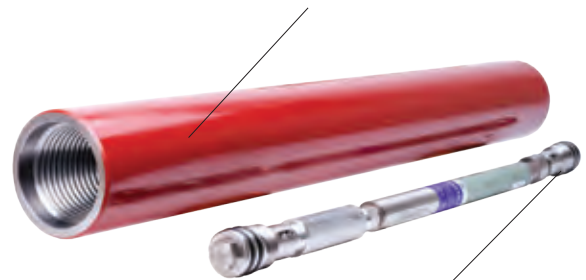
Transmitter Kits for High Flow Housings		
Transmitter Type	When Using ELH-350, 425, 487	When Using ELH-638
DigiTrak®, 15"	ELH-DIGI-KIT	ELH638-DIGI-KIT
DigiTrak®, 19"	ELH-DIGIXL-KIT	ELH638-DIGIXL-KIT
DigiTrak®, Cable 15"	ELH-DIGIWIRE-KIT	ELH638-DIGIWIRE-KIT

* Proper transmitter kits come with purchase of a high flow housing



Multiple fluid passages allow for maximum flow without pressure restrictions

Same type of high-strength, fatigue resistant steel used in landing gears and propeller shafts



Transmitter isolating technology removes vibration, ideal for use with mud motors and air hammers



BOLT-ON BIT BODIES

Use Bolt-on Blades With Your Tri-Con, Spline Connection or Thread-on Style Housing.

Bolt-On Bit Bodies Compatible with Vermeer® Drill Rigs					
Diameter	Thread	Bolt Pattern	Bit Body Part #	Coiled Pins	Pit Bull™ Pins
2.75"	76F	VER 6, 1/2" bolts	4627-13-76F	CP-050-250-HD	DP-0.75X1.00
2.50"	2" IF	VER 6, 1/2" bolts	4625-13		DP-0.75X1.00
2.75"	2" IF	VER 6, 1/2" bolts	4627-13		DP-0.75X1.00
3.25"	2.375" Reg	VER 6, 1/2" bolts	5632-13		DP-0.75X1.00
3.25"	77F	VER 6, 1/2" bolts	5632-13-77F	CP-050-250-HD	DP-0.75X1.00
3.50"	25SPF	VER 6, 1/2" bolts	5635-13-25SPF	CP-050-225-HD	DP-0.75X1.00
4.25"	2.875" Reg	VER 6, 5/8" bolts	1742-23*		N/A
4.75"	3.50" Reg	VER 6, 3/4" bolts	3748-33*		N/A

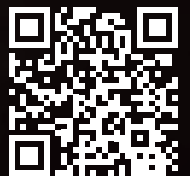
Bolt-On Bit Bodies for Ditch Witch® Drill Rigs					
Diameter	Thread	Bolt Pattern	Bit Body Part #	Compatible Pins	Pit Bull™ Pins
2.75"	76F	DW 5, 12mm bolts	5927-14-76F	CP-050-250-HD	DP-0.50X0.75
2.75"	2" IF	DW 5, 12mm bolts	4927-14		DP-0.50X0.75
3.25"	2.375" Reg	DW 6, 16mm bolts	5932-15		DP-0.75X1.00
3.25"	77F	DW 6, 12mm bolts	5932-15-77F	CP-050-250-HD	DP-0.75X1.00
3.25"	77F	DW 5, 12mm bolts	5932-14-77F	CP-050-250-HD	DP-0.50X0.75
3.50"	25SPF	DW 6, 12mm bolts	5935-15-25SPF	CP-050-225-HD	DP-0.75X1.00
3.50"	2.375" Reg	DW 6, 16mm bolts	5935-15		DP-0.75X1.00
4.25"	2.875" Reg	DW 6, 20mm bolts	1942-25*		N/A

*The 4.25 or 4.75" diameter bit bodies do not come equipped with Pit Bull™ removable dowel pins, and Tri-Con™ or spline connection bit bodies do not come with coiled pins or punch tool (PUNCH-RP-044).



Check valve is standard with threaded bit bodies

DIRECTIONAL BLADES & BITS



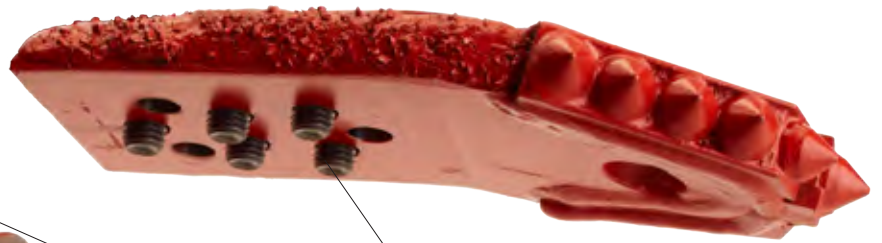


THE PATENTED PIT BULL® DESIGN

This exclusive, patented design uses solid dowel pins to alleviate the force traditionally taken by blade bolts. The Pit Bull design can limit bolts from shearing or rattling loose, and keep you drilling confidently.

SOLVE BOLTS SHEARING OFF BOLTS RATTLING LOOSE

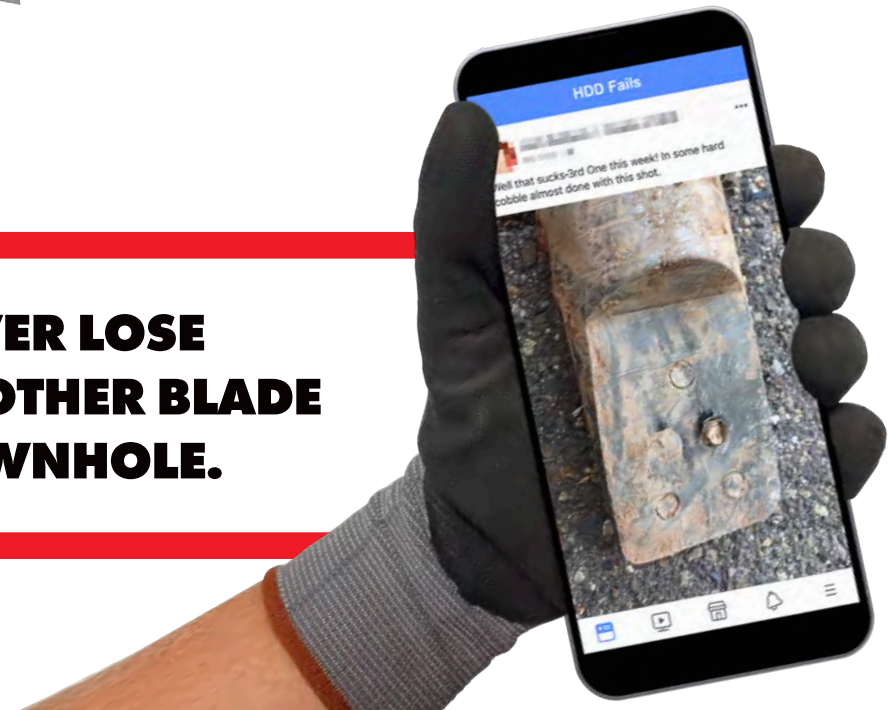
Removable, solid dowel pins are strategically placed to take load off bolts



Mating holes in blades prevent bolts from breaking or rattling loose



**NEVER LOSE
ANOTHER BLADE
DOWNHOLE.**





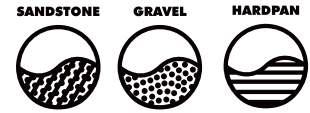
RED DIAMOND BLADE

100% Carbide Coverage For Drilling In
Harder Ground Conditions.

BEST FOR:



GOOD FOR:



Ditch Witch® Compatible Blades		
Bolt Pattern	Cut Size	
	4.5"	5.5"
5-bolt, 12mm	1800-14-45-BRD	
6-bolt, 16mm		1800-15-55-BRD

Vermeer® Compatible Blades		
Bolt Pattern	Cut Size	
	4.5"	5.5"
6-bolt, 1/2"	1800-13-45-BRD	1800-13-55-BRD

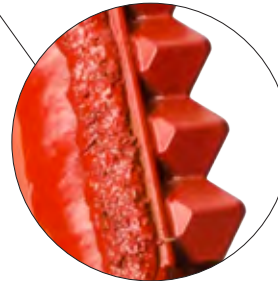


QuickSwivel
Compatible
(See pg. 12)



Durable Domed
Front Carbide

Continuous low-
profile back
carbides are ideal
for direct pullback



Diamond-shaped
carbides on sides for
aggressive cutting
and 100% carbide
coverage

Chunky carbide
hardfacing further
protects all high
wear areas.

Tapered design towards
the rear to reduce drag





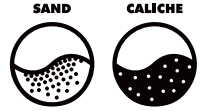
ULTRABIT

All-Around Solution With Great Steering.

BEST FOR:



GOOD FOR:



Vermeer® Compatible Blades								
Bolt Pattern	Cut Size							
	3.5"	4"	5"	6"	7.0	7.5"	8"	9"
5 bolt, 3/8"	1800-06-35-BBU3							
6 bolt, 1/2"	1800-13-35-BBU3	1800-13-40-BBU3	1800-13-50-BBU3		1800-13-70-BBU3			
6 bolt, 5/8"				1610-23-60-BBU3*		1612-23-75-BBU3*	1610-23-80-BBU3*	
6 bolt, 3/4"						1612-33-75-BBU3*		1612-33-90-BBU3*

Ditch Witch® Compatible Blades				
Bolt Pattern	Cut Size			
	3.5"	4"	5"	6"
5 bolt, 12mm	1800-14-35-BBU3	1800-14-40-BBU3	1800-14-50-BBU3	
6 bolt, 16mm		1800-15-40-BBU3	1800-15-50-BBU3	
6 bolt, 20mm				1610-25-60-BBU3*

* Blade is not compatible with Pit Bull™ Features.

Chunky carbide hardfacing the entire length of blade for maximum longevity

Low-profile, tapered design to minimize torque-stealing drag



Conical carbide cutters make this an aggressive bit for hard soils



Also available in larger sizes, 7-12"



STEEP TAPER ULTRABIT 3

BEST FOR:

COBBLES



CALICHE



GOOD FOR:

SHALE



GRAVEL



Drill Through Cobbles & Other Harder Ground Conditions.

Vermeer® Compatible Blades						
Product description	Cut Size					
	3.5"	4"	5"		6"	7"
	Conical	Conical	Conical	Dome	Conical	Conical
5 bolt, 3/8"	1800-06-35-BSU3					
6 bolt, 1/2"		1800-13-40-BSU3	1800-13-50-BSU3	1800-13-50-BSUD		1610-13-70-BSU3
6 bolt, 5/8"			1610-23-50-BSU3		1610-23-60-BSU3	

Ditch Witch® Compatible Blades							
Product description	Cut Size						
	3.5"	4"	5"		6"	7"	
	Conical	Conical	Dome	Conical	Dome	Conical	Conical
5 bolt, 12mm	1805-14-35-BSU3	1800-14-40-BSU3	1800-14-40-BSUD	1800-14-50-BSU3	1800-14-50-BSUD		
6 bolt, 16mm		1810-15-40-BSU3	1800-15-40-BSUD	1800-15-50-BSU3	1800-15-50-BSUD		1800-15-70-BSU3
6 bolt, 20mm						1610-25-60-BSU3	

Center point tooth for easier penetration

Carbide cutter blocks set at an aggressive angle to get through cobble

Weld bead is reinforced with hardfacing to increase bit life

QuickSwivel Compatible (See pg. 12)

Low-profile, tapered design to minimize torque-stealing drag

Chunky carbide hardfacing the entire length of blade

Available with dome carbides for cobble and gravel

Bit of choice where directional "pushes" are difficult

DRILLHEAD SYSTEMS
HOUSINGS
BITS & BLADES
QUICK-DISCONNECTS
REAMERS
SWIVELS
PULLERS
ADAPTERS & SUBS
REPLACEMENT PARTS



ROCK SAW

Bullnose-Design For Smoother Rotation & Easier Steering In Rocky Or Abrasive Soils.

BEST FOR:



GOOD FOR:



Vermeer® Compatible Blades							
Bolt Pattern	Cut Size						
	3.5"		4"		5"		6"
	Conical	Dome	Conical	Dome	Conical	Dome	Conical
6 bolt, 1/2"	1800-13-35-BBX3	1800-13-35-BBXD	1800-13-40-BBX3	1800-13-40-BBXD	1800-13-50-BBX3	1800-13-50-BBXD	1800-13-60-BBX3

Ditch Witch® Compatible Blades							
Bolt Pattern	Cut Size						
	3.5"		4"		5"		6"
	Conical	Dome	Conical	Dome	Conical	Dome	Conical
5 bolt, 12mm	1800-14-35-BBX3	1800-14-35-BBXD	1800-14-40-BBX3	1800-14-40-BBXD			
6 bolt, 16mm			1800-15-40-BBX3	1800-15-40-BBXD	1800-15-50-BBX3	1800-15-50-BBXD	1800-15-60-BBX3

Conical carbide cutters for aggressive forward & side cutting

Available with dome carbides for cobble



Welds are reinforced with hardfacing for longer bit life

Chunky Hardfacing on the tapered rear stands up to wear on pilot bores and direct pullback



All Melfred Borzall directional blades are QuickSwivel Compatible. See page 12





BEAR CLAW



Rugged Design Chews Through Caliche & Sandstone.

BEST FOR:



GOOD FOR:



Vermeer® Compatible Blades	
Bolt Pattern	Cut Size
6 bolt, 1/2"	1600-13-40-BBBC

Ditch Witch® Compatible Blades		
Bolt Pattern	Cut Size	
	3.5"	4"
5 bolt, 12mm	1600-14-35-BBBC	1600-14-40-BBBC
6 bolt, 16mm		



Large conical carbide cutters eat through caliche & sandstone

Hardfacing along all wear edges create a long-lasting blade

Bullnose design minimizes drag while rotating



BEST FOR:



GOOD FOR:



HARDPAN



EXCALIBUR



A Legend In Its Own Time.

Vermeer® Compatible Blades			
Bolt Pattern	Cut Size		
	3.5"	4"	5"
6 bolt, 1/2"	1600-13-35-BBX	1600-13-40-BBX	1600-13-50-BBX
6 bolt, 5/8"			1612-23-50-BBX

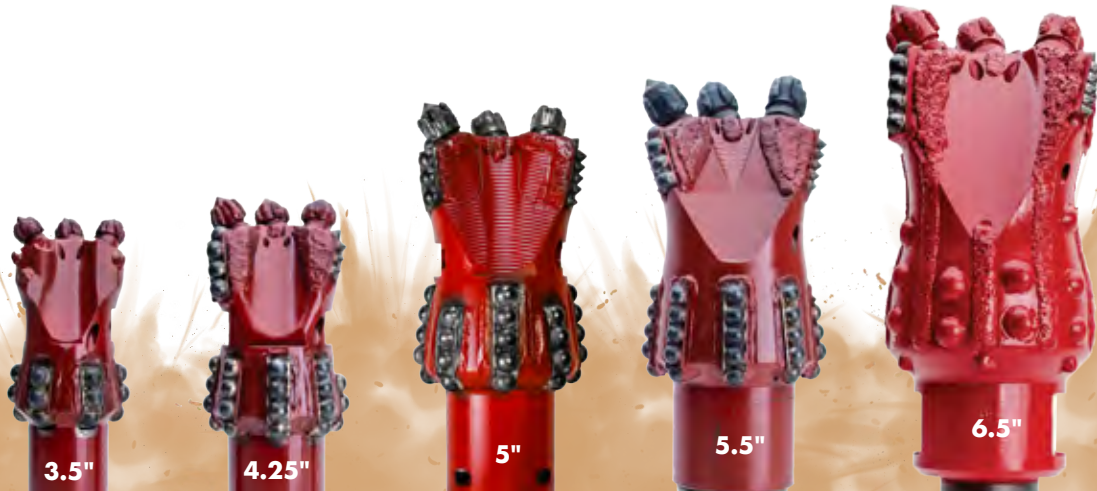
Ditch Witch® Compatible Blades			
Bolt Pattern	Cut Size		
	2.5"	4"	5"
3 bolt, 10mm	1600-09-25-BX		
5 bolt, 12mm		1600-14-40-BBX	1600-14-50-BBX
6 bolt, 16mm		1600-15-40-BBX	1600-15-50-BBX

* Excalibur & Bear Claw Blades shown are not compatible with Pit Bull™ Features.



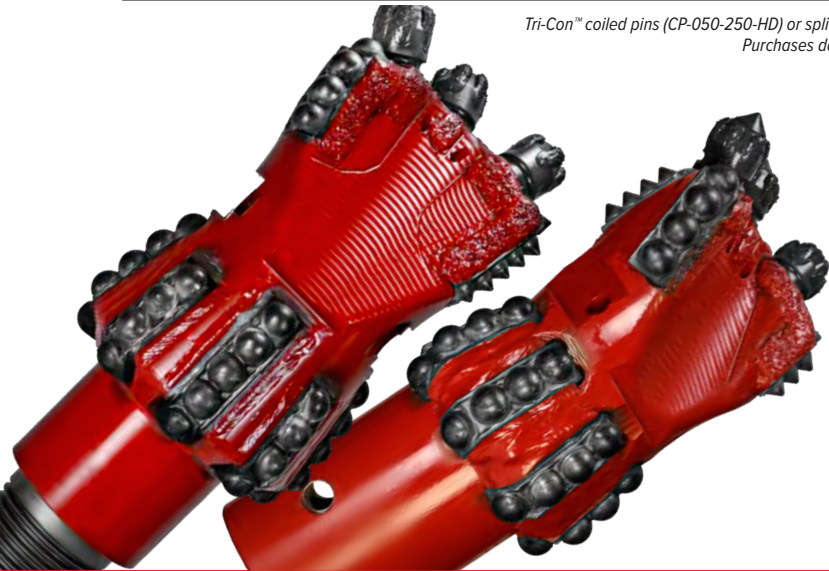
EAGLE CLAW SD

Fastest Drilling And Best Steering Hard Soil Bit On The Market.



Eagle Claw SD			Replacement Cutters				EagleEye Attachments
Cut Size	Thread	Part #	Aggressive Conical	Dome	Large Conical	Concial w/ Carbide Hardfacing	Part #
3.5"	2-1/8" Tri-Con Box	EC-35D2-76F	EC35-C-01	EC35-C-02	EC35-C-03	EC35-C-03-X	EC35-FB42A1-305 EC35-FBLT1-305
3.5"	2" IF pin	EC-35D2-21M	EC35-C-01	EC35-C-02	EC35-C-03	EC35-C-03-X	EC35-FB42A1-305 EC35-FBLT1-305
4.25"	2" IF pin	EC-42D2-21M	EC42-C-01	EC42-C-02	EC42-C-03	EC42-C-03-X	EC42-FB50A1-305 EC42-FBLT1-305
4.25"	2-3/8" Reg pin	EC-42D2-23M	EC42-C-01	EC42-C-02	EC42-C-03	EC42-C-03-X	EC42-FB50A1-305 EC42-FBLT1-305
4.25"	2-1/8" Tri-Con Box	EC-42D3-76F*	EC42-C-01	EC42-C-02	EC42-C-03	EC42-C-03-X	EC42-FB50A1-305 EC42-FBLT1-305
4.25"	2-5/8" Tri-Con Box	EC-42D3-77F*	EC42-C-01	EC42-C-02	EC42-C-03	EC42-C-03-X	EC42-FB50A1-305 EC42-FBLT1-305
5"	2-5/8" Tri-Con Box	EC-50D3-77F*	EC50-C-01	EC50-C-02	EC50-C-03	EC50-C-03-X	EC50-FB60-310 EC50-FBLT1-305
5"	2-1/2" Spline Box	EC-50D3-25SPF*	EC50-C-01	EC50-C-02	EC50-C-03	EC50-C-03-X	EC50-FB60-310 EC50-FBLT1-305
5"	2-3/8" Reg pin	EC-50D3-23M	EC50-C-01	EC50-C-02	EC50-C-03	EC50-C-03-X	EC50-FB60-310 EC50-FBLT1-305
5.5"	2-7/8" Reg pin	EC-55D2-26M	EC55-C-01	EC55-C-02	EC55-C-03	EC55-C-03-X	
6.5"	2-7/8" Reg pin	EC-65D1-26M	EC65-C-01	EC65-C-02	EC65-C-03	EC65-C-03-X	
6.5"	3-1/2" Reg pin	EC-65D1-28M	EC65-C-01	EC65-C-02	EC65-C-03	EC65-C-03-X	

Tri-Con™ coiled pins (CP-050-250-HD) or spline connection coiled pins (CP-050-225-HD) do not come with Eagle Claw purchases. Eagle Claw Purchases do come with a tooth punch tool, but the coiled pin punch tool is sold separately (PUNCH-RP-044).



AVAILABLE IN



& THREADED CONNECTIONS



Direct pullback product with the **NEW Eagle Eye LT**, part of the FastBack Pullback System. See Page 12



Full body dome carbide coverage for wear resistance without cutting the top of the hole for great steering.

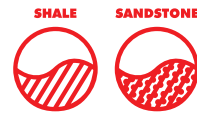


Perfectly balanced cutting design for smooth, vibration-free & efficient operation.



Minimize chance of clogging with built-in check valve

BEST FOR:



GOOD FOR:



Aggressive tri-tooth carbide cutting action with quick-change straight-through knockout holes.



Added hardfacing for wear protection and an extra fluid port on the reverse side for more flow during pullback

Large Conical Aggressive Hardfaced



Dome



Conical Aggressive



Large Conical Aggressive



Tooth removal punch tool is included with all Eagle Claw SD purchases. Also available at www.melfredborzall.com/bits-blades/bit-parts



IRON FIST BIT



Packs A Punch In Cobble Or Loose Rock And Designed To Be Easily Rebuilt.

BEST FOR:

COBBLES



GRAVEL



GOOD FOR:

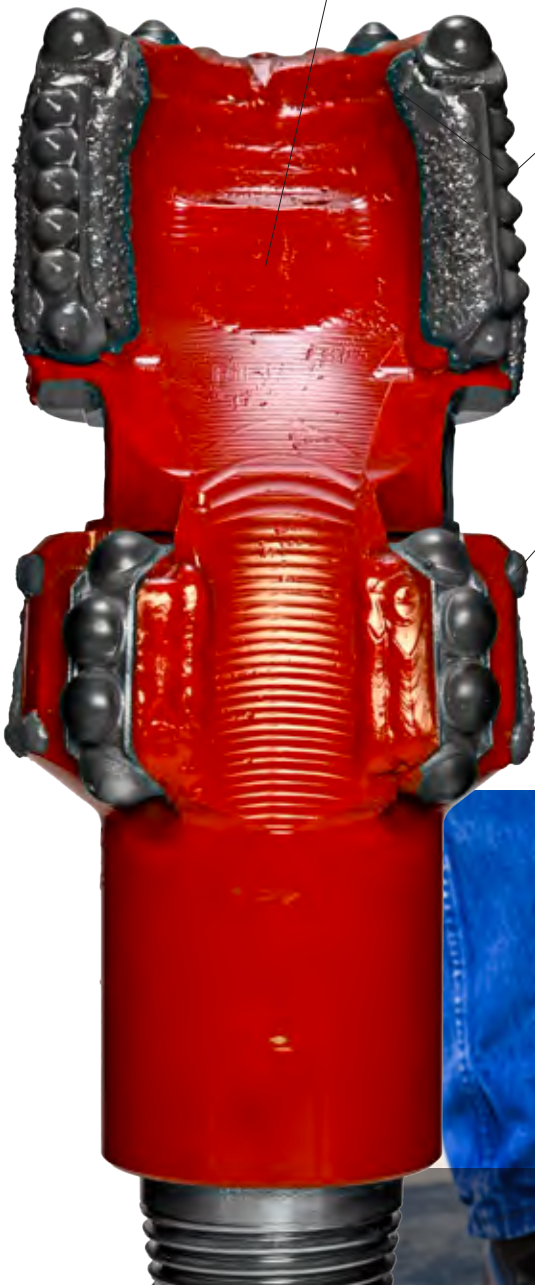
CALICHE



Iron Fist Bits			Replacement Cutter Blocks					
Cut Size	Thread	Dome Bit	Aggressive-Left	Aggressive-Right	Dome-Left	Dome-Right	Rear Cutter	Side Cutters
4.25"	2" IF pin	IF-42DC1-21M			IF40-DC-02-L	IF40-DC-02-R		
4.25"	2-1/8" Tri-Con Box	IF-42DC1-76F	CC-03X4-A	IF42-C-01-S3	IF42-C-DC-L	IF42-C-DC-R	CC-02X4-AA	IF42-C-01-S3
5"	2-3/8" Reg pin	IF-50AC4-23M	CC-03X4-A	IF50-C-01-S3	IF50-C-AC-L	IF50-C-AC-R	CC-02X4-AA	IF50-C-01-S2
5"	2-3/8" Reg pin	IF-50DC4-23M	CC-03X4-A	IF50-C-01-S3	IF50-C-DC-L	IF50-C-DC-R	CC-02X4-AA	IF50-C-01-S3
5"	2-5/8" Tri-Con Box	IF-50DC4-77F	CC-03X4-A	IF50-C-01-S3	IF50-C-DC-L	IF50-C-DC-R	CC-02X4-AA	IF50-C-01-S3
5"	2-1/2" Spline Box	IF-50DC4-25SPF	CC-03X4-A	IF50-C-01-S3	IF50-C-AC-L	IF50-C-AC-R	CC-02X4-AA	IF50-C-01-S3
6"	2-7/8" Reg pin	IF-60DC-26M			IF60-DC-02-L	IF60-DC-02-R		CC-01X4
6"	3-1/2" Reg pin	IF-60DC-28M			IF60-DC-02-L	IF60-DC-02-R		CC-01X4

Tri-Con™ coiled pins (CP-050-250-HD), or spline connection coiled pins (CP-050-225-HD) do not come with Iron Fist purchases. Punch tool also sold separately (PUNCH-RP-044).

Steep, concave steerface with fluid holes for quick response



Compact cutters are less likely to hang up on cobbles

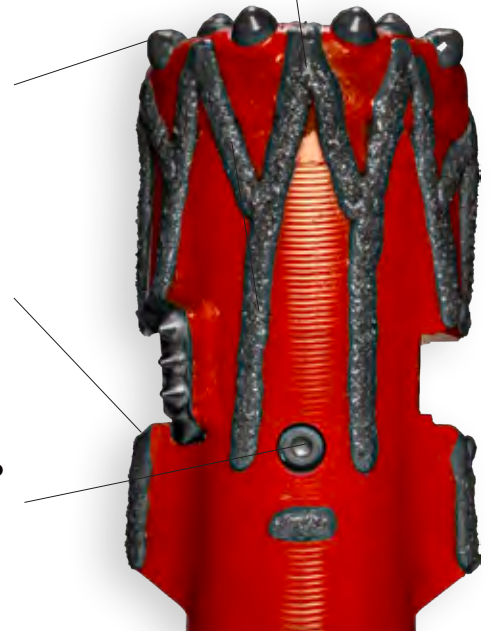
Main carbide cutters positioned to allow for "rocking" the bit through cobbles

Balanced cutters for downhole stability and drilling on center

A MudBoost™ port to get fluid where you need it on pullback.

Fluid Port Plug Part # PLUG-04MP.

Chunky carbide hardfacing, on all wear areas



NOW AVAILABLE IN TRI-CON™ & SPLINE CONNECTIONS!

DIRECT-CONNECTS, COLLARS &
QUICK-DISCONNECTS





VERMEER® COMPATIBLE QUICK-DISCONNECTS & COLLARS

Deluxe & Value Quick-Disconnects That Fit Your Rig Perfectly.

Internal check valve to
reduce drill head clogging

Spiralled carbide studs minimize wear
on quick-disconnect and collar



DELUXE QUICK-DISCONNECTS



VALUE QUICK-DISCONNECTS

Both are precision gun-
drilled and CNC-machined



Carbide Cutters



Chunky Carbide



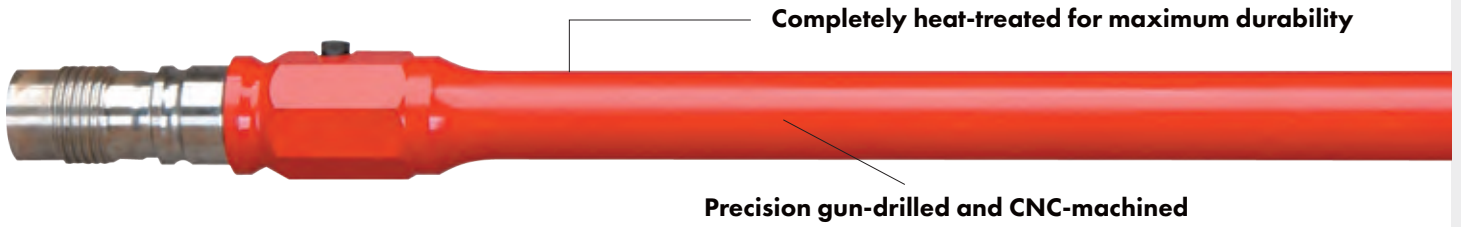
Carbide Stud

Quick-Disconnect Compatibility For Vermeer® Drill Rigs

Compatible Drill Rig Models	Drill Rod Thread	Quick-Disconnect Thread	Deluxe Quick-Disconnect	Value Quick-Disconnect	Chunky Carbide Collar	Carbide Cutter Collar	Carbide Stud Collar
D7x11, D7x11A S2, D8x12, D9x13, D9x13 S2, D9x13 S3, D10x15, D10x15 S3	1.66 FS200	1-5/8" Low Profile		VLRV-31F-L42F-XL	VLR-20-HC-HFC	VLR-20-HC-HFCS	VLR-20-HC-C
		QuickFire® 300	VLR-31F-L300F	VLRV-31F-L300F	VLR-L300-OC-HFC		
D16x20, D16x20 S2	1.90 FS250	2-1/8" Low Profile	VLR-32F-L43F	VLRV-32F-L43F	VLR-25-HC-HFC	VLR-25-HC-HFCS	VLR-25-HC-C
		QuickFire® 400	VLR-32F-L400F	VLRV-32F-L400F	VLR-L400-OC-HFC	VLR-L400-OC-HFCS	
D20x22 S2, D20x22 S3, D23x30 S3, D24x26, D24x33	2.06" FS400	2-1/8" Low Profile	VLR-30F-L43F-XXL	VLRV-30F-L43F-XXL	VLR-25-HC-HFC	VLR-25-HC-HFCS	VLR-25-HC-C
		QuickFire® 400	VLR-30F-L400F	VLRV-30F-L400F	VLR-L400-OC-HFC	VLR-L400-OC-HFCS	
D23X30 S2, D23X30 S3, D24x40, D24X40A, D24X40 S2, D24X40 S3, D40X40	2-3/8" FS600	2-1/8" Low Profile	VLR-40F-L43F	VLRV-40F-L43F	VLR-25-HC-HFC	VLR-25-HC-HFCS	VLR-25-HC-C
		QuickFire® 400	VLR-40F-L400F	VLRV-40F-L400F	VLR-L400-OC-HFC	VLR-L400-OC-HFCS	
D33X44, D36X50, D36X50 S3, D36X50 DR S2, D40X55 S3	2-3/8" FS650	2-1/8" Low Profile	VLR-46F-L43F	VLRV-46F-L43F	VLR-25-HC-HFC	VLR-25-HC-HFCS	VLR-25-HC-C
		QuickFire® 400		VLRV-46F-L400F	VLR-L400-OC-HFC	VLR-L400-OC-HFCS	
		QuickFire® 460		VLRV-46F-L460F	VLR-L460-OC-HFC	VLR-L460-OC-HFCS	
D33X44, D36X50, D36X50 S3	2-5/8" FS700	2-1/8" Low Profile		VLRV-41F-L43F	VLR-25-HC-HFC	VLR-25-HC-HFCS	VLR-25-HC-C
		QuickFire® 400		VLRV-41F-L400F	VLR-L400-OC-HFC	VLR-L400-OC-HFCS	
		QuickFire® 460		VLRV-41F-L460F	VLR-L460-OC-HFC	VLR-L460-OC-HFCS	



DITCH WITCH® COMPATIBLE QUICK-DISCONNECTS & COLLARS



EZ-Connect Compatibility For Ditch Witch® Drill Rigs					
Compatible Drill Rig Models	Drill Rod Thread	EZ-Connect Thread	EZ-Connect	Chunky Carbide Collar	Carbide Cutter Collar
JT5	1.10-5	1.31-6	DLR2-04M-L52M	DL52-15-OC-HFC	
JT520	1.21-6	1.31-6	DLR2-05M-L52M	DL52-15-OC-HFC	
JT920, JT9215, JT920L	1.41-6	1.63-6	DLR2-01AM-L55M	DL55-18-OC-HFC	
JT9, JT922, JT10	1.30-5	1.63-6	DLR2-09M-L55M DLR2-31M-L55M	DL55-18-OC-HFC DL55-18-OC-HFC	
JT1220 M1	1.47-4	1.88-6	DLR2-34M-L58M	DL58-22-OC-HFC	
JT1720, JT1720 M1	1.69-6	2.00-6	DLR2-86M-L54M	DL54-25-OC-HFC	
JT20, JT2020, JT2720	1.94-4	2.00-6	DLR2-20M-L54M	DL54-25-OC-HFC	DL54-25-OC-HFCS
JT20, JT2020	2-3/8" FS600	2.00-6	DLR2-40M-L54M	DL54-25-OC-HFC	DL54-25-OC-HFCS
JT25, JT2720 M1, JT3020, JT32	2.11-4	2.25-6E Z2 2.25-6E Z3	DLR2-36M-L56M DLR3-36M-L59M	DL56-27-OC-HFC DL59-27-OC-HFC	DL59-27-OC-HFCS
JT25, JT28, JT30, JT3020, JT32	2-3/8" FS600	2.25-6E Z3	DLR3-40M-L59M	DL59-27-OC-HFC	DL59-27-OC-HFCS
JT4020 M1	2.59-4	2.63-6	DLR2-43M-L57M		



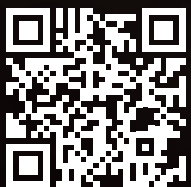
VERMEER & DITCH WITCH COMPATIBLE DIRECT-CONNECTS

Direct Connect Compatibility For Vermeer® Drill Rigs			
Compatible Rig Models	Drill Rod Thread	Direct Connect Thread	Direct Connect
D20x22 S2, D20x22 S3, D23x30 S3, D24x26, D24x33	2.06" FS400 Box	2-3/8" Reg Pin	VLT-30F-23M
D23X30 S2, D23X30 S3, D24x40, D24X40A, D24X40 S2, D24X40 S3, D40X40	2-3/8" FS600 Box	2-3/8" Reg Pin	VLT-40F-23M
D36x50, D36x50 S3, D40x55 S3	2-5w/8" FS700 Box	2-3/8" Reg Pin	VLT-41F-23M

Direct Connect Compatibility For Ditch Witch Drill Rigs			
Compatible Drill Rig Models	Drill Rod Thread	Direct Connect Thread	Direct Connect
JT920, JT921, JT920L, JT922, JT9, JT10	1.30-5 Pin	2" IF Pin	DLT-09M-21M
JT20, JT2020, JT2720	1.94-4 Pin	2-3/8" Reg Pin 2" IF Pin	DLT-20M-23M DLT-20M-21M
JT2720 M1, JT3020, JT30, JT25	2.11-4 Pin	2-3/8" Reg Pin	DLT-36M-23M
JT20, JT2020	2-3/8" FS600 Pin	2-3/8" Reg Pin	DLT-40M-23M



STABILIZERS & BACKREAMERS





TRI-CON REAMERS & PACKERS

Connect Directly To The Tri-Con Housing & Pullback In A Flash With These Newly-Designed Compact Reamers & Packers.



CONNECTING THE FUTURE OF HDD

THE PACKER



TRI-CON™ Packer				
	Shaft Diameter	Front Thread	Rear Pulling Eye	Part Number
4" Packer	3.25"	2-5/8" Tri-Con™ (box)	EYE310	80-04-77F-EYE310
6" Packer	3.25"	2-5/8" Tri-Con™ (box)	EYE310	80-06-77F-EYE310

This Tri-Con™ packer is great for swabbing the hole during your pullback process. With chunky hardfacing protecting all high-wear areas, this will be your new go-to for fast packing on pullback.

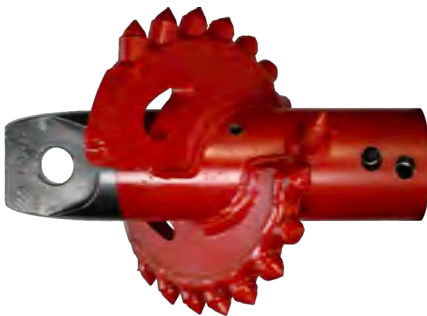
SABRETOOTH REAMER



TRI-CON™ Juggernaut Reamer				
	Shaft Diameter	Front Thread	Rear Pulling Eye	Part Number
6" Sabretooth	2.75"	2-1/8" Tri-Con™ (box)	EYE310	96-06-76F-EYE310-C
6" Sabretooth	3.25"	2-5/8" Tri-Con™ (box)	EYE310	96-06-77F-EYE310-C
8" Sabretooth	2.75"	2-1/8" Tri-Con™ (box)	EYE310	96-08-76F-EYE310-C
8" Sabretooth	3.25"	2-5/8" Tri-Con™ (box)	EYE310	96-08-77F-EYE310-C

The Sabretooth reamer is HDD's go-to option for those drillers reaming with the Tri-Con System. This compact version does not scrimp on teeth and allows you to connect directly to your Tri-Con™ housing.

TORNADO REAMER



TRI-CON™ Tornado Reamer				
	Shaft Diameter	Front Thread	Rear Pulling Eye	Part Number
6" Tornado	2.75"	2-1/8" Tri-Con™ (box)	EYE310	90-06-76F-EYE310
6" Tornado	3.25"	2-5/8" Tri-Con™ (box)	EYE310	90-06-77F-EYE310
8" Tornado	2.75"	2-1/8" Tri-Con™ (box)	EYE310	90-08-76F-EYE310
8" Tornado	3.25"	2-5/8" Tri-Con™ (box)	EYE310	90-08-77F-EYE310
10" Tornado	2.75"	2-1/8" Tri-Con™ (box)	EYE310	90-10-76F-EYE310
10" Tornado	3.25"	2-5/8" Tri-Con™ (box)	EYE310	90-10-77F-EYE310

We've taken Melfred Borzall's #1 reamer and compacted it into a single phase reamer for the Tri-Con™ connection.



77F-EYE310

Don't need a reamer? Try the TRI-CON™ pulling eye that is compatible with our 15,000 - 20,000 lbs. capacity swivels that you can find on page 45.



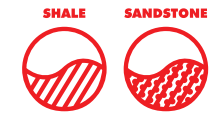
*Tri-Con™ connection coiled pins (CP-050-250-HD) and punch tool (PUNCH-RP-044) sold separately.



SHREDDER

Economical Option That Has A Mouthful Of Carbide-Tipped Sharkteeth® Cutters.

BEST FOR:



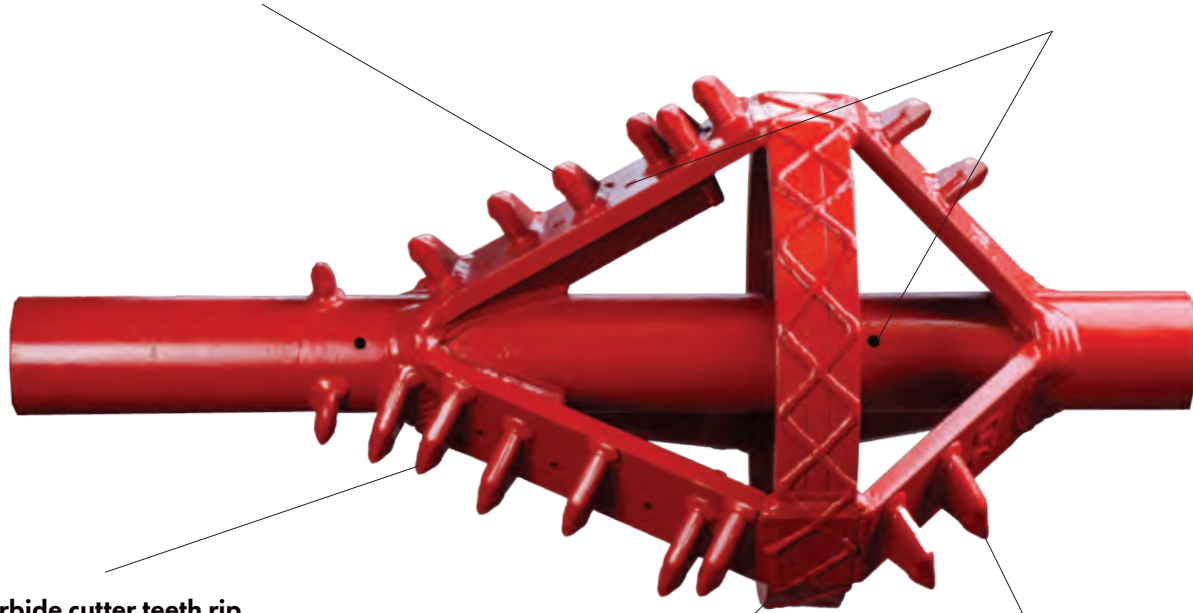
GOOD FOR:



SHREDDER Shaft Diameter & Thread					
Cut	2.75"	3.25"	4.25"	4.75"	6.5"
Diameter	2" IF box X box	2-3/8" Reg box X box	2-7/8" IF box X box	3-1/2" IF box X box	4-1/2" IF box X box
6"	69-06-21F-21F				
8"	69-08-21F-21F	69-08-23F-23F	69-08-27F-27F		
10"	69-10-21F-21F	69-10-23F-23F	69-10-27F-27F		
12"	69-12-21F-21F	69-12-23F-23F	69-12-27F-27F	69-12-29F-29F	
14"	69-14-21F-21F	69-14-23F-23F	69-14-27F-27F	69-14-29F-29F	
16"	69-16-21F-21F	69-16-23F-23F	69-16-27F-27F	69-16-29F-29F	
18"	69-18-21F-21F	69-18-23F-23F	69-18-27F-27F	69-18-29F-29F	
20"		69-20-23F-23F	69-20-27F-27F	69-20-29F-29F	
24"		69-24-23F-23F	69-24-27F-27F	69-24-29F-29F	69-24-47F-47F
28"		69-28-23F-23F	69-28-27F-27F	69-28-29F-29F	69-28-47F-47F
30"			69-30-27F-27F	69-30-29F-29F	69-30-47F-47F
34"			69-34-27F-27F	69-34-29F-29F	69-34-47F-47F
36"			69-36-27F-27F	69-36-29F-29F	69-36-47F-47F
38"			69-38-27F-27F	69-38-29F-29F	69-38-47F-47F
40"			69-40-27F-27F	69-40-29F-29F	69-40-47F-47F
42"				69-42-29F-29F	69-42-47F-47F
48"				69-48-29F-29F	69-48-47F-47F

Gradual taper of blades lessens torque requirement

Drilling fluid is channelled out through the blades and the shaft



Carbide cutter teeth rip through ground such as shale, sandstone or hardpan

Integrated stabilizer ring built into Shredders 18" and larger

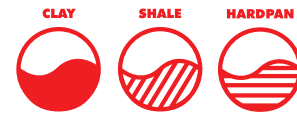
Back-up cutters make pushing the Shredder back through the hole a breeze



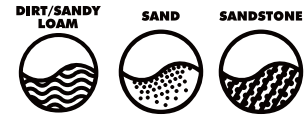
TORNADO

One Of HDD's Favorite Reamers With Aggressive Pumping Action.

BEST FOR:



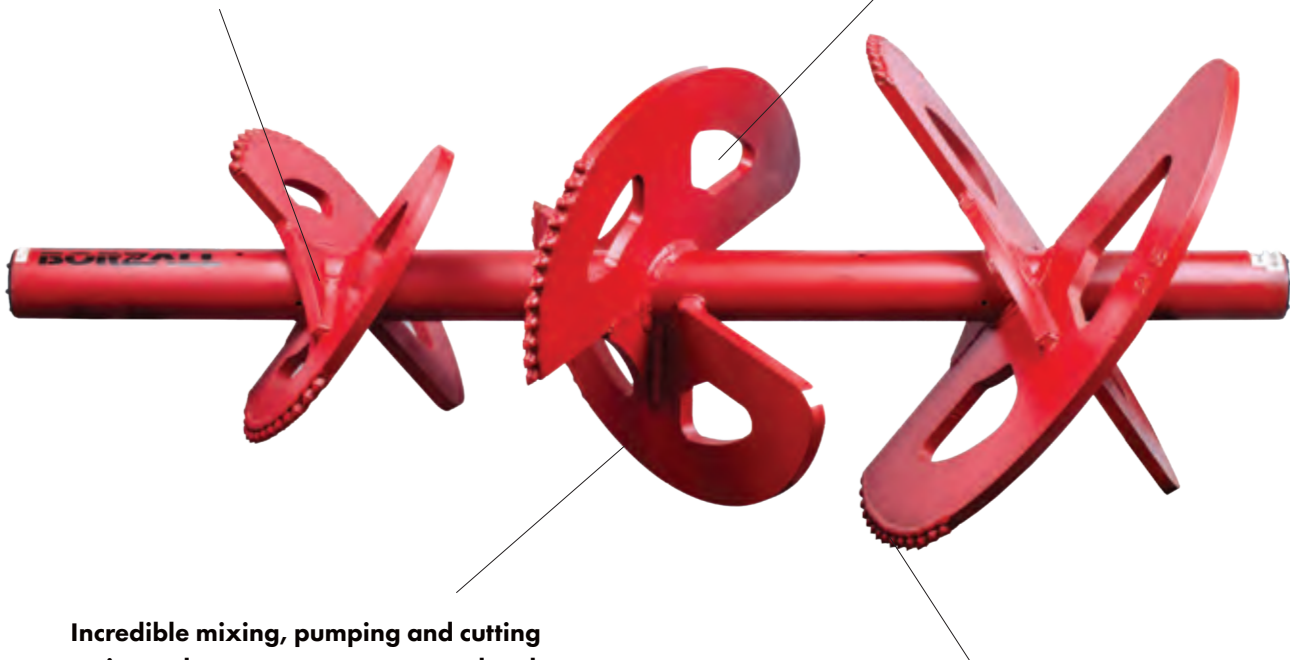
GOOD FOR:



TORNADO Shaft Diameter & Thread					
Cut Diameter	2.75" 2" IF box X box	3.25" 2-3/8" Reg box X box	4.25" 2-7/8" IF box X box	4.75" 3-1/2" IF box X box	6.5" 4-1/2" IF box X box
6"	90-06-21F-21F				
8"	90-08-21F-21F	90-08-23F-23F	90-08-27F-27F		
10"	90-10-21F-21F	90-10-23F-23F	90-10-27F-27F		
12"	90-12-21F-21F	90-12-23F-23F	90-12-27F-27F	90-12-29F-29F	
14"	90-14-21F-21F	90-14-23F-23F	90-14-27F-27F	90-14-29F-29F	90-14-47F-47F
16"	90-16-21F-21F	90-16-23F-23F	90-16-27F-27F	90-16-29F-29F	90-16-47F-47F
18"	90-18-21F-21F	90-18-23F-23F	90-18-27F-27F	90-18-29F-29F	90-18-47F-47F
20"	90-20-21F-21F	90-20-23F-23F	90-20-27F-27F	90-20-29F-29F	90-20-47F-47F
24"		90-24-23F-23F	90-24-27F-27F	90-24-29F-29F	90-24-47F-47F
28"		90-28-23F-23F	90-28-27F-27F	90-28-29F-29F	90-28-47F-47F
30"			90-30-27F-27F	90-30-29F-29F	90-30-47F-47F
34"			90-34-27F-27F	90-34-29F-29F	90-34-47F-47F
36"			90-36-27F-27F	90-36-29F-29F	90-36-47F-47F
38"			90-38-27F-27F	90-38-29F-29F	90-38-47F-47F
40"			90-40-27F-27F	90-40-29F-29F	90-40-47F-47F
42"			90-42-27F-27F	90-42-29F-29F	90-42-47F-47F
48"				90-48-29F-29F	90-48-47F-47F

Gusseted blades for extra strength

Blade cut-outs allow flow-through of slurry



Incredible mixing, pumping and cutting action reduces rotary pressure and makes it an ideal reamer for sticky situations

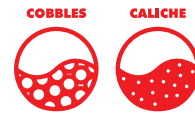
Carbide-tipped cutting blades are precisely positioned and angled so all the abuse is placed on the carbide tooth



THE OGRE

Hard Compact, Loose Cobbles, And
Chunk Rock Reaming Made Easy.

BEST FOR:



GOOD FOR:



Hardfacing on all
wear areas

Slow taper & deep flutes combine to
carry away cuttings while creating
maximum pumping and mixing action

Angled fluid jets shoot water
opposite the reamer rotation to
keep carbides and flutes clear
of debris

Staggered carbide
blocks prevent shaft from
wearing directly in front
of reamer body

Each cutter only takes
1/2" more soil than the
previous stage resulting
in a smooth, efficient
cutting action

Back-up blades make
pushback easier

Customization available upon request



Available with a through-shaft design for pulling eye attachments or optional built-in flange swivel. See page 46 for swivel options.



Ogre Shaft Diameter & Thread							
Cut Diameter	Pack Diameter	3.25"		4.25"		4.75"	6.5"
		2-3/8" Reg box X box	2-3/8" Reg box X flange	2-7/8" IF box X box	2-7/8" IF box X flange	3-1/2" IF box X box	4-1/2" IF box X box
6"	4-1/2"	95-06-23F-23F					
8"	6-5/8"	95-08-23F-23F		95-08-27F-27F			
10"	8-5/8"	95-10-23F-23F	95-10-23F-F31X	95-10-27F-27F	95-10-27F-F32X	95-10-29F-29F	95-10-47F-47F
12"	10-3/4"	95-12-23F-23F	95-12-23F-F31X	95-12-27F-27F	95-12-27F-F31X	95-12-29F-29F	95-12-47F-47F
14"	12-3/4"	95-14-23F-23F	95-14-23F-F31X	95-14-27F-27F	95-14-27F-F32X	95-14-29F-29F	95-14-47F-47F
16"	14"	95-16-23F-23F	95-16-23F-F31X	95-16-27F-27F	95-16-27F-F32X	95-16-29F-29F	95-16-47F-47F
18"	16"	95-18-23F-23F	95-18-23F-F31X	95-18-27F-27F	95-18-27F-F32X	95-18-29F-29F	95-18-47F-47F
20"	18"	95-20-23F-23F	95-20-23F-F31X	95-20-27F-27F	95-20-27F-F32X	95-20-29F-29F	95-20-47F-47F
24"	22"			95-24-27F-27F	95-24-27F-F32X	95-24-29F-29F	95-24-47F-47F
28"	26"			95-28-27F-27F	95-28-27F-F32X	95-28-29F-29F	95-28-47F-47F
32"	30"			95-32-27F-27F	95-32-27F-F32X	95-32-29F-29F	95-32-47F-47F
36"	34"			95-36-27F-27F	95-36-27F-F32X	95-36-29F-29F	95-36-47F-47F
40"	38"			95-40-27F-27F	95-40-27F-F32X	95-40-29F-29F	95-40-47F-47F

Other sizes available

Available with different carbide cutter options. Comes standard with Sharktooth® carbide option.



(D) Dome carbide



(S) Sharktooth® carbide

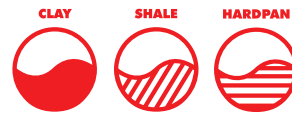


(C) Conical carbide

TORNADO PUP

Add Tornado Features To Your Setup With As Many Stages As You Need.

BEST FOR:



GOOD FOR:



Sometimes you need to add even more mixing and pumping action while using your barrel stabilizer or reamer. That's why we have the Tornado Pup. Mix-and-match any style reamer and integrate Tornado-like pumping action to your existing pullback setup.

TORNADO PUP Shaft Diameter & Thread					
Cut Diameter	2.75"	3.25"	4.25"	4.75"	6.5"
	2" IF box X box	2-3/8" Reg box X box	2-7/8" IF box X box	3-1/2" IF box X box	4-1/2" IF box X box
6" - 12"	90-06-12-21F-F	90-06-12-23F-F	90-06-12-27F-F		
12" - 18"	90-12-18-21F-F	90-12-18-23F-F	90-12-18-27F-F		
14" - 24"		90-14-24-23F-F	90-14-24-27F-F	90-14-24-29F-F	
18" - 24"		90-18-24-23F-F	90-18-24-27F-F	90-18-24-29F-F	90-18-24-47F-F
20" - 28"		90-20-28-23F-F	90-20-28-27F-F	90-20-28-29F-F	90-20-28-47F-F
24" - 36"			90-24-36-27F-F	90-24-36-29F-F	90-24-36-47F-F

Other sizes and configurations available upon request. All custom configurations are built to order.



Special two-stage, heavy-duty Tornado Pup for pre-reaming in stages





BARREL STABILIZER

Key Component To Keep Your Bore Centralized And Steady
As A Rock On A Large Diameter Project.

BARREL STABILIZER Shaft Diameter & Thread					
Pack Diameter	Std Pack Length	3.25"	4.25"	4.75"	6.5"
		2-3/8" Reg Box-by-box	2-7/8" IF Box-by-box	3-1/2" IF Box-by-box	4-1/2" IF Box-by-box
10"	20"	80-10-23F-23F	80-10-27F-27F		
12"	24"	80-12-23F-23F	80-12-27F-27F		
14"	28"	80-14-23F-23F	80-14-27F-27F		
16"	32"	80-16-23F-23F	80-16-27F-27F	80-16-29F-29F	
18"	36"	80-18-23F-23F	80-18-27F-27F	80-18-29F-29F	
20"	40"	80-20-23F-23F	80-20-27F-27F	80-20-29F-29F	80-20-47F-47F
36"	32"			80-36-29F-29F	80-36-47F-47F
40"	36"			80-40-29F-29F	80-40-47F-47F
48"	44"				80-48-47F-47F

Other sizes and configurations available upon request. All custom configurations are built to order.

Front and rear water ports clear cutters and wash away cuttings

Back-facing and forward-facing blades ensure barrel proceeds smoothly even if with partial hole collapse



Deluxe Version Shown

Hardfacing on high wear areas extends the barrel life

Conical carbide cutters minimize wear on the blade edges and face



BARREL STABILIZER Styles			
Barrel Stabilizer Feature	Plain (-P)	Value (-V)	Deluxe (-D)
Hardfacing on main wear areas	Yes	Yes	Yes
Conical Carbide Cutters	No	Yes	No (Upgraded Cutters)
Internal Support Baffles	Yes	Yes	Yes
Internal Chambers to prevent filling with water	Yes	Yes	Yes
Cross-hatch Added Hardfacing	No	No	Yes
Back & Front Cutter Blades	No	No	Yes
Front & Rear Fluid Ports	No	Yes	Yes

When ordering, simply append a -P, -V, or -D to the end of the barrel stabilizer part number to designate a style (i.e. 80-12-23F-23F-V).

DRILLHEAD SYSTEMS
HOUSINGS
BITS & BLADES
QUICK-DISCONNECTS
REAMERS
SWIVELS
PULLERS
ADAPTERS & SUBS
REPLACEMENT PARTS



TURBO

Supercharge Your Reaming In Sand Or Any Other Unstable Soil Condition.

BEST FOR:



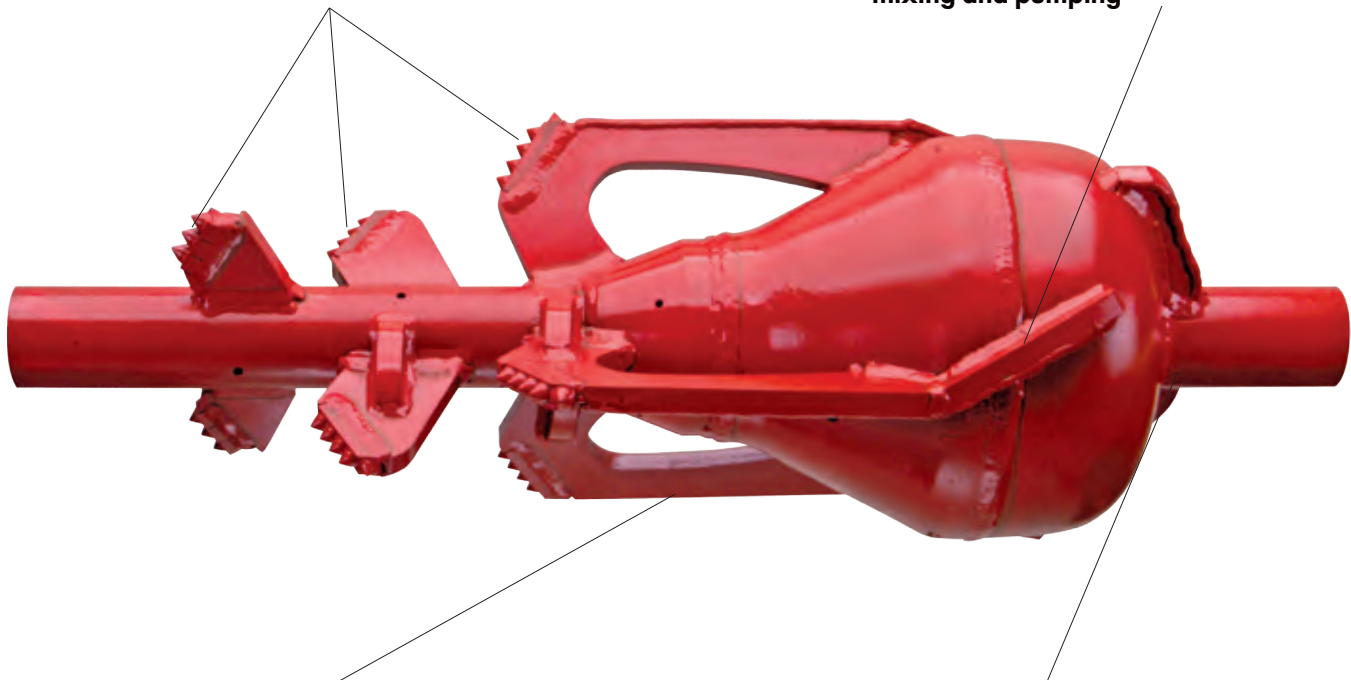
GOOD FOR:



TURBO Shaft Diameter & Thread						
Cut Diameter	Pack Diameter	2.75"	3.25"	4.25"	4.75"	6.5"
		2" IF box X box	2-3/8" Reg box X box	2-7/8" IF box X box	3-1/2" IF box X box	4-1/2" IF box X box
6"	4-1/2"	83-06-21F-21F	83-06-23F-23F			
8"	6-5/8"	83-08-21F-21F	83-08-23F-23F	83-08-27F-27F		
10"	8-5/8"	83-10-21F-21F	83-10-23F-23F	83-10-27F-27F		
12"	10-3/4"	83-12-21F-21F	83-12-23F-23F	83-12-27F-27F		
14"	12-3/4"	83-14-21F-21F	83-14-23F-23F	83-14-27F-27F	83-14-29F-29F	
16"	14"	83-16-21F-21F	83-16-23F-23F	83-16-27F-27F	83-16-29F-29F	83-16-47F-47F
18"	16"	83-18-21F-21F	83-18-23F-23F	83-18-27F-27F	83-18-29F-29F	83-18-47F-47F
20"	18"		83-20-23F-23F	83-20-27F-27F	83-20-29F-29F	83-20-47F-47F
24"	20"		83-24-23F-23F	83-24-27F-27F	83-24-29F-29F	83-24-47F-47F
28"	24"			83-28-27F-27F	83-28-29F-29F	83-28-47F-47F
32"	28"			83-32-27F-27F	83-32-29F-29F	83-34-47F-47F
36"	32"			83-36-27F-27F	83-36-29F-29F	83-36-47F-47F
40"	36"			83-40-27F-27F	83-40-29F-29F	83-40-47F-47F
48"	44"				83-48-29F-29F	83-48-47F-47F

Aggressive conical carbide cutter blocks are positioned to cut as efficiently as possible so the turbo blades move the cutting downhole

Curved packer blades provide maximum mixing and pumping



Long "Turbo" blades scoop up sand to keep it from piling up on the hole bottom and to mix it with drill fluid

Back-up blades make for easier push backs



HEDGEHOG

Push Or Pull...This Reamer Will Get The Job Done.

BEST FOR:

SHALE

SANDSTONE



GOOD FOR:

HARDPAN

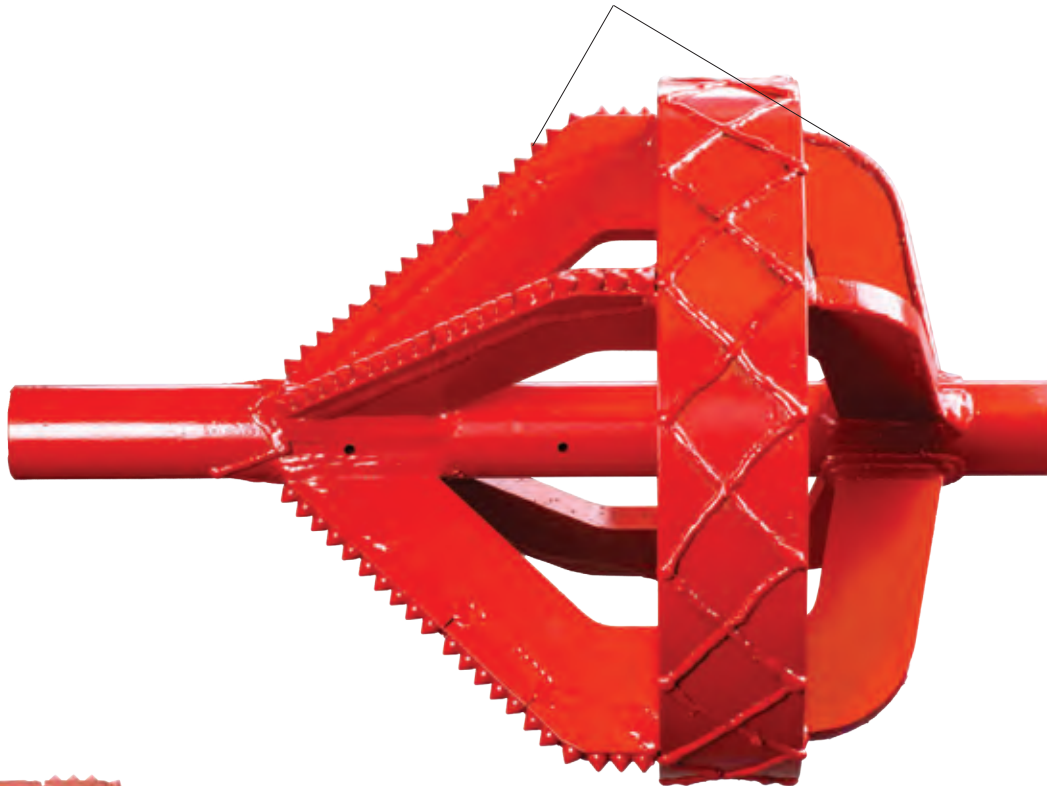
GRAVEL



HEDGEHOG Shaft Diameter & Thread					
Cut Diameter	2.75"	3.25"	4.25"	4.75"	6.5"
	2" IF box X box	2-3/8" Reg box X box	2-7/8" IF box X box	3-1/2" IF box X box	4-1/2" IF box X box
8"	68-08-21F-21F	68-08-23F-23F			
10"	68-10-21F-21F 68-12-21F-21F	68-10-23F-23F 68-12-23F-23F	68-10-27F-27F 68-12-27F-27F	68-12-29F-29F	
14"	68-14-21F-21F	68-14-23F-23F	68-14-27F-27F	68-14-29F-29F	68-14-47F-47F
16"	68-16-21F-21F	68-16-23F-23F	68-16-27F-27F	68-16-29F-29F	68-16-47F-47F
18"	68-18-21F-21F	68-18-23F-23F	68-18-27F-27F	68-18-29F-29F	68-18-47F-47F
20"		68-20-23F-23F	68-20-27F-27F	68-20-29F-29F	68-20-47F-47F
24"		68-24-23F-23F	68-24-27F-27F	68-24-29F-29F	68-24-47F-47F
28"			68-28-27F-27F	68-28-29F-29F	68-28-47F-47F
30"			68-30-27F-27F	68-30-29F-29F	68-30-47F-47F
36"				68-36-29F-29F	68-36-47F-47F
42"				68-42-29F-29F	68-42-47F-47F



Tapered, bi-directional blades with carbide cutting teeth create an aggressive cutting action with a "push" or "pull" option



6" Hedgehog

Only the 10" and larger Hedgehog Reamer are designed with an added stability ring for strength



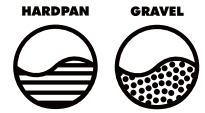
SABERTOOTH

Crunch Through Harder Ground
And Lighten Your Load.

BEST FOR:



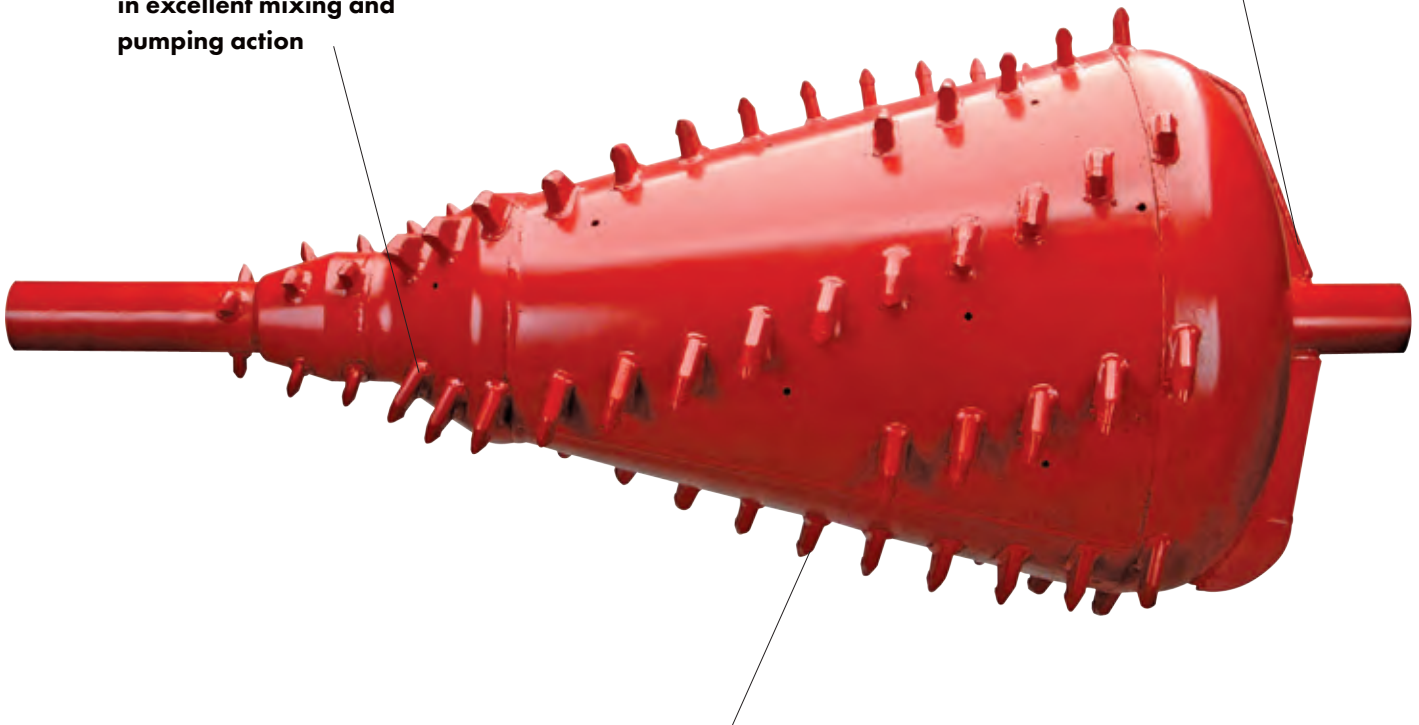
GOOD FOR:



SABERTOOTH Shaft Diameter & Thread						
Cut Diameter	Pack Diameter	2.75"	3.25"	4.25"	4.75"	6.5"
		2" IF box X box	2-3/8" Reg box X box	2-7/8" IF box X box	3-1/2" IF box X box	4-1/2" IF box X box
6"	4-1/2"	96-06-21F-21F	96-06-23F-23F			
8"	6-5/8"	96-08-21F-21F	96-08-23F-23F	96-08-27F-27F		
10"	8-5/8"	96-10-21F-21F	96-10-23F-23F	96-10-27F-27F		
12"	10-3/4"	96-12-21F-21F	96-12-23F-23F	96-12-27F-27F		
14"	12-3/4"	96-14-21F-21F	96-14-23F-23F	96-14-27F-27F	96-14-29F-29F	
16"	14"	96-16-21F-21F	96-16-23F-23F	96-16-27F-27F	96-16-29F-29F	96-16-47F-47F
18"	16"	96-18-21F-21F	96-18-23F-23F	96-18-27F-27F	96-18-29F-29F	96-18-47F-47F
20"	18"		96-20-23F-23F	96-20-27F-27F	96-20-29F-29F	96-20-47F-47F
24"	20"		96-24-23F-23F	96-24-27F-27F	96-24-29F-29F	96-24-47F-47F
28"	24"			96-28-27F-27F	96-28-29F-29F	96-28-47F-47F
32"	28"			96-34-27F-27F	96-34-29F-29F	96-34-47F-47F
36"	32"			96-36-27F-27F	96-36-29F-29F	96-36-47F-47F
40"	36"			96-40-27F-27F	96-40-29F-29F	96-40-47F-47F
48"	44"				96-48-29F-29F	96-48-47F-47F

Angled placement of cutters in a spiral pattern results in excellent mixing and pumping action

Back-up blades make for easier push backs



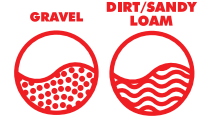
Large shark teeth carbide cutters for aggressive yet smooth cutting



JUGGERNAUT

Faster, Smoother Cutting Than Competitive Fluted Reamers. This One Is Unstoppable.

BEST FOR:

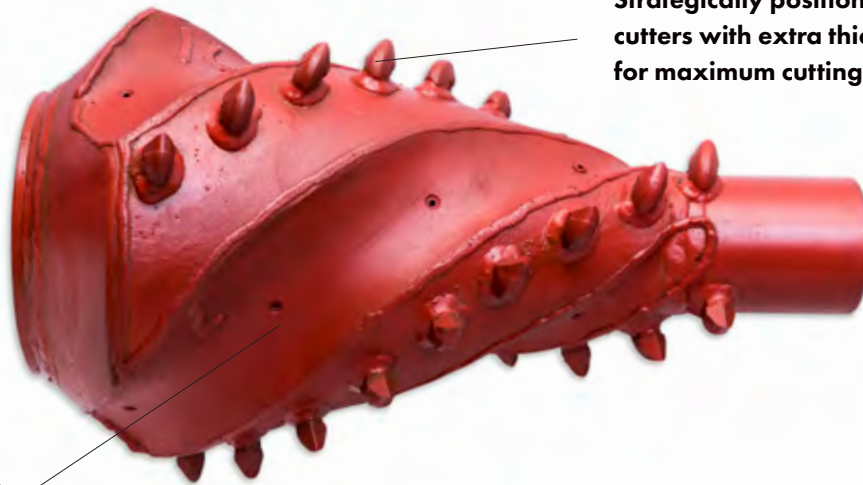


GOOD FOR:



JUGGERNAUT - MACHINED BODY: Shaft Diameter & Thread / Rear Connection			
Cut Diameter	Pack Diameter	2" IF box X fine thread box	
		Use with a 4-ton or 5-ton Pocket Swivel	Use with a 4-ton or 5-ton Pocket Swivel
4.5"	4"	85-04-21F-44F (not available with Sharktooth®)	
6"	4.5"	85-06-21F-44F	
8"	6"	85-08-21F-45F	

JUGGERNAUT - CAST ALLOY STEEL BODY: Shaft Diameter & Thread / Rear Connection						
Cut Diameter	Pack Diameter	2" IF box X flange	2-3/8" Reg box X flange	2-3/8" Reg box X flange	2-7/8" IF box X flange	2-7/8" IF box X flange
		Use with 10 or 15-ton Swivel	Use with 10 or 15-ton Swivel	Use with 20 or 30-ton Swivel	Use with 10 or 15-ton Swivel	Use with 20 or 30-ton Swivel
10"	8"	85-10-21F-F31X	85-10-23F-F31X			
12"	10"	85-12-21F-F31X	85-12-23F-F31X		85-12-27F-F31X	
14"	12"		85-14-23F-F31X	85-14-23F-F32X	85-14-27F-F31X	85-14-27F-F32X
16"	14"		85-16-23F-F31X	85-16-23F-F32X	85-16-27F-F31X	85-16-27F-F32X



Strategically positioned and welded cutters with extra thick carbide inserts for maximum cutting action

Deep, spiralled flutes allow for plenty of slurry to flow past the reamer

Available in these cutter tooth options:



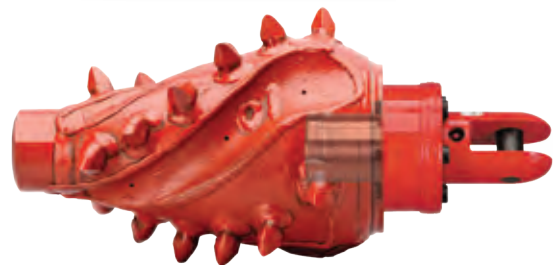
(D) Dome carbide



(S) Sharktooth® carbide

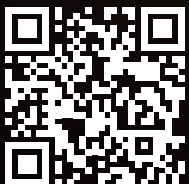


(C) Conical carbide



Available with built-in swivel or pulling eye. See page 46

PULLBACK SWIVELS





DELUXE DUB PULLING SWIVELS

Quad-Stage Seal System And 5-To-1 Safety Factor Make The Deluxe Dub One Long-Lasting Swivel.

Deluxe DUB Swivels				
Pullback Capacity	Swivel Diameter	Clevis X Clevis	Clevis X 2-3/8" Reg Pin	Clevis X 2-7/8"IF Pin
		Part #	Part #	Part #
5,000 lb	2"	00508-202		
10,000 lb	3.125"	00508-205		
20,000 lb	3.75"	00508-210	00508-710-23M	
30,000 lb	4.75"	00508-215	00508-715-23M	00508-715-27M
40,000 lb	5.75"	00508-220		00508-720-27M
60,000 lb	6"	00508-230		00508-730-27M
80,000 lb	6.5"	00508-240		00508-740-27M
100,000 lb	7.5"	00508-250		
120,000 lb	7.5"	00508-260		
160,000 lb	9"	00508-280		

More details on swivel fitting online at www.melfredborzall.com/swivels



Metal-to-metal face seal to ensure reliability and long life



Clevis x Pin option available



Greasable tapered roller & 4-stage sealing system



VALU-DUB PULLING SWIVELS

Greasable Premium Angular Contact Bearings And Triple Sealing System Meet The Demands Of The Toughest HDD Jobs.

Valu DUB Swivels					
Pullback Capacity	Swivel Diameter	Clevis X Clevis	Clevis X 2"IF Pin	Clevis X 2-3/8" Reg Pin	Clevis X 2-7/8"IF Pin
		Part #	Part #	Part #	Part #
5,000 lb	1.25"	00503-202			
8,500 lb	2"	00503-204			
10,000 lb	2.25"	00503-205	00503-705-21M		
15,000 lb	2.5"	00503-208			
20,000 lb	2.5"	00503-210	00503-710-21M	00503-710-23M	
30,000 lb	3"	00503-215		00503-715-23M	
40,000 lb	4.75"	00503-220		00503-720-23M	
60,000 lb	5.75"	00503-230			00503-730-27M
90,000 lb	6"	00503-245			00503-745-27M

Push and pull loads absorbed by premium angular contact bearings



Clevis x Clevis



Clevis x Pin

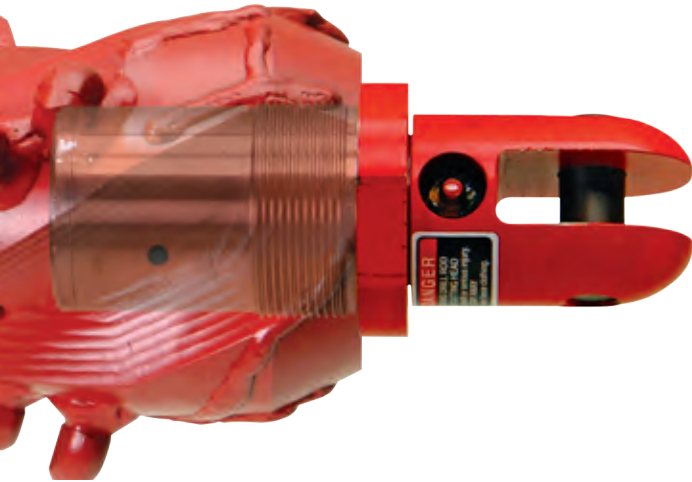
Fitted with a grease nipple that makes for easy lubrication and a long-lasting swivel



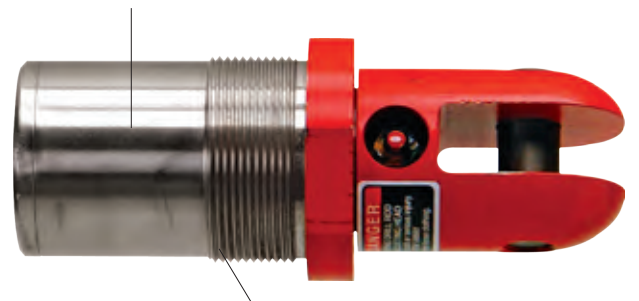
FLUTED REAMER SWIVELS

Designed Exclusively For Melfred Borzall Juggernaut Reamers.

Pocket Swivels for Fluted Juggernaut		
Pullback Capacity	Juggernaut Size	
	4" - 6"	8"
4.5 ton	00503-604-44M	00503-604-45M
10 ton		00503-610-45M



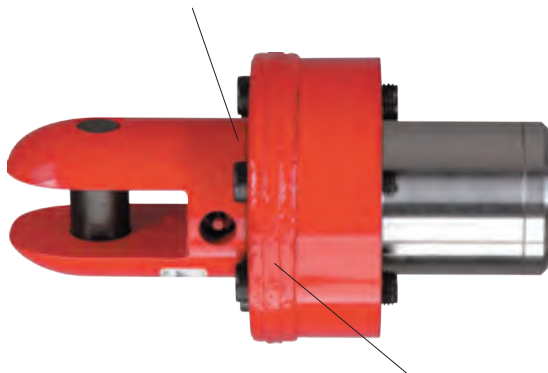
Totally self-contained and greaseable for a long lasting swivel



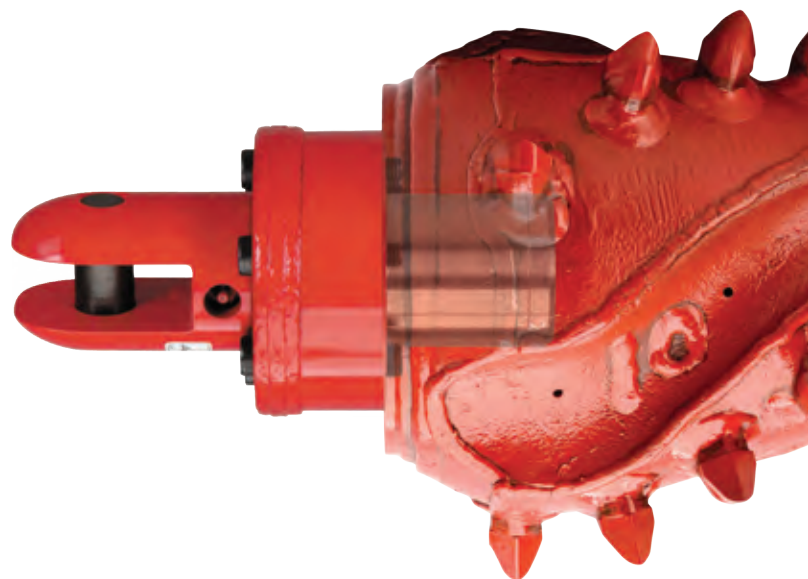
Push and pull loads are absorbed by premium quality angular contact bearings

Flange Swivels for Fluted Juggernaut		
Pullback Capacity	Juggernaut Size	
	10" - 12"	14" - 16"
10 ton	00503-610	00503-610
15 ton	00503-615	00503-615
20 ton		00503-620
30 ton		00503-630

Features a triple-stage sealing system to keep debris from destroying bearings



Hardfacing around face of flange minimizes wear at the head of the bolts





QUICK-SWIVEL

Perform Direct Pullbacks Exclusively With Any Melfred Borzall Blade.

Quick-Swivel				
Pullback Capacity	Part #	Replacement Bolt	Replacement Nut	Replacement Washer
5 ton	00503-205-QS	HHCS-3/4-2.75-8	3/4-10-NUT	3/4 LOCKWASHER



Key-way & bolt feature exclusive to Borzall Blades, ensures the swivel stays with the centerline rotation of the drill head



Made from the same quality components as the 5-ton Valu-DUB swivel



MAXI-RIG SWIVELS

Maximum Strength for the Heaviest Loads and Toughest Conditions.

Maxi Rig Swivels					
Pullback Capacity	Swivel Diameter	Clevis X 4-1/2" IF box	Clevis X 6-5/8" Reg box	Clevis X 6-5/8" FH box	Clevis X 7-5/8" Reg box
		Part #	Part #	Part #	Part #
220,000 lb	10.75"	00508-1110			
330,000 lb	19.5"	00508-1165			
440,000 lb	19.5"		00508-1220		
550,000 lb	19.5"			00508-1275	
700,000 lb	16"			00508-1351	00508-1350
1,000,000 lb	19.5"			00508-1501	00508-1500
1,400,000 lb	23"				00508-1700

Fitted with a grease nipple and relief valve for easy lubrication, making it a long-lasting swivel

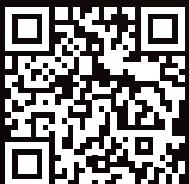


Designed with service in mind. Seals are field replaceable

Push and pull loads are absorbed by premium quality angular contact bearings

Triple-stage seal system keeps bearings protected on your heaviest loads

CONNECTORS & PULLERS





THE SILVER PULL-IT

Improve Production On Bundled Micro-duct Installations

Silver Pull-it replaces single-application bundled micro-duct pullers with a modular system that lets crews handle multiple bundle configurations using fewer tools. No specialized tools & no downtime. Scan the QR code for more details or to use our size configurator to verify your requirements.



DRILLHEAD SYSTEMS
HOUSINGS
BITS & BLADES
QUICK-DISCONNECTS
REAMERS
SWIVELS
PULLERS
ADAPTERS & SUBS
REPLACEMENT PARTS

SILVER PULL-IT CONFIGURATIONS			
Silver Pull-it Body* (Part #)	Puller Diameter	Compatible Spacer (Part #)	Final Desired Configuration
MDP-15W	3.25"	N/A	15-way (4) 16/12 mm and (11) 14/10 mm
MDP-6W-18/14-3.35	4.25"	N/A	Hybrid 6-Way 1 1/4" TSIDR 11.5 + 18/14mm
		MDP-10W-18/14-SPACER	Jumbo 3-Way 1 1/4" TRUE SIDR 11.5
MDP-6W-18/14-4.23	5.00"	N/A	Hybrid 6-Way - 1 1/2" SDR 11 + 18/14 mm
		MDP-6W-SDR11-18/14-SPACER	Hybrid 6-Way - 1 1/2" SDR 11 + 22/16 mm
MDP-7W-18/14	3.00"	N/A	7-way 18/14 mm
		MDP-3W-18/14-SPACER	3-way 18/14 mm
		MDP-4W-18/14-SPACER	4-way 18/14 mm
		MDP-4W-16/12-SPACER	4-way 16/12 mm
		MDP-4W-12.7/10-SPACER	4-way 12.7/10 mm
		MDP-7W-14/10-SPACER	7-way 14/10 mm
		MDP-7W-16/13-SPACER	7-way 16/13 mm
MDP-7W-14/10	3.00"	N/A	7-way 14/10 mm
		MDP-2W-18/14-SPACER	2-way 18/14 mm
		MDP-2W-14/10-SPACER	2-way 14/10 mm

*All puller bodies include 3/8" Socket & Hex Shank Drive Adapter. For all spacer configurations visit the website.

One Silver Pull-it system replaces multiple single-application pullers—reducing tool cost & clutter.

THE PULLER



Choose a Puller Body
(MDP-7W-18/14 displayed)

+

THE SPACER



Choose from selection of
compatible spacers

=

THE BUNDLES OF POSSIBILITIES





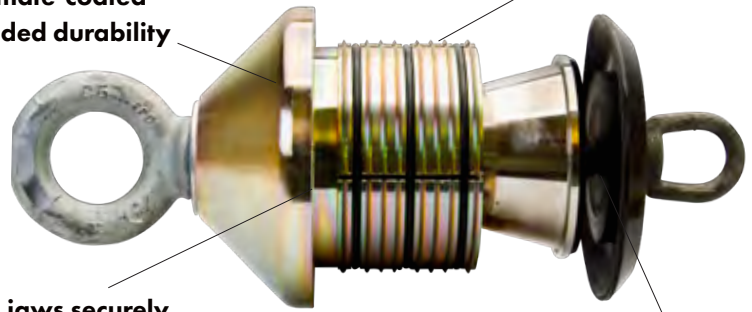
PREMIUM DUCT PULLER

Premium Duct Pullers		
Duct Size	I.D.	Part #
1¼"	1.28" to 1.61"	00616-125
1½"	1.44" to 1.81"	00616-150
2"	1.81" to 2.19"	00616-200
2½"	2.19" to 2.62"	00616-250
3"	2.69" to 3.12"	00616-300
4"	3.31" to 4.06"	00616-400
5"	4.25" to 5.06"	00616-500
6"	4.87" to 6.19"	00616-600

* Metric sizes available

Puller head made form zinc dichromate-coated steel for added durability

Fewer moving parts for easy repair and maintenance



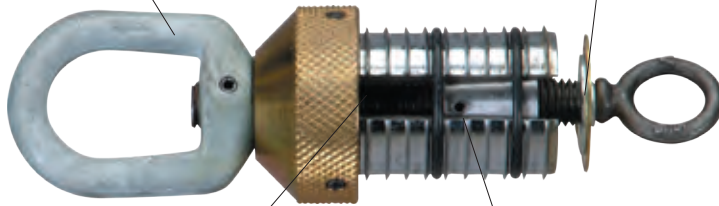
Expanding jaws securely grip inside wall of duct

Comes standard with a polyurethane plunger to minimize fluid from entering the duct

STANDARD DUCT PULLERS

No special tools required

Plungers available to keep mud out



Expanding jaws securely grip inside wall of duct

Large number of jaw teeth (compared to other brands) result in a stronger grip

Premium Duct Pullers		
Duct Size	I.D.	Part #
1¼"	1.28" to 1.50"	00620-125
1½"	1.47" to 1.69"	00620-150
2"	1.88" to 2.12"	00620-200
2½"	2.25" to 2.50"	00620-250
3"	2.75" to 3.06"	00620-300
4"	3.50" to 4.06"	00620-400
5"	4.50" to 5.00"	00620-500
6"	5.44" to 6.12"	00620-600
8"	6.44" to 7.87"	00620-800

* Metric sizes available

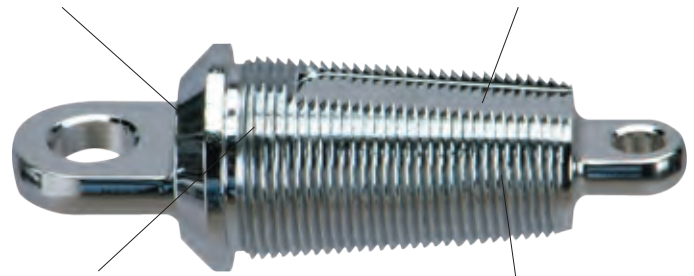


INNERDUCT PULLERS

Innerduct Pullers		
Duct Size	I.D.	Part #
½"		00604-050
¾"	0.72" to 0.93"	00604-075
1"	0.94" to 1.15"	00604-100
1¼"	1.26" to 1.44"	00604-125
1½"		00604-113
1½"	1.48" to 1.66"	00604-150
1¾"		00604-175
2"	1.91" to 2.08"	00604-200
2½"		00604-250

Phenomenal gripping power

Economical means of pulling small diameter duct and innerduct



No moving parts and maintenance free

Double cutting edges that actually cut a thread into the duct



SUPER DELUXE DUCT PULLERS

Super Deluxe Duct Pullers		
Duct Size	I.D.	Part #
1¼"	1.18" to 1.68"	00657-125
1½"	1.39" to 1.92"	00657-150
2"	1.68" to 2.40"	00657-200
2½"	2.24" to 2.90"	00657-250
3"	2.55" to 3.52"	00657-300
4"	3.31" to 4.52"	00657-400
5"	4.29" to 5.61"	00657-500
6"	5.20" to 6.69"	00657-600
8"	6.71" to 8.80"	00657-800

A rugged puller that is quick and easy to install and remove

Sealing on the inside of the product pipe makes this puller watertight



High-tensile drop-forged eyebolt

Can be disassembled by hand for easy maintenance in the field



DELUXE DUCT PULLERS

Deluxe Duct Pullers		
Duct Size	I.D.	Part #
1¼"	1.25" to 1.50"	00650-125
1½"	1.44" to 1.69"	00650-150
2"	1.81" to 2.19"	00650-200
2½"	2.19" to 2.56"	00650-250
3"	2.69" to 3.06"	00650-300
4"	3.44" to 4.25"	00650-400
5"	4.31" to 5.13"	00650-500
6"	5.06" to 6.06"	00650-600

* Metric sizes available

Precision machined, hardened alloy pulling head will handle the abuses of HDD

Expanding jaws grip the inside of the duct as the front eye is rotated, spreading the load evenly around the inside diameter of the duct



Outer sleeve prevents stretching of duct

Oversized rear eye



BREAKAWAY CONNECTORS

Designed To Protect Polyethylene Ducting From Overload.

Pocket Breakaway Swivel

Break strengths from 250 lb to 2,500 lb (1 pin)



Breakaway Swivel

Break strengths from 250 lb to 12,500 lb (5 pin)



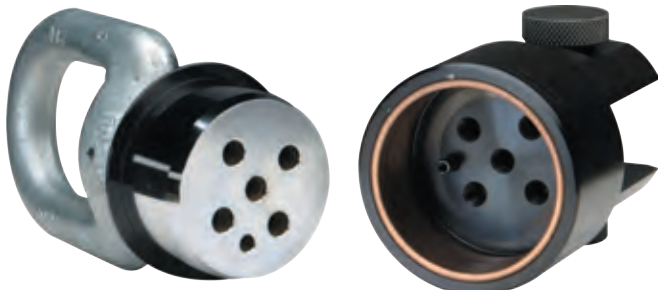
Standard-Duty Breakaway Connector

Break strengths from 750 lb to 12,500 lb



Heavy-Duty Breakaway Connector

Break strengths from 3,000 lb to 45,000 lb



Light-Duty Breakaway Swivels and Pins		
Description	Part #	
Pocket Breakaway Swivel	00570-202	
Breakaway Swivel	00570-208	
Breakaway Connector	00560-010	
Pin Kit (5 per kit)	Part #	Color Code
150 lb. pin kit	00565-015	Black / Red
250 lb. pin kit	00565-025	Brown
300 lb. pin kit	00565-030	Black / Orange
400 lb. pin kit	00565-040	Gray
700 lb. pin kit	00565-070	Green / Orange
750 lb. pin kit	00565-075	Yellow
1,000 lb. pin kit	00565-100	Orange
1,200 lb. pin kit	00565-120	Purple
1,300 lb. pin kit	00565-130	Black
1,500 lb. pin kit	00565-150	Red
2,000 lb. pin kit	00565-200	Blue
2,500 lb. pin kit	00565-250	Green

Heavy-Duty Breakaway Connectors and Pins		
Description	Part #	
Breakaway Connector	00560-020	
Pin Kit (5 per kit)	Part #	Color Code
3,000 lb. pin kit	00565-300	Yellow
6,000 lb. pin kit	00565-600	Orange
7,000 lb. pin kit	00565-700	Red
8,000 lb. pin kit	00565-800	Blue
9,000 lb. pin kit	00565-900	Green

Color-Coded Breakaway Pins



Need a custom puller designed for a specific job requirement?

See page 64





PULLING GRIPS

HDD Pulling Grips To Protect And Secure Your Product During Pullback.

Standard-Duty Wire Mesh Pulling Grips			
Duct Size	Outer Diameter Range	Breaking Strength	Part #
1/4"	.24" to .37"	4,250 lbs	00670-025
3/8"	.38" to .74"	5,000 lbs	00670-038
1/2" & 3/4"	.75" to 1.12"	6,600 lbs	00670-050
1"	1.13" to 1.49"	10,000 lbs	00670-100
1 1/4" & 1 1/2"	1.50" to 1.99"	13,800 lbs	00670-125
2"	2.00" to 2.49"	14,200 lbs	00670-200
2 1/2"	2.50" to 2.99"	17,500 lbs	00670-250

Heavy-Duty Wire Mesh Pulling Grips			
Duct Size	Outer Diameter Range	Breaking Strength	Part #
3/8"	.50" to .74"	5,800 lbs	00680-038
1/2" & 3/4"	.75" to 1.12"	6,700 lbs	00680-050
1"	1.13" to 1.49"	10,000 lbs	00680-100
1 1/4" & 1 1/2"	1.50" to 1.99"	16,400 lbs	00680-125
2"	2.00" to 2.50"	18,500 lbs	00680-200
2-1/2"	2.50" to 2.99"	24,500 lbs	00680-250
3"	3.00" to 3.74"	24,500 lbs	00680-300
4"	4.25" to 4.99"	31,000 lbs	00680-400



Made with a double weave of galvanized wire for maximum durability

Heavy-Duty

At least a 2X safety factor

Return weave design to avoid crimped ends



Standard-Duty

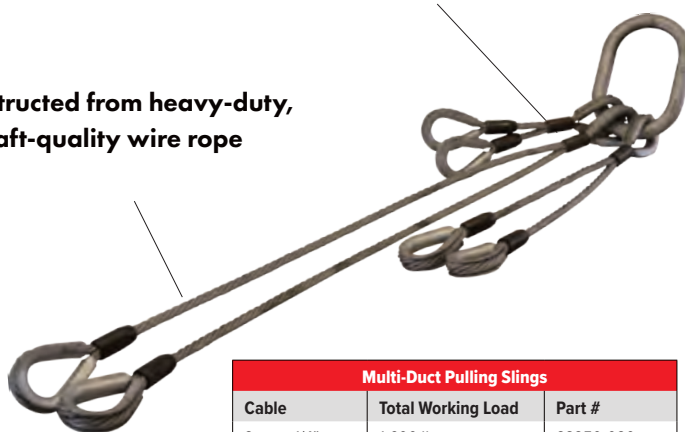


SHACKLES, LINKS & SLINGS

An inexpensive and effective way to hook up and pull 2 to 6 ducts at a time



Constructed from heavy-duty, aircraft-quality wire rope



These sturdy shackles & links connect all sizes of pulling grips and pullers.

Shackles	
Size	Part #
1/2"	SHACKLE-1/2
7/16"	SHACKLE-7/16
5/16"	SHACKLE-5/16
5/8"	SHACKLE-5/8
3/4"	SHACKLE-3/4
7/8"	SHACKLE-7/8
1"	SHACKLE-100

Links	
Size	Part #
1/2"	LINK-1/2
3/4"	LINK-3/4
5/8"	LINK-5/8
7/8"	LINK-7/8

Multi-Duct Pulling Slings		
Cable	Total Working Load	Part #
2-way, 1/4"	1,600 lbs	23250-020
3-way, 1/4"	2,900 lbs	23250-030
4-way, 1/4"	4,200 lbs	23250-040
2-way, 3/8"	9,600 lbs	23375-020
3-way, 3/8"	14,400 lbs	23375-030
4-way, 3/8"	19,200 lbs	23375-040
6-way, 3/8"	28,800 lbs	23375-060
2-way, 1/2"	13,800 lbs	23500-020
3-way, 1/2"	20,700 lbs	23500-030
4-way, 1/2"	27,600 lbs	23500-040
6-way, 1/2"	41,400 lbs	23500-060

SUB-SAVERS & ADAPTERS



CONVERTING TO THREADLESS

Use Your Existing Spline Or Threaded Connections And Convert Over To One Of Melfred Borzall's Threadless Tooling Options.

TRI-CON™ CONNECTION ADAPTERS

TRI-CON™ Connection Adapters		
Side 1 Thread & Gender	Side 2 Thread & Gender	Part Number
2" IF API (Pin)	2-1/8" Tri-Con™ (Box)	21M-76F
2" IF API (Pin)	2-5/8" Tri-Con™ (Box)	21M-77F
2-3/8" Reg API (Box)	2-5/8" Tri-Con™ (Box)	23F-77F
2-3/8" Reg API (Pin)	2-5/8" Tri-Con™ (Box)	23M-77F
2-3/8" Reg API (Pin)	2-5/8" Tri-Con™ (Pin)	23M-77M*
2-1/8" Tri-Con™ (Box)	5,000lbs Pulling Eye	76F-EYE305
2-1/8" Tri-Con™ (Box)	10,000lbs Pulling Eye	76F-EYE310
2-5/8" Tri-Con™ (Box)	10,000lbs Pulling Eye	77F-EYE310

*Replacement O-Ring for 23M-77M is Part #O-RING-221.



Looking for a TRI-CON™ Bit Body Adapter?
We got 'em! Check it out, along with all Bit
Bodies, on page 18.



TRI-CON SWIVEL ADAPTERS

Spline Connection Adapters		
Side 1 Thread & Gender	Side 2 Thread & Gender	Part Number
2-1/8" Tri-Con™ (Box)	4-1/4-ton Valu-DUB Swivel	00503-604-76F
2-1/8" Tri-Con™ (Box)	6-1/4-ton Valu-DUB Swivel	00503-607-76F
2-5/8" Tri-Con™ (Box)	10-ton Valu-DUB Swivel	00503-610-77F



Check out our TRI-CON Eagle
Claw on page 26, or the Iron Fist
on page 28.



*Tri-Con™ coiled pins (CP-050-250-HD) and punch tool (PUNCH-RP-044) sold separately.

STOCK ADAPTERS

Adapters for Vermeer® Threads					
Drill Rig	Front Thread ▶	2" IF Pin	2-3/8" Reg Pin	2-7/8" IF Pin	3-1/2" IF Pin
	Connection Type ▼	Part #	Part #	Part #	Part #
D6x6, D7x11, D7x11 S2, D9x13 S2/S3, D10x15	QuickFire® QF300	21M-L300MV3			
	1-5/8" Low Profile QD	21M-L42M			
D16X20, D16X20 S2, D18X22	QuickFire® QF400	21M-L400MV4	23M-L400MV4		
	2-1/8" Low Profile QD	21M-L43M	23M-L43M		
	FS250 Drill Rod	21M-32F	23M-32F		
D20X22 S2/S3, D24X26	QuickFire® QF400	21M-L400MV4	23M-L400MV4		
	2-1/8" Low Profile QD	21M-L43M	23M-L43M		
	FS400 Drill Rod	21M-30F	23M-30F		
D23X30, D24X40, D24X40 S2/S3	QuickFire® QF400	21M-L400MV4	23M-L400MV4		
	2-1/8" Low Profile QD	21M-L43M	23M-L43M	27M-L43M	
	FS600 Drill Rod	21M-40F	23M-40F	27M-40F	
D33x44, D36x50, D36x50 S2 D40X55	QuickFire® QF460	21M-L43M	23M-L460MV4	27M-L460MV4	
	2-1/8" Low Profile QD		23M-L43M	27M-L43M	
	FS650 Drill Rod		23M-46F		
	FS700 Drill Rod		23M-41F	27M-41F	
D50x100, D60X90	FS900 Drill Rod		23M-50F	27M-50F	
D80x100, D80x100 S2	FS800 Drill Rod			27M-80F	29M-80F
D80x120, D100x120	FS802 Drill Rod			27M-81F	
D100x120, D100x140	FS1000 Drill Rod			27M-82F	29M-82F

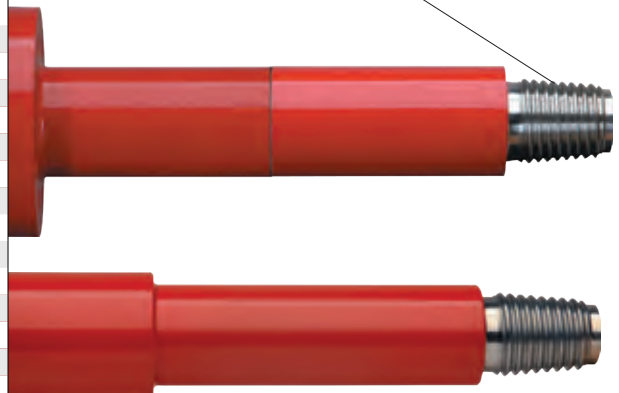
Adapters for Ditch Witch® Threads					
Drill Rig	Front Thread ▶	2" IF Pin	2-3/8" Reg Pin	2-7/8" IF Pin	3-1/2" IF Pin
	Connection Type ▼	Part #	Part #	Part #	Part #
JT520	1.21-6 EZ-Connect	21M-L52F			
JT9, JT920, JT921, JT922	1.63-6 EZ-Connect	21M-L55F			
	1.30-5 (coarse) Drill Rod	21M-09M			
	1.41-6 (fine) Drill Rod	21M-01M			
JT1220 Mach1	1.88-6 EZ-Connect	21M-L58F			
	1.47-4 Drill Rod	21M-34M			
JT1720	2.00-6 EZ-Connect	21M-L54F	23M-L54F		
	1.81-6 Drill Rod	21M-86M			
JT20, JT2020, JT2720	2.00-6 EZ-Connect	21M-L54F	23M-L54F		
	1.94-4 Drill Rod	21M-20M	23M-20M		
JT2720 Mach1	2.25-6 EZ-Connect	21M-36M	23M-L56F	27M-L56F	
	2.11-4 Drill Rod		23M-36M	27M-36M	
JT40	2.63-6 EZ-Connect		23M-L57F	27M-L57F	
	2.10 Drill Rod		23M-48M	27M-48M	
JT25, JT3020, JT30	2.25-6 EZ-Connect 3	21M-L59F	23M-L59F	27M-L59F	
	2.11-4 Drill Rod	21M-36M	23M-36M	27M-36M	
JT4020	2.63-6 EZ-Connect		23M-L57F	27M-L57F	
	2.40-4 Drill Rod		23M-42M	27M-42M	
JT4020 Mach1	2.63-6 EZ-Connect		23M-L57F	27M-L57F	
	2.59-4 Drill Rod		23M-43M	27M-43M	
JT60	2.46-4 Drill Rod			27M-60M	
JT7020, JT8020, JT100	3.27-4 Drill Rod			27M-72M	29M-72M

DRIVE CHUCKS & SUB-SAVERS COMPATIBLE WITH VERMEER & DITCH WITCH

Changing out worn sub-savers and drive chucks is an inexpensive and easy way to get the maximum life out of your drill rod. If they are allowed to wear too much, a drill rod's threads will start to deform to the shape of the worn sub-saver threads. When attaching the drill rod to the sub-saver or chuck, be sure to torque it up to the correct pressure.

Drive Chucks For Vermeer® Drill Rigs			
Drill Rig Model	Drill Rod Thread	Drive Flange Part #	Sub-saver Part #
D7x11a, D10x14, D10x15	FS200	VF-31M-FO-V	VS-31M-31F-4.0
D7x11 S2, D91x13 S2	FS200		VS-31M-32F-8.0
D16x20, D18x22, D20x22	FS250	VF-32M-FO-V	VS-32M-32F-4.0
D16x20S2	FS250		VS-32M-40F-10.1
D20X22 S2	FS400		VS-30M-40F-10.1
D23X30	FS600		VS-40M-40F-10.1
D24X40 S2	FS600	VF-40M-FO	VS-40M-40F-9.5
D24X40 S3	FS600		VS-40M-40F-10.1
D24X40A S/N 1-382	FS600	VF-40M-FO	VS-40M-40F-5.5
D24X40A S/N 383+	FS600	VF-40M-FO	VS-40M-40F-7.0
D40X40	FS600	VF-40M-FO	VS-40M-40F-8.5
D36X50 S2	FS650	VF-46M-FO	VS-46M-46F-7.9
D40X55 S3	FS650		VS-46M-46F
D36X50, D36X50 S2	FS700		VS-41M-41F-8.5
D40X55 S3	FS700	VF-41M-FO	VS-41M-41F-9.5
D50X100A, D80X100 S2	FS800		VS-80M-80F-7.0
D60X90 S2, D60X90 S3	FS900		VS-50M-50F-8.7
D100X120, D100X120 S2, D100X140	FS1000		VS-82M-82F-7.0

CNC-machined for a perfect match with your drill rod



Drive Chucks For Ditch Witch® Rigs			
Drill Rig Model	Drill Rod Thread	Drive Flange Part #	Sub-saver Part #
JT5	1.10-5	DF-04F	
JT920, JT921 - fine thread	1.41-6	DF-01AF	
JT922 - fine thread	1.41-6	DF-922-01AF	
JT922, JT9, JT10	1.30-5	DF-09F	
JT9, JT922, JT10	1.66 FS200	DF-09-31F	
JT1220	1.47-4	DF-34F	
JT20, JT2020	1.94-4	DF-20F	
	2-3/8" FS600	DF-20-40F	
JT30, JT3020	2.11-4	DF-25F	DS-25M-36F

Completely heat-treated alloy for maximum durability

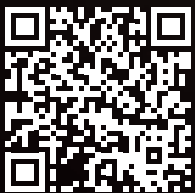


Fred Tip: Don't forget the Auntie C's thread lube!
See pg. 60



Most drive chucks are available with a replaceable, inexpensive sub-saver

REPLACEMENT PARTS &
ACCESSORIES





ORDERING REPLACEMENT PARTS HAS NEVER BEEN EASIER

We're taking the mystery and difficulty out of re-ordering those wearable parts on tooling by making them accessible directly on each of our major tooling product pages. **Click, click, done.**

REPLACEMENT PARTS

- PLUG FOR EAGLE CLAW MUDBOOST PORT**
 Part # PLUG-D4M1
 \$1.20
[Add to Cart](#)
- EAGLE CLAW SD SPRING CLIP | EC50 CUTTER**
[Add to Cart](#)

QUICK-ADD

Add without leaving the product page

Just click the "Add to Cart" button directly on the product page next to the replacement part of choice and see it pop up in your mini-cart.

FREQUENTLY ASKED QUESTIONS

What is the Eagle Claw SD Bit used for?

Designed user this bit is designed for HDD-pilot boxes that demand strong cutting power, prompt flaring response, and reduced vibration. It excels when drilling through hard rock, mixed ground, and tougher formations where maintaining control and progress is critical.

Technical detail: The Eagle Claw SD Bit features an aggressive 11-tooth carbide cutting design, a balanced body design to minimize vibration, and a crucial steering face that reacts quickly to

TOOL FAQs

Questions get answers before checkout

Most product categories have FAQs attached to the product page so you can checkout with 100% assurance that you have the right fit and part.

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AUNTIE C'S THREAD LUBE

Provides maximum protection against galling and seizing

Lead-free, environmentally safe compound with no zinc or temperature-sensitive materials

New 5-gallon bucket in Arctic Grade for cold conditions and for rigs with auto-luber to get all the lube out

For rigs with auto-lubers, we recommend using the Arctic Grade Auntie C's Thread Lube

Auntie C's Thread Lube			
Description	Part #	Arctic Grade Part #	Bulk Details
20 oz. tube	AS-402-JT		10 per carton
10 lb. (1 gal.) pail	AS-410	AS-410-AG	100 per pallet
20 lb. (2 gal.) pail	AS-420	AS-420-AG	60 per pallet
45 lb. (5 gal.) pail	AS-445	AS-445-AG	24 per pallet

Premium copper thread lube designed specifically for the demands of HDD



DRILL ROD WIPERS

Drill Rod Wipers				
Drill Pipe Diameter Range	Solid 9" Wiper Part #	Dual Split Wiper Part#	Wipe Diameter	Hole Size
1.125"	WIPE-0.88-09-NS		9" Dia.	0.875" Hole
1.6" - 1.75"	WIPE-1.13-09-NS		9" Dia.	1.13" Hole
1.75" - 2.25"	WIPE-1.50-09-NS	WIPE-1.50-09-DS	9" Dia.	1.5" Hole
2.25" - 2.6"	WIPE-2.00-09-NS	WIPE-2.00-09-DS	9" Dia.	2" Hole
2.6" - 3.1"	WIPE-2.50-09-NS	WIPE-2.50-09-DS	9" Dia.	2.5" Hole
3.1" - 3.5"	WIPE-3.00-09-NS	WIPE-3.00-09-DS	9" Dia.	3" Hole
14" Wipe with 3.00" Hole		WIPE-3.00-14-DS	14" Dia.	3" Hole
14" Wipe with 4.00" Hole		WIPE-4.00-14-DS	14" Dia.	4" Hole
14" Wipe with 4.50" Hole		WIPE-4.50-14-DS	14" Dia.	4.5" Hole
14" Wipe with 6.25" Hole		WIPE-6.25-14-DS	14" Dia.	6.25" Hole

Check out our wiper compatibility chart online for more detailed product specifications!
www.melfredborzall.com/drill-rod-wipers



Dual-split 9" Wiper

Solid 9" Wiper





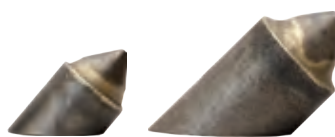
CARBIDE CUTTERS & BLOCKS



CC-01 CC-01-Block CC-10 CC-10-Block

High-quality carbide cutter teeth to rebuild your HDD tools fast and accurately.

Carbide Cutter Teeth				
Description	Width	Height	Thickness	Part #
Conical cutter – Small	0.44"	2.15"		CC-01
Cutter block – Small	1.63"	0.75"		CC-01-BLOCK
Conical cutter – Large	0.75"	3.37"		CC-10
Cutter block – Large	2.25"	1.75"		CC-10-BLOCK
Angled conical cutter – Small	0.76"	0.84"		CC-11
Angled conical cutter – Large	1.06"	1.26"		CC-21
Shark Tooth® cutter – Small	1.25"	1.25"	0.89"	CD-31-SHORT
Shark Tooth® cutter – Medium	1.43"	1.50"	0.75"	CD-31-MED
Shark Tooth® cutter – Large	2.66"	2.16"	0.89"	CD-51
Angled dome cutter – Small	1.06"	1.18"		CC-50
Angled dome cutter – Large	0.77"	0.83"		CC-50



CC-11 CC-21



CD-31-Short CD-31-Med CD-31



CC-51 CC-50



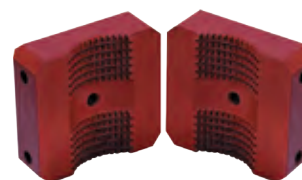
BREAKOUT JAWS

Breakout Jaws - DitchWitch® Compatible		
Drill Rig	Jaw Type	Part #
JT2020	Insert	JAW-20-INS
JT2720M1, JT3020, JT4020M1	Insert	JAW-37-INS
JT8020, JT100	Insert	JAW-100-INS

Breakout Jaws - Vermeer® Compatible		
Drill Rig	Jaw Type	Part #
D24a, D24x26	Stationary	JAW-30
D7x11, D10x15	Stationary	JAW-31
D7x11, D10x15	Cylinder	JAW-31-CT
D16x20	Stationary	JAW-32
D16x20	Cylinder	JAW-32-CT
D33x44	Stationary	JAW-33
D33x44	Insert	JAW-33-INS
D36x50	Stationary	JAW-36
D24x40a	Stationary	JAW-40
D24x40	Insert	JAW-40-INS
D40x40	Cylinder	JAW-40-CT
D50x100, 2 7/8" rod	Cylinder	JAW-50-CT
D50x100, 2 7/8" rod	Insert	JAW-50-INS
D50x100, D80x100, 3 1/2" rod	Cylinder	JAW-80-CT
D80x100, 3 1/2" rod	Insert	JAW-80-INS
D100x120, 3 1/2" rod	Insert	JAW-120-DIA-INS



Cylinder Side Breakout Jaws:
Breakout wrench replacement jaws



Stationary Side Breakout Jaws:
High quality replacement jaws



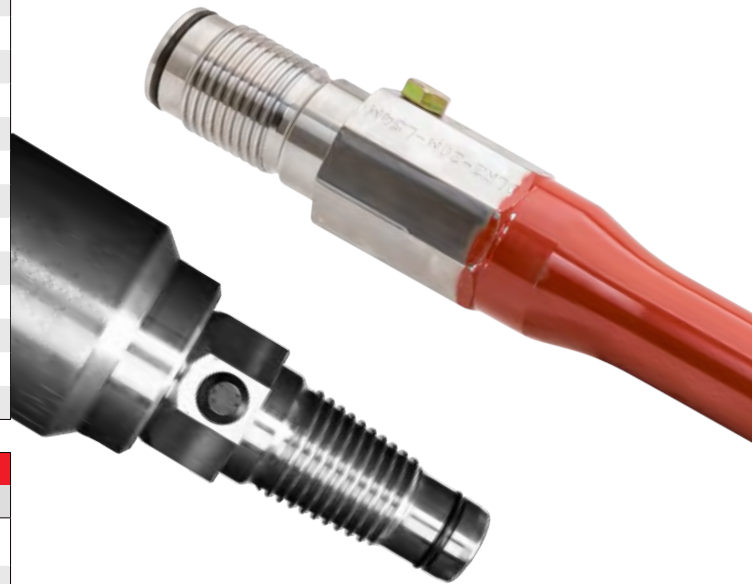
Breakout Jaw Inserts:
High quality replacement jaw inserts

COMMON BOLTS & O-RINGS

These are some of our most common bolts and o-rings that are requested, but you know how many different replacement parts there can be in the HDD tooling world. If you don't see your bolt or o-ring go online where we keep all replacement parts!

O-Rings for Adapters & Lead Rods			
MB Thread ID	Thread Designation	O-Ring Part #	Bolt/Pin Part #
77M	2-5/8" Tri-Con™	O-RING-221	CP-050-250-HD
L42M	1-5/8" Low Profile	O-RING-028	SHCS3/8X5/8
L43M	2-1/8" Low Profile	O-RING-029	SHCS1/2X3/4
L52M	1.31-6	O-RING-022	HHCS5/16X1/2
L54M	2.00-6	O-RING-130	HHFCS1/2X1.06
L55M	1.63-6	O-RING-027	HHCSM10X12
L56M	2.25-6 EZ3	O-RING-133	HHFCS1/2X1.06
L57M	2.63-6	O-RING-139	HHCS5/8X1
L58M	1.88-6	O-RING-221	SHCS3/8X5/8
L59M	2.25-6 EZ3	O-RING-224	SHCS1/2X3/4
L300M	QF300	O-RING-213	SHCS3/8X1/2
L400M	QF400	O-RING-218	HHFCS1/2X1.06
L460M	QF460	O-RING-323	HHFCS1/2X1.06
H350M	Hawkeye 350	O-RING-221	SHCS1/2X3/4

Eagle Eye Bolts & Nuts		
Compatible Eagle Eye	Bolt Part #	Nut Part #
EC35-FB42A1-305	FHHCS5/16X3.75	
EC35-FBLT1-305	HHCS5/16X3.75	5/16-NUT
EC42-FB50A1-305	FHHCS-.4375-4.25	
EC42-FBLT1-305	HHCS7/16X4.50	7/16-NUT
EC50-FB60-310	FHHCS1/2X5.00	
EC50-FBLT1-305	HHCS1/2X5.0	1/2-NUT



SAFETY GEAR

Conforms with ASTM F1117 and tested to 20,000 volts



Meets ASTM specification D-120

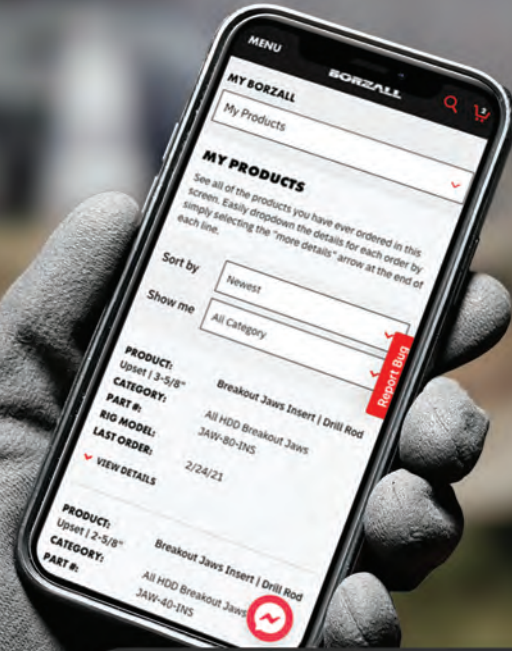


Dielectric rubber rated for usage at up to 17,000 volts

Safety Wearables	
Description	Part #
Rubber glove	1820-GLV
Leather protector	1820-PRO
Over-the-shoe Safety Shoe	1830-SH
Over-the-shoe Safety Boot	1830-SH

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With an online account, you still receive the tailor-fitted support of your local dealers.



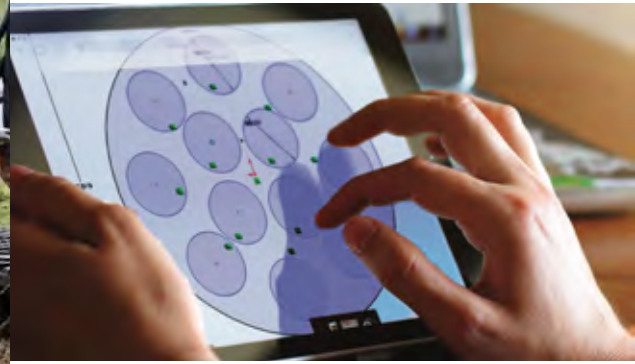
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Order online and it will be smart-routed to your nearest local distributor for expedited shipping.



Continue the personal relationship with your local dealer with the ease of online ordering.



No Such Thing as One-size-fits-all.

We pride ourselves in our array of standard tooling sizes to meet much of the HDD Industry's challenges today. But sometimes a job comes along that doesn't fit any mold, or maybe you just need a custom solution. Our team of engineers, machinists, and specialists can tackle any challenge you throw at them.

Go ahead...try it on for size.

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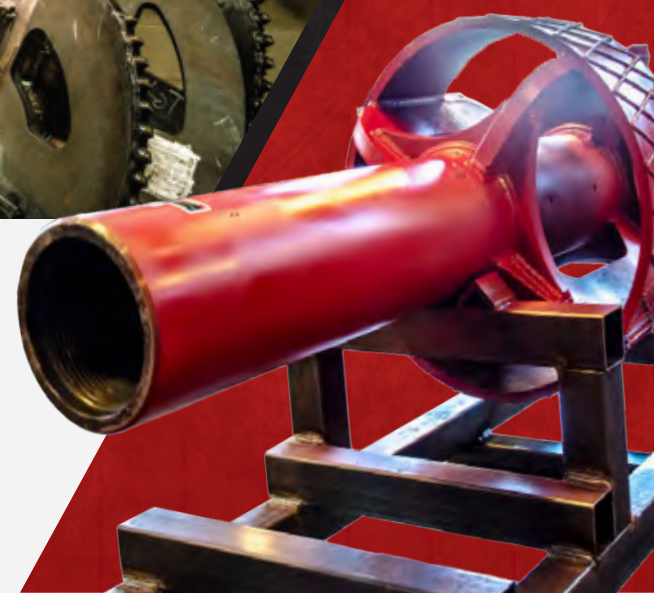
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RUBY RED ANNIVERSARY



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As a founding member of the HDD industry, we had the opportunity to grow up with it. Laser focus on HDD tooling from the beginning has provided us with unique manufacturing experience to fuel innovation.

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\$200k+

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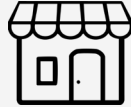
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 NJ, East NY**

Tarheel Contractors Supply, Inc.

Rock Hill, South Carolina - (800) 218-0492
 Rocky Mount, North Carolina - (800) 218-0492
 Murfreesboro, Tennessee - (800) 218-0492
 Marcy, New York - (800) 218-0492
 Hampton, Virginia - (800) 218-0492
 Millersville, Maryland - (800) 218-0492

AL, FL, MS

Atlantic Supply

Largo, Florida - (561) 531-9838
 Jacksonville, Florida - (689) 325-3443
 Orlando, Florida - (689) 325-3443
 Riviera Beach, Florida - (727) 639-7459
 Montgomery, Alabama - (334) 558-5338

MN, IA, East North Dakota

FS3, Inc.

Annandale, Minnesota - (320) 274-7223

OH, WV, IL, WI, PA, MI, IN, West NY

Whole Solutions, Inc.

Mineral Ridge, Ohio - (330) 652-1725
 Jackson, Michigan - (517) 888-3597

UT, AZ, ID, CO, SD, MT, WY, NE, WEST ND

Mountainland Supply, Inc.

Salt Lake City, Utah - (801) 981-5254
 Cedar City, Utah - (801) 981-5254
 Telleston, Arizona - (602) 278-0237
 Nampa, Idaho - (801) 981-5254
 Aurora, Colorado - (844) 665-9048

Canada

Guardian Equipment Limited

Saskatoon, Saskatchewan - (306) 850-9821

HDD Underground Solutions, Inc.

Edmonton, Alberta - (780) 340-8311

Boring Solutions

Peterborough, Ontario - (905) 410-2120
 Alliston, Ontario - (705) 816-5541

WORLDWIDE

Mexico

Master HDD

Saltillo, Coahuila - +52 844 107 4657

New Zealand, Pacific Islands

Blick Group

Te Rapa, New Zealand - +64 7 849 2366

Netherlands, Germany

SlimDril BV

Rotterdam, Netherlands - +44 149 365 6145

United Kingdom

TA Drilling

St Leonards-on-Sea, England - +14 2 485 4112

FI, SE, NO, DK

Maakone

Pori, Finland - 358 50 5142195

PL, LT, EE, LV

Dakor

Warsaw, Poland - +48 530 212 657

France

M.O.S.T.:

Materiels et Outils pour le Sans Tranchee

IGNY, France - +33 (0)1 69 33 17 39

Australia

Queensland Drilling Sales & Supplies

Campbellfield, Victoria - +61 4 332 86136
 Arundel, Queensland - +04 0 318 7873