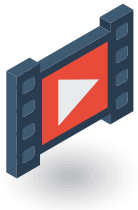
HDD TOOLING CATALOG
2023



MELFRED BORZALL

SCAN & UNLOCK MORE



TRAINING & TOOLING VIDEOS

Explore training videos on how to assemble tooling or deep dive into a single tool's full functionality. A video is worth ten-thousand words!



BLOGS, CASE STUDIES & MANUALS

Explore our vast archve of HDD headlines, press releases, case studies and more on every topic from how to size a reamer to choosing the right hard ground bit. Soon, you will also be able to access tooling instruction and safety manuals online too!



SHOP ONLINE FROM THE JOBSITE

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 will automatically determine the nearest local tooling distributor to ship from to expedite delivery times. All orders are reviewed by an HDD specialist to ensure you have the right tools for the job.

UNLOCK EVEN MORE FEATURES WHEN YOU OPEN A

MYBORZALL ACCOUNT

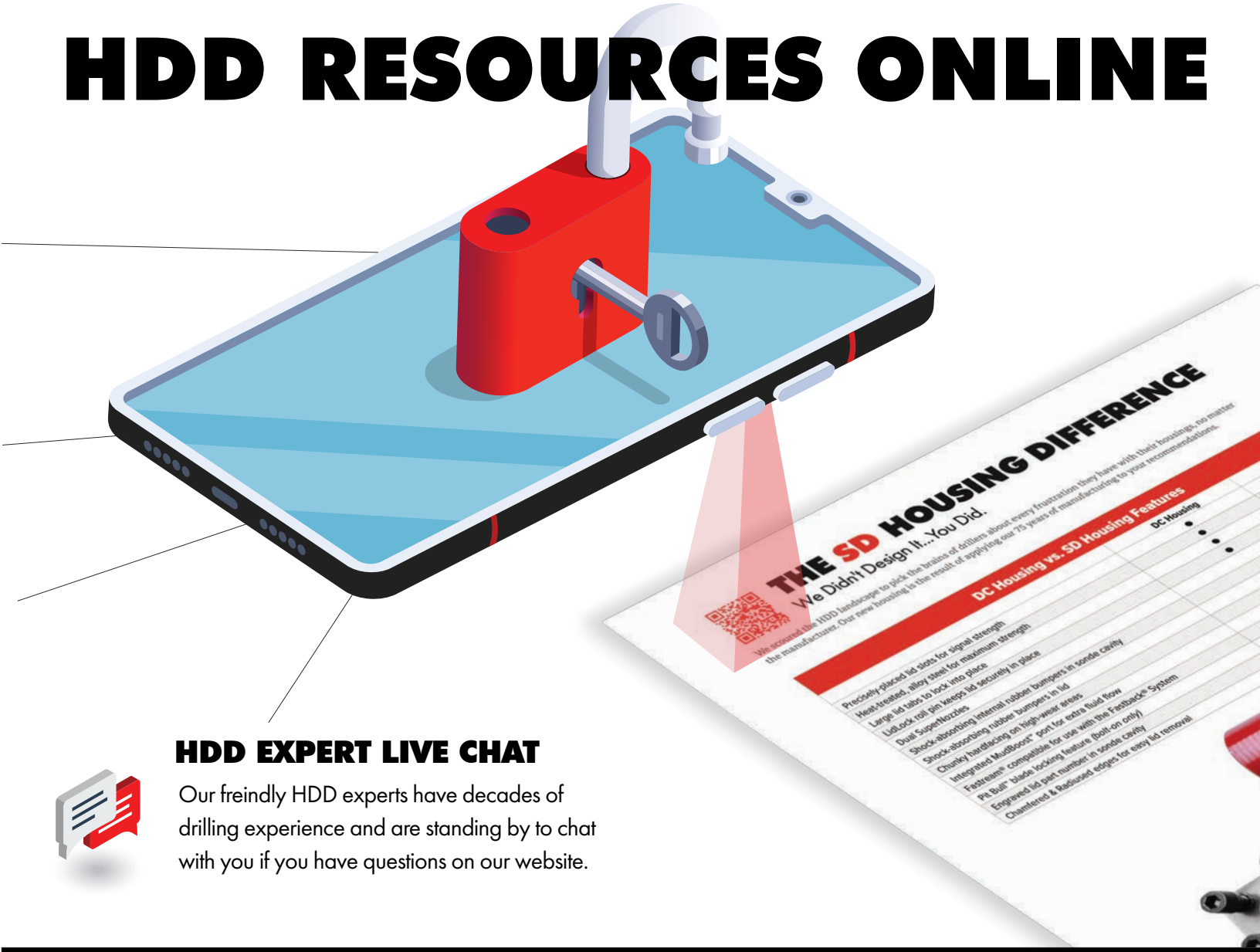


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HDD RESOURCES ONLINE



HDD EXPERT LIVE CHAT

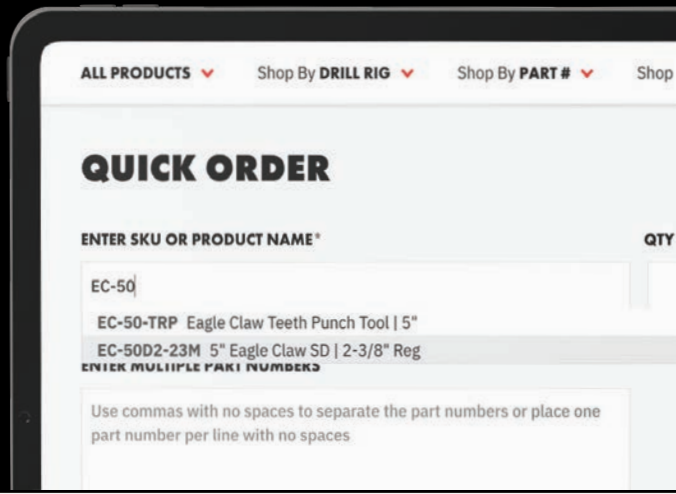
Our freindly HDD experts have decades of drilling experience and are standing by to chat with you if you have questions on our website.

ORDER TRACKING & ONLINE ACCOUNT MANAGEMENT

Add customized employee access, manage company orders, track shipments, attach P.O.'s to orders and much more right in your MyBorzall Account.

QUICK-ORDER & CUSTOM TOOL LISTS

Upload a CSV or Excel spreadsheet that is exported from your software for large tooling orders as well as organize and save your own custom tooling lists in the MyBorzall online account.



Visit www.melfredborzall.com to start shopping today!

75 YEARS OF HDD



1946

Fred Melsheimer launches Melfred Welding & Manufacturing, designing and creating tools for the first horizontal directional drilling system.



1960s

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



1990s

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



2010s

Eric Melsheimer becomes President of Melfred Borzall and his brother, Peter, Vice President of sales and marketing as they make an impact with the tech boom of underground fibre optic utility with the FastBack System.



TODAY

In 2021, we celebrated our 75th anniversary. Moving into 2022 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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Transmitter Housings.....3


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TRANSMITTER HOUSINGS

Ground-breaking sonde protection & performance for harsh ground conditions

THE SD HOUSING DIFFERENCE

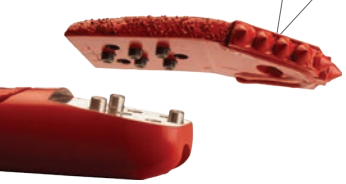
We Didn't Design It...You Did.

We scoured the HDD landscape to pick the brains of drillers about every frustration they have with their housings, no matter the manufacturer. Our new housing is the result of applying our 75 years of manufacturing to your recommendations.

DC Housing vs. SD Housing Features		
	DC Housing	SD Housing
Precisely-placed lid slots for signal strength	●	●
Heat-treated, alloy steel for maximum strength	●	●
Large lid tabs to lock into place	●	●
LidLock roll pin keeps lid securely in place	●	●
Dual SuperNozzles		●
Shock-absorbing internal rubber bumpers in sonde cavity		●
Shock-absorbing rubber bumpers in lid		●
Chunky hardfacing on high-wear areas		●
Integrated MudBoost™ port for extra fluid flow		●
Fastream® compatible for use with the Fastback® System		●
Pit Bull™ blade locking feature *(bolt-on only)*		●
Engraved lid part number in sonde cavity		●
Chamfered & Radiused edges for easy lid removal		●







Pit Bull™ Ready

Minimize the chance of shearing a bolt, rattling it out or possibly losing a directional blade.



Sonde Bumpers

Lid & sonde pocket cavity bumpers to cushion the sonde and extend its life in hard conditions.

Covered by patents 9,713,344, 10,246,993, and patents pending.



Dual Nozzle
Double the jet power with two SuperNozzles



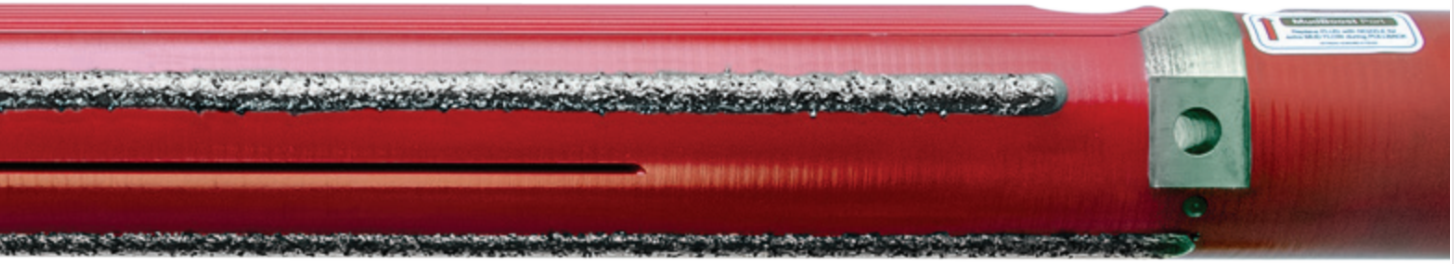
Lid Locking Pins
Dual lid retention system uses roll pin for extra lid security





FastBack® Ready
Attach FastReam® Cutter Blocks to enlarge a hole up to 12" during pullback. See pg. 14 for more details

Even More Hardfacing
Robotically-applied carbide hardfacing on all high-wear areas, including the nose, which can increase the housing life up to 50%





Integrated End Bumper
Pre-installed in Digitrak Housings (Part # 5000-BUMPER5).



MudBoost™ Port
Now integrated directly in the tail of the housing for extra fluid flow during pullback.

SD HOUSING | SIDE-LOAD, *BOLT-ON*

Newly-Designed With Shock Absorption, Wear Life Upgrades And Pit Bull Features For Drilling With Your Favorite Directional Blade.

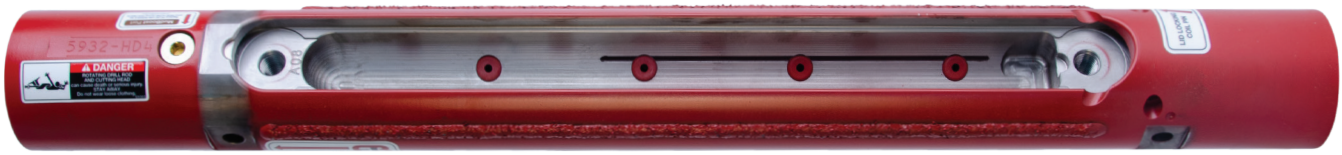


Using DigiTrak & UMag 2-cell Transmitters					Replacement Parts				
Drill Rig Thrust	Diameter	Thread (rear)	Bolt Pattern	Housing	Blade Bolts	Housing Lid	LidLock Pin	Lid Bolts	Pit Bull Dowel Pin
< 8,000 lb.	2.5"	FS200	VER 5, 3/8" bolts	**5625-HT4-06**	SHCS3/8X3/4	5625-HT4-CP	RP-038-175*	SHCS3/8X3/4	DP-050X075
6,000 - 10,000	2.5"	2" IF	VER 6, 1/2" bolts	**5625-HT4-13**	SHCS1/2X1	5625-HT4-CP	RP-038-175*	SHCS1/2X3/4	DP-075X075
10,000 - 20,000	2.75"	2" IF	VER 6, 1/2" bolts	**5627-HT4-13**	SHCS1/2X1	5627-HT4-CP	RP-038-175	SHCS1/2X3/4	DP-075x100
20,000 - 40,000	3.25"	2.375" Reg	VER 6, 1/2" bolts	**5632-HT4-13**	SHCS1/2X1	5632-HT4-CP	RP-038-200	SHCS1/2X3/4	DP-075x100
40,000 - 80,000	4.25"	2.875" IF	VER 6, 5/8" bolts	**5742-HT4-23**	SHCS5/8X1-1/4	5742-HU4-CP	RP-038-200	SHCS1/2X3/4	

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	RP-038-175*	SHCS12MMX20MM	DP-050X075
6,000 - 20,000	2.75"	2" IF	DW 5, 12mm bolts	**5927-HD4-14**	SHCS12MMX25MM	5927-HD4-CP	RP-038-175*	SHCS12MMX20MM	DP-050X075
20,000 - 30,000	3.25"	2.375" Reg	DW 6, 16mm bolts	**5932-HD4-15**	SHCS16MMX35MM	5932-HD4-CP	RP-038-200	SHCS16MMX25MM	DP-075x100
20,000 - 40,000	3.5"	2.375" Reg	DW 6, 16mm bolts	**5935-HD4-15**	SCHS16MMX35MM	5935-HD4-CP	RP-038-200	SHCS16MMX25MM	DP-075x100
40,000 - 80,000	4.25"	2-7/8" IF	DW 6, 20mm bolts	**5942-HD4-25**	SCHS20MMx40MM	5942-HD4-CP	RP-038-200	SHCS16MMX25MM	

SD HOUSING | SIDE-LOAD, *THREAD-ON*

Newly-Designed 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**	5625-13	5625-HT4-CP	RP-038-175	SHCS1/2X3/4
10,000 - 20,000	2.75"	2" IF	2" IF	**5627-HT4**	5627-13	5627-HT4-CP	RP-038-175	SHCS1/2X3/4
20,000 - 40,000	3.25"	2.375" Reg	2.375" Reg	**5632-HT4**	5632-13	5632-HT4-CP	RP-038-200	SHCS1/2X3/4
40,000 - 50,000	3.5"	2.375" Reg	2.375" Reg	**5635-HT4**	5635-13	5635-HT4-CP	RP-038-200	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**	5927-14	5927-HD4-CP	RP-038-175	SHCS12MMX20MM
20,000 - 40,000	3.25"	2.375" Reg	2.375" Reg	**5932-HD4**	5932-15	5932-HD4-CP	RP-038-200	SHCS16MMX25MM
40,000 - 50,000	3.5"	2.375" Reg	2.375" Reg	**5935-HD4**	5935-15	5935-HD4-CP	RP-038-200	SHCS16MMX25MM

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
50,000 - 80,000	4.25"	2.875" IF	2.875" Reg	**5742-HU4**	1742-23, 1942-25	5742-HU4-CP	RP-038-200	SHCS1/2X3/4
80,000 - 150,000	4.75"	3.5" IF	3.5" Reg	**5747-HU4**	1748-33	5748-HU4-CP	RP-038-200	SHCS1/2X3/4

DC HOUSING | SIDE-LOAD, *BOLT-ON*

High Quality, Low Cost Housing With A Dual Lid-locking Design.



Using DigiTrak & UMag 2-cell Transmitters					Replacement Parts		
Drill Rig Thrust	**Diameter**	**Rear Thread**	**Bolt Pattern**	**Housing**	**Blade Bolts Part #**	**Housing Lid Part #**	**Lid Bolts Part #**
< 8,000 lb.	2.5"	FS200	VER 5, 3/8" bolts	**3625-HT3-06**	SHCS3/8X5/8	3625-HT3-CP	SHCS3/8X3/4
10,000 - 20,000	2.75"	2" IF	VER 6, 1/2" bolts	**3627-HT3-13**	SHCS1/2X1	3627-HT3-CP	SHCS1/2X3/4
20,000 - 40,000	3.25"	2.375" Reg	VER 6, 1/2" bolts	**3632-HT3-13**	SHCS1/2X1	3632-HT3-CP	SHCS1/2X3/4

Using Subsite® Transmitters					Replacement Parts		
Drill Rig Thrust	**Diameter**	**Rear Thread**	**Bolt Pattern**	**Housing**	**Blade Bolts Part #**	**Housing Lid Part #**	**Lid Bolts Part #**
6,000 - 20,000	2.75"	2" IF	DW 5, 12mm bolts	**3927-HD3-14**	SHCS12MMX25MM	3927-HD3-CP	SHCS12MMX20MM
20,000 - 30,000	3.25"	2.375" Reg	DW 6, 16mm bolts	**3932-HD3-15**	SHCS16MMX35MM	3935-HD3-CP	SHCS16MMX25MM

Removable Pit Bull dowel pins for use with standard blades

THREAD-ON BIT BODIES

Use Bolt-on Blades With Your Thread-on Style Housing.

Bolt-On Bit Bodies Compatible with Vermeer® Drill Rigs			
Diameter	**Thread**	**Bolt Pattern**	**Bit Body Part #**
2.5"	2" IF	VER 6, 1/2" bolts	5625-13
2.75"	2" IF	VER 6, 1/2" bolts	5627-13
3.25"	2.375" Reg	VER 6, 1/2" bolts	5632-13
4.25"	2.875" Reg	VER 6, 5/8" bolts	1742-23*

Bolt-On Bit Bodies for Ditch Witch® Drill Rigs			
Diameter	**Thread**	**Bolt Pattern**	**Bit Body Part #**
2.75"	2" IF	DW 5, 12mm bolts	5927-14
3.25"	2.375" Reg	DW 6, 16mm bolts	5932-15
3.50"	2.375" Reg	DW 6, 16mm bolts	5935-15
4.25"	2.875" Reg	DW 6, 20mm bolts	1942-25*

**The 4.25" diameter bit bodies do not come equipped with Pit Bull™ removable dowel pins.*



Check valve minimizes chance of clogging nozzle



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. Ideal for use with mud motors, Eagle Claw & Iron Fist bits and bolt-on bit bodies. 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
80,0000 - 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

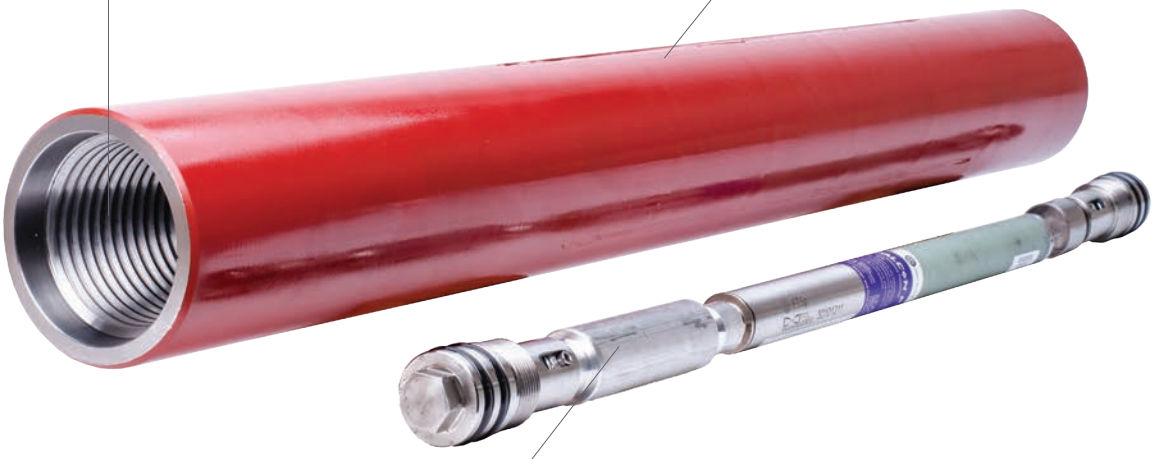
Transmitter Kits for High Flow Housings		
Transmitter Type	**When Using ELH-350, 425, 487**	**When Using ELH-638**
DigiTrak®, 15"	ELH-DIGI-KIT	ELH638-DIGI-KIT
DigiTrak®, 19"	ELH-DIGIXL-KIT	ELH638-DIGIXL-KIT
DigiTrak®, Cable 15"	ELH-DIGIWIRE-KIT	ELH638-DIGIWIRE-KIT

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

End-load design for maximum torsional, compressive and bending strength

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

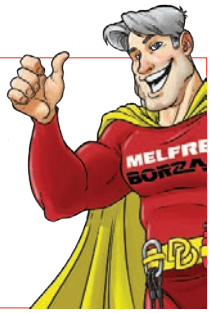
Multiple fluid passages allow for maximum flow without pressure restrictions





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

Learn more about our mud motor options available on pages 46-47.





FASTBACK SYSTEM

FOR DIRECT PULLBACK

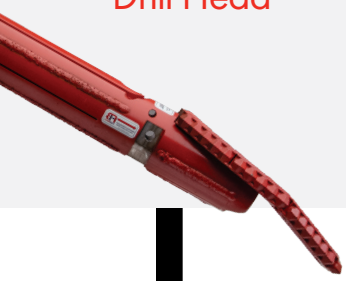
Ream And Pullback Without Ever Taking Off The Drill Head. Save Time, Increase Productivity, Save Money.

WHAT IS 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 pg. 6

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

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

HANDLE JOBS WITH LIMITED ACCESS BETTER

Using the FastBack System in tight spaces such as suburban street-to-house shots, will enable you to work around other vital buried utilities and stay on schedule.



SPEED UP YOUR PRODUCTION

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



FASTREAM® CUTTER BLOCKS

Ream Without Ever Taking Off The Drill Head.



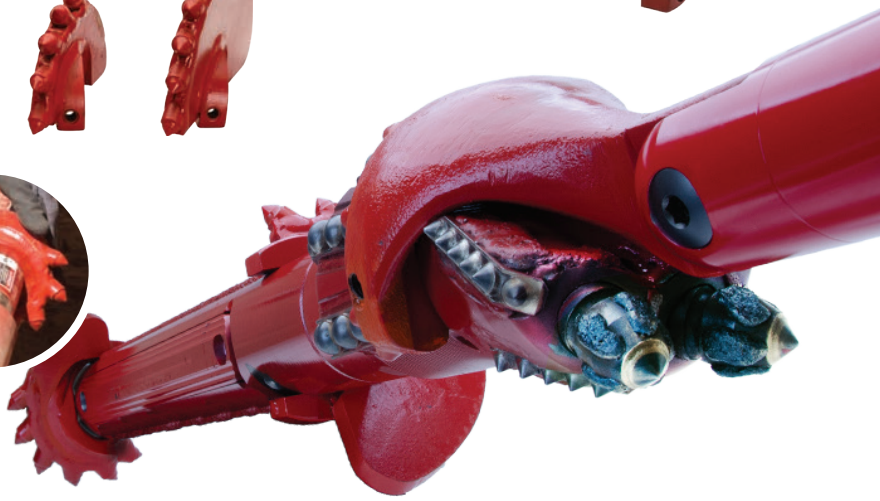
TE series cutters are designed after our best selling reamer, the Tornado

EX series cutters are designed after our cobble bit, the Iron Fist







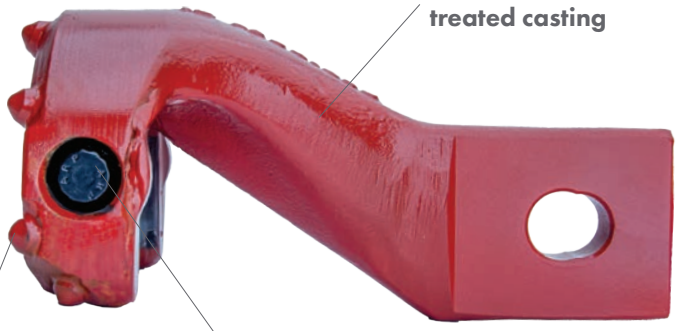


Fastream Cutter Blocks		
Housing Diameter	Cutting Diameter	Part Number
2.5"	4.5"	FR-250-EX-45
2.5"	6"	FR-250-TE-47-60
2.5"	8"	FR-250-TE-47-80
2.5"	10"	FR-250-TE-57-10
2.75"	6"	FR-275-TE-47-60
2.75"	8"	FR-275-TE-47-80
2.75"	10"	FR-275-TE-57-10
2.75"	12"	FR-275-TE-80-12
3.25"	6"	FR-325-EX-35-60
3.25"	8"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

EAGLE EYE

Fast Pull Back Using Your Eagle Claw Bit

Be ready for direct pullback in a matter of minutes. Bolt your Eagle Eye onto your Eagle Claw bit for direct pullbacks and provide a secure link that keeps the swivel straight and on the center line. Eagle Eye's heat-treated one-piece design with carbide buttons gives you maximum strength and longevity.



Single-piece heat treated casting

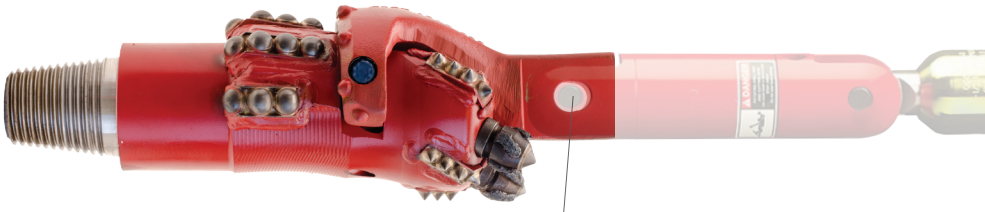
Carbide buttons extend the wear life

We us the same high-clamp load 12-point bolts used in auto racing applications

Eagle Eye		
Eagle Claw Size	Part#	Bolt Size
3.5"	EC35-FB42A1-305	5/16" x 3.75L
4.25"	EC42-FB50A1-305	7/16" x 4.25L
5"	EC50-FB60-310	1/2"-13 x 5.0L

Check out more details on the Eagle Claw SD bits on pg. 21





Attach, and hold in line, a swivel for direct pullback

QUICK-SWIVEL & QUICK-LINK

Fast, & Secure Direct Pullback Without Removing the Blade.

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



Quik 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

Both are engineered to hold the swivel rotation on center

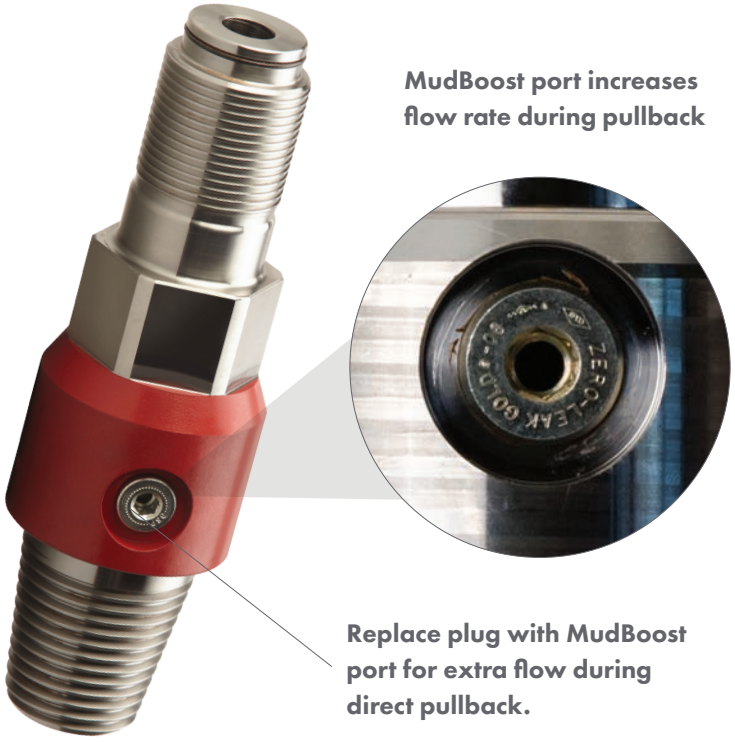


FASTBACK® MUDBOOST ADAPTERS

Boost Your Flow For A Clean Hole

MudBoost is a feature available for adapters that gives added fluid power right where you need it. Replace the plug with the MudBoost port on pullback and for increased cutting power and better returns.

MudBoost feature can be added to just about any Borzall adapter. Call us to get the adapter you need with the power of MudBoost.



MudBoost port increases flow rate during pullback

Replace plug with MudBoost port for extra flow during direct pullback.

BITS
& BLADES

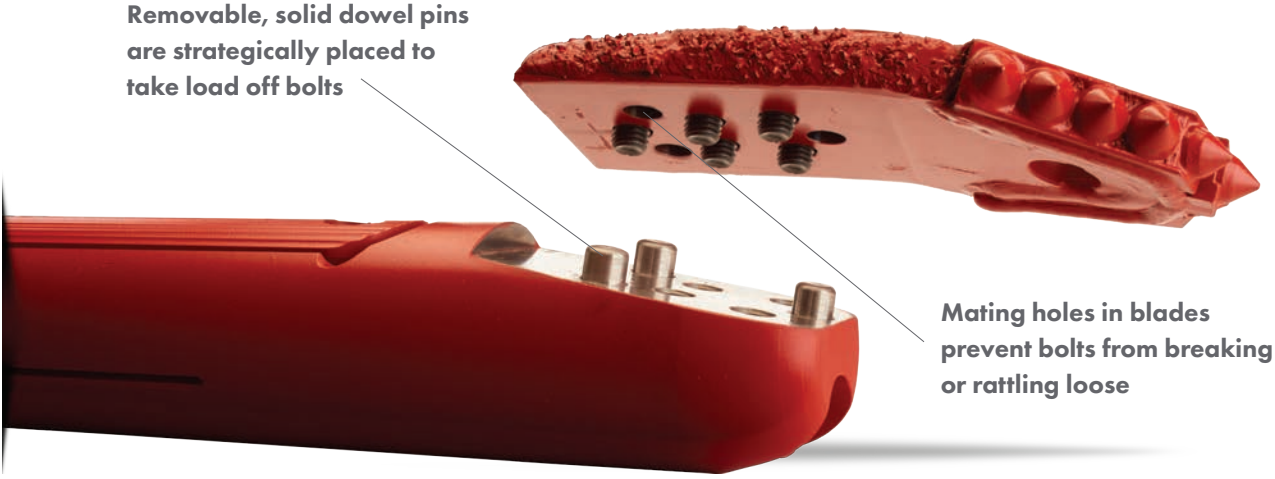
HDD's Most Popular Bits and Directional Blades Featuring the Pit Bull Design

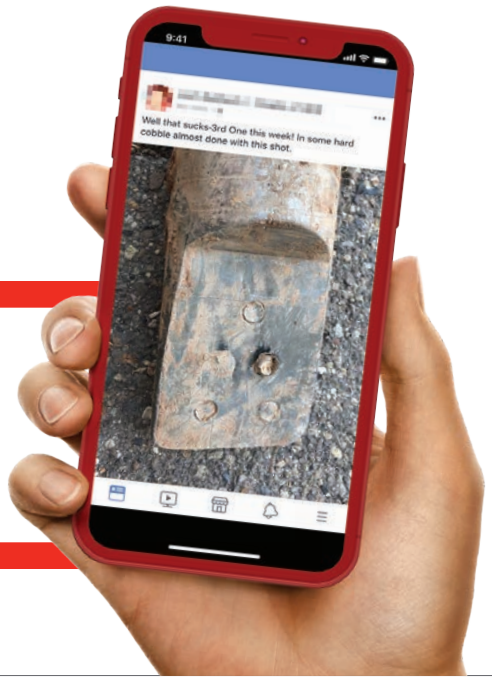


EXCLUSIVE TO BORZALL BLADES:
THE PIT BULL DESIGN

This patent-pending 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





NEVER LOSE ANOTHER BLADE DOWNHOLE.

RED DIAMOND BLADE

100% Carbide Coverage For Drilling In Harder Ground Conditions.

BEST FOR: SHALE, CALICHE

GOOD FOR: SANDSTONE, GRAVEL, HARDPAN

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



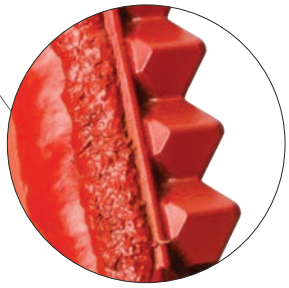
QuickSwivel Compatible (See pg. 13)



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

STEEP TAPER ULTRABIT 3

Drill Through Cobbles & Other Harder Ground Conditions.

BEST FOR: COBBLES, CALICHE

GOOD FOR: SHALE, GRAVEL

Vermeer® Compatible Blades							
Product description	Cut Size						
	3.5"	4"		5"		6"	7"
	Conical	Conical	Dome	Conical	Dome	Conical	Conical
5 bolt, 3/8"	1800-06-35-BSU3						
6 bolt, 1/2"		1800-13-40-BSU3	1600-13-40-BSUD	1800-13-50-BSU3	1800-13-50-BSUD		1610-13-70-BSU3
6 bolt, 5/8"				1610-23-50-BSU3	1610-23-50-BSUD	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, 25mm						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. 13)



Available with dome carbides for cobble and gravel

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

Chunky carbide hardfacing the entire length of blade

Bit of choice where directional "pushes" are difficult

ULTRABIT 3

All-Around Solution With Great Steering.

BEST FOR: SHALE, SANDSTONE

GOOD FOR: SAND, CALICHE

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, 25mm				1610-25-60-BBU3*

** Blade is not compatible with Pit Bull™ Features.*



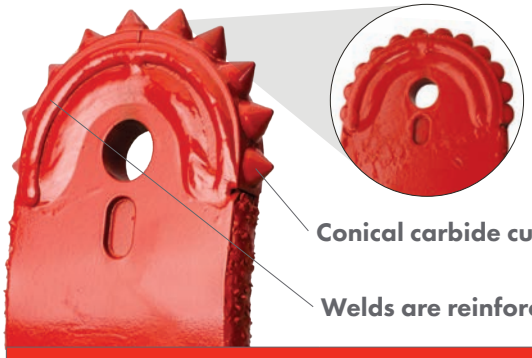
Conical carbide cutters make this an aggressive bit for hard soils

Chunky carbide hardfacing the entire length of blade for maximum longevity

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

ROCK SAW

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



Available with dome carbides for cobble

Also available in larger sizes, 7-9"

Conical carbide cutters for aggressive forward &side cutting

Welds are reinforced with hardfacing for longer bit life

BEST FOR: HARDPAN, GRAVEL

GOOD FOR: COBBLES

Vermeer® Compatible Blades								
Bolt Pattern	Cut Size							
	3.5"		4"		5"		6"	
	Conical	Dome	Conical	Dome	Conical	Dome	Conical	Dome
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	1800-13-60-BBXD

Ditch Witch® Compatible Blades								
Bolt Pattern	Cut Size							
	3.5"		4"		5"		6"	
	Conical	Dome	Conical	Dome	Conical	Dome	Conical	Dome
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	1800-15-60-BBXD

BEAR CLAW

Rugged Design Chews Through Caliche & Sandstone.

Vermeer® Compatible Blades	
Bolt Pattern	Cut Size
	4"
6 bolt, 1/2"	1600-13-40-BBBC

Ditch Witch® Compatible Blades			
Bolt Pattern	Cut Size		
	3.5"	4"	5"
5 bolt, 12mm	1600-14-35-BBBC	1600-14-40-BBBC	
6 bolt, 16mm		1600-15-40-BBBC	1600-15-50-BBBC



All Melfred Borzall directional blades are QuickSwivel Compatible.
See page 13

Large conical carbide cutters eat through caliche & sandstone



Hardfacing along all wear edges create a long-lasting blade

BEST FOR:

SAND

CALICHE

GOOD FOR:

DIRT/SANDY LOAM

Bullnose design minimizes drag while rotating



Pit Bull feature is not available with the Excalibur or Bear Claw blades

BEST FOR:

SAND

CLAY

GOOD FOR:

DIRT/SANDY LOAM

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

EAGLE CLAW SD

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



Eagle Claw SD			Replacement Cutters				EagleEye Attachment
Cut Size	Thread	Part #	Aggessive Conical	Dome	Large Conical	Concial w/ Carbide Hardfacing	Part #
3.5"	2" IF pin	EC-35D2-21M	EC35-C-01	EC35-C-02	EC35-C-03	EC35-C-03-X	EC35-FB42A1-305
4.25"	2" IF pin	EC-42D2-21M	EC42-C-01	EC42-C-02	EC42-C-03	EC42-C-03-X	EC42-FB50A1-305
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
5"	2-3/8" Reg pin	EC-50D2-23M	EC50-C-01	EC50-C-02	EC50-C-03	EC50-C-03-X	EC50-FB60-310
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-65D2-26M	EC-65-C-01	EC65-C-02	EC65-C-03	EC65-C-03-X	
6.5"	3-1/2" Reg pin	EC-65D2-28M	EC-65-C-01	EC65-C-02	EC65-C-03	EC65-C-03-X	

Fluid Port Port Plug Part# PLUG-04MP



BEST FOR: SHALE, SANDSTONE

GOOD FOR: HARDPAN



Directly pullback product with the Eagle Eye device, part of the FastBack Pullback System.
See Page 12



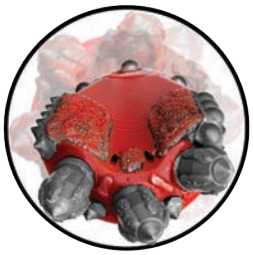
Aggressive tri-tooth carbide cutting action with quick-change straight-through knockout holes.

Steering face has conical shape for quicker reaction to directional "pushes"

100% coverage dome carbides provide great wear resistance without cutting top of hole for great steering.

Extra fluid port on reverse side for more flow during pullback

Minimize chance of clogging with built-in check valve



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



Tooth removal punch tool also available
www.melfredborzall.com/bits-blades/bit-parts

IRON FIST BIT

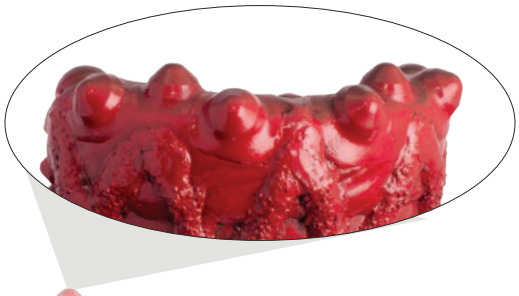
Packs A Punch In Cobble And Loose Rock Conditions. Also Designed To Be Easily Rebuilt At A Fraction Of The Cost.

BEST FOR: COBBLES, GRAVEL

GOOD FOR: CALICHE

Iron Fist Bits			Replacement Cutter Blocks					EagleEye Attachments
Cut Size	Thread	Dome Bit	Aggressive-Left	Aggressive-Right	Dome-Left	Dome-Right	Side Cutters	Part #
4"	2" IF pin	IF-40DC3-21M	IF40-C-01-L	IF40-C-01-R	IF40-C-02-L	IF40-C-02-R		EC35-FB42A1-305
5"	2-3/8" Reg pin	IF-50DC3-23M	IF50-C-01-L	IF50-C-01-R	IF50-C-02-L	IF50-C-02-R	IF50-C-01-S	EC42-FB50A1-305
6"	2-7/8" Reg pin	IF-60DC3-26M	IF60-C-01-L	IF60-C-01-R	IF60-C-02-L	IF60-C-02-R	CC-01X4	
6"	3-1/2" Reg pin	IF-60DC3-28M	IF60-C-01-L	IF60-C-01-R	IF60-C-02-L	IF60-C-02-R	CC-01X4	

Fluid Port Port Plug Part# PLUG-04MP

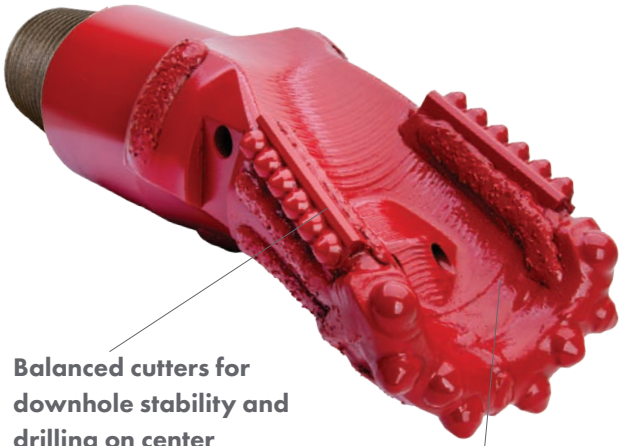


Main carbide cutters positioned to allow for "rocking" the bit through cobbles



Compact cutters are less likely to hang up on cobbles

Chunky carbide hard facing, on all wear areas



Balanced cutters for downhole stability and drilling on center

Steep, concave steering for quick response



Minimize chance of clogging with built-in check valve

Extra fluid port for more flow during pullback



QUICK DISCONNECTS
& COLLARS

The Safer, Easier Way To Swap & Secure Tooling On Your Vermeer® And Ditch Witch® Drill Rigs.

VERMEER® COMPATIBLE QUICK-DISCONNECTS

Deluxe & Value Quick-Disconnects That Fit Your Rig Perfectly And Keep You Running Smoothly.

DELUXE
QUICK-DISCONNECTS

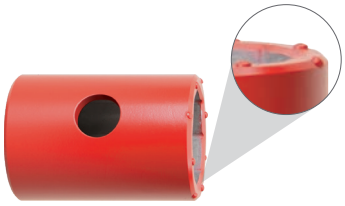


VALUE
QUICK-DISCONNECTS




Chunky Carbide


Carbide Cutters


Carbide Stud

Quick-Disconnect Compatiblity 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 QuickFire® 300		VLRV-31F-L42F-XL	VLR-20-HC-HFC VLR-L300-OC-HFC	VLR-20-HC-HFCS	VLR-20-HC-C
D16x20, D16x20 S2	1.90 FS250	2-1/8" Low Profile QuickFire® 400	VLR-32F-L43F VLR-32F-L400F	VLRV-32F-L43F	VLR-25-HC-HFC VLR-L400-OC-HFC	VLR-25-HC-HFCS VLR-L400-OC-HFCS	VLR-25-HC-C
D20x22 S2, D20x22 S3, D23x30 S3, D24x26, D24x33	2.06" FS400	2-1/8" Low Profile QuickFire® 400	VLR-30F-L43F-XXL VLR-30F-L400F	VLRV-30F-L43F-XXL VLRV-30F-L400F	VLR-25-HC-HFC VLR-L400-OC-HFC	VLR-25-HC-HFCS VLR-L400-OC-HFCS	VLR-25-HC-C
D23X30 S2, D23X30 S3, D24x40, D24X40A, D24X40 S2, D24X40 S3, D40X40	2-3/8" FS600	2-1/8" Low Profile QuickFire® 400	VLR-40F-L43F VLR-40F-L400F	VLRV-40F-L43F VLRV-40F-L400F	VLR-25-HC-HFC VLR-L400-OC-HFC	VLR-25-HC-HFCS VLR-L400-OC-HFCS	VLR-25-HC-C
D33X44, D36X50, D36X50 S3, D36X50 DR S2, D40X55 S3	2-3/8" FS650	2-1/8" Low Profile QuickFire® 400 QuickFire® 460	VLR-46F-L43F	VLRV-46F-L43F VLRV-46F-L400F VLRV-46F-L460F	VLR-25-HC-HFC VLR-L400-OC-HFC VLR-L460-OC-HFC	VLR-25-HC-HFCS VLR-L400-OC-HFCS VLR-L460-OC-HFCS	VLR-25-HC-C
D33X44, D36X50, D36X50 S3	2-5/8" FS700	2-1/8" Low Profile QuickFire® 400 QuickFire® 460		VLRV-41F-L43F VLRV-41F-L400F VLRV-41F-L460F	VLR-25-HC-HFC VLR-L400-OC-HFC VLR-L460-OC-HFC	VLR-25-HC-HFCS VLR-L400-OC-HFCS VLR-L460-OC-HFCS	VLR-25-HC-C

DITCH WITCH® COMPATIBLE EZ-CONNECTS



EZ-Connect Compatiblity 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, JT921, JT920L, JT922, JT9, JT10	1.30-5	1.63-6	DLR2-09M-L55M	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
JT2720 M1, JT2720 AT, JT3020, JT30, JT25	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
JT4020 M1	2.59-4	2.63-6	DLR2-43M-L57M		

VERMEER & DITCH WITCH COMPATIBLE DIRECT CONNECTS

NEW! Connect Tooling Directly To Drill Rod. Long Enough To Fit In Your Rig's Breakout Jaws.

Direct Connect Compatiblity For Vermeer® Drill Rigs			
Compatible Drill 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



Direct Connect Compatiblity 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	DLT-20M-23M
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



REAMERS

Get more our of your drill with the right reamer for the job.

JUGGERNAUT

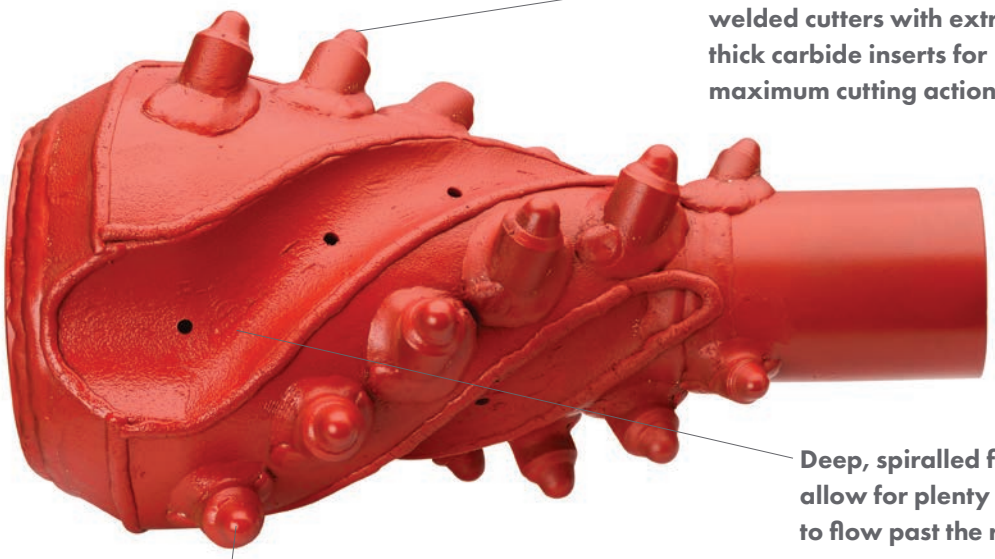
Faster, Smoother Cutting Than Competitive Fluted Reamers. This One Is Unstoppable.

BEST FOR: DIRT/SANDY LOAM, GRAVEL

GOOD FOR: SHALE

Cut Diameter	Pack Diameter	JUGGERNAUT - MACHINED BODY: Shaft Diameter & Thread / Rear Connection	
		2"IF box X fine thread box	2-3/8" Reg 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	85-08-23F-45F

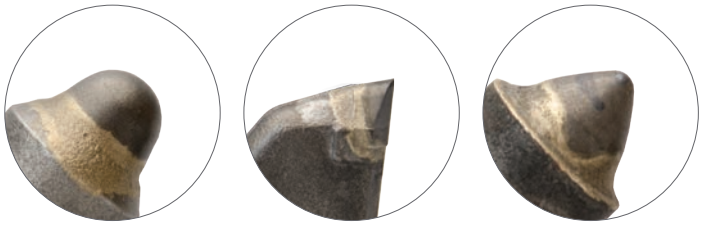
Cut Diameter	Pack Diameter	JUGGERNAUT - CASTED BODY: Shaft Diameter & Thread / Rear Connection				
		2"IF box X flange	2-3/8" Reg box X flange	2-3/8" Reg box X flange	2-7/8" IF box X flange	2-7/8" IF box X flange
		Use with 10 or 15-ton Swivel	Use with 10 or 15-ton Swivel	Use with 20 or 30-ton Swivel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

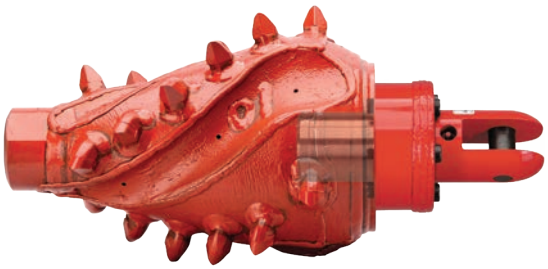
Available with sharkteeth® or conical cutters with aggressive or dome carbides to cover a variety of tough ground conditions



(D) Dome carbide

(S) Sharktooth® carbide

(C) Conical carbide



Available with built-in swivel or pulling eye. See page 37 for swivel information

SHREDDER

Economical Option For Shale, Sandstone Or Hardpan That Has A Mouthful Of Carbide-Tipped Sharkteeth® Cutters.

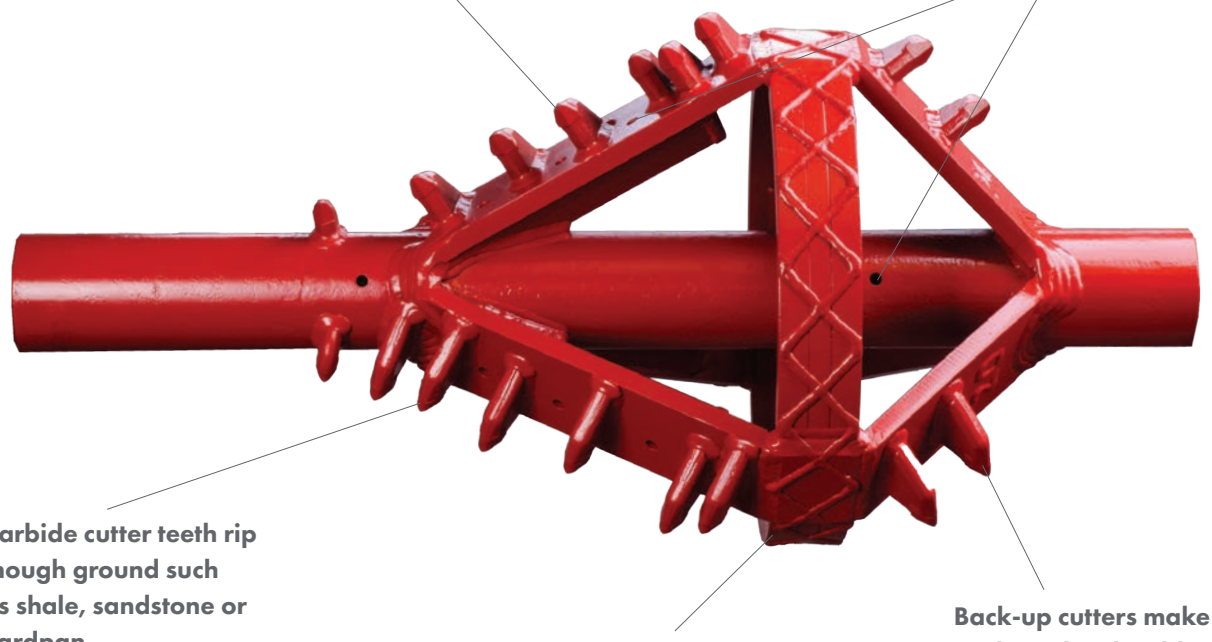
BEST FOR:

SHALE SANDSTONE

GOOD FOR:

DIRT/SANDY LOAM HARDPAN GRAVEL

	SHREDDER 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"	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



TORNADO

One Of HDDs Favorite Reamers With Aggressive Pumping Action For Everthing From Sticky Clay To Hard Shale.

BEST FOR:



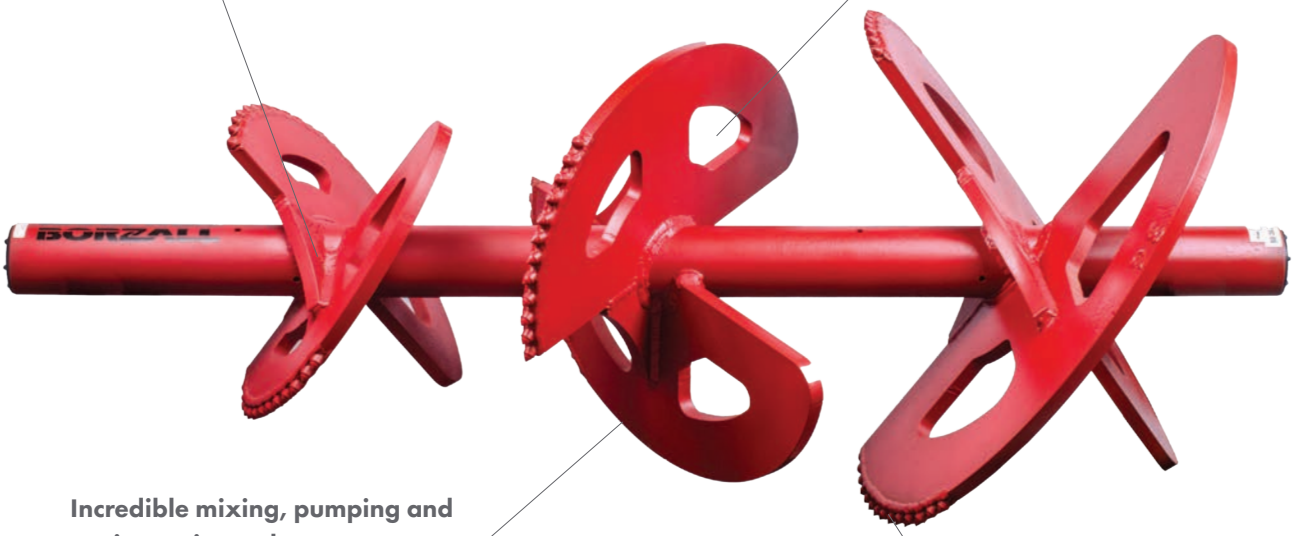
GOOD FOR:



TORNADO 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"	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: COBBLES, CALICHE

GOOD FOR: SHALE, SANDSTONE, HARDPAN, GRAVEL

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

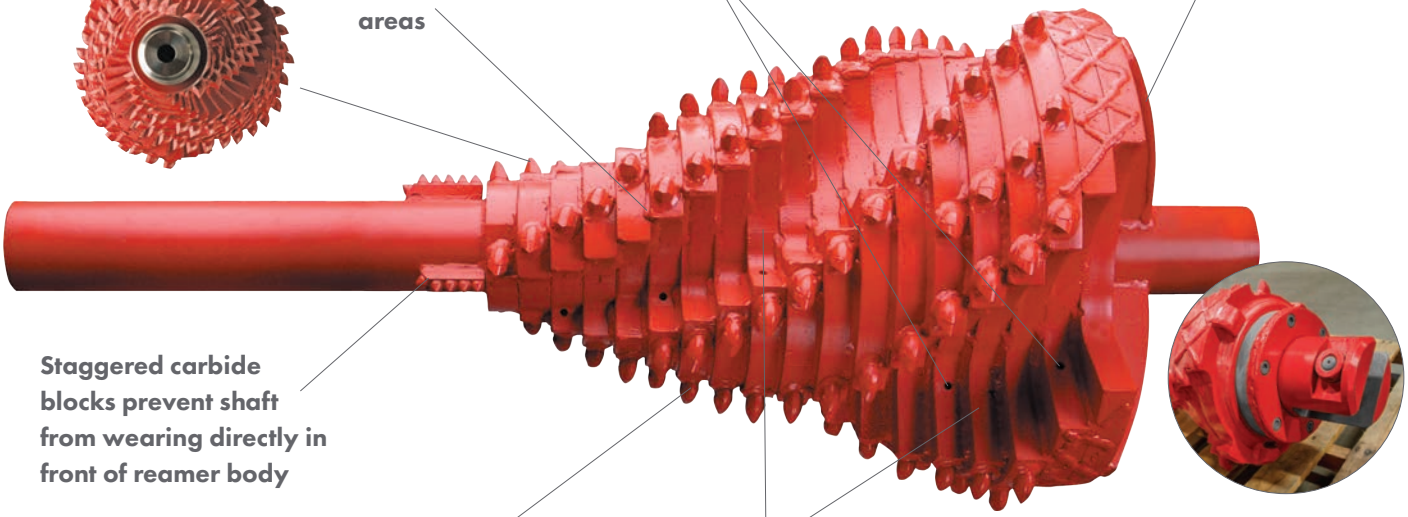
Each cutter only takes ½" more soil than the previous stage resulting in a smooth, efficient cutting action



Hardfacing on all wear areas

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

Back-up blades make pushback easier



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

Slow taper and deep spiralled fluting combine for maximum mixing and pumping

Deep flutes carry away cuttings

Available with a built-in flange swivel or through-shaft design

Available with different carbide cutter options



(D) Dome carbide



(S) Sharktooth® carbide



(C) Conical carbide

TURBO

Supercharge Your Reaming In Sand.

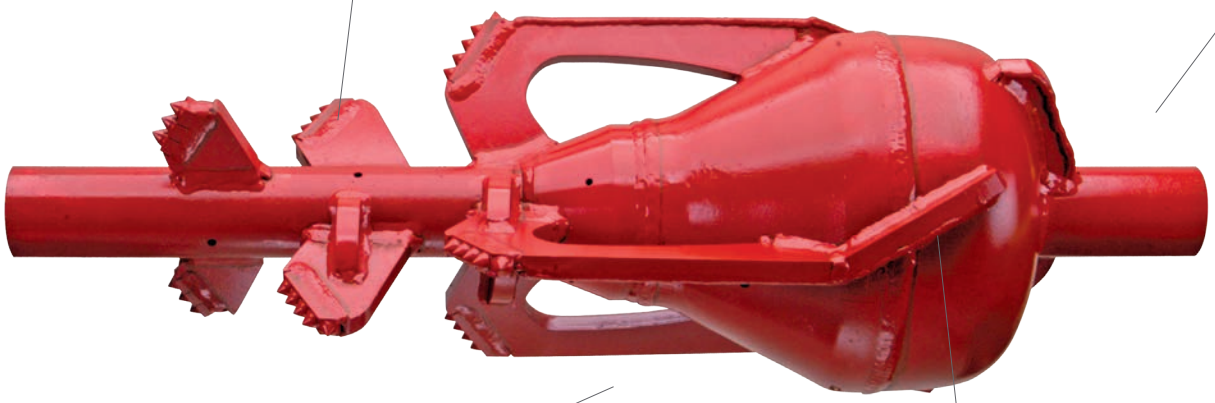
BEST FOR: DIRT/SANDY LOAM, SAND

GOOD FOR: CLAY

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"			83-34-27F-27F	83-34-29F-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

Heavy duty blades with carbide teeth for aggressive cutting action

Back-up blades make for easier push backs



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

Curved packer blades provide maximum mixing and pumping

TORNADO PUP

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

BEST FOR: CLAY, SHALE, HARDPAN

GOOD FOR: DIRT/SANDY LOAM, SAND, SANDSTONE

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



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

Can mix and match with barrel stabilizers to meet job requirements



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"			80-36-27F-27F	80-36-29F-29F
40"	36"			80-40-27F-27F	80-40-29F-29F
48"	44"				80-48-29F-29F

Other sizes and configurations available

Front and rear water ports clear cutters and wash away cuttings

Back-facing and forward-facing blades ensure barrel proceeds smoothly even if some hole collapse occurs

Deluxe Version Shown



Conical carbide cutters minimize wear on the blade edges and face

The key component of a successful large diameter project

Hardfacing on high wear areas extends the barrel life



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

HEDGEHOG

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

BEST FOR: DIRT/SANDY LOAM, SHALE

GOOD FOR: CLAY, SANDSTONE

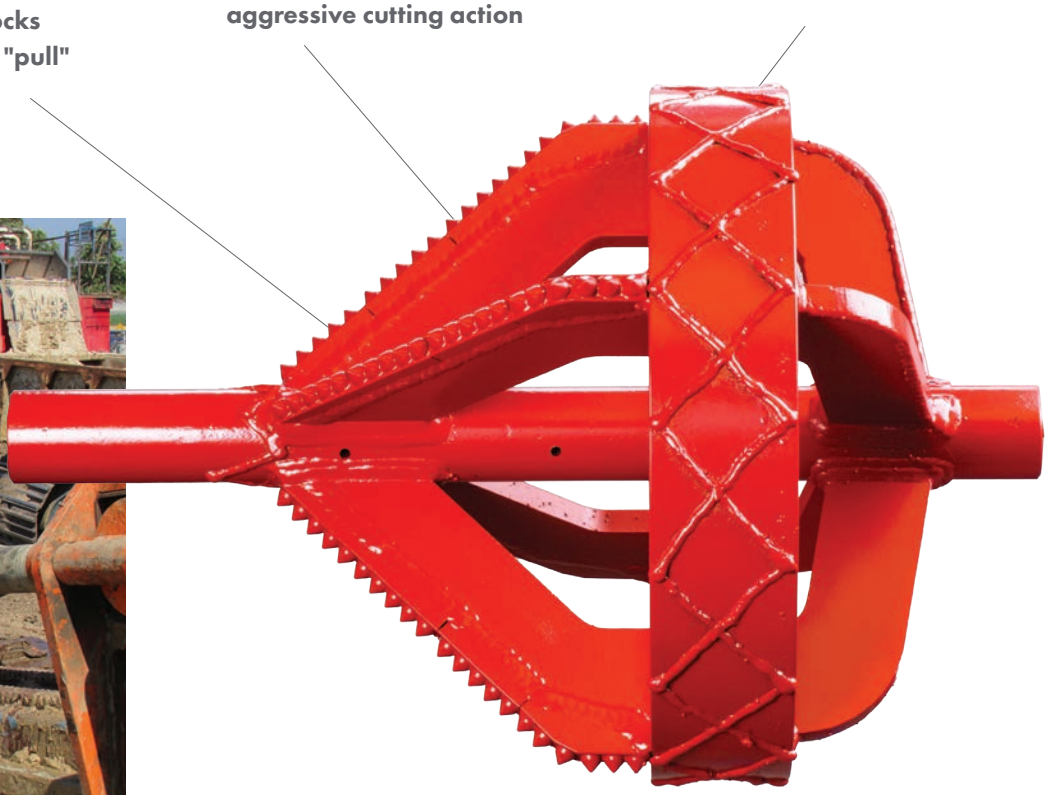
HEDGEHOG Shaft Diameter & Thread					
Cut Diameter	2.75"	3.25"	4.25"	4.75"	6.5"
	2" IF box X box	2-3/8" Reg box X box	2-7/8" IF box X box	3-1/2" IF box X box	4-1/2" IF box X box
8"	68-08-21F-21F	68-08-23F-23F			
10"	68-10-21F-21F	68-10-23F-23F	68-10-27F-27F		
12"	68-12-21F-21F	68-12-23F-23F	68-12-27F-27F	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

Bi-directional, conical carbide cutter blocks allow this to be a "pull" or "push" reamer

Tapered blades with carbide cutting teeth create an aggressive cutting action

Reamers over 10" and larger are designed with a ring for strength and stability





SABERTOOTH

Crunch Through Harder Ground
And Lighten Your Load.

BEST FOR: SHALE, SANDSTONE

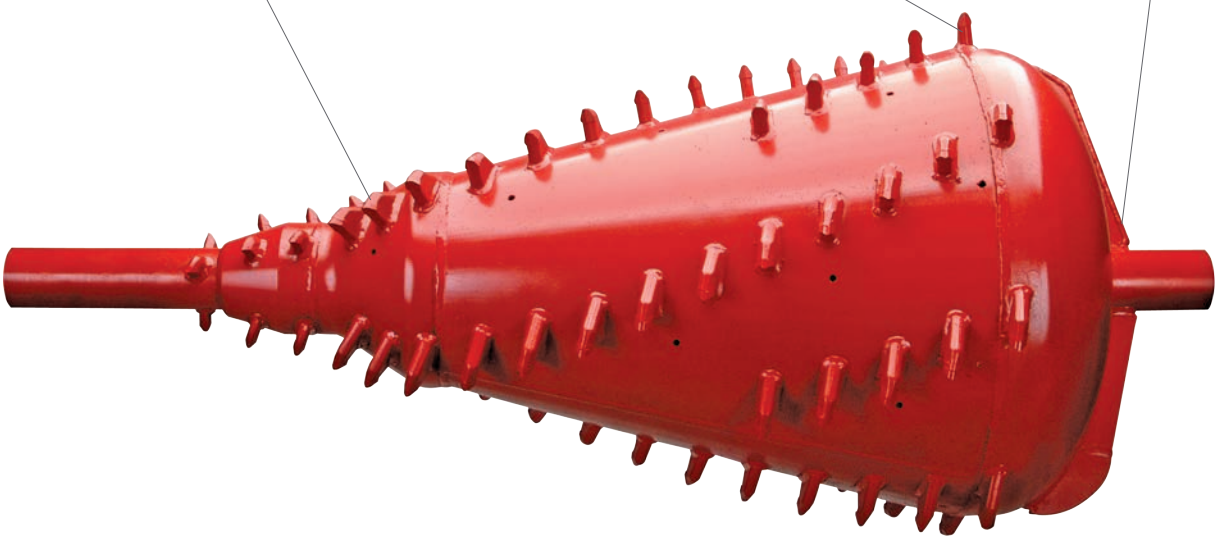
GOOD FOR: HARDPAN, GRAVEL

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

Large shark teeth carbide cutters for aggressive yet smooth cutting

Back-up blades make for easier push backs





HDD SWIVELS

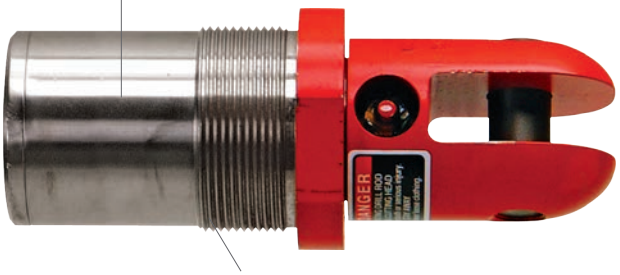
Ensure A Successful Installation Each And Every Time With Our High Quality HDD Pullback Swivels.

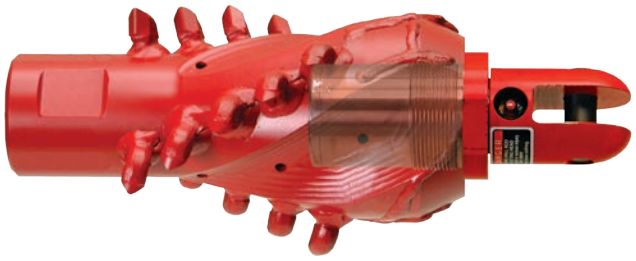
FLUTED REAMER SWIVELS

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

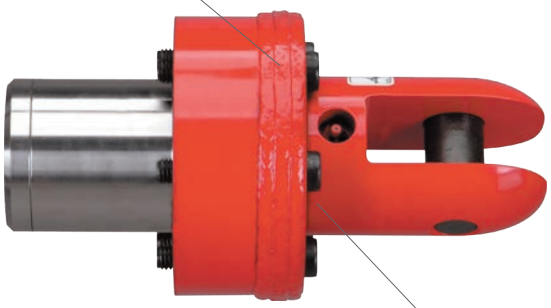


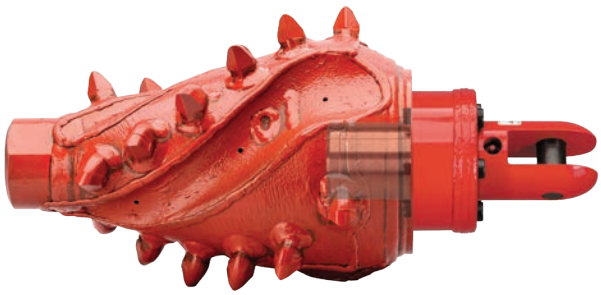


Push and pull loads are absorbed by premium quality angular contact bearings

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

Hard-facing around face of flange minimizes wear at the head of the bolts





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

DELUXE DUB PULLING SWIVELS

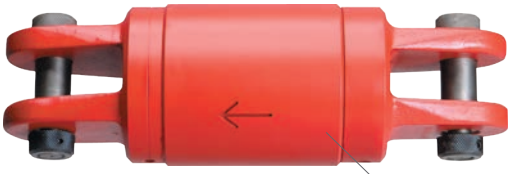
Quad-Stage Seal System And 5-To-1 Safety Factor Make The Deluxe Dub One Long-Lasting Swivel.

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



Clevis x Clevis



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

Clevis x Pin



Four-stage sealing system

Greasable tapered roller

VALU-DUB PULLING SWIVELS

Greasable Premium Anglular 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

Clevis x Clevis



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

Clevis x Pin



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

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 in line with the rotation of the drill head



Made from the same quality components as the 5-ton ValuDUB 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



HDD PULLERS

Keep a firm grip with rugged deluxe, premium, innerduct and other pullers for every underground installation.

SUPER DELUXE DUCT PULLERS

Super Deluxe Duct Pullers		
Duct Size	**I.D.**	**Part #**
1¼"	1.18" to 1.68"	00660-125
1½"	1.39" to 1.92"	00660-150
2"	1.68" to 2.40"	00660-200
2½"	2.24" to 2.90"	00660-250
3"	2.55" to 3.52"	00660-300
4"	3.31" to 4.52"	00660-400
5"	4.29" to 5.61"	00660-500
6"	5.20" to 6.69"	00660-600
8"	6.71" to 8.80"	00660-800



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

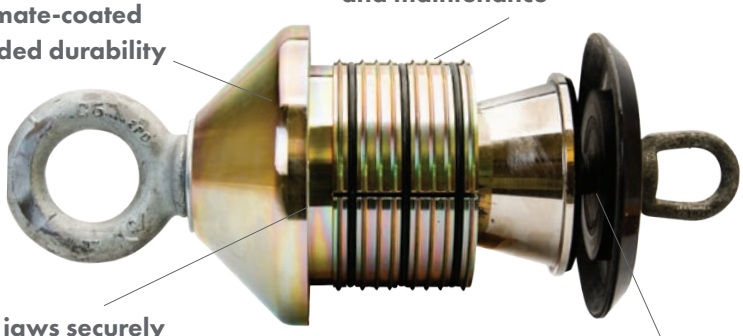
Outer sleeve prevents stretching of duct

Oversized rear eye

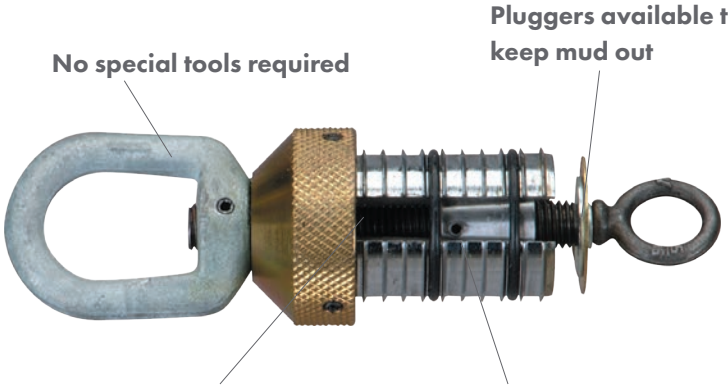
PREMIUM DUCT PULLER

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*



STANDARD DUCT PULLERS

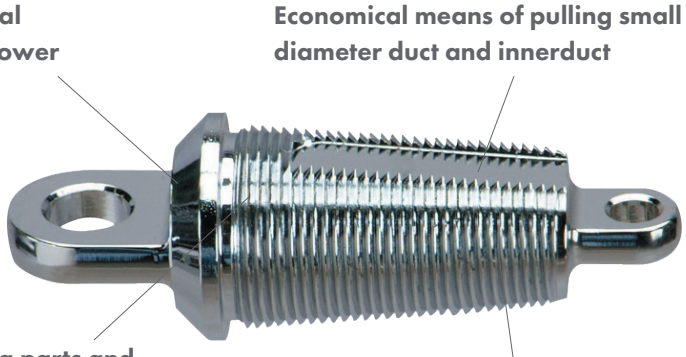


Premium Duct Pullers		
Duct Size	I.D.	Part #
1¼"	1.28" to 1.50"	00620-125
1½"	1.47" to 1.69"	00620-150
2"	1.88" to 2.12"	00620-200
2½"	2.25" to 2.50"	00620-250
3"	2.75" to 3.06"	00620-300
4"	3.50" to 4.06"	00620-400
5"	4.50" to 5.00"	00620-500
6"	5.44" to 6.12"	00620-600
8"	6.44" to 7.87"	00620-800
10"	Please specify SDR	00620-1000
12"	Please specify SDR	00620-1200

** Metric sizes available*

INNERDUCT PULLERS

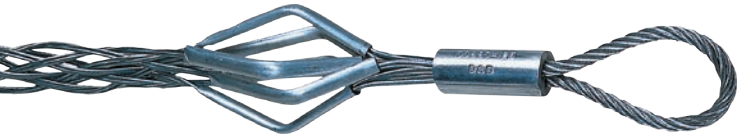
Innerduct Pullers		
Duct Size	I.D.	Part #
¾"	0.72" to 0.93"	00604-075
1"	0.94" to 1.15"	00604-100
1¼"	1.26" to 1.44"	00604-125
1½"	1.48" to 1.66"	00604-150
2"	1.91" to 2.08"	00604-200



PULLING GRIPS

Standard-Duty Wire Mesh Pulling Grips			
Duct Size	Outer Diameter Range	Breaking Strength	Part #
¼"	.24" to .37"	4,250 lbs	00670-025
⅜"	.38" to .74"	5,000 lbs	00670-038
½" & ¾"	.75" to 1.12"	6,600 lbs	00670-050
1"	1.13" to 1.49"	10,000 lbs	00670-100
1¼" & 1½"	1.50" to 1.99"	13,800 lbs	00670-125
2"	2.00" to 2.49"	14,200 lbs	00670-200
2½"	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
1¼" & 1½"	1.50" to 1.97"	16,400 lbs	00680-125
2"	2.00" to 2.50"	18,500 lbs	00680-200
21/2"	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 #
7/16"	SHACKLE-7/16
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 #
4-way, 1/4"	9,600 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

BREAKAWAY CONNECTORS

Designed To Protect Polyethylene Ducting From Overload.

Pocket Breakaway Swivel

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



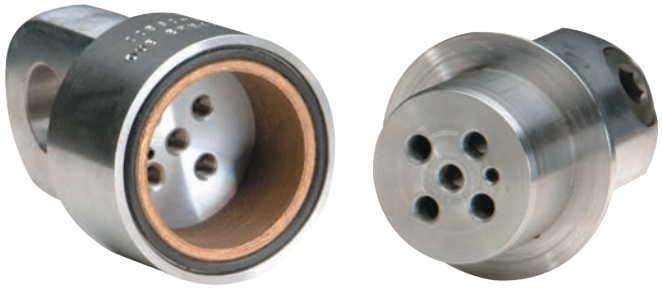
Breakaway Swivel

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



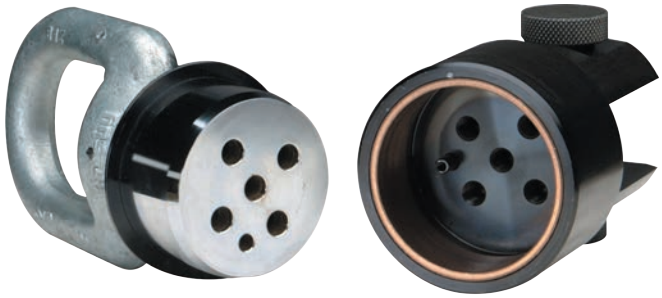
Standard-Duty Breakaway Connector

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 Connectors and Pins		
Description	**Part #**	
Pocket Breakaway Swivel	00560-202	
Breakaway Swivel	00560-208	
Breakaway Connector	00560-010	
Pin Kit (5 per kit)	**Part #**	**Color Code**
250 lb. pin kit	00565-025	Dark Brown
700 lb. pin kit	00565-070	Green
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 56



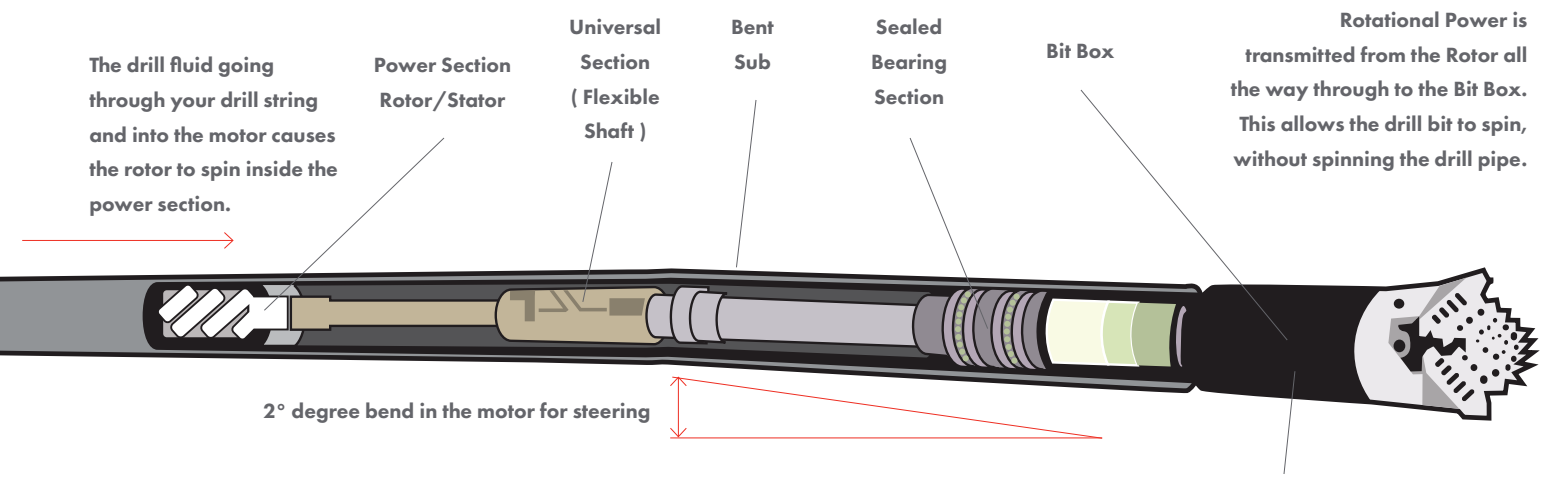
MUD MOTORS & ROCK DRILLING

Harder Ground Calls For
Even Harder Tooling.



ROCK-IT MUD MOTORS

Take This Job And Rock-It!



- **Drill fluid flow = speed of rotation of the bit (rpm)**
- **Drill fluid pressure = torque output by the bit (lb-ft)**

Rock-It Mud Motors						
Standard Size	**Torque Rating (ft-lbs)**	**Rotational Speed (rpm)**	**Flow Requirements (gpm @ 1,000 psi)**	**Operating Range (psi)**	**Recommended Bit Size**	**Recommended Drill Rig**
3" 5/6 Lobe	250	80-346	20-60	350	3⅞" to 4½"	D24x40, D33x44, D40x40, JT2720, JT2720 Mach 1, DD3238
3½" 6/7 Lobe	325	70-240	40-100	500	4½" to 5½"	D36x50, D40x40, JT3020 Mach 1, JT4020 Mach 1, JT4020, DD4, DD4045
3¾" 5/6 Lobe	1,200	200-400	100-170	350	5¼" to 6¼"	D50x100, D55x100, D60x90
4¾" 5/6 Lobe	1,200	180-370	100-170	350	6" to 7⅞"	D80x100, JT7020 Mach 1, D60x90, DD6
5" 7/8 Lobe	2,500	105-230	140-300	600	6" to 7⅞"	D100x120, D100x140, JT8020 Mach 1 JT100 Mach 1, DD10, DD140B, DD9014
5¾" 5/6 Lobe	4,500	90-222	250-320	450	7⅞" to 8¾"	Maxi-Rigs
6¾" 7/8 Lobe	5,000	70-150	200-500	500	8¾" to 9⅞"	Maxi-Rigs
8" 6/7 Lobe	7,500	65-200	200-600	500	9⅝ to 12¼"	Maxi-Rigs
8½" 7/8 Lobe	5,000	70-150	200-500	500	10⅝" to 12¼"	Maxi-Rigs

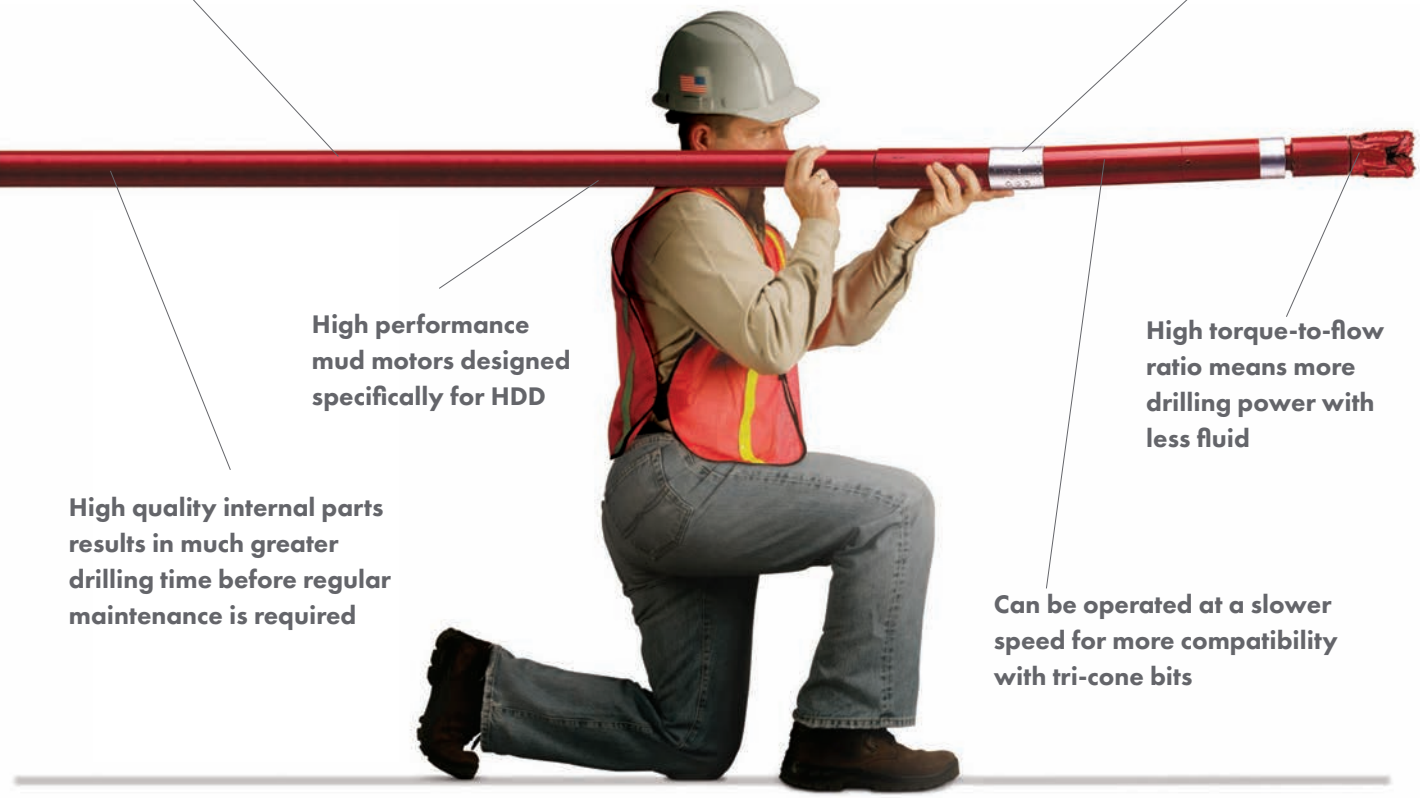
Mud Motors available in more sizes and configurations. Call for a complete selection.





Rotors and stators are designed for HDD. They are shorter in length to help with motor steering. All stators are manufactured with a new "hard" Nitrile rubber, resulting in more power from the motor.

Stator tube walls are twice as thick as other brands for maximum durability.



High performance mud motors designed specifically for HDD

High torque-to-flow ratio means more drilling power with less fluid

High quality internal parts results in much greater drilling time before regular maintenance is required

Can be operated at a slower speed for more compatibility with tri-cone bits



DRIVE CHUCKS & SUB-SAVERS

Protect The Drill Rod Threads On Your Vermeer and Ditch Witch drill rigs.

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

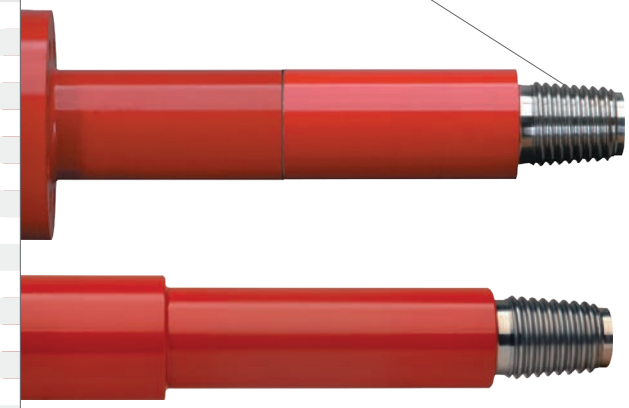
Changing out worn sub-savers and drive chucks is an inexpensive and easy way to get the maximum life out of your drill rod. If they are allowed to wear too much, a drill rod's threads will start to deform to the shape of the worn sub-saver threads. When attaching the drill rod to the sub-saver or chuck,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

Fred Tip: Don't forget the Auntie C's thread lube!
See pg. 53



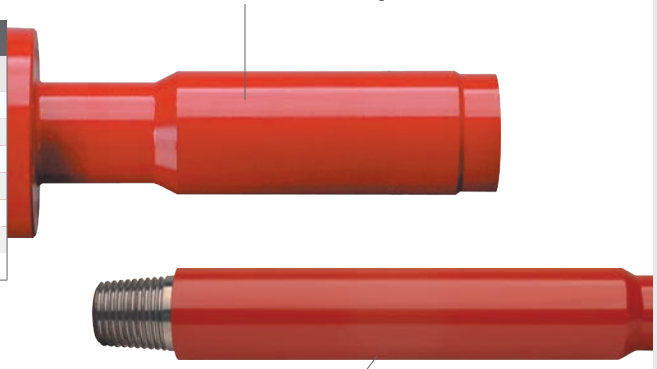
Drive Chucks For Vermeer® Drill Rigs			
Drill Rig Model	**Drill Rod Thread**	**Drive Flange Part #**	**Sub-saver Part #**
D7x11a, D10x14, D10x15	FS200	VF-31M-FO-V	VS-31M-31F-4.0
D7x11 S2, D91x13 S2	FS200		VS-31M-32F-8.0
D16x20, D18x22, D20x22	FS250	VF-32M-FO-V	VS-32M-32F-4.0
D16x20S2	FS250		VS-32M-40F-10.1
D18x22, D20x22, D18x20	FS400		VS-30M-30F-6.5
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	VF-80F-FO	VS-80M-80F-7.0
D80X100A	FS800	VF-80F-FO	VS-80M-80F-10.5
D50X100A	FS900		VS-50M-50F-5.8
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 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 - coarse thread	1.30-5	DF-09F	
JT1220	1.47-4	DF-34F	
JT20, JT2020	1.94-4	DF-20F	
JT30, JT3020	2.11-4	DF-25F	DS-25M-36F

Completely heat-treated alloy for maximum durability



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

SELECT THE RIGHT ADAPTER WITH MELFREDBORZALL.COM

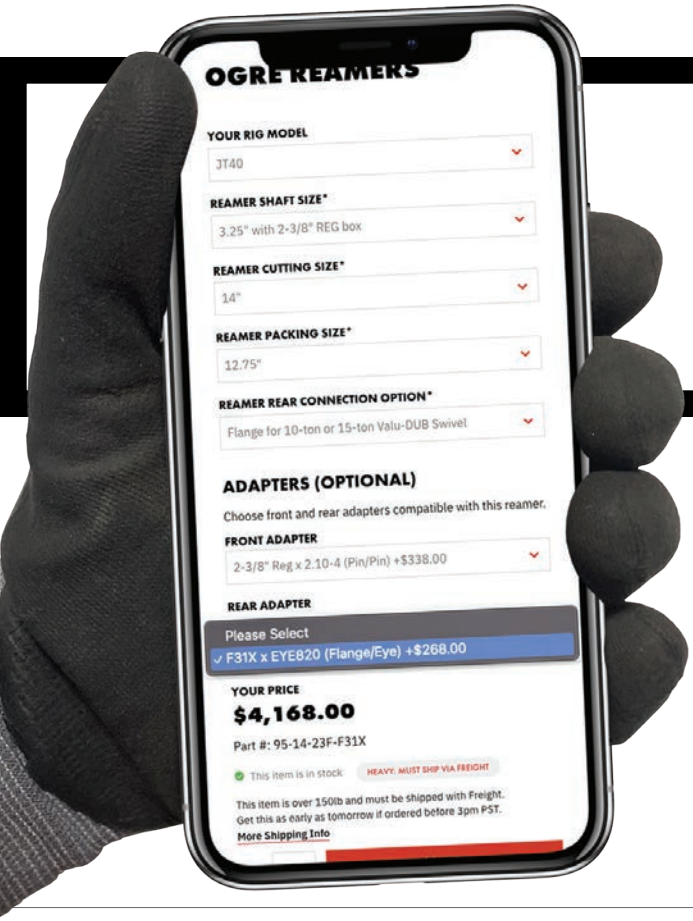
Easily add a compatible adapter when you order a transmitter housing or reamer...without having to leave the product page. Click, click, done.



HOUSINGS

Adapter options are narrowed down to only those compatible with your housing and drill rig model. Simply select an option, and it will be added to your cart as a separate item.

www.melfredborzall.com/transmitter-housings



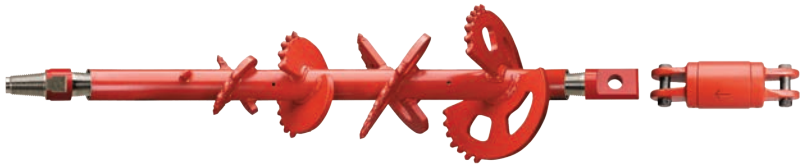
REAMERS

Configure your front adapter AND rear pulling eye with the optional adapter selections on each of our reamer pages. Pre-selected options for each reamer ensures you get the right fit.

www.melfredborzall.com/reamers

REAMER WIZARD

Our online reamer wizard will help you select and configure the perfect reamer for your rig and ground conditions.



visit melfredborzall.com/reamer-wizard

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	23M-L300MV3		
	1-5/8" Low Profile QD	21M-L42M	23M-L42M		
	FS200 Drill Rod	21M-31F	23M-31F		
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-L400MV3		
	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-L460MV4	23M-L460MV4	27M-L460MV4	
	2-1/8" Low Profile QD	21M-L43M	23M-L43M	27M-L43M	
	FS650 Drill Rod		23M-46F	27M-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	29M-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 JT5	1.21-6 EZ-Connect	21M-L52F			
	1.10 Drill Rod	21M-05M			
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	23M-34M		
JT1720	2.00-6 EZ-Connect	21M-L54F	23M-L54F		
	1.81-6 Drill Rod	21M-86M	23M-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		23M-L56F	27M-L56F	
	2.11-4 Drill Rod	21M-36M	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-36	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	
	FS900 Drill Rod			27M-50M	
JT7020, JT8020, JT100	3.27-4 Drill Rod			27M-72M	29M-72M



PARTS & ACCESSORIES

Drilling parts and accessories to reinforce HDD tooing and the driler who depend on them.

AUNTIE C'S THREAD LUBE

Provides maximum protection against galling and seizing

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

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

Premium copper thread lube designed specifically for the demands of HDD



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

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



CC-11 CC-21



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



CC-50 CC-51

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-31
Angled dome cutter – Small	1.06"	1.18"		CC-50
Angled dome cutter– Large	0.77"	0.83"		CC-51

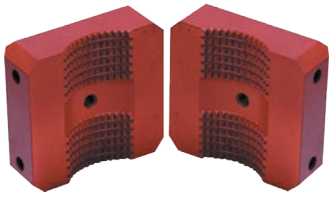
BREAKOUT JAWS

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

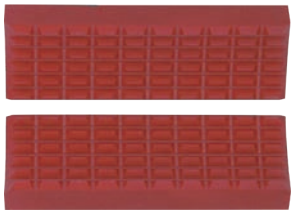
Breakout Jaws - Vermeer® Compatible		
Drill Rig	**Jaw Type**	**Part #**
D24a, D24x26	Stationary	JAW-30
D7x11, D10x15	Stationary	JAW-31
D7x11, D10x15	Cylinder	JAW-31-CT
D16x20	Stationary	JAW-32
D16x20	Cylinder	JAW-32-CT
D33x44	Stationary	JAW-33
D33x44	Insert	JAW-33-INS
D36x50	Stationary	JAW-36
D24x40a	Stationary	JAW-40
D24x40	Insert	JAW-40-INS
D40x40	Cylinder	JAW-40-CT
D50x100, 2⅞" rod	Cylinder	JAW-50-CT
D50x100, 2⅞" rod	Insert	JAW-50-INS
D50x100, D80x100, 3½" rod	Cylinder	JAW-80-CT
D80x100, 3½" rod	Insert	JAW-80-INS
D100x120, 3½" 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

ELECTRICAL SAFETY GEAR

Safety Shoes & Boots	
Description	**Part #**
Over-the-shoe Safety Shoe	1830-SH
Over-the-shoe Safety Boot	1830-BT

Safety Gloves	
Description	**Part #**
Rubber glove	1820-GLV
Leather protector	1820-PRO
Glove storage bag	1820-BAG

Conforms with ASTM F1117 and tested to 20,000 volts



Boots are a 12" over-the-shoe style

Leather protectors go over to protect rubber glove from damage

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

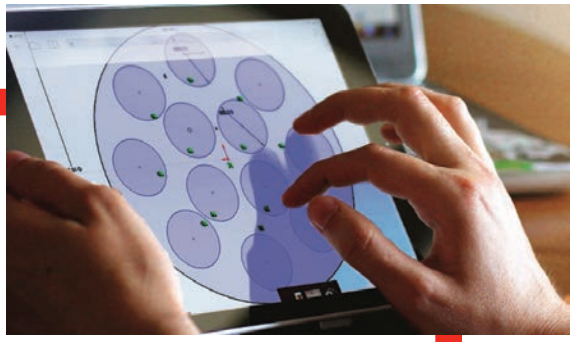


Meets ASTM specification D-120

Half and whole sizes available





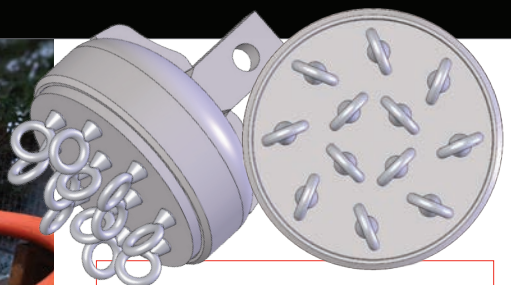


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WHY MELFRED BORZALL

HDD Tooling Solutions From The Company That Pioneered Horizontal Directional Drilling.






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With distributors all over the globe, you can count on getting tools fast! When you need it, you need it now...and we get it. Same-day shipping and local inventory with our distributors helps deliver tools fast to keep you up and running.

An Innovative Edge

Our state-of-the-art facility & engineers are always pushing for more productive ways to build better HDD tooling, and are available to design and manufacture your custom solution that can improve efficiency.

Unparalleled Experience

Being a founding member of the HDD industry has given us the opportunity to grow up with it. Laser focus on HDD tooling from the beginning has provided us with unique manufacturing experience over 75 years and continues to fuel innovation.

77 YEARS

EXPERIENCE | INNOVATION | SERVICE | SUPPORT

Continuing Innovation For A Better Tomorrow

We don't just protect drillers, we protect the Earth and strive to inspire future leaders of our industry. Our energy efficient facility and community outreach helps to accomplish that mission.

$150k+
Donated to local schools and trade programs

1000
Solar panels powering the Santa Maria plant

84
University & High School Internships filled

26
Educational scholarships awarded since 2018

Visit www.melfredborzall.com/our-story to learn more about Melfred Borzall's history.

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