

**MELFRED
BORZALL**

THE HDD TOOLING EXPERTS



**YOUR JOB
AT THE SPEED
OF LIGHT.**

PRODUCT CATALOG 2017

FIND THE RIGHT MELFRED BORZALL PRODUCT FOR THE JOB

When you're deep in an HDD job, you need tools you can count on. Our expert team of engineers has bored through every type of soil, sand and rock there is. When stock Vermeer and Ditch Witch tools just couldn't cut it, we went ahead and designed our own.














BITS

ULTRABIT 3 p.24		GOOD		BEST	BEST				GOOD
ROCK SAW p.22						BEST	BEST	GOOD	
STEEP TAPER ULTRABIT p.23				GOOD			GOOD	BEST	BEST
EXCALIBUR p.25	GOOD	BEST	BEST			GOOD			
BEAR CLAW p.26	GOOD	BEST						BEST	
EAGLE CLAW p.29				BEST	BEST	GOOD			GOOD
IRON FIST p.28							BEST	BEST	GOOD

REAMERS

TERMINATOR p.35	GOOD	GOOD	BEST	BEST	GOOD	BEST			
SHREDDER p.34	GOOD			BEST	BEST	GOOD	GOOD		GOOD
JUGGERNAUT p.33	BEST			GOOD			BEST	GOOD	
OGRE p.37				BEST	GOOD	GOOD	BEST	BEST	BEST
TURBO p.42	BEST	BEST	GOOD						
SABERTOOTH p.40				BEST	BEST	GOOD	GOOD		GOOD
HEDGEHOG p.41	BEST		GOOD	BEST	GOOD				

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OUR STORY

70 years of groundbreaking drilling solutions.

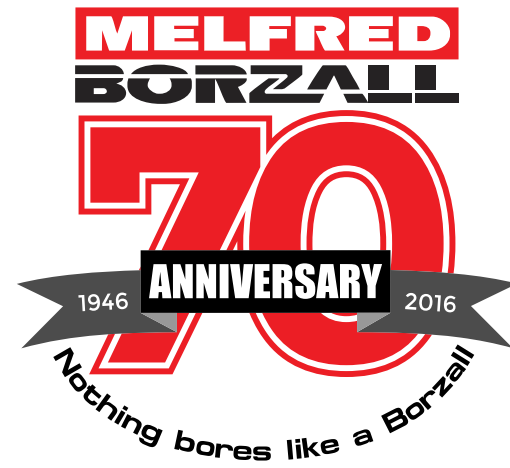
We know a lot about directional drilling because we've been in this business a long time. Our founder Fred Melsheimer saw a problem in the drilling industry, so he went about fixing it. When he introduced the first horizontal directional drilling system to the public in 1946, he set a standard that we still live up to over 70 years later.

When versatile designs meet quality materials, dependable HDD tools are born. We hire expert engineers who put their designs to work right away. We know that high quality drilling solutions are only as good as the job they perform, so we take them out of the workshop and into the field to see how they hold up under pressure. By watching our tools work and watching the way drillers work with our tools, we refine our designs to pack the most punch at a reasonable price. The result: long-lasting, Earth-chomping, tough-as-nails tools that help drillers cover more ground while limiting expenses.

We're not out to make a quick buck. We're out to keep the drilling industry moving forward. We stand by our products because we know that they'll stand up to the toughest conditions nature puts in your path. You can't control what you'll run into underground. But you can control the quality of tools you choose. If you're looking for unmatched quality at value pricing remember that "Nothing bores like a Borzall."

Proud to Be Going Green

We don't just protect drillers, we protect the Earth. Our Santa Maria plant houses 800 solar panels, producing almost 150 kilowatts of power. That's enough solar electric energy to provide over 90% of the plant's needs. We also cut our lighting energy usage in half by using skylights in our offices & production spaces and replacing all our metal halide plant lighting with high-efficiency T5 fluorescent lights. We recently acquired two electric cars for business use which we recharge at the two plug-in stations in our North parking lot. When you see the "Made with Solar Power" label, not only are you getting a quality tool priced for value, but you know that tool is made in a clean, high-tech environmentally friendly facility.



WHY MELFRED BORZALL?

HDD tooling solutions from the company that laid the foundation for horizontal drilling.

Quality Control

As the original directional drilling tool manufacturer, we're serious about maintaining our spotless reputation. We have a key advantage over our competitors: we actually care what happens to our products after they leave our plant and end up on the job. To us, each tool we ship is not just a new order; it's a new relationship. We pay attention to details, double-check our work and listen to our customers. As a result, we're in a state of constant innovation, including effective and efficient tool designs, improved materials selection, smoother sales processes, and more personalized and attentive customer service.

Moving the Drilling Industry Forward

We weren't just handed the role of industry leaders; we earned it. R&D is the responsibility of every directional drilling tool manufacturer, so our expert engineers invest major resources in developing new tools that tackle tough jobs faster, more efficiently and more cost-effectively. Whether your job requires a tool we have in our inventory, or you need us to develop an entirely new solution, we can design it, create it and get it to you fast—every time.



Quality Control, Grounded in Excellence

No rusty production warehouses for us. We engineer and manufacture all our products in a spotless, modern facility, using state-of-the-art computerized machining stations. We personally inspect each tool during every stage of the manufacturing process. Tools that don't make the cut (there aren't many, by the way) are scrapped before they leave the factory floor. That means you'll receive a tool that is guaranteed to perform as expected—or better.

Fast and Safe Shipping, Even Off the Beaten Path

When you need a new tool, we know the clock is ticking. We won't waste your time with incorrect orders or poorly packaged products. We double-check each and every order before it leaves our warehouse. Every product is packaged in sturdy foam and shrink wrap, designed specifically to handle the weight and non-standard shapes of our tools. Larger reamers are strapped onto custom-made steel pallets which you can reuse to get your reamer to the next location in one piece. Our extensive [distributor network](#) can get the right tool into your hands right away so you can get back to work.



CUSTOMER SERVICE

Drilling is tough enough. Working with your HDD tooling supplier shouldn't be.

Expert Recommendations

Our expert HDD tooling team knows a whole lot more than part numbers. We can help you figure out what it will take to make your job more efficient, more effective and more profitable. As the original HDD tool innovators, we've built our business to serve the drilling industry from the ground up. Not only are we experts in the tools we manufacture, we also understand soil and rock variations, HDD tooling compatibility and logistical issues that can challenge your job. We consider everything when recommending the right part for you. [Visit melfredborzall.com](http://melfredborzall.com) and [Live Chat with one of our experts today!](#)

Expert Distributors

When you need the right horizontal directional drilling tool, you can't afford to waste time. Every Melfred Borzall distributor knows HDD drilling inside and out. Tell us about your problem and we'll let you know what you need to get the job done. Our distributors can get you the right tool for the job in every single US state and 10 key international locations. Time is money. We don't waste it and neither should you.

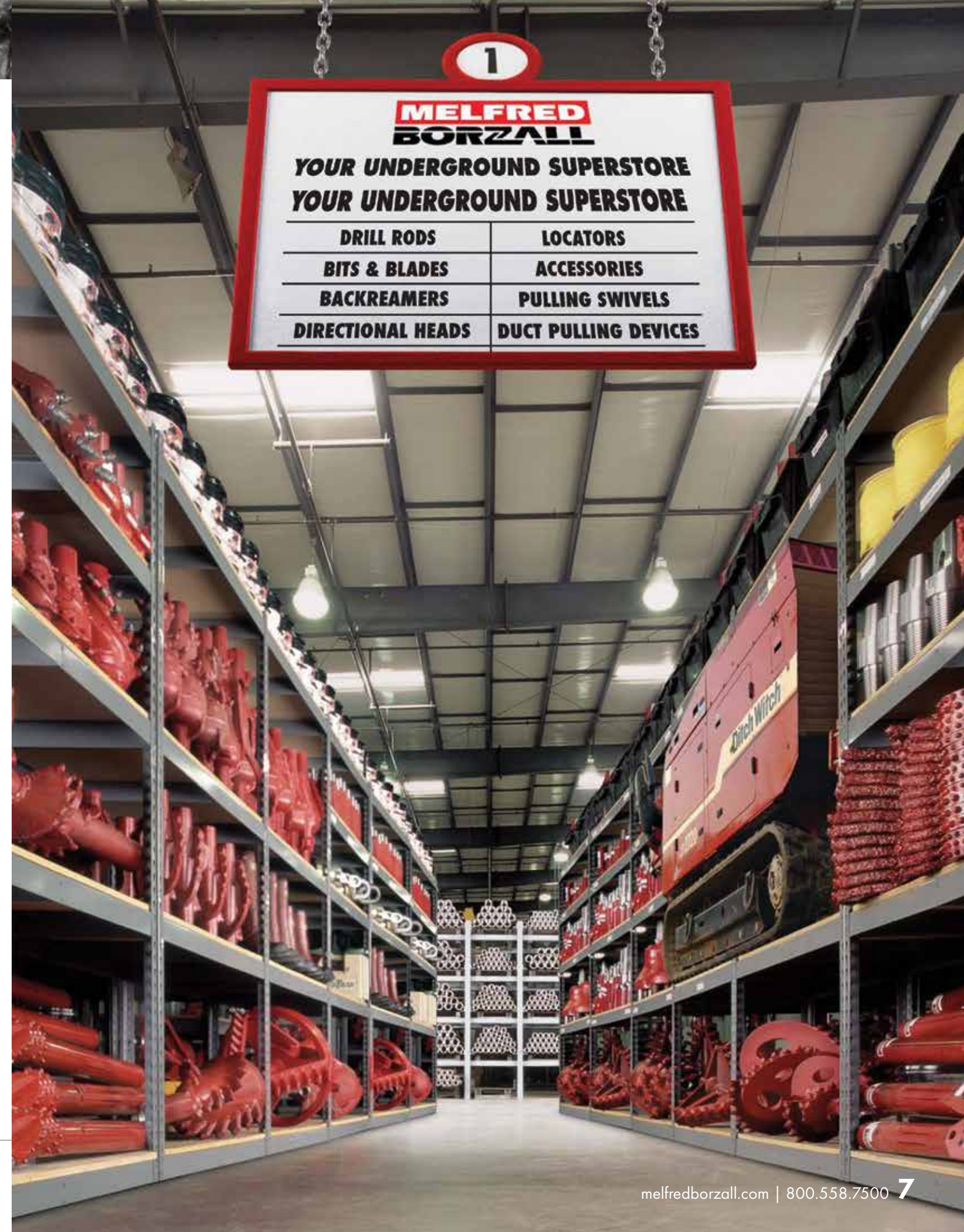


Same-Day Shipping

When you need it yesterday, next week won't cut it. Our strategic partnerships with air freight and ground transportation companies make sure the products you order arrive when you need them, at the lowest possible cost. All orders for stock items ship the same day. In many cases, you'll have your order in hand by the next morning.

100% Satisfaction Guarantee

We offer the best money-back guarantee in the industry. Period. If you're not satisfied with your purchase, neither are we. Give us a call and we'll work with you until we meet your needs. Otherwise, we'll issue a full refund for all merchandise returned within 30 days of delivery. We don't shrink from guaranteeing our products, because we know that our [quality control](#) standards are among the highest in the industry.



FASTBACK® SYSTEM

Fast & easy pullback devices that work with any Borzall bit.

Ok, you know a quick and easy way to pull back a small pipe. But what happens when you're in a tight spot and have multiple conduits or one big pipe? No problem. Melfred Borzall's patent pending FastBack system gives you the pullback devices you need to quickly ream up to a 12" hole...without ever taking the drill head off.

"Borzall's new FastBack system has been a real timesaver for us. We've been doing a lot of fiber installs recently and most of them are in tight areas. The ease in attaching tools right in the pit and pulling product in one shot is a great timesaver. We couldn't be happier with this new product and the increase in production."



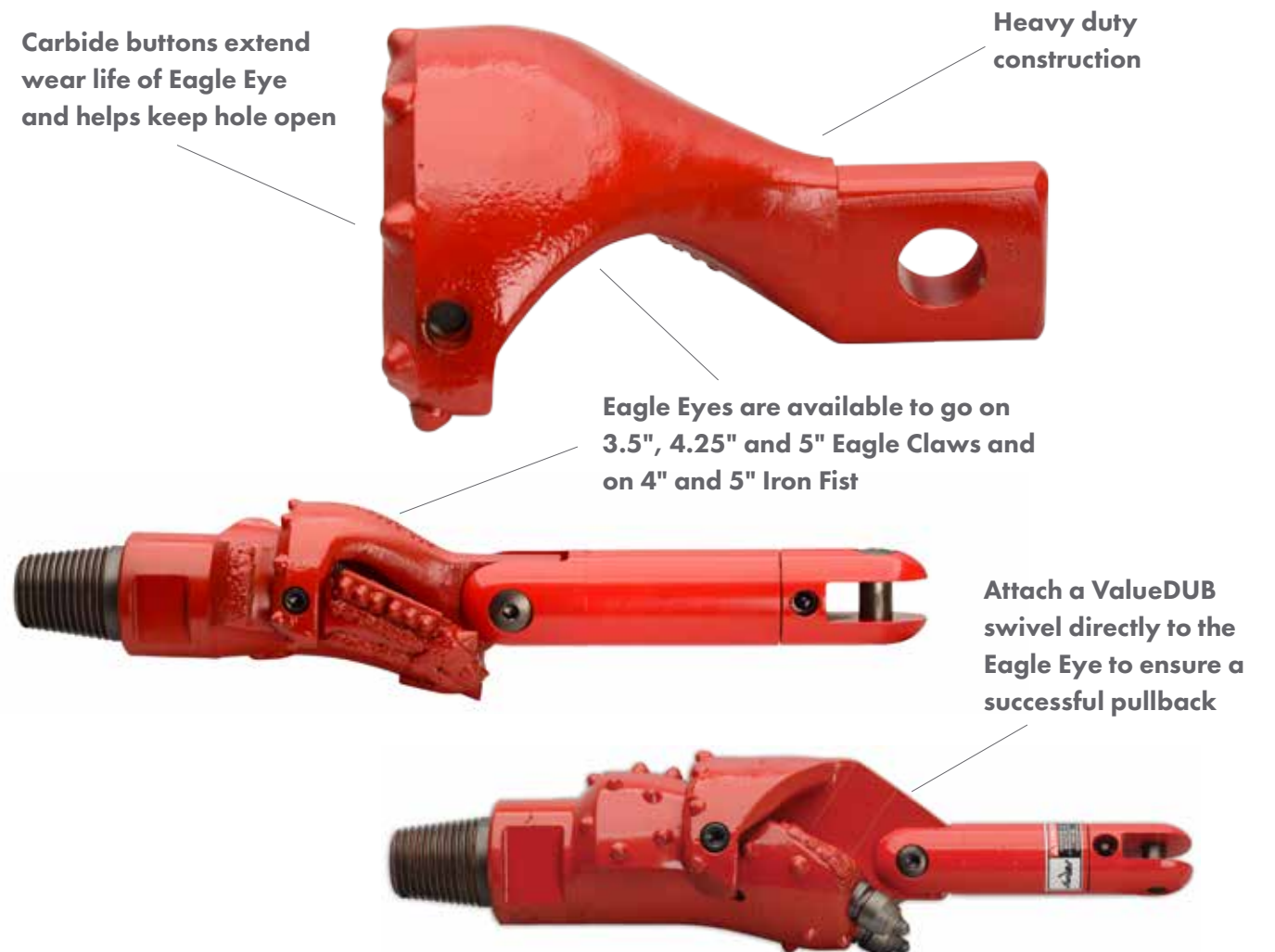
DO YOUR PULLBACK WITH ANY BORZALL BIT.

Our goal is to increase your production. That's what it's about in this biz and with our new FastBack® pullback attachments, you can do just that. Whether you are using an Iron Fist bit for cobbles, an Eagle Claw for shale, or just a good 'ol "duck bill", we have an attachment to make it fast and easy for direct pullbacks.

EAGLE EYE

Cover more ground at flying speed.

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



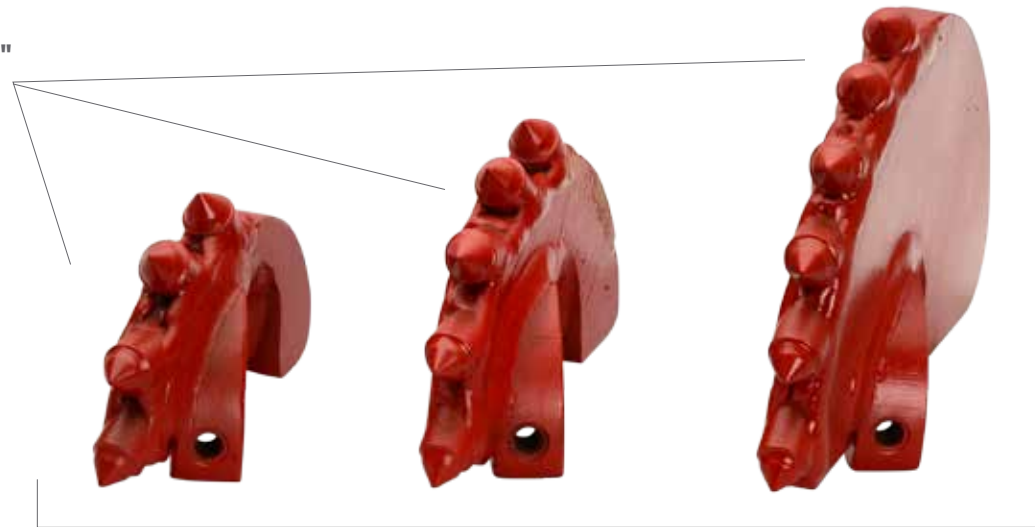
FASTREAM® CUTTER BLOCKS

Drill big or go home.

Need a bigger hole but no room to install a backreamer? Just bolt on the FastReam cutter blocks to your FastReam housing and you can ream up to a 12" hole. The design of these cutter blocks is based on our best-selling reamer, the Terminator (see page 35).

Assortment of sizes available to enlarge hole from 5" up to 12"

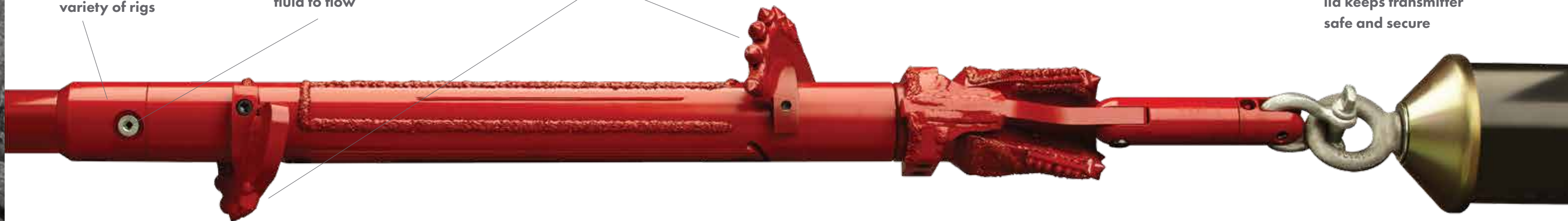
FastReam® cutter blocks designed after our best selling reamer, the Terminator



Get through tough conditions while providing much-needed mixing and pumping action

Replaceable thread adapters enable you to use housing with a variety of rigs

Dual Mud-Boost ports allow maximum drill fluid to flow



Extra thick, locking lid keeps transmitter safe and secure

FASTREAM® HOUSINGS

Open your hole up to 12" without ever taking off the housing.

Start pulling product within minutes of completing the pilot bore. If you're going to pull back with your transmitter housing, you better have a tool designed with this in mind. The FastReam housing has an abundance of carbide hardfacing to increase tool life. The housing door is a thick slab of heat-treated steel for minimal flex and maximum longevity. Even if you don't think you need the FastReam cutter blocks, the carbide hardfacing extends the housing life longer than anything else on the market.

Available in side-load bolt-on and side-load thread-on styles

Robotically-applied carbide hardfacing in key locations keeps the FastReam housing online



QUICK-LINK

Safety first. Ya dig?

When you're down in the pit, it pays to think quick. The Quick Link easily connects 5- or 10-ton swivels to Melfred Borzall blades and keeps them straight and on-center for quick and safe direct pullbacks. It avoids the flopping or jack-knifing that can happen with shackles.



More secure and faster than using multiple shackles

Quick-Link connects 5- or 10-ton swivels to Melfred Borzall bits



Keeps swivels straight and on-center

Avoids clevis flopping and jack-knifing

QUICK-SWIVEL

Fast and furious.

Stop wasting time trying to shackle up a generic swivel to your bit. The Quick-Swivel is a 10,000 pound swivel that attaches directly to Melfred Borzall blades for quick and safe direct pullbacks. The unique locking pin keeps the Quick-Swivel straight and on-center.



Swivel stays in line with the rotation of the drill head

Quickly bolts onto most Borzall blades, including Excalibur blade



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

Do direct pullbacks without removing the drill head

FASTBACK® ADAPTERS FEATURING MUDBOOST

Smooth out the rough patches.

Special adapters for the FastBack system incorporate dual MudBoost fluid ports to ensure smooth, easy pullback with maximum flow.



TRANSMITTER HOUSINGS

Transmitter housings for hard-working directional drills

Let's face facts: directional drills are only as functional as their transmitters. Keep yours safe and sound with our ultra-durable and secure line of transmitter housings that protect your transmitter so you can cover more ground. These smooth operators look sleek on the outside but are nearly invincible inside—where it counts.

"Borzall housings are simply dependable. Since we've been using them in the past few years, we've seen less down time and the housings last longer than any others we've tried. The most durable on the market, hands down."



SIDE-LOAD, BOLT-ON TRANSMITTER HOUSINGS

Designed for DigiTrak® Transmitters and Subsite® Beacons

If it's good enough for the aeronautics industry, it's good enough for us. These tough-as-nails transmitter housings feature heat-treated, chrome-nickel-moly alloy steel for maximum strength and durability – the same high-strength, fatigue-resistant steel used in aircraft landing gears and propeller shafts. Available with any Ditch Witch® or Vermeer® bolt pattern.



- Incorporates the angled Super Nozzle, designed to help your cutting action by minimizing clogging and use erosion
- Large lid tabs provide more contact surface for less wear and longer life
- Double locking lid bolts keep the transmitter secure
- Engraved batch and part number traces material, heat-treat & manufacturing date, and provides identification
- Epoxied lid slots minimize transmitter exposure to mud
- Option for 1-piece design or housing with removable rear adapter
- Heat-treated, chrome-nickel-moly alloy steel for maximum strength and durability (the same high-strength, fatigue-resistant steel used in landing gears and propeller shafts)
- Available sizes: 2" - 4.25"

SIDE-LOAD, THREAD-ON TRANSMITTER HOUSINGS

Designed for DigiTrak® Transmitters and Subsite® Beacons and Ideal for Use with Eagle Claw and Iron Fist Bits and Bolt-On Bit Bodies

Same heat-treated, chrome-nickel-moly alloy steel as our bolt-on transmitter housings. Box-by-box design provides unmatched versatility and value so you can use your Eagle Claw, Iron Fist or bolt-on blades with one housing. The stainless steel timing mechanism makes clocking the transmitter to the bit a cinch. Straight-through gun-drilled fluid ports make the transmitter housing easy to clean.



- Simple timing mechanism on all 3625, 3627, 3632, thread-on style housings
- Double locking lid bolts keep the transmitter secure
- Precisely-placed slots optimize signal strength while minimizing weaknesses
- Available sizes: 2.5" - 4.25"
- Heat-treated, chrome-nickel-moly alloy for superior strength, abrasion resistance and durability
- Versatile housings can be used with Eagle Claw or Iron Fist bits, or Bolt-on Bit Bodies
- Large lid tabs provide more contact surface for less wear and longer life
- API thread connections are the most reliable connections on the market
- Removable, replaceable adapter increases longevity of the housing

HIGH FLOW TRANSMITTER HOUSING

Ideal for use with Mud Motors, Eagle Claw and Iron Fist Bits, and Bolt-On Bit Bodies

Maximum mud flow with minimum restriction. The Melfred Borzall End-Load, High Flow Housing is a perfect match for your next rock job when utilizing a mud motor or air hammer. It has 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.



Heat-treated, chrome-nickel-moly alloy steel for maximum strength and durability (the same high-strength, fatigue resistant steel used in landing gears and propeller shafts)

Simple, interchangeable internal mechanism allows the same housing to be used with most locating systems

Accommodates DigiTrak 2-cell, 4-cell, and cable transmitters (Mark V systems and newer); Subsite 86B, 86BV2 Beacons

Stainless steel springs support and cushion the transmitter, allowing it to be used with air hammers as well as Mud Motors

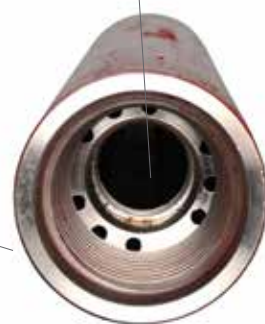
For rigs from 20,000 lbs. to 400,000+ lbs. thrust

Can be used with Mud Motors, Eagle Claw bits, Iron Fist bits and Bolt-On Bit Bodies

Available sizes: 3.5" - 4.64"

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

Multiple fluid passages allow for maximum flow without pressure restrictions



DIGITRAK FALCON GUIDANCE SYSTEMS

The new Falcon Guidance Systems are here to help you increase production by overcoming one of the biggest obstacles in HDD installations - active interference. The Falcon technology allows you to select the optimal transmitter frequencies for each job allowing you to sidestep the interference and make your HDD operation as productive and successful as possible. Not too mention the Falcon locating process itself is incredibly fast and intuitive!

Big discounts for upgrading from Subsite locators and classic DigiTrak locators are available.



Falcon F5 Performance Features:

- Falcon frequency optimizer analyzes and overcomes active interference at different jobsites
- One Falcon F5 wideband transmitter supports multiple frequencies from 4.5 to 45 kHz
- Infrared pairing of receiver and transmitter
- 0.1% precision pitch for completing critical grade bores
- Max Mode noise filtering boosts fringe data and stabilizes depth readings
- Increased power in a 15 in. transmitter for industry-best 100 ft. depth and 125 ft. data range
- Supports DataLog, Log-While-Drilling, and Target Steering® features
- Compatible with DigiTrak Aurora® touchscreen display
- Fluid pressure transmitter
- 24 transmitter roll positions



Falcon F2 Performance Features:

- DigiTrak Falcon frequency optimization technology
- Pair two optimized frequency bands for each bore
- Convenient transmitter pairing using infrared ports
- Single wideband transmitter supports hundreds of frequencies between 4.5 kHz — 45 kHz
- Increased performance provides up to 100 ft. (30.48 m) depth and 125 ft. (38.1 m) data range
- Max Mode boosts data range and stabilizes depth readings in extreme interference
- 0.1% pitch resolution
- Target Steering™ (Aurora Touchscreen Display)
- Roll Offset
- 12 transmitter roll positions

Call 800.558.7500 for more information or to arrange for a demo of the new Falcon Guidance Systems.

BOLT-ON BIT BODIES FOR THREAD-ON STYLE HOUSINGS

Use any bit you want. You know the drill.

Make your thread-on housing even more versatile with a bit body to use with bolt-on bits and blades.



Allows blades to be used on Thread-On style and High Flow Housings

Incorporates the Super Nozzle—designed to minimize clogging

Check valve minimizes chance of clogging nozzle

BITS & BLADES

Harder, Faster, Stronger Bolt-On Blades and Directional Drilling Bits

These nearly indestructible bits & blades are built to withstand all the tough spots and rough patches Mother Nature throws in your way. Most of our bits have unique features that allow you to utilize FastBack® attachments for quick pullbacks. Our computer-designed, field-tested, signature red directional drilling bits are a force to be reckoned with.

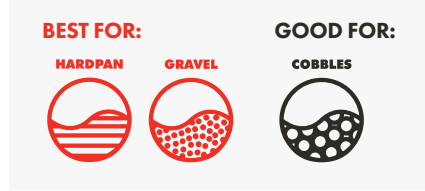
“Conditions were rough and rocky. We were doing the pilot bore with the OEM and getting nowhere. We ended up pulling back out and the bit was completely chewed up. We called Melfred Borzall and they suggested the Steep Taper Ultra Bit. What a difference! The bore went incredibly smooth and fast. When we finished the bore the bit showed very little wear. Very impressive, especially when we discovered we had drilled through a solid boulder!”



ROCK SAW

Nothing stands between Rock Saw and a hard place.

Get ready to rock and roll with this bullnose-designed bolt-on blade. Rock Saw gives you smoother rotation, better cutting and easier steering pushes in rocky and abrasive soil conditions. Get more aggressive forward- and side-cutting with Rock Saw's UltraBit-style conical carbide cutters around the front of the bit. Now available with dome carbides for rockin' past those cobbles without getting hung up. Available cutting sizes 3.5" - 6".



UltraBit-style conical carbide cutters around the front of the bit for aggressive forward- and side-cutting

Bullnose profile design for better steering and easier steering pushes

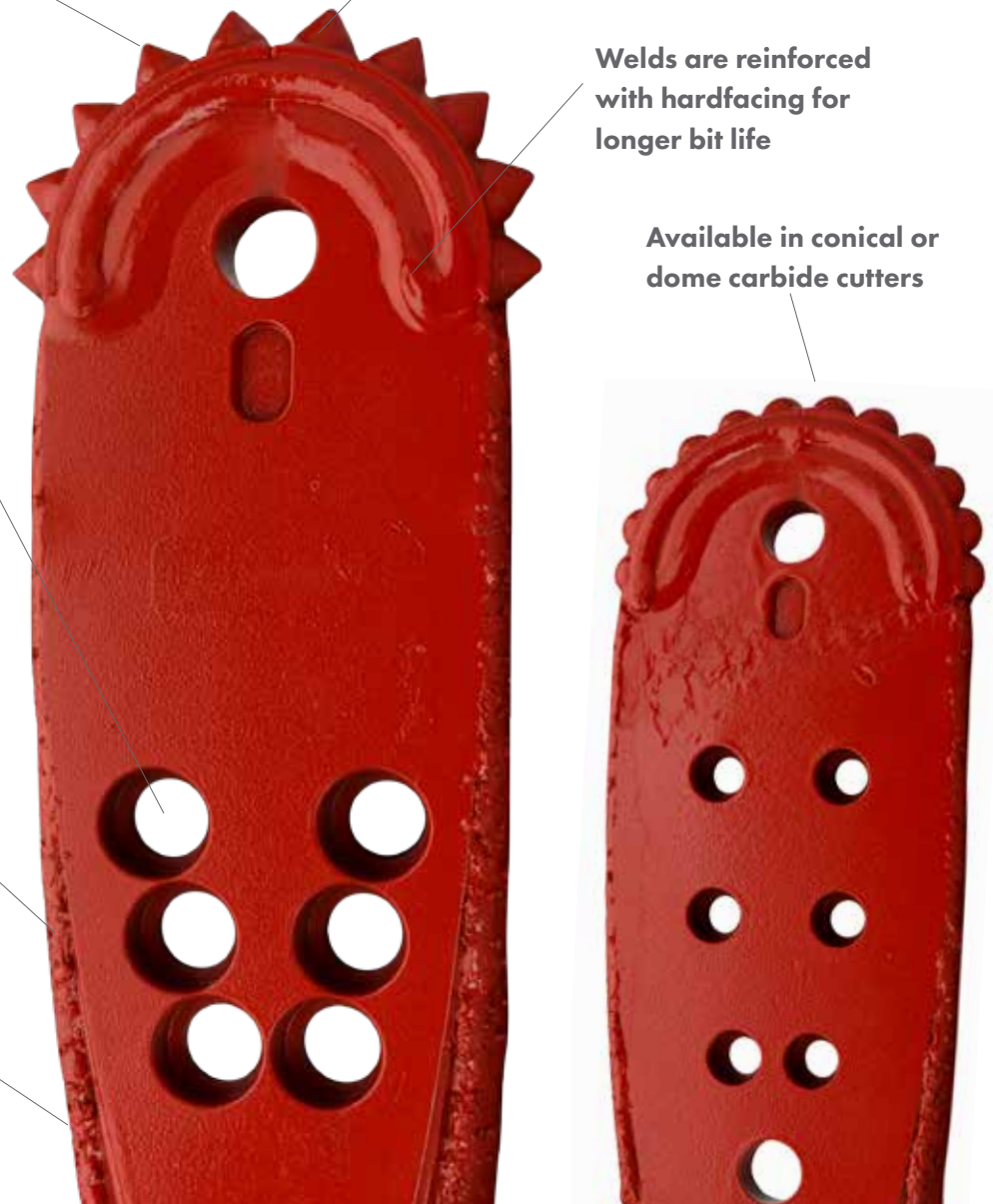
Welds are reinforced with hardfacing for longer bit life

Available in conical or dome carbide cutters

Available for Vermeer and Ditch Witch bolt patterns

Chunky carbide hardfacing along the entire length of the blade reduces wear

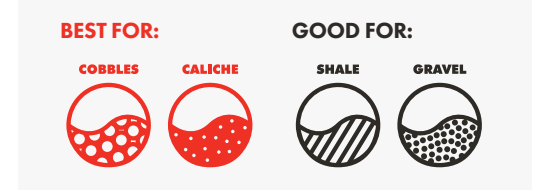
Low profile and contoured back design minimizes drag



STEEP TAPER ULTRA BIT 3

This is gonna leave a mark.

Steer through difficult ground without locking up. This premium drill bit slices through cemented cobble, hard packed soils and softer shales. Keep a firm grip on the job with an aggressive tapered bit-front and contoured steel surface featuring chunky carbide wear. Now available with dome carbides for blazing through those cobbles without missing a beat. Available cutting sizes: 3.5" - 6".



Bit of choice for ground where it's hard to do directional "pushes"

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

Available with conical or dome-shaped carbides

Available for Vermeer and Ditch Witch bolt patterns

Chunky carbide hardfacing the entire length of blade for maximum longevity

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



ULTRA BIT 3

Break ground without breaking a sweat.

This is the MVP of our fleet of bits & blades. Ultra Bit 3 is an outstanding all-around ground solution with excellent steering and incredible durability, thanks to its large welded carbide blocks and contoured steer surface with chunky carbide wear surface. Available cutting sizes: 3" - 9".



Conical carbide cutters make this an aggressive bit for hard soils



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



Welds are reinforced with hardfacing to extend bit life

Chunky carbide hardfacing the entire length of blade for maximum longevity

Available for Vermeer and Ditch Witch bolt patterns

EXCALIBUR

A legend in its own time.

This versatile bit is as classy as it is powerful. Excalibur features larger and deeper carbides than competing drill bits, which lead to a longer life. Excalibur's round nose makes for smooth cutting and easier steering pushes in rocky and abrasive soil conditions. Available cutting sizes: 2.5" - 5".



Bullnose design minimizes drag while rotating



Carbide button bits grind through tough ground conditions

Strategically placed carbides along side give this blade a long, productive life

Available for Vermeer and Ditch Witch bolt patterns



BEAR CLAW

Only the strong survive.

Behold, the King of the Beasts! This burly blade uses large conical carbide cutters to eat through caliche, sandstone and other tough conditions. Our rugged design and engineering make the Bear Claw one of the fiercest blades on the market. Available sizes: 3.5" - 5".



Large conical carbide cutters eat through caliche, sandstone and other tough conditions

Hardfacing along all wear edges create a long-lasting blade

Available for Vermeer and Ditch Witch bolt patterns



ROCK TOOLS

Less talk, more drilling rock.

When you have to cut through a rock-solid wall, you need proven performance, not flimsy claims. Our rock tools set the standard for the HDD industry, starting with the legendary Melfred Borzall Eagle Claw, the go-to rock bit for experienced drillers who don't mess around. Our entire line of rock tools are engineered to make you unstoppable.

"We own several Rock-It motors for our rigs which can range from 60k to 1.1 million pound capacity, and they've proven time and time again to be durable, solid performers. When the work load requires us to have more motors, we get a rental within two days, use it and then send it back. That's it. And we never have a repair change. Our production has been consistently above our expectations, so yeah, Rock-It motors absolutely give us a competitive edge in a very competitive market."



IRON FIST BIT

Wham. Bam. It's a real knockout.

Challenging cobble bore? Not anymore. The Iron Fist packs a major punch in cobble and loose rock conditions. It's also designed to be easily and inexpensively rebuilt, reducing your tooling costs. Bam.



Compact cutters are less likely to hang up on cobbles

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

Make direct pullbacks with your Iron Fist using the FastBack® system on page 9.

Available cutting sizes: 4" - 6" with conical or dome cutters

Wrench flats for easy removal

Minimize chance of clogging with built-in check valve

1/4" recessed water holes to prevent clogging

Contoured design

Balanced cutters for downhole stability

EAGLE CLAW BIT

The Eagle has landed.

The Melfred Borzall Eagle Claw is the fastest drilling, best steering and most durable hard soil drill bit on the market. The end. Straight-thru cutter knockout holes, built-in check valve and wrench flats make the Eagle Claw the most productive HDD rock bit you can buy. Available in 3.5" through 6" cut sizes for rigs from 7,000 lbs. to 200,000 lbs. thrust.



Unique balanced cutting design improves cutting efficiency

Aggressive tri-tooth carbide cutting action gets through the hardest conditions

Quickly and easily change out carbide cutter teeth

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

Smooth running with minimal vibration to drill stem and drill rig

Precisely placed carbide buttons minimize wear on bit body

Easily threads on to a side-load or high-flow housing

Different tooth styles to accommodate a variety of job conditions

Chisel carbide Conical carbide Dome carbide



Make direct pullbacks with your Eagle Claw using the FastBack® system on page 9.

Built-in check valve

ROCK-IT MUD MOTORS AND TRI-CONE BITS

Take this job and Rock-It!

Get more power. Use less fluid. Rock-It Mud Motors convert drill fluid pressure into maximum torque so you get more drilling time before stopping for maintenance. It's not magic. It's just Melfred Borzall engineering.

Performance Features:

- "Rent it. Rock-It. Return it." No surprise fees. Rent for as little as 2 weeks and know what your costs will be.
- High performance mud motors designed specifically for HDD
- Can be operated at a slower speed for more compatibility with tri-cone bits
- High torque-to-flow ratio means more drilling power with less fluid
- High quality internal parts results in more drilling time before regular maintenance is required
- Bearing packs are designed to be completely sealed
- 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.
- Built tough to withstand the harsh conditions of horizontal drilling. Stator tube walls are twice as thick as other brands for maximum durability.



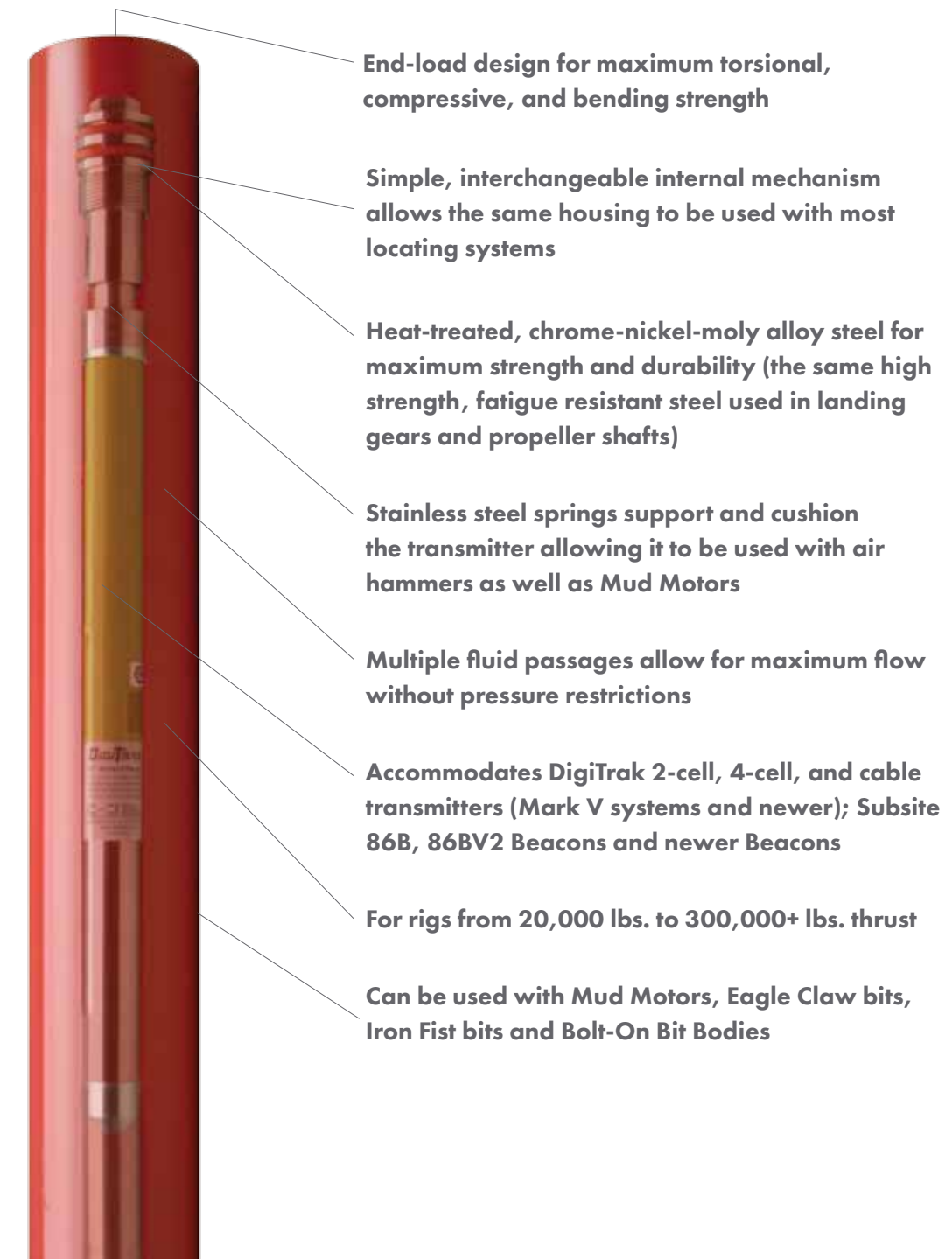
Need a rock bit for that motor? We've got a big selection.



END-LOAD, HIGH-FLOW TRANSMITTER HOUSINGS

Ideal for use with Mud Motors or Air Hammers

Use these puppies with Mud Motors, Borzall Eagle Claw & Iron Fist bits & bolt-on bit bodies. They come in sizes to accommodate rigs from 20,000 to 300,000 lbs. pullback.



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

Simple, interchangeable internal mechanism allows the same housing to be used with most locating systems

Heat-treated, chrome-nickel-moly alloy steel for maximum strength and durability (the same high strength, fatigue resistant steel used in landing gears and propeller shafts)

Stainless steel springs support and cushion the transmitter allowing it to be used with air hammers as well as Mud Motors

Multiple fluid passages allow for maximum flow without pressure restrictions

Accommodates DigiTrak 2-cell, 4-cell, and cable transmitters (Mark V systems and newer); Subsite 86B, 86BV2 Beacons and newer Beacons

For rigs from 20,000 lbs. to 300,000+ lbs. thrust

Can be used with Mud Motors, Eagle Claw bits, Iron Fist bits and Bolt-On Bit Bodies

REAMERS

It doesn't matter how good your Vermeer® or Ditch Witch® drills are if you don't have the right reamer for your job.

When it comes to reamers, we've got your back. Whether you're going through clay, sand or rock, our wide assortment of backreamers are designed to get you through the toughest conditions. We offer the most quality reamers in the industry, available in a number of different configurations and sizes. Melfred Borzall reamers help you get better production on backream and pullback from your Ditch Witch or Vermeer drill.

"We were replacing a water line under a river, about 20 feet below the bottom of the river with a bore of about 600 feet. The soil was thick mud with a lot of decomposed wood. The concern was the bore collapsing or fracking out. After drilling the pilot bore we used Borzall's Terminator with a Barrel Stabilizer to backream. The tooling solved the problem of unstable conditions and we were able to pull product and finish the job under budget."



BEST FOR:
 DIRT/SANDY LOAM
 GRAVEL

GOOD FOR:
 SHALE

JUGGERNAUT

Get ready to become unstoppable.

More carbide cutters than competitive fluted reamers mean that this versatile, compact tool makes tracks in lots of different soil types. Faster, smoother cutting action, longer life and more successful bores each day. Boom. Juggernauts with built-in swivels keep the reamer assembly as short as possible for reaming in cobble or loose rock. Juggernauts with pulling eyes save money by using one clevis swivel on multiple reamers. Available with different carbide cutter options, the Juggernaut is the most productive reamer for your conditions.

Welded cutters with extra thick carbide inserts for maximum cutting action

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

Available cutting sizes: 4.5" - 16"

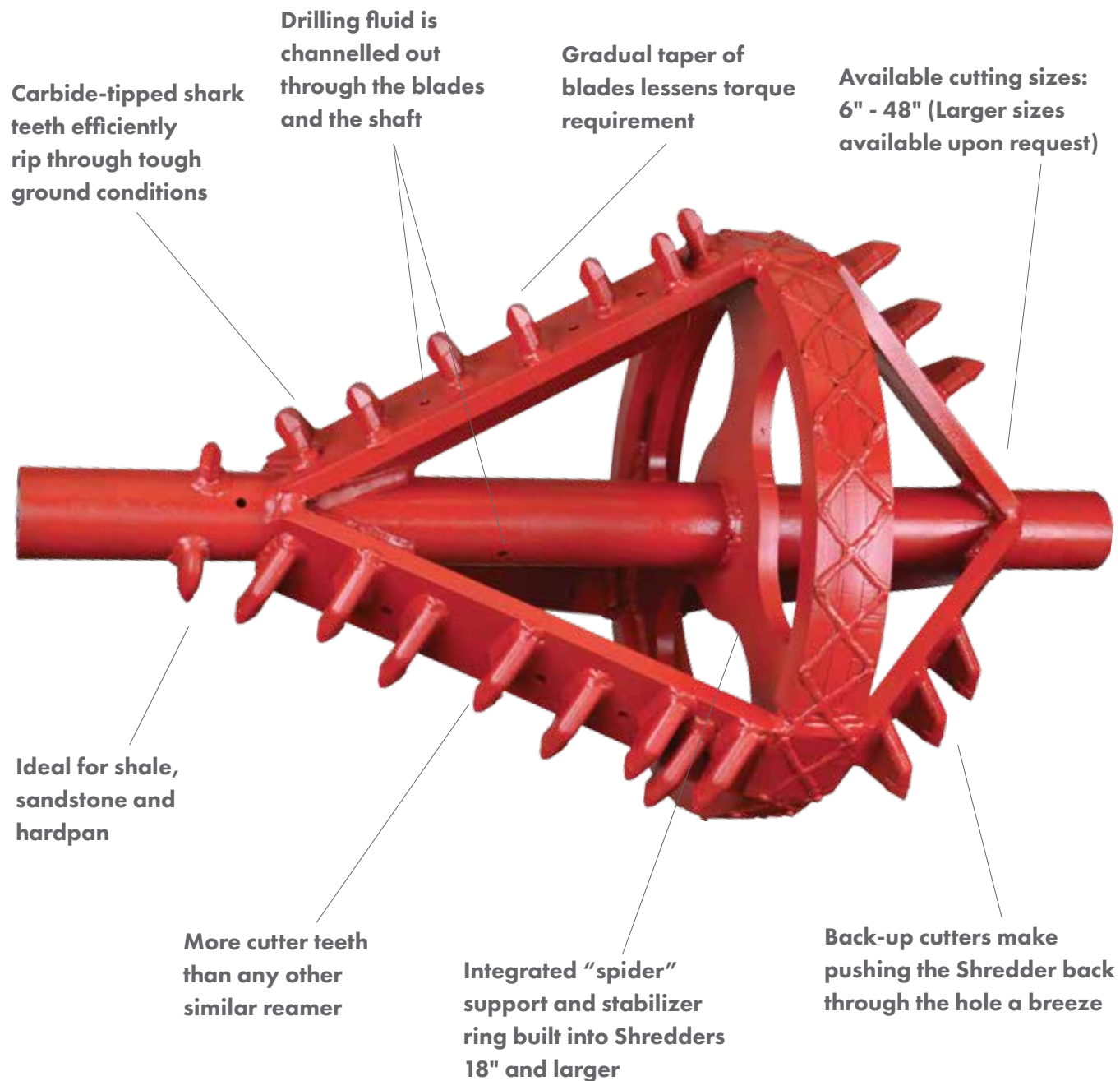
Available with shark teeth or conical cutters with aggressive or dome carbides to cover a variety of tough ground conditions

Available with built-in swivel or pulling eye - see page 48 for swivel information

SHREDDER

Your daily grind just got a whole lot easier.

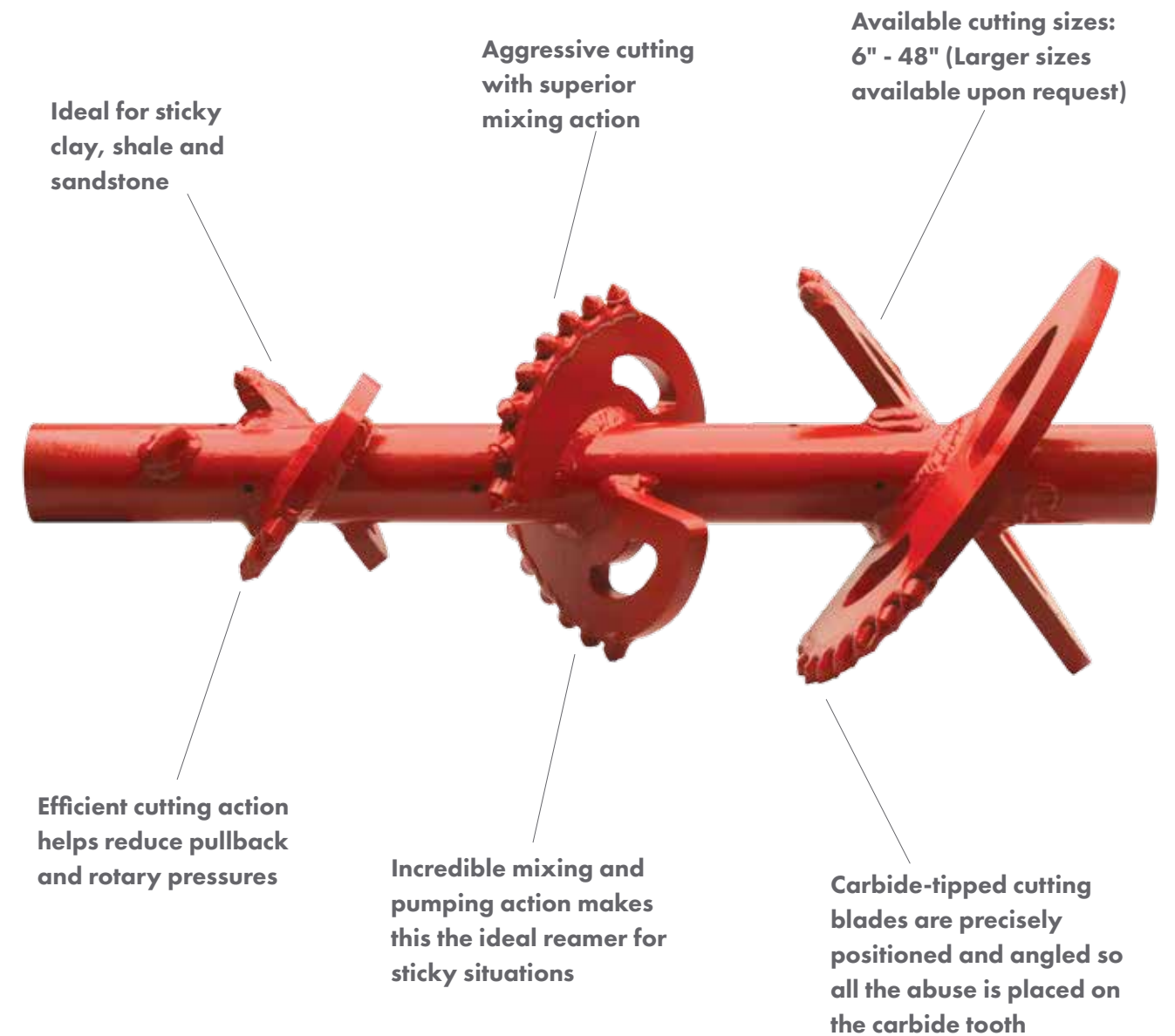
No need to break the bank when you can use this powerful and economical reaming machine in shale, sandstone and hardpan. Open wide because the Shredder has a mouth full of carbide-tipped shark teeth to crunch through difficult ground conditions any day of the week.



TERMINATOR

Destroys everything that stumbles into its path.

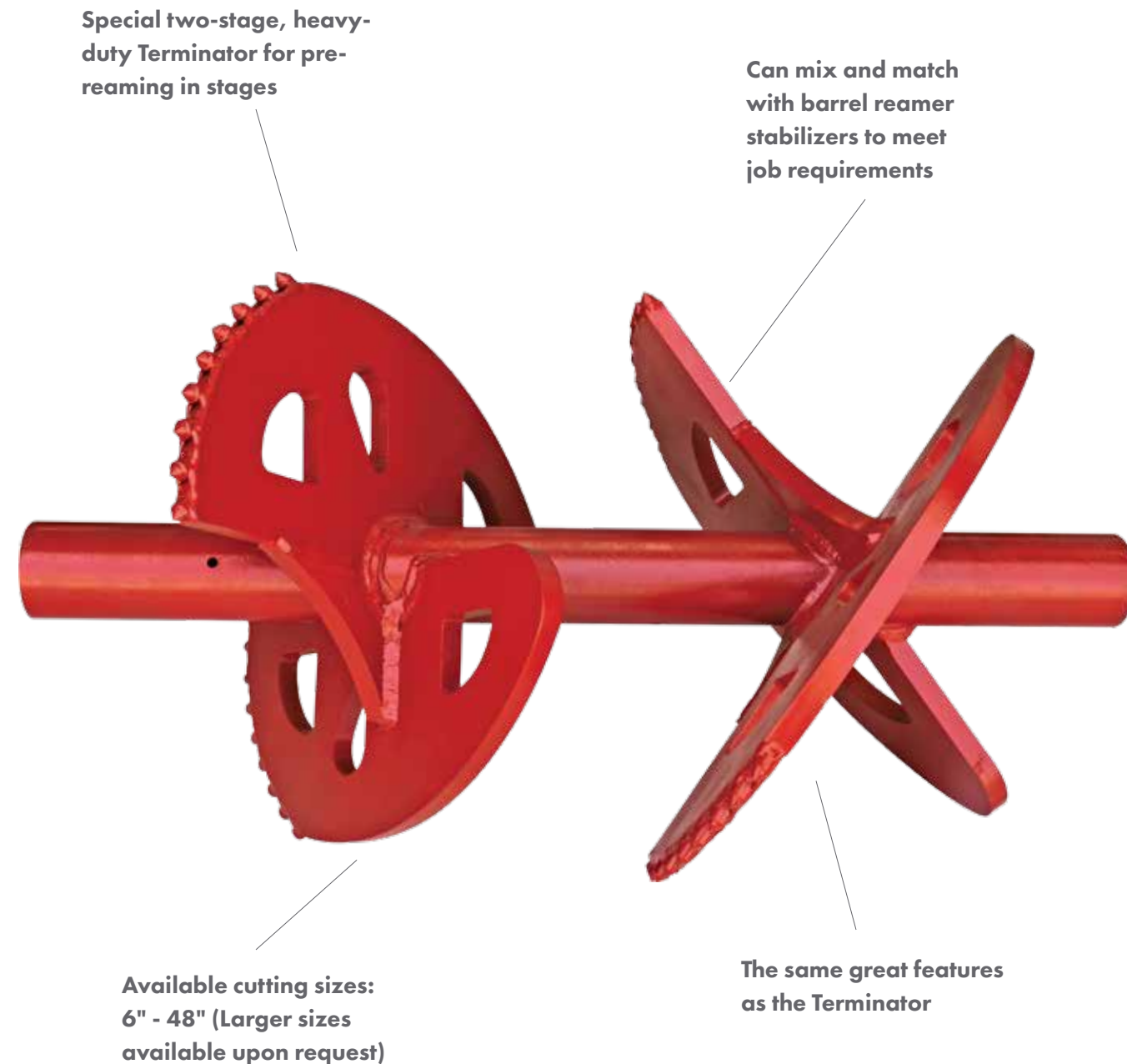
This Melfred Borzall original design combines aggressive cutting and mixing to reduce pullback and rotational forces. Terminator is ideal for sticky clays and reactive soils but can also be used successfully in a variety of conditions, from sand to hardpan. Try the Terminator once and—we've gotta say it—you'll be back.



TERMINATOR PUP

Unleash the Borzall reamer with a powerful bite.

Use these powerful puppies for bores requiring multiple reaming passes. Save money by only buying the exact amount of reaming you need. Terminator Pup reamers start cutting at a larger diameter, typically 2"-4" smaller than the previous reamer size. Remember, Terminator Pups work best with Borzall Barrels.



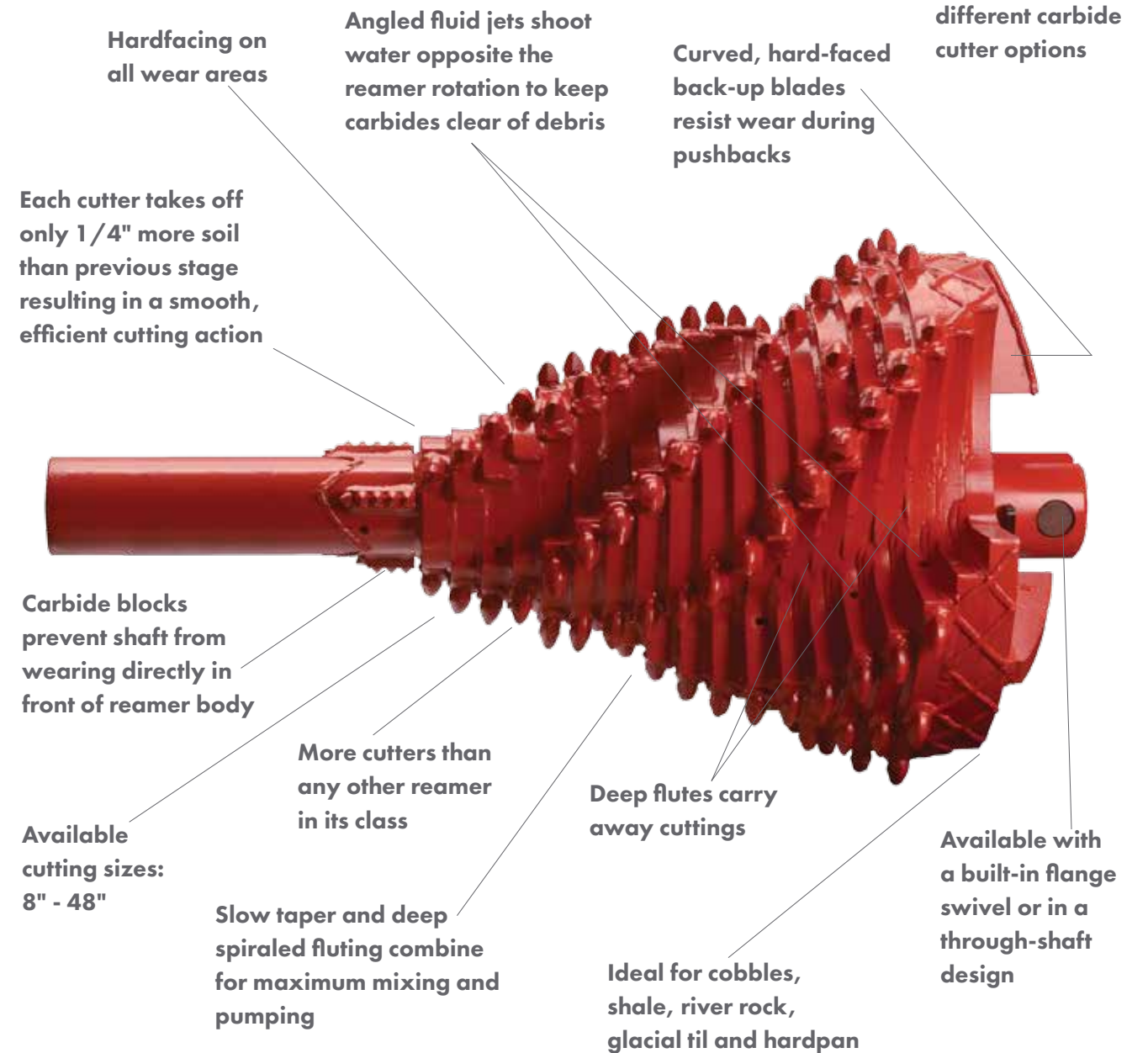
OGRE

Fire bad. Ogre good.

Hard rock, chunk rock and cobble? Ogre chews 'em up and spits 'em out. Packed with carbide cutters, Ogre is unquestionably the best reamer on the market for faster, smoother cutting and unsurpassed durability in hard, rocky conditions. Available with different carbide cutter options, Ogre is the most productive reamer for your conditions.



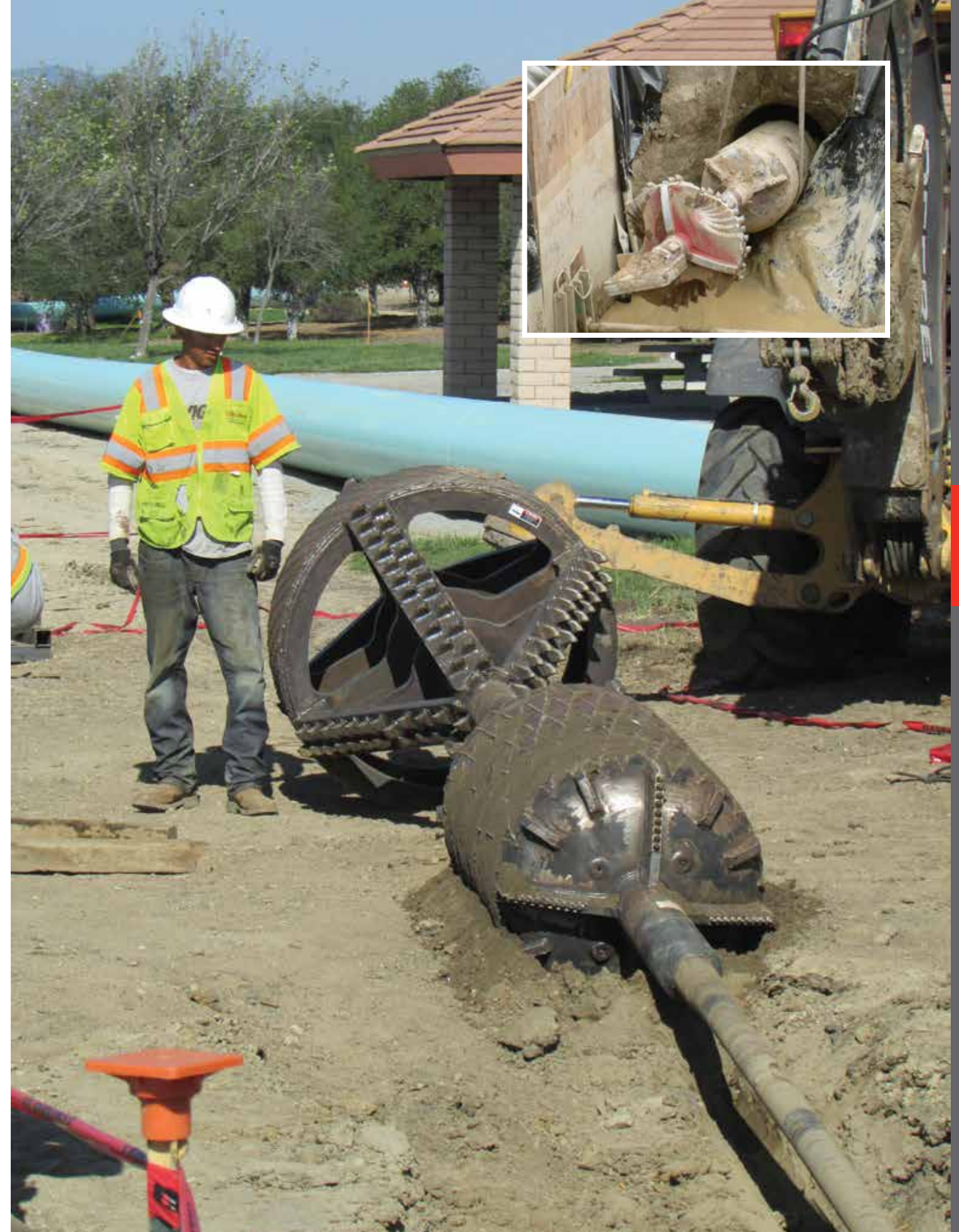
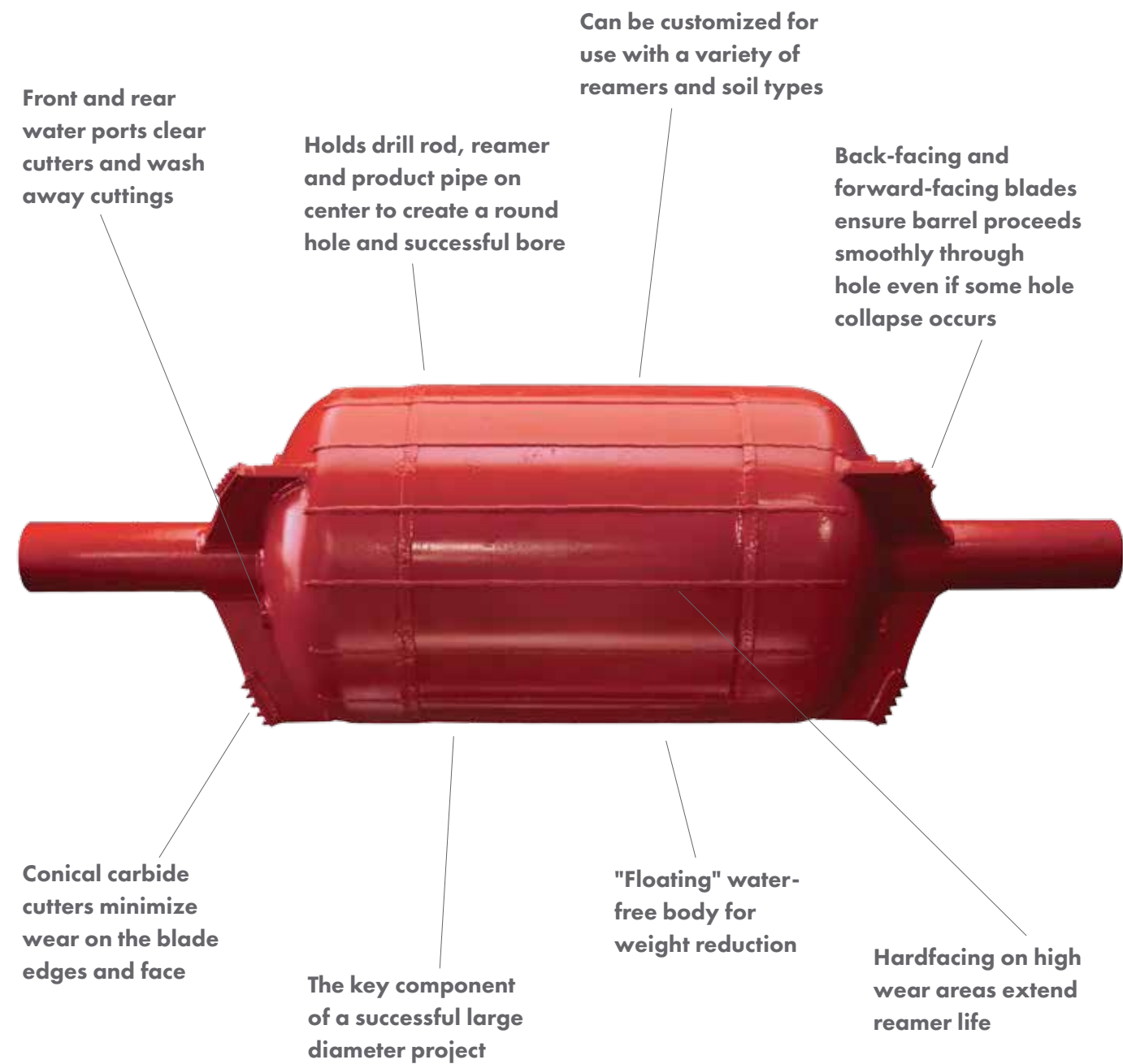
Available with different carbide cutter options



BARREL STABILIZER

Steady as a rock.

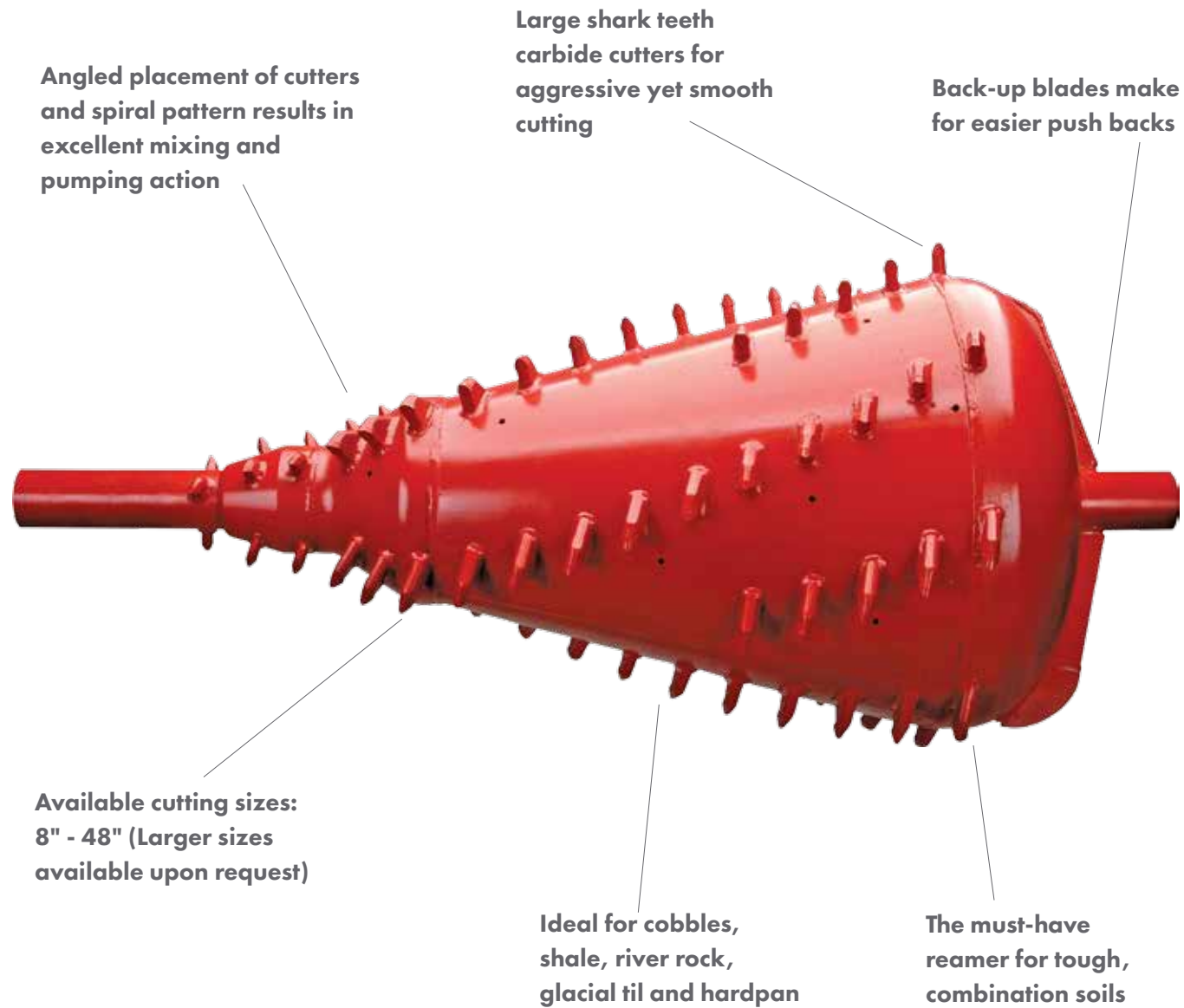
Keep your bore centralized on multiple pass reams and pack and stabilize the hole with these long-life barrel reamers. Borzall Barrels feature internal baffles to reduce weight from drilling fluid and bi-directional cutter blocks for push or pull use. They also minimize hole collapse by using replaceable forward- and rear-facing nozzles to provide lubrication without jetting out hole walls.



SABERTOOTH

Sharpen your claws. It's about to get heavy.

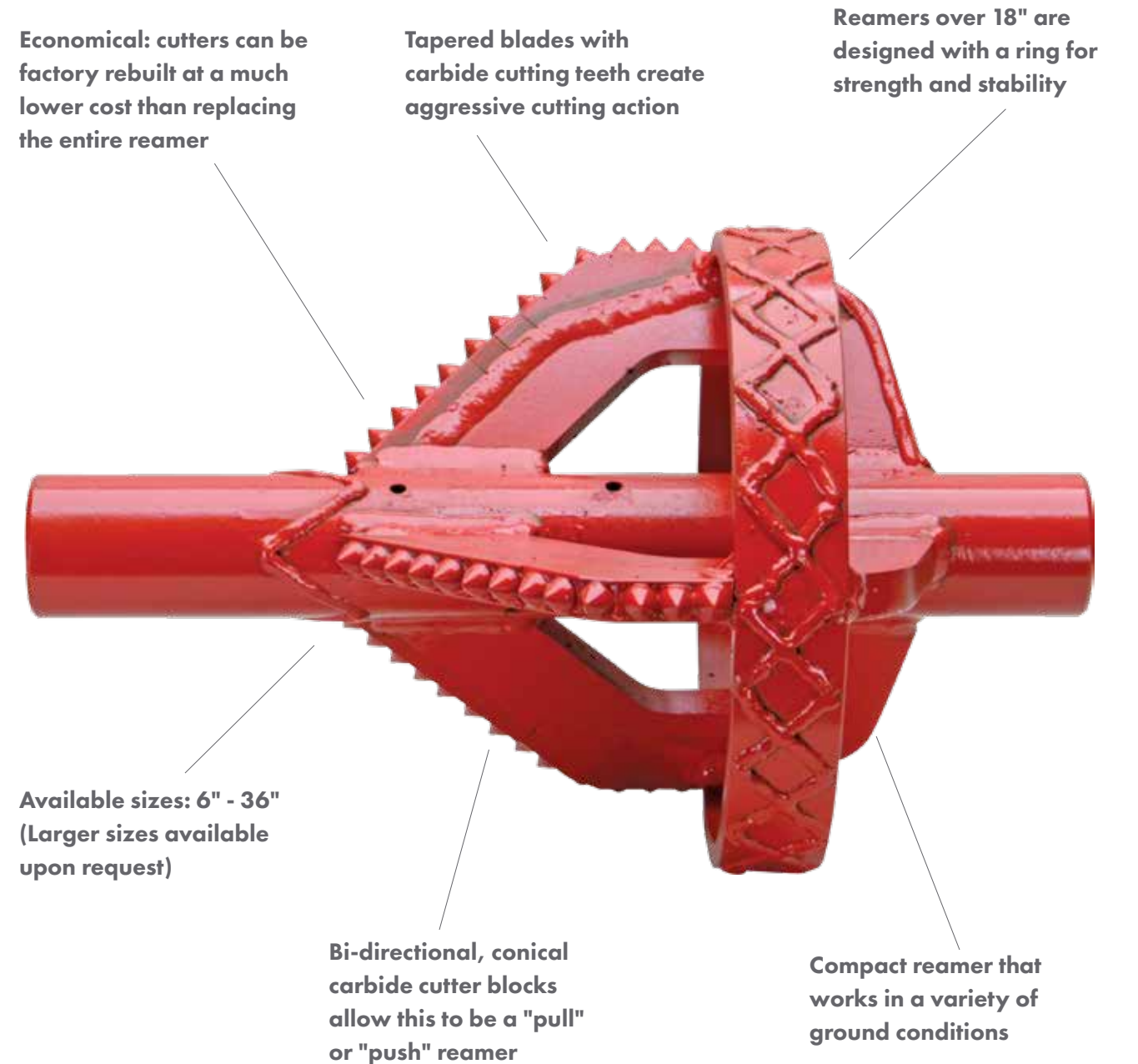
Crunch through hard ground at an affordable price. With lots of tall shark teeth in a spiral pattern and a tapered packing section, Sabertooth tackles sticky, sandy or rocky ground conditions on a single bore.



HEDGEHOG

Chew your way out of any tight squeeze.

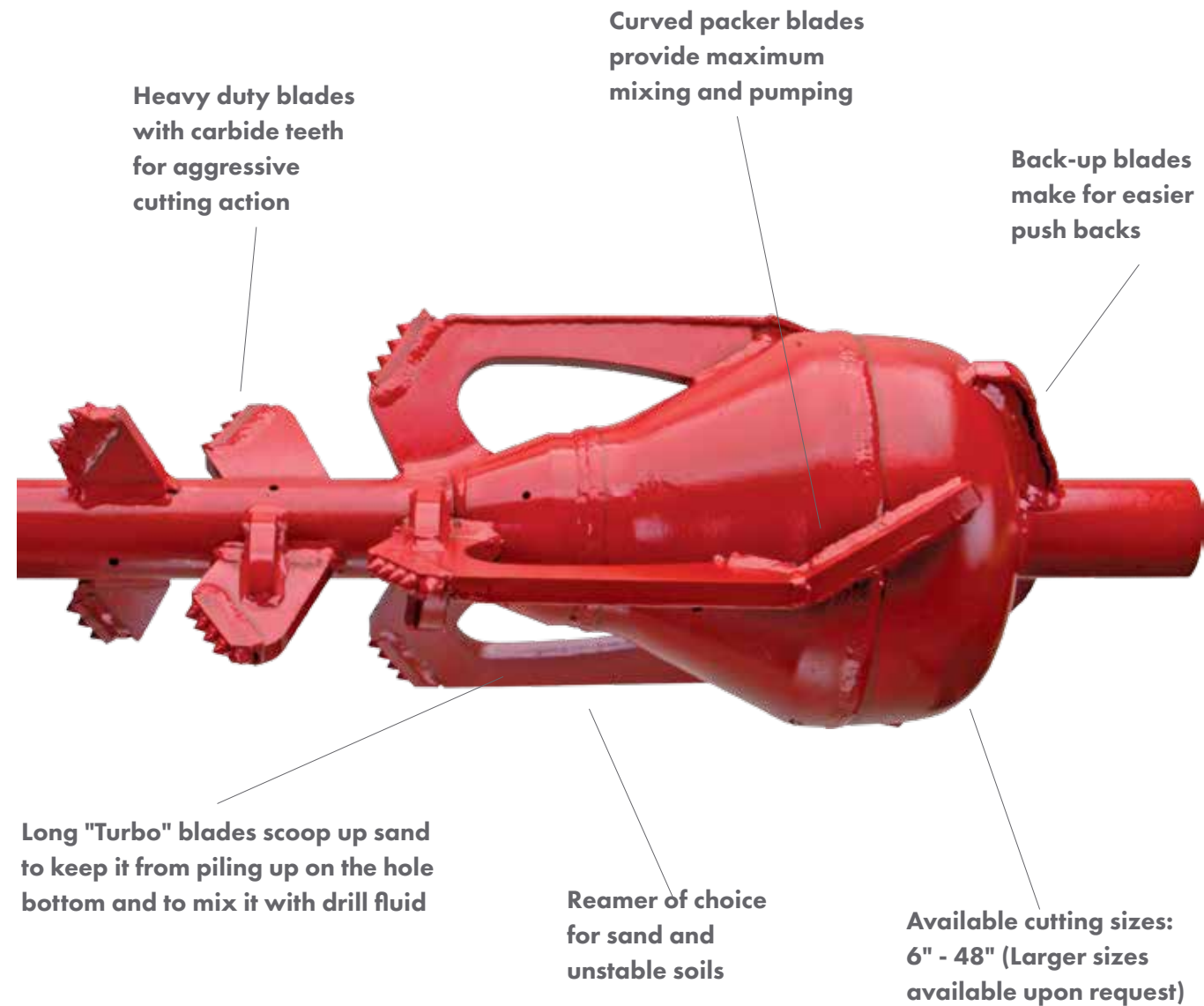
Use this pointy little fellow to burrow into lots of soil types for an economical price. Bi-directional cutters allow Hedgehog to be used as both a conventional pull reamer or as a push reamer to get more mileage out of your Ditch Witch or Vermeer drill.



TURBO

Supercharge your drilling action.

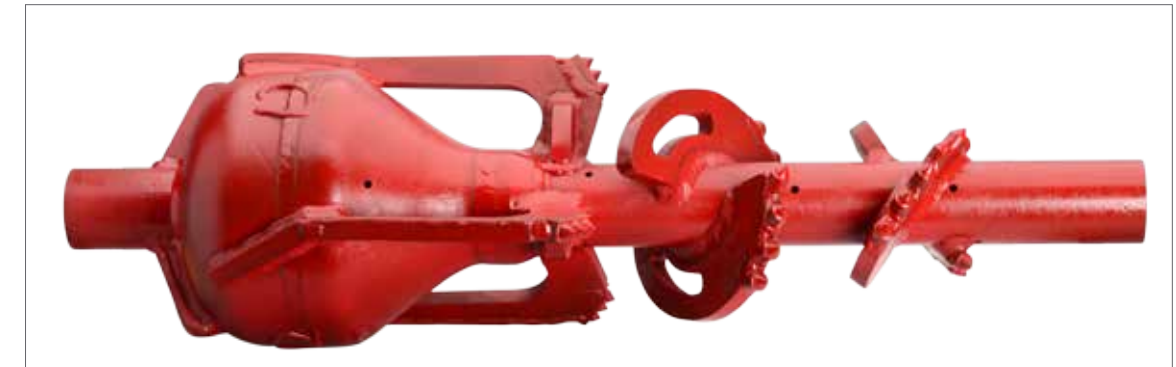
Reaming sand or unstable soils? Apply a little Turbo power. Turbo's newly redesigned mixing, pumping and packing features make boring in sand more manageable. Backup blades and Turbo's packing section make for easy pushbacks to swab out the hole, resulting in effortless pullbacks.



CUSTOM REAMERS

If you can think it, we can build it.

Tell us what you want and we'll make it and get it to you fast. Have a vision for your custom reamer? Talk to our HDD specialists about your ground conditions and job requirements and we'll put our engineers to work. We'll design and build it, then ship it to you when you need it.



QUICK-DISCONNECTS & COLLARS

The safer, easier way to swap out tools on your Vermeer® and Ditch Witch® drills

Put down that pipe wrench! Our reliable Quick-Disconnects and Collars have been engineered by HDD experts and put to the test by real drillers who understand the importance of speed and safety on every job.

SLIDE COLLARS FOR VERMEER® AND DITCH WITCH®

For Vermeer Navigator® and Ditch Witch Jet Trac®

All collars are not created equal. Our collars for Ditch Witch and Vermeer Quick-Disconnects have a thicker wall for more strength and longer life. Choose from collar options with chunky carbide hardfacing, carbide button studs, or even carbide cutter teeth to actually enlarge the hole during pullback. Collars with cutter teeth are part of Melfred Borzall's FastBack® System to accelerate your direct pullback operations.

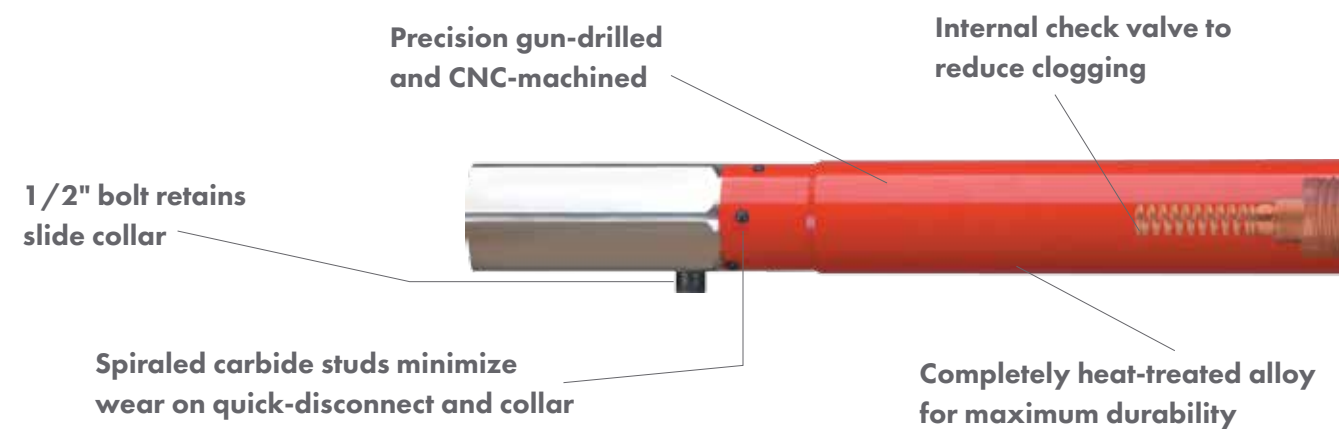
Performance Features:

- Extra-heavy wall thickness
- Completely heat-treated alloy for maximum durability
- Available with carbide studs, carbide hardfacing or with carbide cutters for maximum wear life



DELUXE QUICK-DISCONNECTS FOR VERMEER®

Minimize nozzle plugging during rod break out with our Deluxe Quick-Disconnect, featuring a built-in check valve. Carbide wear buttons extend the life of your quick-disconnect in the high-wear area immediately behind the hex collar.



VALUE QUICK-DISCONNECTS FOR VERMEER®

Quality and compatibility is assured by 100% thread inspection and unique single-setup machining process. We use chrome-moly steel produced by US Mills that matches our specs to create the highest strength and longest life quick-disconnect available.

Performance Features:

- Completely heat-treated alloy for maximum durability at a value price
- 1/2" bolt retains slide collar



EZ CONNECTS FOR DITCH WITCH®

We guarantee durability and compatibility with our precision gun-drilled, CNC-machined Ditch Witch EZ Connects, manufactured from tough American chrome-moly steel.

Performance Features:

- Completely heat-treated for maximum durability
- Precision gun-drilled and CNC-machined

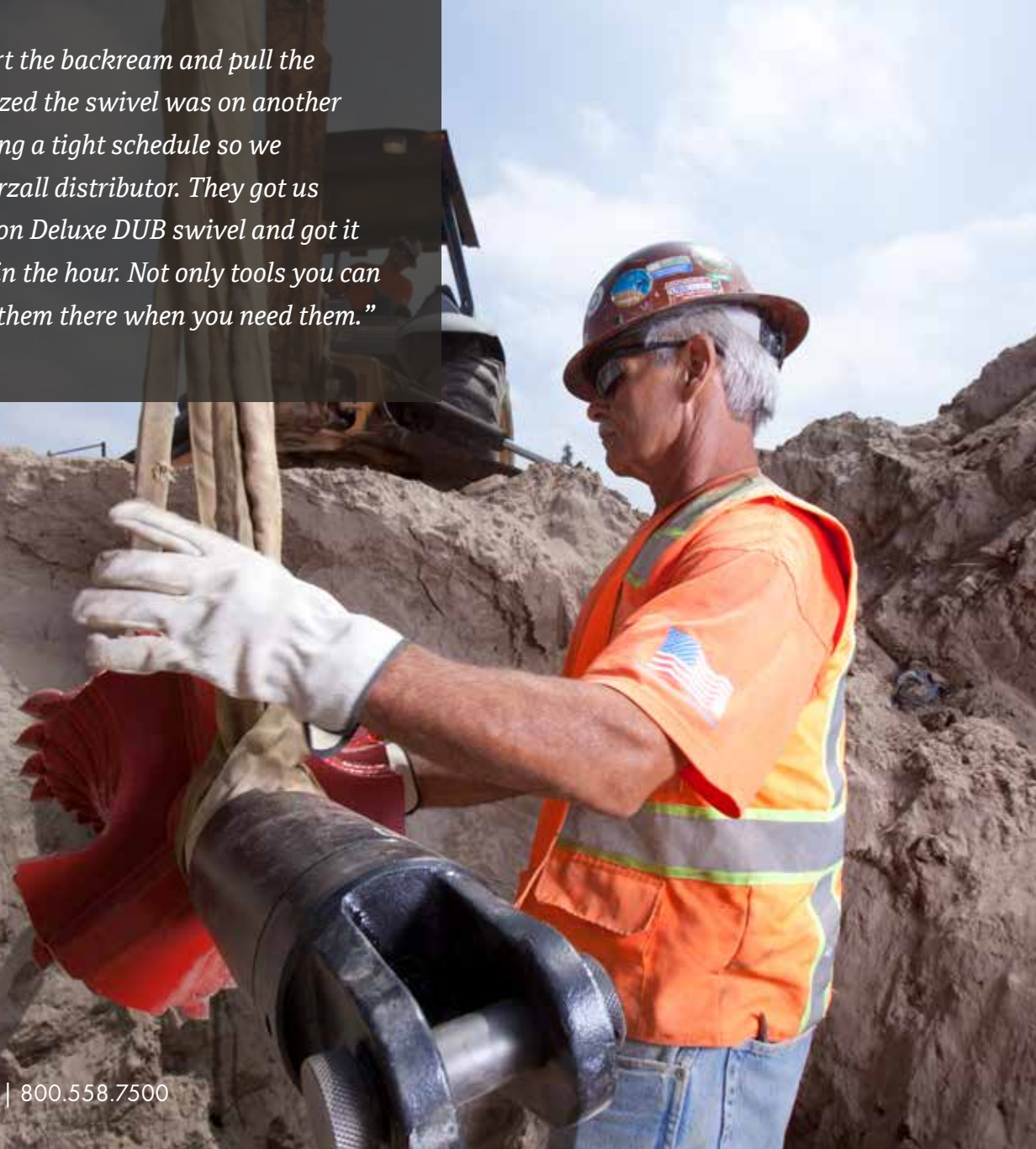


SWIVELS

Ensure a successful installation each and every time with our high quality HDD pullback swivels

Give your reamers the freedom to spin with our super-strong HDD pullback swivels that withstand high rpms without breaking a sweat. Protect your pipe against unnecessary wear with any one of our mighty swivels, available at price points to match every

“We were ready to start the backream and pull the product when we realized the swivel was on another jobsite. We were running a tight schedule so we contacted our local Borzall distributor. They got us hooked up with a 30-ton Deluxe DUB swivel and got it out to our jobsite within the hour. Not only tools you can count on, but they get them there when you need them.”



DELUXE DUB PULLING SWIVELS

Quad-stage seal system and 5-to-1 safety factor make the Deluxe DUB one long-lasting swivel.

It's not the cheapest, but it is the best. And if you're pulling in 1500' of 20" HDPE, isn't that what you really need? Deluxe DUB swivels are the most secure way to complete your backream pullbacks. The greasable tapered roller or spherical bearings and four-stage sealing system on your Deluxe DUB features a metal-to-metal face seal to ensure reliability and long life. Available in pullback capacities from 2.5-ton to 700-ton (wow, that's big!)

Performance Features:

- Not the least expensive swivel but will save you the most money
- Deluxe bearings can handle tensile, compressive and side loads
- Intricate quad-stage seal system designed specifically for HDD conditions
- Available in double-clevis or thread-clevis configurations



VALU-DUB PULLING SWIVELS

Valu-DUB Swivels are as dependable as they are economical. Greasable premium angular contact bearings and triple sealing system meet the demands of even the toughest HDD job. Available in capacities from 4.25-ton to 45-ton.

Performance Features:

- The most swivel for your money (by far!)
- Features a triple-stage sealing system to keep debris from destroying bearings
- Push and pull loads are absorbed by premium quality angular contact bearings
- Fitted with a grease nipple that makes for easy lubrication and a long-lasting swivel



QUICK-SWIVEL

Designed exclusively for Melfred Borzall blades

Part of our FastBack® System, the Quick-Swivel is a 10,000 lb. swivel that attaches directly to Melfred Borzall bits for quick and safe direct pullbacks. The unique locking pin keeps the Quick-Swivel straight and on-center.

Performance Features:

- Do direct pullbacks without removing the drill head
- Quickly bolts on to Melfred Borzall's most popular blades: Excalibur, Rock Saw, UltraBit
- Swivel stays in line with the rotation of the drill head
- Made from the same quality components as the 5-ton ValuDUB swivel

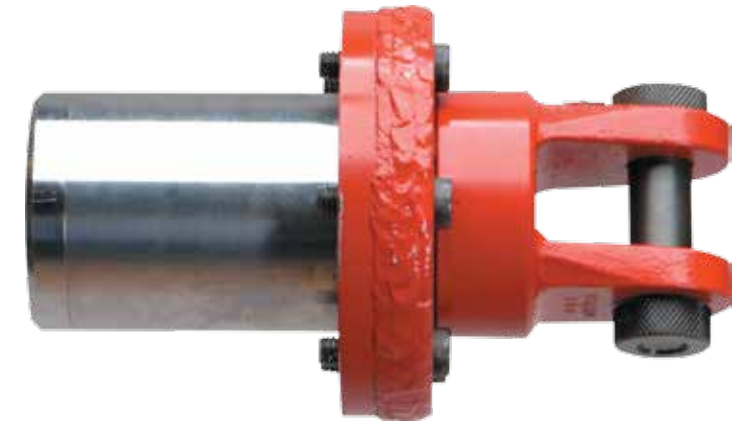


DELUXE DUB FLUTED REAMER SWIVELS

Keep your overall backreamer length compact with all the awesome features of Deluxe DUB HDD pullback swivels—but designed for fluted reamers. Available in capacities from 5-ton to 60-ton.

Performance Features:

- Deluxe bearings can handle tensile, compressive and side loads
- Intricate quad-stage seal system designed specifically for HDD conditions
- Totally self-contained and greaseable for a long life
- Hard-facing around face of flange minimizes wear at the head of the bolts

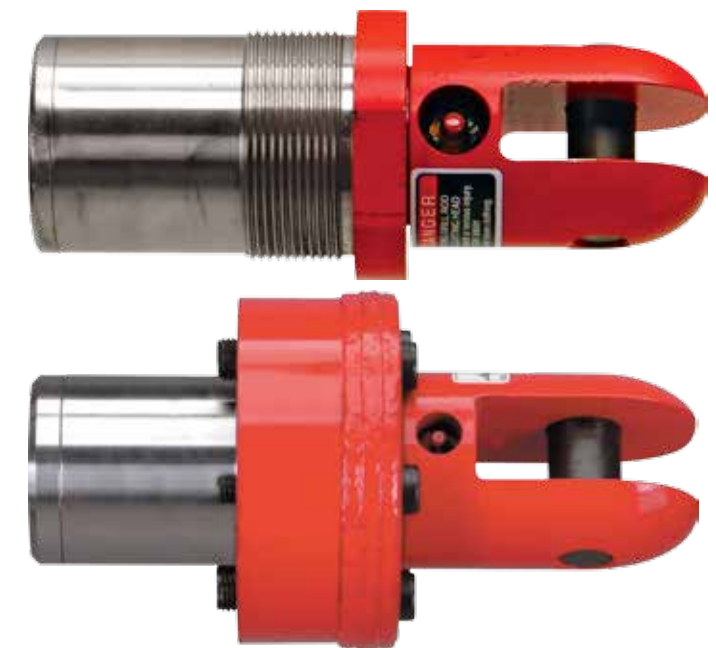


VALU-DUB FLUTED REAMER SWIVELS

The value and features of Valu-DUB swivels are made for fluted reamer setups, resulting in a compact overall backreamer length. Available in capacities from 4.5-ton to 30-ton.

Performance Features:

- Features a triple-stage sealing system to keep debris from destroying bearings
- Push and pull loads are absorbed by premium quality angular contact bearings
- Totally self-contained and greaseable for a long lasting swivel
- Hard-facing around face of flange minimizes wear at the head of the bolts



PULLERS

Keep a firm grip with rugged HDD pullers for every job

Pull thousands of feet of pipe without slipping with our indomitable line of sturdy HDD pullers. When conditions are tough, you need to be able to trust your tools. We engineered all our pulling tools and accessories to be efficient and reliable in any situation you run into underground.

"We pull a lot of different product, so when we were on a high-profile fiber job, the last thing we needed to worry about was losing one of the multiple conduits. Our Borzall distributor came to the site with a truck full of different pullers and helped us choose the right size to ensure a smooth pullback. It's good to know that in those occasional situations when we need something on the job site, Borzall is there to support us."

SUPER DELUXE DUCT PULLERS

Soak this rugged duct puller all you want, its internal sealing keeps it watertight. This ultra-strong puller can be assembled and disassembled by hand for easy use in the field.

Performance Features:

- 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

This reliable puller has a precision-machined, hardened alloy head that can handle all the abuses HDD throws its way. With an outer sleeve to protect against stretching the duct, our Deluxe Duct puller fits most duct sizes, from SDR9 through SDR21.

Performance Features:

- Precision machined, hardened alloy pulling head will handle the abuses of HDD
- Completely sealed to prevent fluids from entering the duct or the puller itself
- Outer sleeve prevents stretching of duct
- 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
- Oversized rear eye
- Available sizes: fits most duct sizes from SDR9 through SDR21



PREMIUM DUCT PULLERS

Performance Features:

- Fewer moving parts for easy repair and maintenance
- Expanding jaws securely grip inside wall of duct
- Comes standard with a polyurethane plugger
- Made from zinc dichromate-coated steel

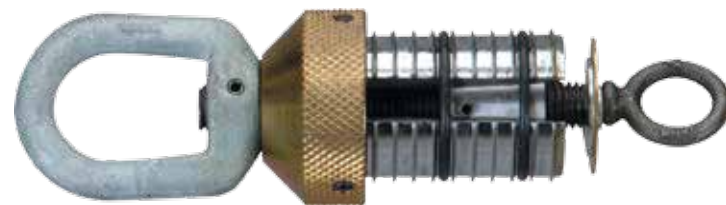


STANDARD DUCT PULLERS

Easy does it. No special tools are needed to install these fast and easy pullers that fit most duct sizes from SDR11 through SDR17.

Performance Features:

- Quick and easy to install with no special tools required
- Expanding jaws securely grip inside wall of duct
- Large number of jaw teeth (compared to other brands) result in a stronger grip
- Pluggers available to keep mud out
- Available sizes: fits most duct sizes from SDR11 through SDR17



INNERDUCT PULLERS

These hearty Lug-style and Clevis-style HDD pullers are made from steel and plated for added strength and durability. Quick and easy to install, they feature sharp double cutting edges that actually cut a thread into the duct, enabling a firmer grip with less chance of stretch.

Performance Features:

- Phenomenal gripping power
- Economical means of pulling small diameter duct and innerduct
- Machined from steel and chrome-plated for durability
- Double cutting edges that actually cut a thread into the duct



BREAK-AWAY CONNECTORS & PINS

Protect polyethylene ducting from overload during installation with our line of heavy- and light-duty Break-Away Connectors and Pins.

Performance Features:

- Protect your duct from failure
- Designed to protect polyethylene ducting from overload during installation
- Utilizes up to 5 pins that are designed to break in tension at a specific load
- Heavy-Duty Break-Away has a breaking range from to 6,000 lbs. to 45,000 lbs.
- Light-Duty and Break-Away Swivel have a breaking range from 750 lbs. to 12,500 lbs.



Light-Duty Break-Away and Pins



Heavy-Duty Break-Away and Pins



Break-Away Swivel

SHACKLES

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

Performance Features:

- Stock up on shackles to connect the pulling grips and pullers to your swivel
- Many, many sizes in stock

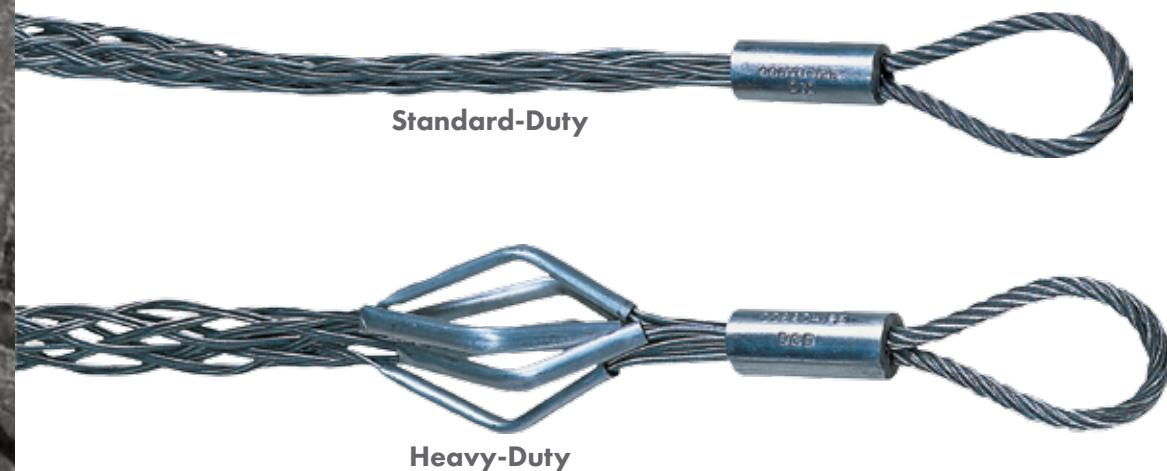


PULLING GRIPS

Wire mesh standard-duty and heavy-duty grips made with a double weave of galvanized wire stay strong under pressure. Smart, return-weave design leaves no crimped trailing ends.

Performance Features:

- Made with a double weave of galvanized wire for maximum durability
- Return weave design so there are no crimped ends at the trailing end
- At least a 2X safety factor
- Available in Heavy-Duty and Standard-Duty

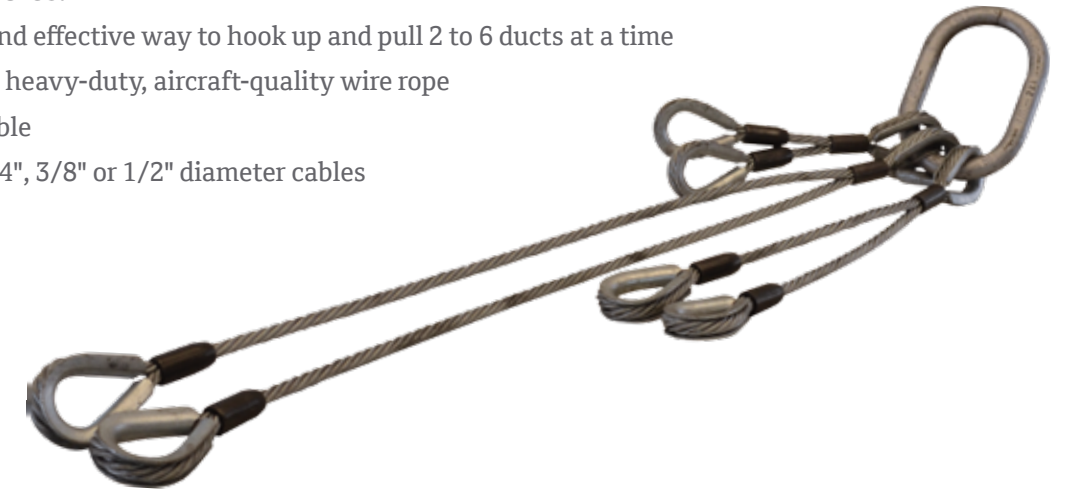


PULLING SLINGS

Save time and money by hooking up and pulling 2 to 6 ducts at one time. These strong cable slings are made using heavy-duty, aircraft-quality wire rope and feature replaceable legs.

Performance Features:

- 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
- Legs are replaceable
- Available with 1/4", 3/8" or 1/2" diameter cables



MULTI-DUCT PULLING PACKER

Pull multiple ducts at once with our multi-duct pulling packer, which securely locks your innerduct puller into a single unit. This monster pulling device can house lots of duct sizes, depending on your job.

Performance Features:

- A simple and secure means of pulling several ducts at one time
- Actual pulling device is protected by a heavy-duty packer housing
- Packer provides a gradual transition from the swivel
- Large variety of duct size combinations can be pulled
- Can be used with the Series 00616, 00620, 00650 or 00604 pullers
- Custom configurations available



DRIVE CHUCKS & SUB-SAVERS

Protect the drill rod threads on your Vermeer Navigator[®] and Ditch Witch Jet Trac[®]

In the HDD business, small parts shoulder big responsibilities. Too much wear on your drill rods starts to deform the shape of the worn sub-saver threads. That's bad news for your drilling operation. Get more life out of every drill rod by changing out your worn sub-savers and drive chucks. When attaching the drill rod to the sub-saver or chuck, be sure to torque it up to the correct pressure. And don't forget your Auntie C's thread lube!

"Borzall has a great selection of drive chucks to fit our drills and drill rod. The high quality is long lasting and adds to the life of our drill rod. Using Borzall's Drive Chucks solves the problem of prematurely wearing out the threads."

DRIVE CHUCKS & SUB-SAVERS FOR VERMEER NAVIGATOR[®]

Precision CNC-machining means that these drive chucks and sub-savers will keep your drill rod threads safe and sound. Boost your drive chuck's life by adding a replaceable sub-saver to bear the brunt of the wear so your drill rod threads don't have to.

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.



Performance Features:

- Most drive chucks are available with a replaceable, inexpensive sub-saver
- Completely heat-treated alloy for maximum durability
- CNC-machined for a perfect match with your drill rod
- Glue kit available for sub-savers
- Pro Driller Tip: Don't forget the Auntie C's thread lube!

DRIVE CHUCKS & SUB-SAVERS FOR DITCH WITCH JET TRAC®

Same precision engineering and rugged materials but designed as a direct replacement for your Ditch Witch Jet Trac®. These bad boys are a perfect match to your drill rod so you don't lose time fixing compatibility issues.

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.



Performance Features:

- All drive chucks are available with a replaceable, inexpensive sub-saver
- Direct replacement for the one that came with your JetTrac®
- Completely heat-treated alloy for maximum durability
- CNC-machined for a perfect match with your drill rod
- Pro Driller Tip: Don't forget the Auntie C's thread lube!

ADAPTERS

When the going gets tough, we make it easy to adapt.

Our sturdy adapters seamlessly connect your Melfred Borzall tools to any Vermeer®, Ditch Witch® or other OEM drill rig connection. Choose from hundreds of adapter configurations or have our product engineers create a custom adapter specifically for your needs. Whether stock or custom, we can ship your adapter the same day you order it, so you can get back to work fast.

FAST-ADAPT

Don't throw away your housing just because the threads are worn out

No matter what tools you're trying to connect, we can machine high-quality, sturdy adapters that are guaranteed to work. Not only do we have a ton of adapter configurations already, we can build custom adapters on the same day you order them and get them to you fast.

Performance Features:

- Precision, CNC-machined from US sourced, heat-treated alloy steel
- Custom adapters manufactured on the day you order them
- Hundreds of in-stock adapter configurations available for same-day shipping
- Adapters can be used with Melfred Borzall reamers and transmitter housings
- Adapters also available with Mud Boost fluid ports (see page 14)

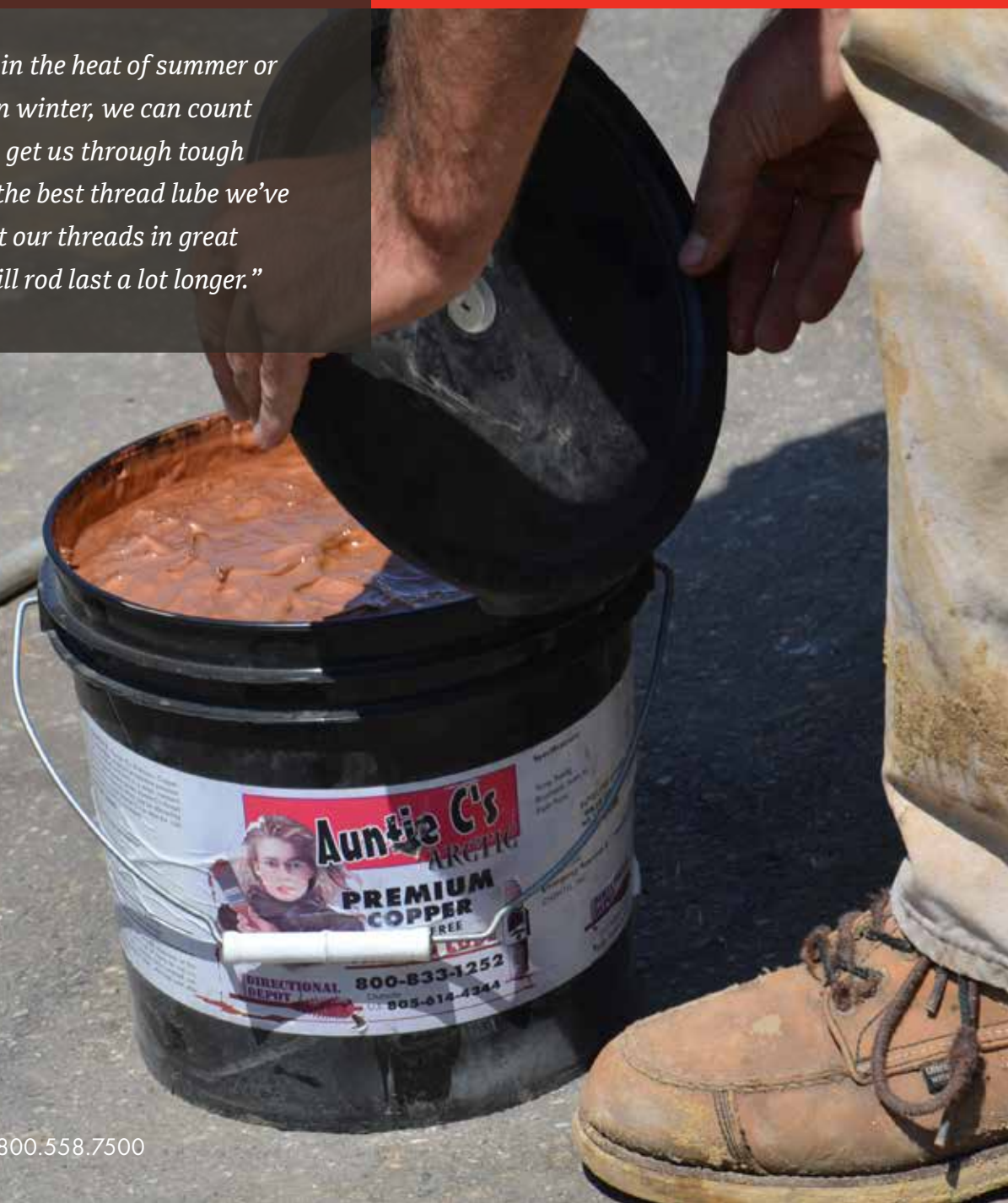


PARTS & ACCESSORIES

Drilling parts and accessories to reinforce HDD tools and the drillers who depend on them

You've got the best backreamer, the right bits and blades, now all you need is...everything else to keep your HDD operation on track. Stop wasting time running between supply stores and OEM catalogues when Melfred Borzall offers all the parts and accessories you need, right now.

"Whether we are drilling in the heat of summer or extreme cold conditions in winter, we can count on Borzall's Auntie C's to get us through tough conditions. Auntie C's is the best thread lube we've come across and has kept our threads in great condition, making our drill rod last a lot longer."



AUNTIE C'S THREAD LUBE

Keep your operation running smoothly with Auntie C's Premium copper thread lube, designed specifically for the demanding conditions found in directional drilling.

Performance Features:

- Premium copper thread lube designed specifically for the demands of HDD
- Provides maximum protection against galling and seizing
- Lead-free, environmentally safe compound
- Contains no zinc or other materials which may be affected by elevated temperatures
- Available in Arctic Grade for cold conditions and for rigs with auto-lubers

Available sizes:

- 20 oz. tube
- 10 lb. pail
- 20 lb. pail
- 45 lb. pail

Pro Driller Tip: For rigs with auto-lubers, we recommend using the Arctic Grade Auntie C's



DRILL ROD WIPERS

Keep your drill rod clean by adding some drill rod wipers to your next order. These indispensable drilling parts are manufactured from high quality solid rubber and are designed as a direct replacement for your OEM wipers.

Performance Features:

- Direct replacement for most OEM wipers
- High quality solid rubber wiper keeps drill rod clean
- Solid 9" rubber wipers
- Dual-split 9" rubber wipers
- Dual-split 14" rubber wipers

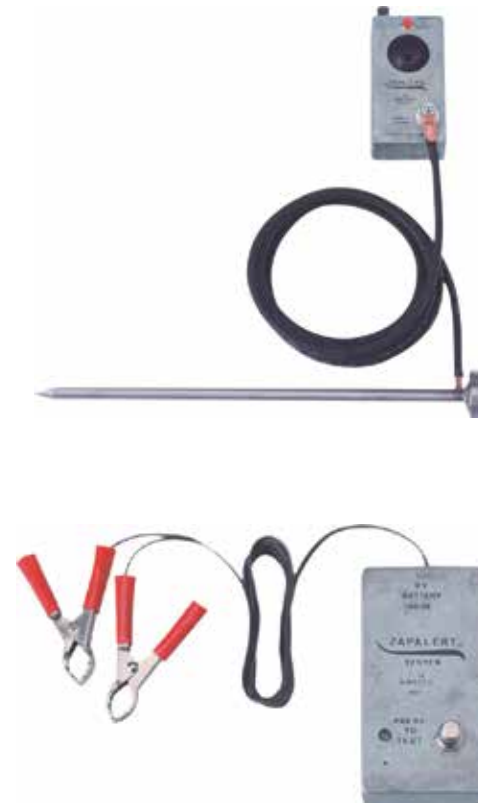


ZAPALERT STRIKE ALARM & TESTER

Use these easy-install alarms to alert your crew to the possibility of a strike on an underground power line.

Performance Features:

- Easily installs on HDD rigs
- Tested from 100 to 100,000 volts AC
- Retrofit Zapalerts and parts available for Vermeer Navigator internal Zapalert



BREAKOUT JAWS

Our high-quality cylinder side and stationary side breakout wrench replacement jaws and inserts will ensure your rod is properly torqued and easily unthreads.

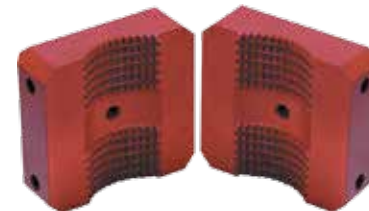
Cylinder Side Breakout Jaws:

Breakout wrench replacement jaws



Stationary Side Breakout Jaws:

High quality replacement jaws



Breakout Jaws Inserts:

High quality replacement jaw inserts



REPLACEMENT CUTTERS AND BLOCKS

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



ELECTRICAL SAFETY BOOTS, SHOES & GLOVES

Waterproof. Mudproof. HDD-proof. Don't waste your time on flimsy safety boots or gloves. Our dielectric boots and gloves are constructed from tear-resistant rubber to keep you dry and safe, inside and outside the pit.

Boot & Shoe Performance Features:

- Conform with ASTM F1117 and tested to 20,000 volts

Boot & Shoe sizes:

- Boots are a 12" over-the-shoe style
- Shoes are an over-the-shoe style

Glove Performance Features:

- Dielectric rubber gloves rated for usage at up to 17,000 volts
- Leather protectors go over to protect rubber glove from damage
- Meets ASTM specification D-120

Glove sizes:

- Half and whole sizes available





2712 Airpark Drive | Santa Maria, CA 93455
800-558-7500 *phone* | 805-739-0118 *international* | www.melfredborzall.com

FIBER OPTICS TO SEWER LINES. SAND TO SHALE. GET IT DONE AT THE SPEED OF LIGHT.

Whatever you are installing, wherever you are drilling. We have the products to get the job done quicker, better and with less headaches.

When it comes to the world of HDD, we've been just about everywhere. That's what happens when you've got over a half-century of innovation, experience and industry-leading customer service under your tool belt. So when you need the right tool the first time, and the solutions to back it up, there's only one place to call—Melfred Borzall.



YOU, THE AMAZING DRILLER:

WHERE TO GET AMAZING TOOLS: