



®









**RAILHEAD**  
UNDERGROUND PRODUCTS, LLC.







P. O. BOX 2409  
Weatherford, TX 76086

Phone: 817-594-6663  
Fax: 817-594-3697  
[www.railhead.com](http://www.railhead.com)

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These products are protected by one or more of the following

US Patents

5,931,240

5,934,391

6,209,660



# Rock Tooling—Railhead Incredibit

**Railhead** is engineered to drill through tough rocky conditions, while the patented technology allows it to **out steer every other tool on the market**, typically making corrections in half the time required by other knock offs and conventional tooling. And, it allows smaller machines that had been previously unsuccessful to complete tough condition bores.

**Railhead** bores in a manner different than any other tool. By drilling in a random elliptical pattern, Railhead creates an annular space larger than the tooling. This reduces wear, increases flow and allows for faster corrections.

**Newly designed door** with thicker hold down tabs and a rounded top to increase the service life and added protection for your beacon.



Available in 2-3/4", 3", 3-1/2", 4-1/8" and 5" sizes, fit drills from 7,000# to 140,000#

|                          |        |        |        |        |     |
|--------------------------|--------|--------|--------|--------|-----|
| <b>Railhead bit size</b> | 2-3/4" | 3"     | 3-1/2" | 4-1/8" | 5"  |
| <b>Average hole size</b> | 4-1/2" | 5-1/2" | 6-1/2" | 9"     | 11" |

Because of the way the Railhead drills, the hole sizes created are larger than the tooling. The table above shows the average size hole created using Railhead tooling.



# Rock Tooling—Railhead Incredibit

**Railhead Housings and Rock Bits** incorporate the patented 'Stress Relief Structure' with the "key and keyway" design to take much of the side stress off the bolts. This greatly reduces tool loss due to bolts breaking. The newly designed rounded door incorporates another patent with the "Door Hold Down Tabs". Simply drop the door in place, slide it back and install the bolts in front of the door.



## Incredibit Sonde Housings

| PART # | Description                                       |
|--------|---|
| 1800   | SH 2-3/4" "Non-Subsite" Sonde Housing             |
| 1810   | SH 2-3/4" "Subsite 86B/BH Specific" Sonde Housing |
| 1830   | SH 3-1/8" OD Sonde Housing                        |
| 1850   | SH 4-1/8" OD Sonde Housing                        |
| 1860   | SH 3-5/8" OD Sonde Housing                        |
| 1880   | SH 5" OD Sonde Housing                            |

Housings require a Housing Saver which connects to the drill rod or quick connect system being utilized. See page 11 for a complete list.

## Incredibit Rock Bits



| PART # | Description                                |
|--------|--|
| 1503   | RB 2-3/4" Standard (1800/1810)             |
| 1526   | RB 3" Standard (1830)                      |
| 1528   | RB 3" Aggressive (1830)                    |
| 1554   | RB 3-1/2" Standard (1860/1760)             |
| 1555   | RB 3-3/4" Aggressive (1860/1760)           |
| 1562   | RB 4-1/8" Standard (1850/1750/1751/1754)   |
| 1565   | RB 4-1/8" Aggressive (1850/1750/1751/1754) |
| 1581   | RB 5" Standard (1880/1780/1782)            |

# Rock Tooling—Railhead DirectBore

The 9" and 13" DirectBore 1's are made for the big guys. This tool is designed for the bores using drills in the 220,000# to the million eighties when steering needs to be more aggressive.



13" DirectBore I

Part #8190

**Go Green with DirectBore** tooling and keep more green in your pocket. This tooling is for all those **"Just like a Railhead"** guys. No birds or circles here, just tooling to do the jobs that do not require a Railhead.

The DirectBore tooling comes in several sizes to fit drills from 12,000# to over a million pounds. The housings incorporate many of the features found in a Railhead. Tri lock doors reduce twisting of the housing and keep your electronics in place. The sonde blocks can be clocked for alignment, so no shimming of the bit is required. All of this at a price that won't break the bank.



4-1/2" DirectBore I

Part #8145



5" DirectBore I

Part #8150



9" DirectBore I

Part #8185

# Rock Tooling—Railhead DirectBore

The **DirectBore** is for those jobs that just do not require a Railhead. Made from the finest alloys available, The DirectBore housing is available in sizes to fit 15,000# drills, up to 50,000#. The box end on the housing allows the DirectBore Rock Bits to be screwed in without the use of any shims or pins. The Sonde Blocks can be clocked to align the sonde inside the housing. This is easily changed should the bit become over-torqued on the housing.

The housings incorporate many of the features found in a Railhead. Tri lock doors reduce twisting of the housing and keep your electronics in place.



Housings require a Housing Saver which connects to the drill rod or quick connect system being utilized. See page 11 for a complete list.

## DirectBore I Sonde Housings

| PART # | Description  |
|--------|--|
| 8430   | DirectBore Housing 2" IF Box X Rotolock Pin          |
| 8460   | DirectBore Housing 2-3/8" API Reg Box X Rotolock Pin |

## DirectBore I Rock Bits

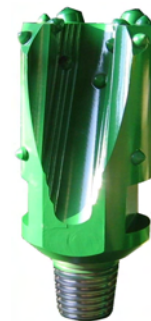
| PART # | Description                               |
|--------|---|
| 8130   | DirectBore I 4" W/ 2" IF Pin              |
| 8145   | DirectBore I 4-1/2" W/ 2-3/8" API Reg Pin |
| 8150   | DirectBore I 5" W/ 2-3/8" API Reg Pin     |
| 8185   | DirectBore I - 9" w/4-1/2" API Reg Pin    |
| 8190   | DirectBore I - 13" w/4-1/2" API Reg Pin   |

## DirectBore II Rock Bits

| PART # | Description                      |
|--------|----------------------------------|
| 8230   | DirectBore II 3-1/2" w/2" IF Pin |

## DirectBore III Rock Bits

| PART # | Description                                |
|--------|--|
| 8350   | DirectBore III 5-1/2" w/2-3/8" API Reg Pin |



DirectBore II



DirectBore III

# Railhead Dirt Tooling—Endurance Housings

All lines of our dirt tooling require the use of sonde blocks and water nozzles which are listed below. They use the same Housing Savers on the rear as what are used on our rock tooling. See page 11 for a complete list.

## Water Nozzle Blocks

| PART # | Description   |
|--------|---|
| 2150   | Water Nozzle - Blank Orifice (2-3/4", 3" & 3-1/2" Housings)       |
| 2155   | Water Nozzle - 3 Hole .032 Orifice (2-3/4", 3" & 3-1/2" Housings) |
| 2156   | Water Nozzle - 3 Hole .064 Orifice (2-3/4", 3" & 3-1/2" Housings) |
| 2157   | Water Nozzle - 2 Hole .096 Orifice (2-3/4", 3" & 3-1/2" Housings) |
| 2158   | Water Nozzle - 1 Hole .250 Orifice (2-3/4", 3" & 3-1/2" Housings) |
| 2160   | Water Nozzle - 1 Hole .250 Orifice (4-1/8" Housings)              |



## Sonde Blocks

| PART # | Description                     |
|--------|---------------------------------|
| 4703   | End Rubber for Subsite 86 B/BH  |
| 4704   | Subsite 86B/BH Dual Block SH    |
| 4716   | DCI for 1800 SH                 |
| 4721   | Radiodetection for 1800 SH      |
| 4726   | McLaughlin for 1800 SH          |
| 4735   | DCI Dual Block SH               |
| 4736   | Radiodetection Dual Block SH    |
| 4737   | McLaughlin Dual Block SH        |
| 4747   | Clocking DCI Direct Bore SH     |
| 4748   | Clocking Subsite Direct Bore SH |

**Sonde block sets** include the blocks, cushion O-rings, hex key, screws and washers.



**Railhead Endurance Housings** incorporate the patented 'Stress Relief Structure' with the "key and keyway" design to take much of the side stress off the bolts. This greatly reduces tool loss due to bolts breaking. The newly designed rounded door incorporates another patent with the "Door Hold Down Tabs". Simply drop the door in place, slide it back and install the bolts in front of the door.



## Railhead Endurance Housings

| PART # | Description                    |
|--------|--------------------------------|
| 2830   | Endurance 3-1/8" Sonde Housing |
| 2860   | Endurance 3-5/8" Sonde Housing |



Keyway Feature



# Railhead Dirt Tooling—Endurance Housings



## Ditch Witch Bolt Pattern Sonde Housings

| PART # | Description  |
|--------|--|
| 3200   | Ditch Witch 5 Bolt Pattern 2-3/4" OD Sonde Housing |
| 3230   | Ditch Witch 5 Bolt Pattern 3-1/8 OD" Sonde Housing |
| 3260   | Ditch Witch 6 Bolt Pattern 3-5/8" OD Sonde Housing |



The **Newly designed door** with thicker hold down tabs and a rounded top increase the service life and provide added protection for your electronics.

The **Water Nozzle Block** protects the nose, increasing the life of the housing. The **Rubber Sonde Blocks** securely hold your sensitive electronics and dampen the vibration caused during those tough bores.

**Railhead has set the standard** for durability and cost-effective tooling. We are confident you will be impressed. **Your billfold** will get thicker and your bores will go smoother. Call us today for a distributor near you.



## Vermeer Bolt Pattern Sonde Housings

| PART # | Description                                    |
|--------|--|
| 3100   | Vermeer 7 Bolt Pattern 2-3/4" OD Sonde Housing |
| 3120   | Vermeer 7 Bolt Pattern 3-1/8" OD Sonde Housing |
| 3160   | Vermeer 7 Bolt Pattern 3-5/8" OD Sonde Housing |

# Dirt Tooling—Paddle Bits






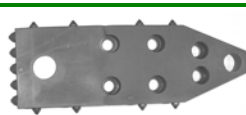


## Endurance Paddle Bits

**Endurance Paddle Bits** incorporate the patented ‘Stress Relief Structure’ with the “key and keyway” design to take much of the side stress off the bolts. These bits fit our Endurance Housings found on page 8. Available in sizes from 3-1/2” to 6” wide.

|   |               |  |            |
|---|---------------|--|------------|
|  | Sharp Shooter |  | Iron Claw  |
|  | Silver Bullet |  | Button Bit |
|   |               |  |            |

## Ditch Witch and Vermeer Paddle Bits

**Paddle Bits** built with heat-treated alloy for your 5-Bolt and 6-Bolt Ditch Witch housings and 7-Bolt Vermeer housings . Available in sizes from 3-1/2” to 5” wide.

|   |                |  |               |
|---|----------------|--|---------------|
|  | Economy Chisel |  | Conical Claw  |
|  | Carbide Chisel |  | Round Button  |
|  | Steep-Taper    |  | Chisel Button |
|  | Ripper         |  | Angled Button |

**Don't see a style you have in mind?** We will custom build a bit to your specs. Call us and we will provide fast, friendly service and the quality you deserve.

# Housing Savers

**Housing Savers** are used with all Railhead Housings and Extreme Reamers to greatly reduce your repair costs. Rather than replacing the entire housing, you simply replace the housing saver. If you do not see your connection or have questions about what you need please call us and **our friendly staff will steer you in the right direction.**

| For 2-3/4" Housings |   |
|---------------------|---|
| 4301                | VM 1- 5/8" LP Pin (7x11,10x15 Quick Connect)        |
| 4304                | VM 1.66" FS I Box (7x11, 10x15 direct connect )     |
| 4308                | DW 1.41" FM Pin (920, 920L, 922 direct connect)     |
| 4415                | DW 1.63" EZII Box (920, 920L, 922 DW Quick Connect) |
| 4417                | DW 1.88" EZII Box (1220 Mack I DW Quick Connect)    |
| 4422                | 1.66" Astec Box                                     |
| 4424                | 2" Ramon Pin (Railhead Quick Connect)               |

| For 3-1/8" Housings |   |
|---------------------|---|
| 4305                | VM 2-1/8"LP Pin (20x22, 24x40 Quick Connect)    |
| 4354                | VM 2.06" FS I Box (20x22, 24x26 Direct Connect) |
| 4355                | VM 1.90" FS I Box (16x20, 18x22 Direct Connect) |
| 4356                | 2" UNJ Pin                                      |
| 4364                | DW 2.06" Fluid Miser Box                        |
| 4395                | DW 2.0" EZII Box (1720, 2020, 2720)             |
| 4409                | 2" Ramon Pin (Railhead Quick Connect)           |
| 4418                | DW 1.88" EZII Box (1220 Mach I)                 |



| For 3-5/8" Housings |  |
|---------------------|--|
| 4309                | 2-1/2" Ramon Pin (Railhead Quick Connect)          |
| 4314                | DW 2.52" Fluid Miser Pin ( 4020 Direct Connect)    |
| 4352                | VM 2-3/8" FS I Box (24x40 Direct Connect)          |
| 4358                | VM 2-1/8" LP Pin (24x40, 33x44 Quick Connect)      |
| 4373                | DW 2.06" Fluid Miser Pin (2720 Direct Connect)     |
| 4374                | VM 2-7/8" FS I Box (50x100 Direct Connect)         |
| 4375                | VM 3-1/2" FS I Box (50x100, 80x100 Direct Connect) |
| 4379                | DW 2.59 Fluid miser Box (4020 mach I)              |
| 4389                | 2-1/2" Case BSW Pin                                |
| 4396                | DW 2.0" EZII Box (2720)                            |
| 4397                | DW 2.25" EZII Box (2720 mach I)                    |
| 4398                | DW 2.63" EZII Box (4020, 4020 Mach I)              |
| 4421                | 2-3/8" Astec Box                                   |
| 4427                | DW 2.25" EZIII Box (3020 Mach I)                   |
| 4429                | VM 2-3/8" FS II Box (33x44, 36x50 Direct Connect)  |

| For 4-1/8" Housings |  |
|---------------------|--|
| PART #              | Description                                |
| 4306                | 2-1/2" RAMON Pin (Railhead Quick Connect)  |
| 4307                | Vm 3-1/2"FS Box (50/100, 80/100 Drill Rod) |
| 4310                | Vm 2-7/8" FS Box (50/100 Drill Rod Thread) |
| 4311                | 2-7/8" IF Box (DD6 Drill Rod Thread)       |
| 4363                | DW 3.27 Box (7020, 8020 Drill Rod Thread)  |

| For 5" Housings |  |
|-----------------|--|
| PART            | Description                                |
| 4380            | Vm 2-7/8" FS Box (50/100 Drill Rod Thread) |
| 4381            | Vm 3-1/2"FS Box (50/100, 80/100 Drill Rod) |
| 4383            | 2-7/8" IF Box (DD6 Drill Rod Thread)       |
| 4384            | 3-1/2" IF Box (DD8 Drill Rod Thread)       |
| 4387            | DW 3.27 Box 5" (7020, 8020 Drill Rod Thrd) |

# EXTReam Reamers

**"The EXTReam Reamer has the absolute smoothest pullback of any rock reamer on the market today, making it easy on your drill and great for the bottom line."**

**8" EXTReam Part #1340**  
3-1/2" Shaft

**12" EXTReam Part #1350- 3-1/2" Shaft**  
Part # 1360- 4-1/8" Shaft

**16" EXTReam Part #1370**  
4-1/8" Shaft



**The EXTReam** rock reamer is built with no bearings that may fail due to pullback pressure or rotational speed.



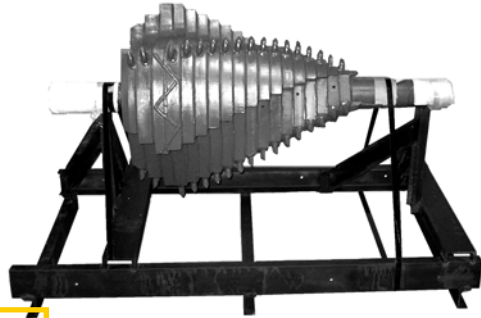
Many contractors have experienced bearing problems with small size hole-openers due to the high pull back pressures and rotational speed required for the hole-openers to perform properly. The EXTReam reamer requires very little pull back pressure to perform. We recommend starting at 500# and changing to provide optimum performance.



# Back Reamers

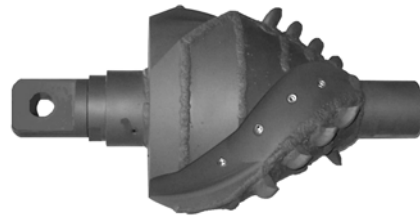
## Stacked Plate Reamers

These stacked plate back reamers feature a slow taper design and deep spiral fluting for smooth cutting and maximum mixing action. They are available with a built-in 15K, 25K or 50K swivel, drawbar, pin or box rear connection. Specify the number of rows of teeth for your soil conditions. The stacked plate reamers can be built as a bi-directional or push reamer if required.



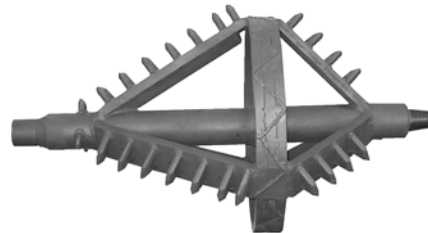
## Solid Body Fluted Reamers

Machined from solid alloy steel bars, and heat treated for strength and durability, these solid body back reamers are available with a built-in 15K, 25K or 50K swivel, drawbar or pin. The API box fronts will accept any API pin crossover to your thread. Available with carbide shark's teeth or conical teeth.



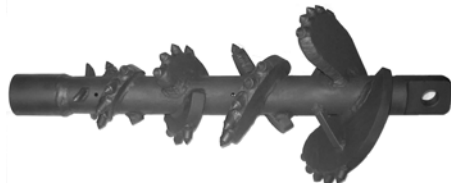
## Wing Reamers

Fabricated from heat treated alloy steel for strength and durability, these Winged Back reamers are available with a built-in 15K, 25K or 50K swivel or drawbar, pin or box rear connection. Larger sizes include standard spider reinforcement. All sizes include a packing wheel to stabilize the reamer.



## Clay Reamers

Made from heat treated alloy steel for strength and durability, the clay reamers feature an aggressive cutting action coupled with a superior mixing action for those sandy loam and clay bores.



## Tapered Barrel and Straight Barrel Reamers

Tapered barrel reamers feature shark teeth carbide cutters in a spiral pattern, and a "packer" barrel rear for stability. Reamers have API REG box fronts and are available with a built-in swivel, drawbar, pin or box rear connection. The API REG box fronts will accept any API pin crossover needed to attach to your drill.

Our Barrel Reamer design features rows of fixed conical carbide cutters on the reamer's face that permit the reamer to cut slightly larger than its outside diameter to allow slurry to flow past the tool. Other features include: 1) full diameter compaction, 2) carbide hardfacing on critical wear areas (*including the front of cutters*) for long life, 3) replaceable fluid jets, and 4) clean-out plug. Both Barrel Reamers may also be used as a centering reamer and pulled in tandem.



Reamers shown on this page are manufactured by Triple D Industries

# Duct Pullers and Slings

## DUCT AND PIPE PULLERS - LUG STYLE

| PART # | DESCRIPTION                            |
|--------|--|
| 10364  | GRIP RANGE 0.72" - 0.93" WITH REAR LUG |
| 10365  | GRIP RANGE 0.94" - 1.15" WITH REAR LUG |
| 10367  | GRIP RANGE 1.26" - 1.44" WITH REAR LUG |
| 10368  | GRIP RANGE 1.48" - 1.66" WITH REAR LUG |
| 10369  | GRIP RANGE 1.91" - 2.08" WITH REAR LUG |
| 10370  | GRIP RANGE 2.70" - 3.20" WITH REAR LUG |



## DUCT AND PIPE PULLERS - CLEVIS STYLE

| PART # | DESCRIPTION                            |
|--------|--|
| 10365C | GRIP RANGE 0.94" - 1.15" WITH REAR LUG |
| 10367C | GRIP RANGE 1.26" - 1.44" WITH REAR LUG |
| 10368C | GRIP RANGE 1.48" - 1.66" WITH REAR LUG |
| 10369C | GRIP RANGE 1.91" - 2.08" WITH REAR LUG |



The **Machined Chrome-Moly Steel Pulling Eye** outlasts cast eyes found on other pulling eyes on the market.



## EXPANDING JAW PULLING EYES HARDENED ALLOY STEEL JAWS, CONE & ROD

| Part # | Description  |
|--------|--|
|        | 2" Non-Sleeved Pulling Eye, SDR 9 thru 21, SDR 7 thru 15, SCH 40 & 80  |
| 11242  | 2" Sleeved Pulling Eye, SDR 9 thru 21, SCH 40 & 80                     |
|        | 4" Non-Sleeved Pulling Eye, SDR 9 thru 21, SDR 7 thru 15 & SCH 40 & 80 |
| 11244  | 4" Sleeved Pulling Eye, SDR 9 thru 21, SCH 40 & 80                     |

## WIRE ROPE PULLING SLINGS

| Part # | DESCRIPTION   |
|--------|---|
| 10378  | 1/4" DIA. CABLE, 2 LEGS, TOTAL WORK LD. 4,000 LBS.  |
| 10379  | 1/4" DIA. CABLE, 3 LEGS, TOTAL WORK LD. 6,500 LBS.  |
| 10380  | 1/4" DIA. CABLE, 4 LEGS, TOTAL WORK LD. 6,500 LBS.  |
| 10381  | 1/4" DIA. CABLE, 5 LEGS, TOTAL WORK LD. 6,500 LBS.  |
| 10382  | 1/4" DIA. CABLE, 6 LEGS, TOTAL WORK LD. 6,500 LBS.  |
| 10383  | 3/8" DIA. CABLE, 2 LEGS, TOTAL WORK LD. 9,500 LBS.  |
| 10384  | 3/8" DIA. CABLE, 3 LEGS, TOTAL WORK LD. 9,500 LBS.  |
| 10385  | 3/8" DIA. CABLE, 4 LEGS, TOTAL WORK LD. 13,000 LBS. |
| 10386  | 3/8" DIA. CABLE, 5 LEGS, TOTAL WORK LD. 13,000 LBS. |
| 10387  | 3/8" DIA. CABLE, 6 LEGS, TOTAL WORK LD. 13,000 LBS. |
| 10388  | 1/2" DIA. CABLE, 2 LEGS, TOTAL WORK LD. 13,000 LBS. |
| 10389  | 1/2" DIA. CABLE, 3 LEGS, TOTAL WORK LD. 13,000 LBS. |
| 10390  | 1/2" DIA. CABLE, 4 LEGS, TOTAL WORK LD. 17,000 LBS. |
| 10391  | 1/2" DIA. CABLE, 5 LEGS, TOTAL WORK LD. 17,000 LBS. |
| 10392  | 1/2" DIA. CABLE, 6 LEGS, TOTAL WORK LD. 17,000 LBS. |



# Swivels and Pulling Eyes

The **Extreme Duty Swivels** are specifically designed to swivel under high tension loads in the harsh environment of Directional Boring. They are manufactured using high strength, quenched and tempered, Chrome-Moly Steel.



The **Extreme Duty Swivels** are fitted with side-mounted grease fittings for easy lubrication and a multiple sealing system to retain the lubricant and repel external contaminants. They also contain bi-directional bearings allowing them to be pulled from either end without any loss of pullback rating.



## SEALED BEARING PULLBACK SWIVELS

| PART # | DESCRIPTION                                      |
|--------|--|
| 10909  | PULLBACK SWIVEL -- 8,500 LB. WL                  |
| 10911  | BOLT -ON PULLBACK SWIVEL -- 8,500 LB. WL         |
| 10910  | PULLBACK SWIVEL -- 10,000 LB. WL                 |
| 10912  | PULLBACK SWIVEL -- 12,000 LB. WL                 |
| 10914  | PULLBACK SWIVEL -- 16,000 LB. WL                 |
| 10916  | PULLBACK SWIVEL -- 22,000 LB. WL                 |
| 10918  | PULLBACK SWIVEL -- 32,000 LB. WL                 |
| 10919  | PULLBACK SWIVEL -- 44,000 LB. WL                 |
| 10920  | PULLBACK SWIVEL -- 60,000 LB. WL                 |
| 10922  | PULLBACK SWIVEL -- 90,000 LB. WL (Clevis/Box)    |
| 10923  | PULLBACK SWIVEL -- 90,000 LB. WL (Clevis/Clevis) |
| 10924  | PULLBACK SWIVEL -- 120,000 LB. WL                |
| 10908  | PULL BACK SWIVEL GREASE - 14OZ CARTRIDGE         |



The **60K and 90K Extreme Duty Swivels** come standard with a locking pin to prohibit the loss of the clevis pin. This is accomplished with the use of a hex pin on the shoulder side of the clevis pin that locks into a built in groove. No more worries about tearing up the threads of the pin and no exposed bolt head or nut to catch and snag.



## Pulling Eyes

| PART # | Description                  |
|--------|------------------------------|
| 3003   | Pulling Eye 2-1/2" RAMON Pin |
| 3004   | Pulling Eye 2" UNJ Pin       |
| 3005   | Pulling Eye DW 1.63 EZ2 Box  |
| 3006   | Pulling Eye DW 1.88 EZ2 Box  |
| 3007   | Pulling Eye DW 2.00 EZ2 Box  |
| 3008   | Pulling Eye Vm 1-5/8" LP Pin |
| 3009   | Pulling Eye Vm 2-1/8" LP Pin |



# Railhead Quick Connect Tooling

The **Railhead Quick Connect** system is the finest system of it's kind on the market. You can attach and remove your drill head or reamer in less than 2 turns. Also, we have never experienced a pin breakage problem. These facts make our system the **fastest and strongest quick connect system available**.

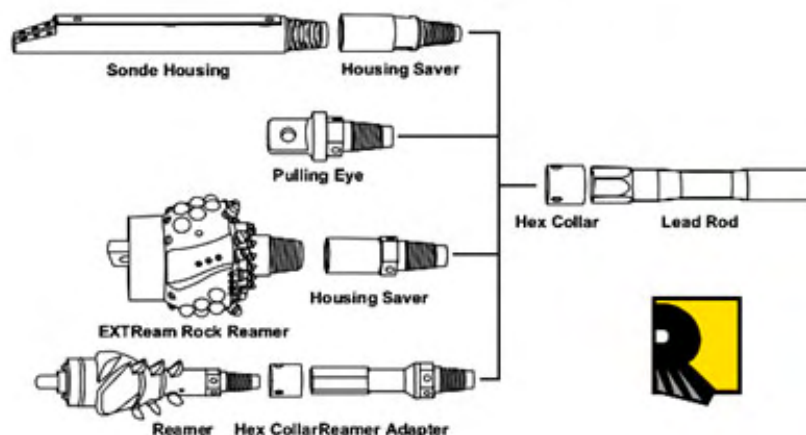
## Lead Rods

| PART # | Description                                      |
|--------|--|
| 1216   | 2LR 2.06" Firestick Box 2-1/2" RAMON Box         |
| 1233   | 2LR 2-3/8" DW Fld Miser Pin 2-1/2" RAMON Box     |
| 1237   | 2LR-Long 2-3/8" Case Box 2-1/2" RAMON Box        |
| 1240   | 1LR 2.52" Fluid Miser Pin 2-1/2" RAMON Box       |
| 1252   | 1LR-Long 1.90" Firestick Box 2" RAMON Box        |
| 1253   | 1LR-Long 2.06" Firestick Box 2" RAMON Box        |
| 1259   | 2LR-Long 2-3/8" FirestickII Box 2-1/2" RAMON Box |
| 1263   | 1LR 2.11" Fluid Miser Pin 2-1/2" RAMON Box       |
| 1265   | 2LR-Long 3-1/2" Firestick Box 2-1/2" RAMON Box   |
| 1266   | 1LR-1.66" Astec Box 2" RAMON Box                 |
| 1267   | 1LR-2.0 Astec Box x 2" RAMON Box                 |
| 1269   | 1LR HD 2-3/8" Firestick Box 2-1/2" RAMON Box     |
| 1270   | 1LR-2-3/8" Astec Box 2-1/2" RAMON Box            |
| 1272   | 1LR- T1-700 FS Box 2-1/2" RAMON Box              |

## Hex Collars

| PART #    | Description                                  |
|-----------|--|
| 1107      | 2.5" Hex 3.5" OD x .50" Wall                 |
| 1107/1125 | 2.5" Hex Hard Surface 3.5" OD x .50" Wall    |
| 1108      | 3" Hex 4.25" OD x .625" Wall                 |
| 1110      | 2.5" Hex 6" OAL 3.5" OD x .50" Wall for 1413 |
| 1110/1125 | 2.5" Hex Hard Surface 6" OAL for 1413        |
| 1111      | 2.5" Hex Carbide w/ Hard Surface             |
| 1111/1125 | 2.5" Hex Carbide w/ Hard Surface             |
| 1113      | 3" Hex Carbide w/ Hard Surface               |

"Quick Connect" Parts Diagram





# Manufacturers Easy Connect



## Ditch Witch Transition Rods

| PART # | DESCRIPTION                           |
|--------|---------------------------------------|
| 12020  | 1.41 Pin x 1.63 EZ II Pin (920, 920L) |
| 12021  | 1.47 Pin x 1.88 EZ II Pin 1220 Mach I |
| 12022  | 1.69 Pin x 2.00 EZ II Pin 1720        |
| 12023  | 1.94 Pin x 2.00 EZ II Pin 2720        |

## Ditch Witch Collars

| PART # | DESCRIPTION                                     |
|--------|---|
| 11316  | 2.0" Octagon Plain EZ-II (920, 920L, JT922)     |
| 11317  | 2.0" Octagon Hardfaced EZ-II (920, 920L, JT922) |
| 11318  | 2.25" Octagon Plain EZ-II 1220                  |
| 11319  | 2.25" Octagon Hardfaced EZ-II 1220              |
| 11320  | 2.5" Octagon Plain EZ-II (1720, 2020, 2720)     |
| 11321  | 2.5" Octagon Hardfaced EZ-II (1720, 2020, 2720) |
| 11322  | 2.75" Octagon Plain EZ-II 2720 Mach I           |
| 11323  | 2.75" Octagon Hardfaced EZ-II 2720 Mach I       |
| 11324  | 2.75" Octagon Plain EZ-III 3020 Mach I          |
| 11325  | 2.75" Octagon Hardfaced EZ-III 3020 Mach I      |
| 11326  | 3.0" Octagon Plain EZ-II 4020, 4020 Mach I      |
| 11327  | 3.0" Octagon Hardfaced EZ-II 4020, 4020 Mach I  |



## Vermeer Collars

| PART # | DESCRIPTION                                       |
|--------|---|
| 11310  | 2.0" Hex Plain (7/11, 10/15)                      |
| 11311  | 2.0" Hex Hardfaced (7/11, 10/15)                  |
| 11312  | 2.5" Hex Plain 16/20 (16/20, 18/22, 24/26, 24/40) |
| 11313  | 2.5" Hex Hardfaced (16/20, 18/22, 24/26, 24/40)   |

## Vermeer Starter Rods

| PART # | DESCRIPTION                                      |
|--------|--|
|        | Chrome-Moly Steel - 152,000 psi tensile strength |
| 12010  | 1.66" FS Box x 1-5/8" LP Box 7/11                |
| 12011  | 1.90" FS Box x 2-1/8" LP Box (16/20, 18/22)      |
| 12012  | 2.06" FS Box x 2-1/8" LP Box (20/22, 24/26)      |
| 12013  | 2-3/8" FS Box x 2-1/8" LP Box 24/40              |

# Drive Chucks and Sub-Savers

**We are now providing Drive Chucks for your Vermeer and Ditch Witch rigs.**

Machined to the precise and exacting standards you expect.

Manufactured using the finest Chrome-Moly Steel, call us today for a dealer near you.

## Ditch Witch Drive Chucks

| PART # | DESCRIPTION                      |
|--------|----------------------------------|
| 11400  | 1.41 Box x DW Flange (920, 920L) |
| 11401  | 1.69 Box x DW Flange 1720        |
| 11402  | 1.94 Box x DW Flange 2720        |

## Vermeer Drive Chucks

| PART # | DESCRIPTION                                |
|--------|--|
| 11412  | 1.66" FS Pin x Vm Flange 7/11              |
| 11413  | 1.66" FS Pin x Vm Flange 10/15             |
| 11414  | 2.06" FS Pin x Vm Flange (20/22, 24/26)    |
| 11415  | 2-3/8" FS Pin x Vm Flange 24/40            |
| 11416  | 2-7/8" FS Pin x Vm Flange (50/100, 80/100) |
| 11417  | 3-1/2" FS Pin x Vm Flange (50/100, 80/100) |



**Sub-Savers** are CNC manufactured from 163,000 PSI Tensile Strength Chrome-Moly Steel to insure **long lasting, durable quality and precision fit.**

## Vermeer Sub-Savers

| PART # | DESCRIPTION                          |
|--------|--------------------------------------|
| 11425  | 1.66" FS Pin x Box (7/11, 10/15)     |
| 11426  | 1.90" FS Pin x Box (16/20, 18/22)    |
| 11427  | 2.06" FS Pin x Box (20/22, 24/26)    |
| 11428  | 2-3/8" FS Pin x Box 7.5" OAL 24/40   |
| 11429  | 2-3/8" FS Pin x Box 9.5" OAL 24/40   |
| 11430  | 2-7/8" FS Pin x Box (50/100, 80/100) |
| 11431  | 3-1/2" FS Pin x Box (50/100, 80/100) |



# Tool Adapters

## Tool Adapters

| PART # | Description                                      |
|--------|--|
| 1401   | 1TA 2-7/8" FS Pin x 2-1/2" RAMON Pin             |
| 1402   | 1TA 3-1/2" FS Pin x 2-1/2" RAMON Pin             |
| 1403   | 1TA 2-7/8" IF Pin x 2-1/2" RAMON Pin             |
| 1404   | 1TA 3.27 DW Fluid Miser Pin x 2-1/2" RAMON Pin   |
| 1405   | 1TA 2-1/8" Vermeer LP Pin x 2-1/2" RAMON Pin     |
| 1406   | 2TA 2-3/8" Case Pin x 2-1/2" RAMON Pin           |
| 1407   | 2TA 1.81 DW Fld Miser Box x 2-1/2" RAMON Pin     |
| 1408   | 2TA 1.81 DW Fld Miser Pin x 2-1/2" RAMON Pin     |
| 1409   | 2TA 2.06 DW Fld Miser Pin x 2-1/2" RAMON Pin     |
| 1411   | 1TA 2-3/8" API Reg Pin x 2-1/2" RAMON Pin        |
| 1412   | 1TA 2" IF Pin x 2-1/2" RAMON Pin                 |
| 1413   | 2TA 2-1/8" Vermeer LP Box x 2-1/2" RAMON Pin     |
| 1419   | 1TA 2-3/8" API Reg Pin x 2.06 DW Fluid Miser Pin |
| 1421   | 1TA 2-3/8" API Reg Pin x 2.59 DW Fluid Miser Pin |
| 1424   | 1TA 2-3/8" API Reg Pin x 2-3/8" Astec Box        |
| 1425   | 1TA 2-3/8" API Reg Pin x 2-3/8" Firestick Box    |
| 1428   | 1TA 2-3/8" API Reg Pin x 2" RAMON Pin            |
| 1435   | 1TA 2-3/8" API Reg Pin x 2-1/8" Vermeer LP Pin   |
| 1437   | 1TA 2.52 DW Fld Miser Pin x 2-1/2" RAMON Pin     |
| 1438   | 2TA 2-3/8" Firestick Pin x 2-1/2" RAMON Pin      |
| 1439   | 1TA 2-3/8" API Reg Pin x 1.63 EZ II Box          |
| 1440   | 1TA 2-3/8" API Reg Pin x 1.88 EZ II Box          |
| 1441   | 1TA 2-3/8" API Reg Pin x 2.0 EZ II Box           |
| 1442   | 1TA 2-3/8" API Reg Pin x 2.25 EZ II Box          |
| 1443   | 1TA 2.59 DW Fld Miser Pin x 2-1/2" RAMON Pin     |
| 1447   | 2TA 2-3/8" Firestick Box x 2-1/2" RAMON Pin      |
| 1448   | 1TA 2.59 DW Fld Miser Box x 2-1/2" RAMON Pin     |
| 1449   | 1TA 2-3/8" Astec Pin x 2-1/2" RAMON Pin          |



## Incredibit Rock Bit Adapters

| PART # | Description                                |
|--------|--|
| 1750   | 4-1/8" Rock Bit Adapter 2-7/8" API Reg Pin |
| 1751   | 4-1/8" Rock Bit Adapter 2-3/8" API Reg Pin |
| 1754   | 4-1/8" Rock Bit Adapter 3-1/2" API Reg Pin |
| 1760   | 3-1/2" Rock Bit Adapter 2-3/8" API Reg Pin |
| 1780   | 5" Rock Bit Adapter 2-7/8" API Reg Pin     |
| 1782   | 5" Rock Bit Adapter 3-1/2" API Reg Pin     |



# Railhead Replacement Parts



**Railhead offers a repair program second to none.** All Incredibits and Incredibit Housings are repairable. Simply call your dealer for details and we will have a repaired bit **shipped** as soon as **today** so you can **be back to work tomorrow**.

## Rock Points

| PART | Description                              |
|------|--|
| 5013 | RP for 2-3/4" Rock Bit-Hard              |
| 5019 | RP for 3" Rock Bit-Hard                  |
| 5020 | RP for 4-1/8" Std Rock Bit-General       |
| 5021 | RP for 3" Rock Bit-General               |
| 5022 | RP for 3-1/2" & 3-3/4" Rock Bit-General  |
| 5023 | RP for 4-1/8" Std Rock Bit-Hard          |
| 5024 | RP for 4-1/8" Agressive Rock Bit-General |
| 5026 | RP for 3-1/2" & 3-3/4" Rock Bit-Hard     |
| 5029 | RP for 4-1/8" Agressive Rock Bit-Hard    |
| 5030 | RP for 12" & 16" EXTReam Reamer          |
| 5031 | RP for 8" & 12" EXTReam Reamer           |
| 5032 | RP for 5" Rock Bit-Hard                  |
| 5033 | RP for 13" DirectBore Bit                |



## Housing Doors

| PART # | Description                           |
|--------|---------------------------------------|
| 4403   | Dual Block Sonde Housings (New Style) |
| 4405   | Single Block Sonde Housings           |
| 4406   | Dual Block Sonde Housings (old Style) |
| 4407   | Dual Block 8400 Series Sonde Housings |
| 4408   | 2-3/4" Sonde Housings                 |



## Keys for Incredibit Sonde Housings to Endurance Bits

| PART | Description                                  |
|------|--|
| 2201 | Key - Dirt Bit to 2-3/4" or 3" Rock Housings |
| 2202 | Key - Dirt Bit to 3-1/2" Rock Housings       |
| 2203 | Key - Dirt Bit to 4-1/8" Rock Housings       |

## Socket Head Cap Screws

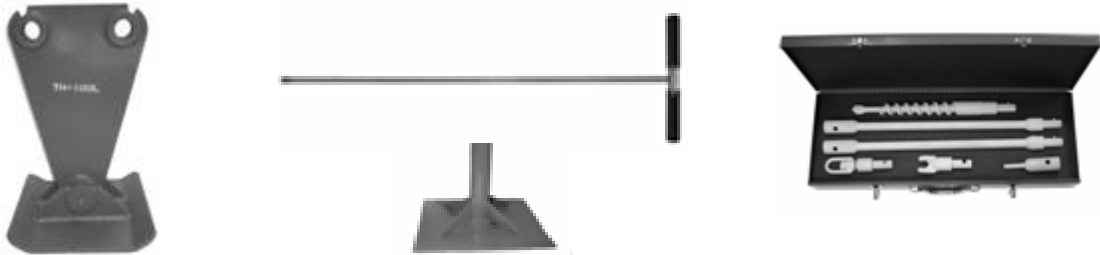
| PART #     | Description   |
|------------|---|
| 5301/50 ct | 50 ct - SCS 10-24 x 3/8"  |
| 5304       | EXTReam Reamer 1/4" NPT Nozzle - Blank Orifice                      |
| 5309       | EXTReam Reamer 1/4" NPT Nozzle - 5/32" Orifice                      |
| 5310/50 ct | 50 ct - SHCS 3/8"-16 x 1/2" OAL Pelleted                            |
| 5311/50 ct | 50 ct - SHCS 3/8"-16 x 3/4" OAL Pelleted (Sonde Housing Door Bolts) |
| 5313/50 ct | 50 ct - SHCS 3/8"-16 x 1-1/4" OAL Pelleted (2-3/4", 3" Rock Bit)    |
| 5314/50 ct | 50 ct - SHCS 1/2"-13 x 5/8" OAL Pelleted (Hex Collar Bolt)          |
| 5316/50 ct | 50 ct - SHCS 1/2"-13 x 1-1/4" OAL Pelleted (3-1/2" Rock Bit)        |
| 5317/50 ct | 50 ct - SHCS 12mm-1.75mm x 1" OAL Pelleted                          |
| 5318/50 ct | 50 ct - SHCS 16mm-2mm x 1-1/4" OAL Pelleted                         |
| 5321/50 ct | 50 ct - SHCS 3/8"-16 x 3/8" OAL Pelleted                            |
| 5342/50 ct | 50 ct - SHCS 14mm-2mm x 35mm OAL Pelleted                           |
| 5343/50 ct | 50 ct - SHCS 5/8"-11 x 1" OAL Pelleted                              |
| 5344/50 ct | 50 ct - SHCS 3/4"-11 x 2" OAL Pelleted                              |
| 5346/50 ct | 50 ct - SHCS 3/4"-11 x 1-1/4" OAL Pelleted                          |





# BorePro Tools and Parts

**Railhead** is expanding our product line to provide contractors an ever-increasing variety of products for the underground industry.



**Railhead** now provides Turf Hammers, Installation Accessories, and Hand Held Earth Drilling Kits.



Our **BorePro Series** includes Plow Blades, Traction Blades, Chute Blades, and Lost-Motion Assemblies.



Our **BorePro Series**, manufactured by Triple D Industries; also includes a comprehensive line of Dry Compaction Boring Tools including Bits, Back reamers, Rock Heads, Drill Rods, and Lead Augers.

## **Aids in Arkansas HDD Project**

In the horizontal directional drilling (HDD) business, many items become key to a successful completion of a project. Having worked with contractors throughout North America over the last 10 years, I have received many calls with problems ranging from site conditions to tooling. I call on my experience and that of many industry contacts to help in any way I can.

The call that came on July 2 was no exception. Bill Harrison of Southwestern Road Boring was working on a project in southwestern Arkansas and having problems with excessive wear on his tooling, not to mention the difficulties encountered trying to complete the bores in a timely manner. Harrison had about 1.5 miles of 4-in. gas line to install in very difficult site and soil conditions.

The jobsite is near the Navaculite mine in Hot Springs, Ark. This is the name of the Arkansas stone that is used in the manufacture of sharpening stones. Railhead's Steve Mayer and I met with Harrison and his crew at the jobsite. We were asked to provide solutions to the problems presented by this project. After looking over the soil conditions, we found the stone that had been described to us, as well as some Quartzite formations mixed in.

When working with contractors, I stress the need to eliminate as many strikes against you as possible before starting the bore. This includes having the right drill, with the right crew, mixing the right mud mix and, finally, choosing the right tools for the job. By doing this along with mustering up all the patience you have, successful rock bores can become an every day story for today's contractors.

The pilot bore had been completed before we arrived. The bore was only 200 ft long, but the tooling used was completely worn out. Harrison told us the tooling was brand new before this bore and came out looking like a pencil point. He said he felt he was "lucky" to not have any damage to the sonde, noting that he believed it too would have been destroyed had the bore been any longer.



By using an Incredibit, Southwestern Road Boring was able to create a pilot bore of more than 6 in.

The EXTReam Reamer  
Came through the bore  
With virtually no damage.



The outside diameter of the gas line is more than 5 in. The inspector required the pipe to be virtually “scar free” when it came through the bore. Because of this requirement, our recommendation was to drill the future pilot bores with a Railhead Incredibit and the back ream should be done with an EXTReam reamer. By using an Incredibit, Southwestern Road Boring was able to create a pilot bore of more than 6 in.

The EXTReam rock reamer is built with no bearings that may fail due to pull back pressure or rotational speed. Many contractors have experienced bearing problems with small-size hole-openers because of the high pull back pressures and rotation speed required for the hole-openers to perform properly. The EXTReam reamer requires very little pull back pressure to perform. We recommend starting at 500 lbs and changing to provide optimum performance. The crew for this project was able to back ream this first bore with only 400 lbs of pull back pressure. Back ream speed was approximately 8 to 10 minutes per 10-ft rod. This resulted in a minimum of wear to the tooling and drill rods. By building a 12-in. hole to pull the product through, the inspector was very pleased with the condition of the pipe when it came out of the hole.

As is evidenced by the wear on the collar shown in the picture (see page 52), it is obvious that the conditions at this site are extremely abrasive. Harrison was glad to see the EXTReam had virtually no wear to the body. His only repair was to simply replace the teeth in the reamer. After a day that was filled with equipment problems, thunderstorms and even flight delays trying to get to the job, Harrison was still happy that they had a successful bore and solutions to the problems he originally called us with.

***Dave Helgeson*** is director of sales and marketing at Railhead Underground Products, based in Weatherford, Texas.





# **RAILHEAD**

UNDERGROUND PRODUCTS, LLC.



P. O. BOX 2409  
Weatherford, TX 76086

Phone: 817-594-6663  
Fax: 817-594-3697  
[www.railhead.com](http://www.railhead.com)