



**hole**  
**PRODUCTS**

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**GLOBAL DRILLING PRODUCTS CATALOG**

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**MINERAL EXPLORATION**  
**ENVIRONMENTAL**  
**GEOTECHNICAL**  
**GEOTHERMAL**  
**ROTARY**  
**SONIC**  
**HDD**

**www.hole PRODUCTS.com**





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## OUR COMPANY

Hole Products is a leading global provider of high performance drilling supplies, tools and equipment to the direct push, environmental, geotechnical, geothermal, HDD, mineral exploration, rotary and sonic drilling industries.

We combine hundreds of years of drilling supply and service experience, a vast inventory, multiple stocking locations, and worldwide shipping capabilities. Our drilling tools are preceded by extensive R&D, field tested, and backed by our unmatched commitment to service and support.

In addition, our diverse team offers industry leading inventory management, sourcing, logistics, troubleshooting, and product innovation solutions.

Call now, to discover the Hole Products advantage!



## INDUSTRIES & MARKETS

### DIRECT PUSH

---

A full line of Geoprobe® compatible direct push tooling and accessories innovatively designed and manufactured to provide consistency, durability, and longevity. Large inventory, multiple stocking locations, local delivery, and global logistical solutions.

### HDD

---

A full line of Ditch Witch® and Vermeer® compatible HDD drilling tools and accessories, backed by second to none service and support.

### SONIC

---

World class tooling, designed and manufactured specifically to withstand the rigors unique to sonic drilling. On-site solutions you just can't find anywhere else.

### ENVIRONMENTAL & GEOTECHNICAL

---

Auger tools, rods and subs, bits, sampling equipment, well completion products, and more. One call for all of your environmental and geotechnical product needs.

### MINERAL EXPLORATION

---

Quality, innovative tooling, and accessories to support all methods of exploratory drilling. Large on-hand inventory and worldwide shipping capabilities.

### GEOTHERMAL

---

Our IGSHA certified staff can provide quality products and solutions for both geothermal installations and geothermal drilling.

### ROTARY

---

A vast inventory of tooling and accessories to service air, mud, and reverse circulation rotary drilling operations.



## LOCAL PRESENCE . . . GLOBAL CAPABILITIES

The world's premier drilling supply inventory and unmatched distribution support network are now closer than ever. With stocking locations throughout the United States, local delivery, and worldwide shipping capabilities, we can seamlessly integrate our product solutions into your drilling operations.



## OUR LOCATIONS

### California

1413 E. Philadelphia St.  
Ontario, CA 91761  
Toll free (844) 573-0854  
Phone (909) 939-2581  
Fax (909) 891-0434

### Connecticut

56 Wickham Rd.  
East Haddam, CT 06423  
Phone (860) 319-4393

### Florida

6448 Pinecastle Blvd., Suite 105  
Orlando, FL 32809  
Toll free (877) 544-4211  
Phone (407) 792-2670  
Fax (407) 286-2956

### Georgia

1725 Corporate Dr., Suite 340  
Norcross, GA 30093  
Toll free (888) 448-4430  
Phone (770) 279-8755  
Fax (770) 279-8499

### Minnesota

205 16th St. NE., Suite A  
Little Falls, MN 56345  
Phone (320) 616-0701  
Fax (320) 631-0064

### Missouri

4061 Wedgeway Ct.  
Earth City, MO 63045  
Toll free (877) 699-2159  
Phone (314) 282-2740  
Fax (314) 770-0687

### Wisconsin

7575 Bombardier Ct., Suite 300  
Wausau, WI 54401  
Toll free (888) 465-3704  
Phone (715) 842-0000  
Fax (715) 842-5999

### Global Sales

(888) 465-1569



## THE DIFFERENCE

The best drilling companies seek a partner, not just a supplier. That's why the best drilling companies work with Hole Products.

At Hole Products, we offer comprehensive solutions to our clients. This means we are focused on:

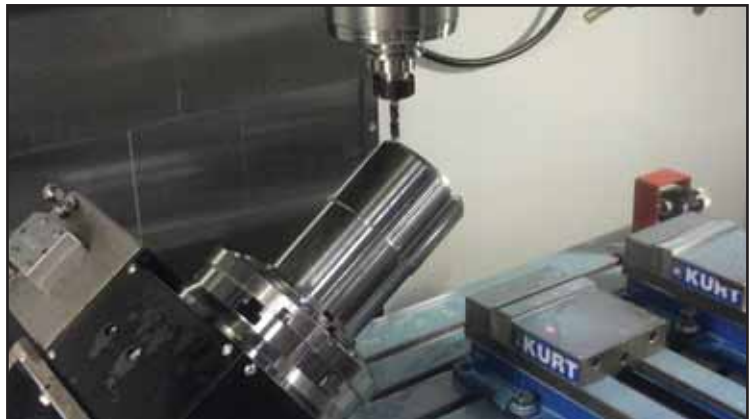
### SERVICE & SUPPORT:

Hole Products' team of industry professionals has the experience and knowledge necessary to help our clients succeed. You can count on our dedicated service and support team to be on call with the answers and resources to help you get the job done on time and under budget.



### WORLD CLASS DRILLING PRODUCTS:

We innovate, design, and provide world class manufactured tooling to support our drilling partners. Our commitment to quality and continuous improvement are unparalleled. We stand behind all of our products with confidence.



### INVENTORY & LOGISTICS:

Our large on-hand inventory, multiple stocking locations, and worldwide shipping capabilities, ensure we have the products you need, when you need them. Any product, anytime, anywhere.





# FOOTAGE FIRST Rewards



Simple... Exceptional... Rewarding

Earn points with every purchase... Each time you place an order you are earning points towards fantastic merchandise.

**Visit [www.holeproducts.com](http://www.holeproducts.com) to learn more.**

Footage First Rewards program is all about saying thank you to our loyal customers for choosing Hole Products. This exciting buyers program is designed to be SIMPLE, EXCEPTIONAL, and REWARDING. All customers are eligible to earn valuable points on every qualifying Hole Products purchase. Footage First Reward Points are redeemable for a number of fun and fantastic products.

Visit our website today at [www.holeproducts.com](http://www.holeproducts.com) to learn more.

## Simple:

Signing up is easy and fast. Simply fill in the enrollment form at [www.holeproducts.com](http://www.holeproducts.com) and submit online or by mail. We'll take care of the rest! We track your points, send statements, and allow you to view and choose merchandise online. No need to worry about shipping or tax. We have it covered!

## Exceptional:

Footage First rewards puts our customers first by providing them with fun and fantastic merchandise. Developing a program that is beneficial to you is our ultimate goal and we look forward to your input.

## Rewarding:

Earning points for buying products you already use! Redeeming points for fantastic merchandise! What could be more rewarding than that?

# Footage First Rewards Program (the "Program") TERMS & CONDITIONS.

You must read, agree with and accept all of the provisions contained in these Terms before participating in the Program.

## 1. Overview of Program

1. This is a customer appreciation program sponsored by Hole Products ("Hole Products") through which our customers can earn points ("Points") by purchasing goods from Hole Products.
2. At the end of each applicable term, you can redeem these Points for various merchandise featured in Program fliers and on the website located at [www.holeproducts.com](http://www.holeproducts.com) (the "Website"). The most up to date merchandise list will be available on the website and will supersede all other merchandise lists.
3. In order to redeem Points, the customer must spend at least \$10,000 on Hole products during the applicable calendar year term.

## 2. Participation in the Program

1. Start Date: Enrollment in the Program shall begin July 1, 2010. No points will be earned on purchases prior to July 1, 2010 or enrollment form completion. Enrollment forms received before August 1, 2010 will begin earning rewards points affect July 1, 2010. Forms received after August 1, 2010 will begin earning rewards points on the date in which the enrollment form is received by Hole Products.
2. The Program is open to U.S. business entities which purchase products from Hole Products. Each Participant shall designate an individual to act on its behalf in regard to the Program. Only individuals eighteen (18) years of age or older who can legally bind the Participant are eligible to participate. In order to participate, the Participant must fill out an official enrollment form received from Hole Products personnel or the Website and submit it to Hole Products as directed in the form. Enrollment requires valid e-mail address, name, company name, mailing address. Additional information may be necessary.
3. Participation in the Program constitutes each Participant's full and unconditional agreement to these Terms. Participants who do not comply with these Terms may be prohibited from participating in the Program.
4. Any information collected from you in connection with the Program will be used as needed to facilitate your participation in the Program. Such information will not be sold or otherwise shared with third parties, except to the extent required to facilitate the Program and to disseminate any future Hole Products promotional materials.
5. By participating in the Program, you agree to receive promotional information from Hole Products until such time that you write Hole Products requesting not to receive such materials.
6. Hole Products is not liable or responsible in any manner for any tax consequences which may result from a Participant's participation in the Program. Each Participant is solely responsible for the payment of all taxes payable and benefits acquired as a result of such participation and earning, conversion, holding and/or use of Points and for all applicable filing and reporting obligations.
7. By participating in the Program, you agree that receipt of Points or merchandise will not cause you to violate any laws, orders, rules and regulations applicable to your business, including any internal rules or guidelines.

## 3. Modification and Termination of the Program

1. Hole Products may modify any of the terms and conditions governing the Program, including, but not limited to, the methods through which Points can be earned, how Points can be used, the value of Points, the merchandise offered, the conversion rates between Points and merchandise, and the conditions under which Points may be forfeited - at any time, with or without notice, even though these changes may affect a Participant's ability to use the Points that he/she has already earned.
2. The Program has no predetermined termination date and may continue until such time that Hole Products decides to terminate the Program. Hole Products may terminate the Program at any time, with notice via email to the Participant's email address currently on file with Hole Products. Upon termination, Participant's may or may not have a designated period of time from the date of Program termination to use accrued Points. Otherwise, any Points remaining in a Participant's account at time of termination will be forfeited and no compensation will be provided.
3. A Participant's continued participation in the Program constitutes acceptance of any changes to these Terms. Participants are responsible for remaining knowledgeable as to any changes that Hole Products may make to these Terms. The most current version of these Terms will be available on the Website and will supersede all previous versions of the Terms.

## 4. Earning and Converting Points

1. Participants can earn Points by purchasing qualifying goods from Hole Products. "Qualifying Purchases" may exclude discounted products, sale products, and other products as determined by Hole Products. Participants are responsible for verifying prior to the purchase, that such purchases are qualifying purchases.
2. For every \$1,000 spent on qualifying purchases, Participants will receive 15 Points. This is the total before any discounts, shipping cost, handling cost or tax is added to the order. Points earned by a Participant will automatically be deposited into your Points account. Points will begin to accrue immediately following the processing of your enrollment form. Purchases made prior to your enrollment in the Program will not be eligible.
3. Any Points awarded for the purchase of products which are subsequently returned shall be deducted from your account total.
4. Points accrue on all sales between January 1 – December 31 of the applicable calendar year. Such purchases shall be deemed made on the date the purchase is invoiced by Hole Products' accounting department, rather than the actual date of purchase.

## 5. Redeeming Points

1. No Points may be redeemed by Participants, unless at least 150 Points has accrued during the applicable calendar year. This requires qualifying purchases in an amount of \$10,000 (see note in section 2.1 for calendar year 2010 exception).
2. Points may be redeemed for merchandise between January 1st and February 15th of the year following the Points accrual year. Points not redeemed by February 15th of the applicable year shall be forfeited and no compensation will be provided. Under no circumstances may Points be carried over from one calendar year to the next.
3. Following the end of the applicable calendar year, Hole Products shall send Participants a Points total, and the specific procedures required to redeem Points for Merchandise. Participants not current in their payment terms, may be deemed ineligible for Program participation.
4. Merchandise is not returnable for a Points refund. Any defects or issues with the merchandise shall be the responsibility of the manufacturer, and the Participant must contact the manufacturer for all complaints and disputes. Hole Products accepts no responsibility for the quality or condition of the merchandise.

## 6. General Terms and Conditions

1. ACCRUED POINTS DO NOT CONSTITUTE PROPERTY OF A PARTICIPANT AND HAVE NO VALUE OUTSIDE OF THE PROGRAM. POINTS ARE CREDITS THAT HOLE MAY REVOKE AT ANY TIME AS SET FORTH HEREIN. POINTS MAY NOT BE EXCHANGED FOR CASH, ASSIGNED, BARTERED, OR TRANSFERRED, EXCEPT AS SET FORTH HEREIN.
2. Each Participant is responsible for ensuring that the information in its account is accurate and is kept current.
3. Hole Products reserves the right to terminate the Points account of any Member who uses the Program in a manner inconsistent with these Terms or any federal, state, provincial, territorial or local laws, statutes, by-laws, guidelines, or ordinances, which may result in the loss of all earned Points, benefits, and privileges.
4. Any attempt by any person to undermine the legitimate operation of the Program may be a violation of criminal and civil law, and, should such an attempt be made, Hole reserves the right to seek damages from any such person to the fullest extent permitted by law. Hole Products' failure to enforce any of these Terms shall not constitute a waiver of that, or any other, provision.
5. All questions or disputes regarding eligibility for the Program, the earning, use, or conversion of Points, or a Participant's compliance with these Terms will be resolved by Hole Products in its sole discretion. Hole Products reserves the right to refuse redemption of points to Participants who are not current in their payment terms with Hole Products.

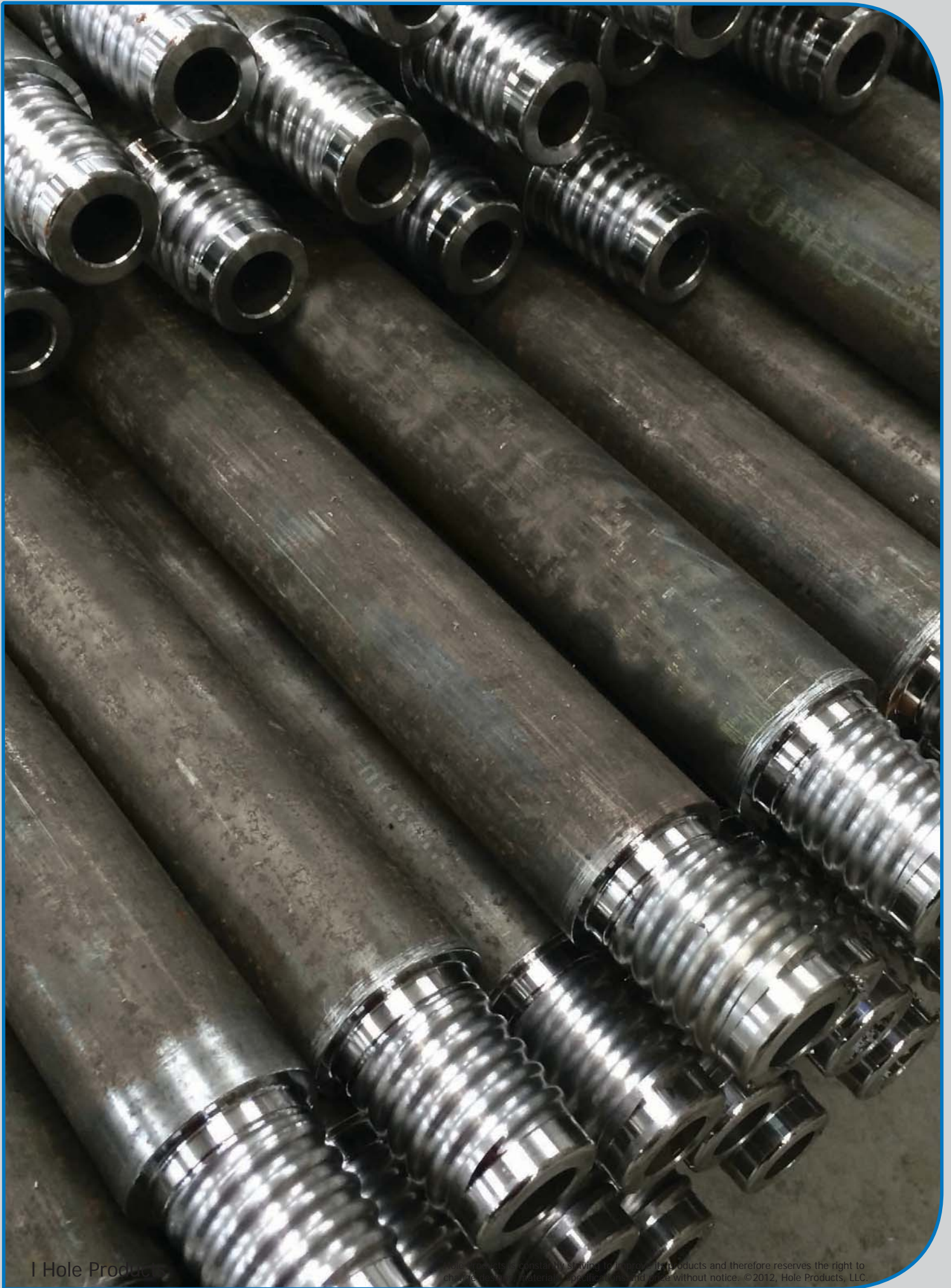
## 7. Limitation of Liability

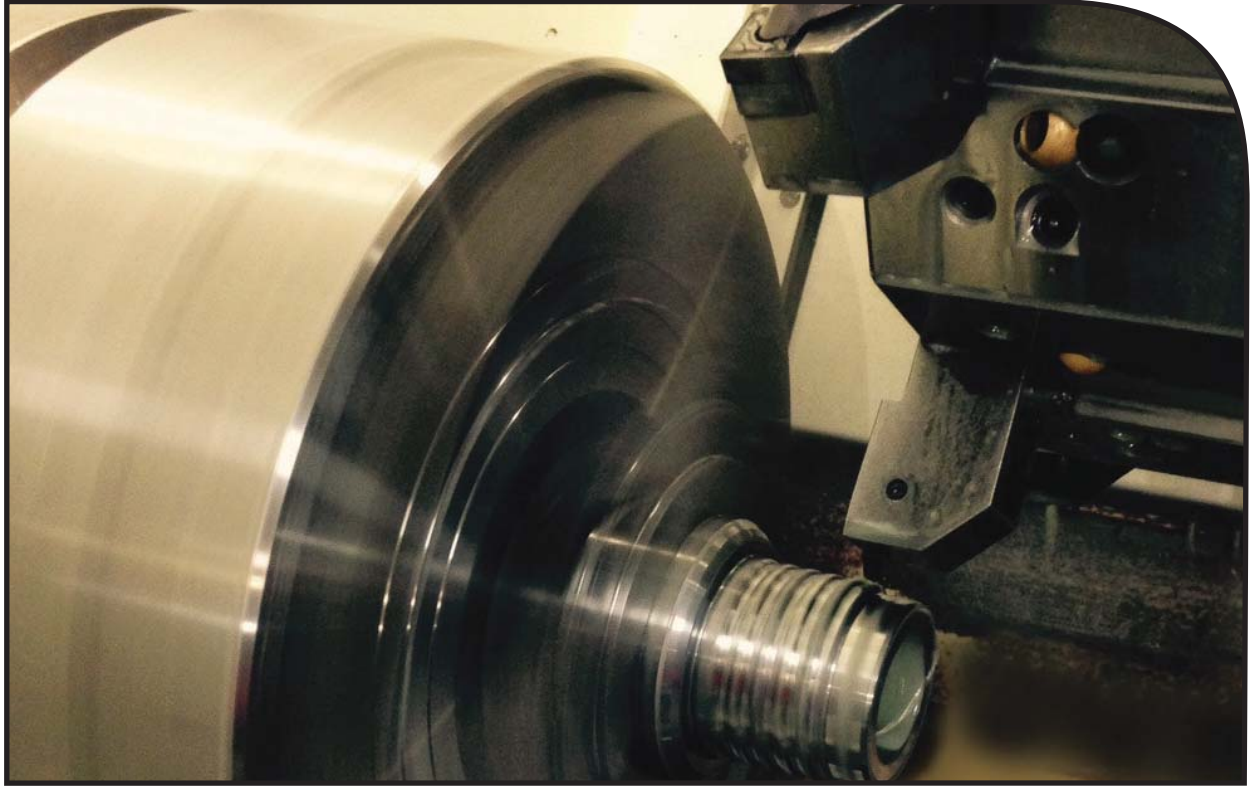
1. By participating in the Program, each Participant accepts all responsibility for, and hereby indemnifies and holds harmless Hole Products and its respective officers, directors, employees, shareholders, agents, and successors, and assigns (the "Released Parties"), from and against any claims that may arise from actions taken by such Participant, participation in the Program, acceptance or use of any merchandise, misuse of Program by Participant or others, and any unauthorized access to Participant's account by a third party.
2. UNDER NO CIRCUMSTANCES, INCLUDING, BUT NOT LIMITED TO, NEGLIGENCE, SHALL THE RELEASED PARTIES BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF THE PROGRAM, EVEN IF ANY OR ALL OF THE RELEASED PARTIES HAVE BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES. SOME JURISDICTIONS DO NOT ALLOW THE EXCLUSION OR LIMITATION OF INCIDENTAL OR CONSEQUENTIAL DAMAGES, THEREFORE SUCH EXCLUSIONS MAY NOT APPLY TO YOU. IF A PARTICIPANT PROVES THAT HOLE PRODUCTS HAS IMPROPERLY DENIED THAT PARTICIPANT ANY POINTS, LIABILITY WILL BE LIMITED TO THE EQUIVALENT AMOUNT OF POINTS. BY PARTICIPATING IN THE PROGRAM, A PARTICIPANT WAIVES ANY AND ALL RIGHTS TO BRING ANY CLAIM OR ACTION RELATED TO SUCH MATTERS IN ANY FORUM BEYOND ONE (1) YEAR AFTER THE FIRST OCCURRENCE OF THE KIND OF ACT, EVENT, CONDITION OR OMISSION UPON WHICH THE CLAIM OR ACTION IS BASED. EACH MEMBER SPECIFICALLY WAIVES ANY BENEFIT UNDER CALIFORNIA CIVIL CODE SECTION 1542 WHICH PROVIDES "A GENERAL RELEASE DOES NOT EXTEND TO UNKNOWN CLAIMS WHICH THE CREDITOR DOES NOT KNOW OR SUSPECT TO EXIST IN ITS FAVOR AT THE TIME OF EXECUTING THE RELEASE, WHICH IF KNOWN BY HIM WOULD HAVE MATERIALLY AFFECTED THE SETTLEMENT".
3. These Terms are governed by and interpreted under the laws of the state of Wisconsin with venue and jurisdiction in Wisconsin. Participants specifically agree to personal jurisdiction in Wisconsin.
4. If any provision of these Terms is found to be invalid or unenforceable by a court of competent jurisdiction, such provision shall be severed from the remainder of these Terms, which will otherwise remain in full force and effect. The Program is void where prohibited or restricted by law.

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Direct Push Technology (DPT) utilizes direct push (probe) rigs to push tools and sensors into the ground to advance sampling devices and geotechnical or analytical sensors into the subsurface.

Direct Push is often the preferred drilling method for geotechnical and environmental projects. Cost effectiveness, versatility, and efficiency are some of the many advantages of direct push. In addition, probes produce minimal cuttings and waste, thus saving time and reducing overall job-site costs associated with handling, removal, and clean-up of waste often associated with other traditional drilling methods.

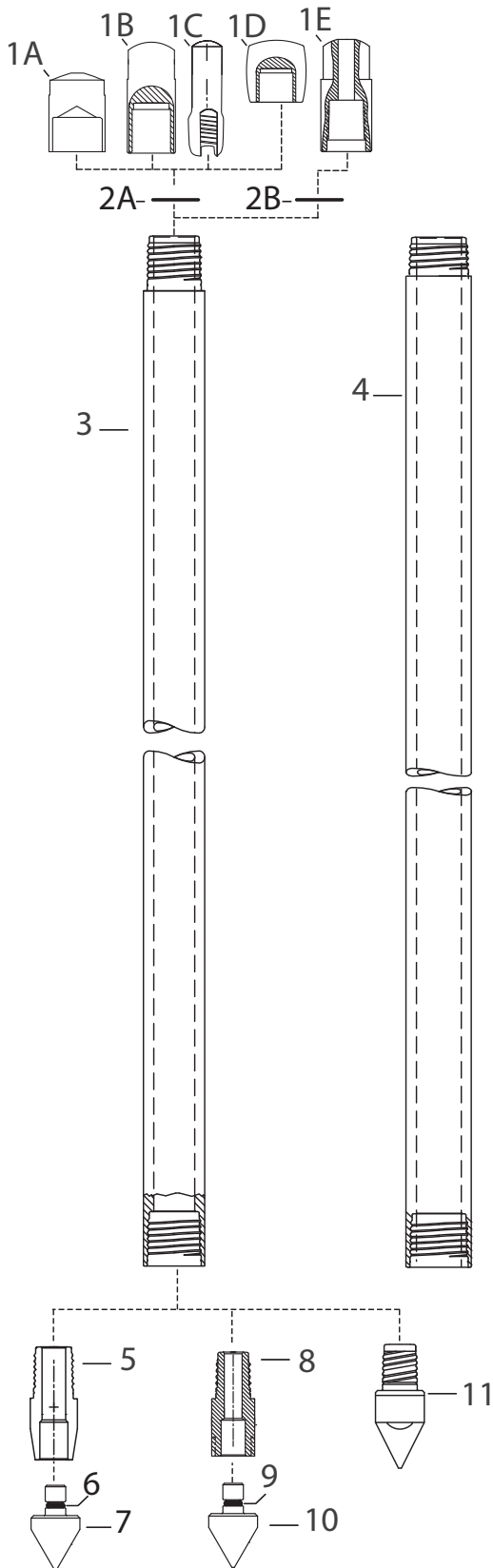
To service the Direct Push market, Hole Products brings you **Force DPT**. The **Force** line of world class, industry compatible tooling includes: tooling systems ranging from 1.25" – 4.50", soil sampling systems, groundwater sampling and assessment systems, field accessories, and much more.

With an unrivalled inventory, in-stock at multiple locations throughout the US, coupled with Hole Products sales, service, and distribution network, Force DPT provides drillers the direct push alternative they've been waiting for.

Please contact a **Force** representative for additional details, product availability, or assistance ordering **The Genuine Alternative!**

*Products listed in the catalog are representative of the most common industry sizes and styles.  
Please contact your Hole Products representative for additional product offerings.*

# 1.25" PROBE TOOLS



## ACCESSORIES

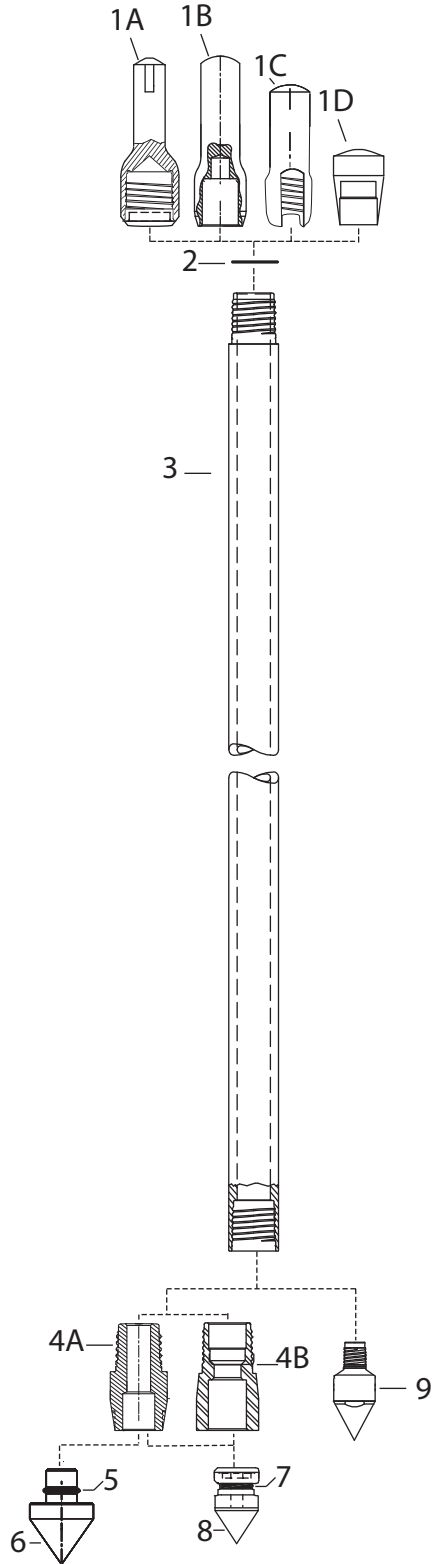
<p>12A</p>	<p>12B</p>	<p>12C</p>
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# 1.25" PROBE TOOLS

1.25" PROBE TOOLS				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1A	4020181	N/A	N/A	1.25" DRIVE CAP, SHORT, THREADLESS (GH40 HAMMER)
	4030007	AT1200	213748	1.25" DRIVE CAP, SHORT, W/ THREADS (G40 HAMMER)
1B	4020206	35392	207282	1.25" DRIVE CAP, LONG, THREADLESS (GH40 HAMMER)
1C	4020205	AT1202	213749	1.25" DRIVE CAP, SLOTTED, 5.50" LONG (GH40 HAMMER)
1D	4020204	8398	201089	1.25" DRIVE CAP, THREADLESS (GH60 HAMMER)
1E	4020209	AT1266	213775	1.25" DRIVE CAP, GAS SAMPLING
2A	4020217	AT1250R	213771	O-RING, 1.25" PROBE ROD (25/PKG)
2B	4020218	AT1266R	213776	O-RING, 1.25" GAS SAMPLING CAP (25/PKG)
3	4030279	AT1212	213753	1.25" X 12" PROBE ROD
	4030222	AT1224	213758	1.25" X 24" PROBE ROD
	4020229	AT1236	213762	1.25" X 36" PROBE ROD
	4020230	AT1239	213763	1.25" X 39"/1M PROBE ROD
	4030270	AT1248	213769	1.25" X 48" PROBE ROD
	4030267	AT1260	213773	1.25" X 60" PROBE ROD
4	4020227	43012	209949	1.25" X 36" LIGHTWEIGHT PROBE ROD
	4020226	32318	206525	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD
	4030224	21900	203988	1.25" X 48" LIGHTWEIGHT PROBE ROD
	4030277	27600	205232	1.25" X 60" LIGHTWEIGHT PROBE ROD
5	4020212	PR1215	214202	1.25" EXPENDABLE POINT HOLDER FOR 1.10" OD EXPENDABLE POINT
6	4030225	AT14R	213782	O-RING, 1.00" FOR 1.10" OD EXPENDABLE POINT (25/PKG)
7	4020835	AT14	213778	1.00" EXPENDABLE POINT (1.10" OD)
	4030115	PR14	214205	1.00" EXPENDABLE POINT W/ 1.10" OD FOR SOIL GAS IMPLANTS W/ O-RING
8	4030466	AT1213	213754	1.25" EXPENDABLE POINT HOLDER FOR 1.45" OD EXPENDABLE POINT
9	4030425	AT1214R	N/A	O-RING, 1.25" FOR 1.45" OD EXPENDABLE POINT (25/PKG)
10	4020208	AT1214	N/A	1.25" EXPENDABLE POINT W/ O-RING (1.45" OD)
	4020219	PR1214	214201	1.25" EXPENDABLE POINT W/ O-RING (1.45" OD) SOIL GAS IMPLANT
11	4020221	AT1245	213767	1.25" SOLID DRIVE POINT (1.45" OD)
	4020241	AT1244	213766	1.25" SOLID DRIVE POINT (1.75" OD)
	4020242	AT1247	213768	1.25" SOLID DRIVE POINT (2.00" OD)
	4020243	AT1242	213765	1.25" SOLID DRIVE POINT (2.50" OD)
	4020244	AT1252	213772	1.25" SOLID DRIVE POINT (3.00" OD)
12A	4030468	N/A	N/A	1.25" DRIVE/PULL CAP, LONG
12B	4030059	AT1204	213751	1.25" PULL CAP
12C	4030427	43343	210092	1.25" LIFTING SWIVEL PULL CAP
12D	4020232	16697	202929	1.25" GROUT INJECTION PULL CAP
12E	4020452	37303	105017	O-RING, 1.25" GROUT INJECTION PULL CAP
12F	4020833	17267	203036	1.25" PULL CAP W/ 1/2" NPT FEMALE THREAD
12G	4020231	AT1203	213750	1.25" PULL CAP, SLOTTED
13	4020234	31499	206239	1.25" LEAF PULLER ASSEMBLY
14	4020210	GH1255	213950	1.25" ROD GRIP HANDLE ASSEMBLY (GH40 HAMMER)
	4020220	15554	202724	1.25"/1.50" ROD GRIP HANDLE ASSEMBLY (GH60 HAMMER)
15	4020202	23663	204400	1.25"/1.50" ROD GRIP BODY (GH40 HAMMER)
	4020203	23418	204305	1.25"/1.50" ROD GRIP BODY (GH60 HAMMER)
16	4020214	5867	200685	1.00"/1.25" ROD GRIP JAW (GH40 HAMMER)
	4020216	15275	202660	1.25"/1.50" ROD GRIP JAW (GH60 HAMMER)
17	4020211	23852	600341	1.25"/1.50" ROD WIPER
*	4030477	BU1250	600996	1.25" NYLON ROD BRUSH
*	4020200	15812	202789	ADAPTER, 1.25" BOX TO 1.50" PIN
*	4020201	15813	202790	ADAPTER, 1.50" BOX TO 1.25" PIN

\* Image not shown. See page 50 for additional details.

# 1.50" PROBE TOOLS



## ACCESSORIES

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<p>13</p>	<p>14</p>	<p>15</p>

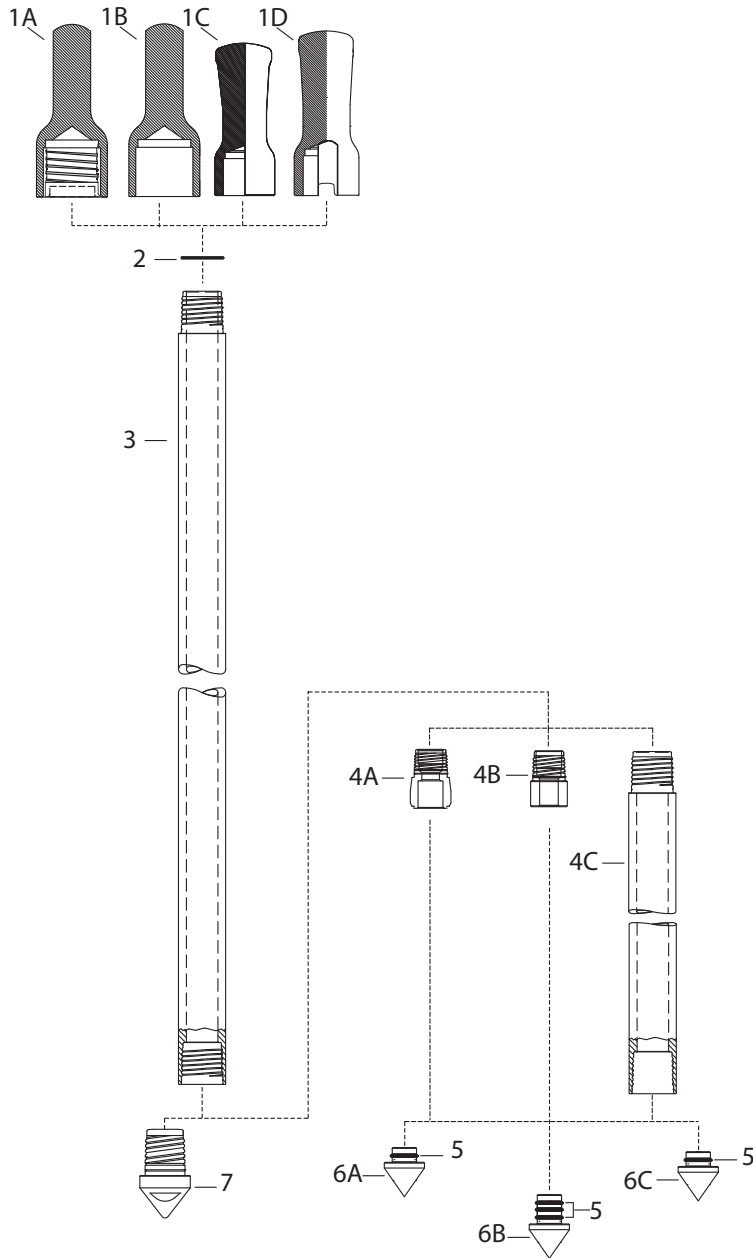
# 1.50" PROBE TOOLS

1.50" PROBE TOOLS				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1A	4020403	15590	202736	1.50" DRIVE CAP, W/ THREADS (GH40 HAMMER)
1B	4020400	N/A	N/A	1.50" DRIVE CAP, THREADLESS (GH40 HAMMER)
1C	4020402	15607	202743	1.50" DRIVE CAP, SLOTTED, W/ THREADS (GH40 HAMMER)
1D	4030041	12787	202115	1.50" DRIVE CAP, THREADLESS (GH60 HAMMER)
1E*	4020401	21075	N/A	1.50" DRIVE CAP, SLOTTED, THREADLESS (GH40 HAMMER)
2	4030429	15389	202695	O-RING FOR 1.50" PROBE ROD (25/PKG)
3	4030232	15471	202714	1.50" X 12" PROBE ROD
	4020412	15472	202715	1.50" X 24" PROBE ROD
	4020413	35325	207261	1.50" X 36" PROBE ROD
	4020411	17899	203193	1.50" X 39"/1M PROBE ROD
	4020414	13359	202248	1.50" X 48" PROBE ROD
	4030235	11121	201682	1.50" X 60" PROBE ROD
4A	4020407	21444	203895	1.50" EXPENDABLE POINT HOLDER FOR 1.10" OD POINT
4B	4020406	15132	202615	1.50" EXPENDABLE POINT HOLDER FOR 1.70" OD POINT
5	4020228	N/A	N/A	O-RING, 1.50" FOR 1.70" OD EXPENDABLE POINT FOR (25/PKG)
6	4020409	N/A	N/A	1.50" EXPENDABLE POINT W/ O-RING (1.70" OD)
7	4030225	AT14R	213782	O-RING, 1.00" FOR 1.10" OD EXPENDABLE POINT (25/PKG)
8	4020835	AT14	213778	1.00" EXPENDABLE POINT (1.10" OD)
	4030115	PR14	214205	1.00" EXPENDABLE POINT W/ 1.10" OD FOR SOIL GAS IMPLANTS W/ O-RING
9	4020420	21519	203909	1.50" SOLID DRIVE POINT THREADED (1.50" OD)
	4020421	15219	202637	1.50" SOLID DRIVE POINT THREADED (1.70" OD)
	4020422	14512	202494	1.50" SOLID DRIVE POINT THREADED (2.50" OD)
	4020423	12814	202121	1.50" SOLID DRIVE POINT THREADED (3.00" OD)
10A	4030058	15090	202598	1.50" PULL CAP STANDARD NECK
10B	4020415	15164	202630	1.50" PULL CAP W/ SLOT
10C	4030345	42416	209748	1.50" LIFTING SWIVEL PULL CAP
10D	4020416	16698	202930	1.50" GROUT INJECTION PULL CAP
10E	4020452	37303	105017	O-RING, 1.50" GROUT INJECTION PULL CAP
11	4020417	40167	208806	1.50" LEAF PULLER ASSEMBLY
12	4020425	GH1555	213951	1.50" ROD GRIP HANDLE ASSEMBLY (GH40 HAMMER)
	4020220	15554	202724	1.25"/1.50" ROD GRIP HANDLE ASSEMBLY (GH60 HAMMER)
13	4020202	23663	204400	1.25"/1.50" ROD GRIP BODY (GH40 HAMMER)
	4020203	23418	204305	1.25"/1.50" ROD GRIP BODY (GH60 HAMMER)
14	4030069	15582	202730	1.50" ROD GRIP JAW (GH40 HAMMER)
	4020216	15275	202660	1.25"/1.50" ROD GRIP JAW (GH60 HAMMER)
15	4020211	23852	600341	1.25"/1.50" ROD WIPER
**	4020200	15812	202789	ADAPTER, 1.25" BOX TO 1.50" PIN
**	4020201	15813	202790	ADAPTER, 1.50" BOX TO 1.25" PIN

\* Image not shown.

\*\* Image not shown. See page 50 for additional details.

# 2.25" PROBE TOOLS



ACCESSORIES		
8A	8B	
8C	8D	
8E	8F	9
10	11	
12	13	14

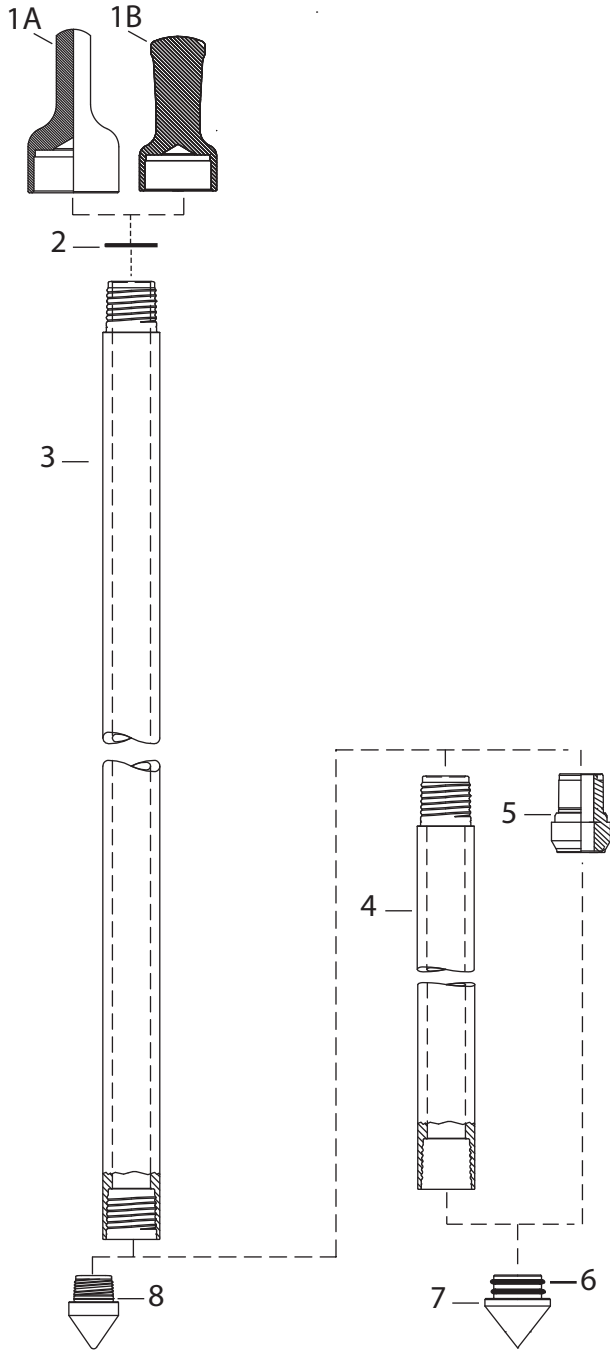
## 2.25" PROBE TOOLS

2.25" PROBE TOOLS				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1A	4020304	25362	204787	2.25" DRIVE CAP, W/ THREADS (GH40 HAMMER)
1B	4020303	31405	206187	2.25" DRIVE CAP, THREADLESS (GH40 HAMMER)
1C	4030046	31530	206249	2.25" DRIVE CAP, THREADLESS, LONG (GH60 HAMMER)
1D	4030026	48181	211798	2.25" DRIVE CAP, SLOTTED, THREADLESS (GH60 HAMMER)
2	4020312	AT2100R	213790	O-RING, 2.25" PROBE ROD (25/PKG)
3	4020323	25351	204777	2.25" X 12" PROBE ROD
	4030242	32656	206588	2.25" X 24" PROBE ROD
	4020324	33245	206706	2.25" X 36" PROBE ROD
	4020325	25352	204778	2.25" X 39"/1M PROBE ROD
	4030244	25300	204766	2.25" X 48" PROBE ROD
	4030245	25301	204767	2.25" X 60" PROBE ROD
4A	4020139	25353	204779	2.25" EXPENDABLE POINT HOLDER SHORT (2.50" OD)
4B	4020311	28662	205481	2.25" EXPENDABLE POINT HOLDER SHORT (2.25" OD)
4C	4020309	25355	204781	2.25" EXPENDABLE POINT HOLDER 48" LONG (2.25" OD)
	4020310	25356	204782	2.25" EXPENDABLE POINT HOLDER 60" LONG (2.25" OD)
5	4020426	2799	200282	O-RING, 2.25" EXPENDABLE POINT (32/PKG)
6A	4020034	AT2015	213788	2.25" EXPENDABLE POINT STANDARD (2.45" OD) W/ 1 O-RING
6B	4020314	19442	203530	2.25" EXPENDABLE POINT EXT. SHANK (2.45" OD) W/ 3 O-RINGS
6C	4020315	13896	202356	2.25" EXPENDABLE POINT IMPLANT ANCHOR (2.45" OD)
7	4020319	25295	204764	2.25" SOLID DRIVE POINT (2.50" OD)
	4020320	25357	204783	2.25" SOLID DRIVE POINT (3.00" OD)
	4020321	25358	204784	2.25" SOLID DRIVE POINT (3.50" OD)
8A	4020326	33622	206823	2.25" PULL CAP HD
8B	4020327	33882	206876	2.25" LIFTING SWIVEL PULL CAP, BOX DOWN
8C	4020328	35621	207352	2.25" LIFTING SWIVEL PULL CAP, PIN DOWN
8D	4030025	35311	207256	2.25" FLANGE PULL ROD
8E	4030421	37275	207845	2.25" GROUT INJECTION PULL CAP
8F	4020452	37303	105017	O-RING, 2.25" GROUT INJECTION PULL CAP
9	4020329	32952	206643	2.25" LEAF PULLER ASSEMBLY
10	4020335	29461	205678	2.25" ROD GRIP HANDLE ASSEMBLY (GH40 HAMMER)
	4020332	29385	205664	2.25" ROD GRIP HANDLE ASSEMBLY (GH60 HAMMER)
11	4020336	23664	204401	2.25" ROD GRIP BODY (GH40 HAMMER)
	4020333	23666	204403	2.25" ROD GRIP BODY (GH60 HAMMER)
12	4020337	29457	205676	2.25" ROD GRIP JAW (GH40 HAMMER)
	4020334	28930	205565	2.25" ROD GRIP JAW (GH60 HAMMER)
13	4020330	14506	202491	2.25" CENTERING TOOL FOR EXTENSION RODS
14	4020331	26876	600412	2.25" ROD WIPER
*	4020302	BU2125	600998	2.25" NYLON BRUSH
*	4020300	25359	204785	ADAPTER, 2.25" BOX TO 1.50" PIN
*	4020301	25360	204786	ROD TO CAP ADAPTER, 2.25" PIN TO HSA

\* Image not shown. See page 50 for additional details.



# 3.25" PROBE TOOLS



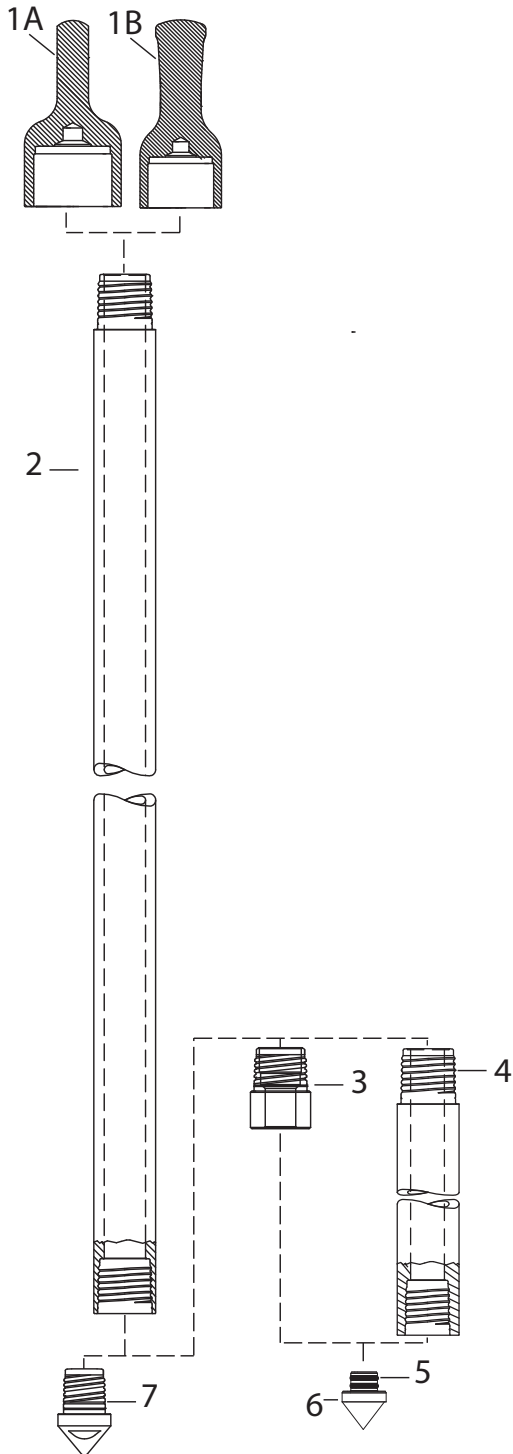
ACCESSORIES		
9A	9B	
9C	10	11
12	13	14
15	16	17
18	19	
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## 3.25" PROBE TOOLS

3.25" PROBE TOOLS				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1A	4020500	10605	201448	3.25" DRIVE CAP, THREADLESS (GH40 HAMMER)
1B	4030049	9742	201275	3.25" DRIVE CAP, THREADLESS (GH60 HAMMER)
2	4020514	9960	201325	O-RING, 3.25" PROBE ROD (25/PKG)
3	4020508	13672	202313	3.25" X 12" PROBE ROD
	4030252	18405	203284	3.25" X 24" PROBE ROD
	4020509	N/A	N/A	3.25" X 36" PROBE ROD
	4020510	13925	202363	3.25" X 39"/1M PROBE ROD
	4020511	10594	201446	3.25" X 48" PROBE ROD
	4030250	9040	201185	3.25" X 60" PROBE ROD
4	4020501	13926	202364	3.25" EXPENDABLE POINT HOLDER 39"/1M LONG
	4020504	10596	201447	3.25" EXPENDABLE POINT HOLDER 48" LONG
	4030055	9796	201282	3.25" EXPENDABLE POINT HOLDER 60" LONG
5	4030096	N/A	N/A	3.25" EXPENDABLE POINT HOLDER SHORT (3.25" OD)
	4020140	12270	202026	3.25" EXPENDABLE POINT HOLDER SHORT (4.00" OD)
6	4020513	AT3215R	213800	O-RING, 3.25" EXPENDABLE POINT (26/PKG)
	4020519	16490	600207	O-RING, 3.25" EXPENDABLE POINT (EACH)
7	4020505	N/A	N/A	3.25" EXPENDABLE POINT W/ O-RING - ALUMINIUM
	4020507	N/A	N/A	3.25" EXPENDABLE POINT W/ O-RING - LONG
	4020038	AT3215	213798	3.25" EXPENDABLE POINT W/ O-RING - STEEL
8	4020520	9729	201273	3.25" SOLID DRIVE POINT (3.50" OD)
9A	4030050	13257	202234	3.25" PULL CAP
9B	4020517	35358	207272	3.25" LIFTING SWIVEL PULL CAP, BOX DOWN
9C	4030431	35369	207277	3.25" FLANGE PULL ROD
10	4020523	12235	202012	3.25" ROD GRIP HANDLE ASSEMBLY (GH40 HAMMER)
11	4020524	23665	204402	3.25" ROD GRIP BODY (GH40 HAMMER)
12	4020525	12228	202008	3.25" ROD GRIP JAW (GH40 HAMMER)
13	4020526	9757	201277	3.25" ROD GRIP HANDLE ASSEMBLY (GH60 HAMMER)
14	4020527	9096	201189	3.25" ROD GRIP BODY (GH60 HAMMER)
15	4020308	16792	202948	3.25"/3.50" ROD GRIP HAMMER V-BLOCK (GH60 HAMMER)
16	4020316	6370	101149	3.25" ROD GRIP SCREW
17	4030470	12126	201963	3.25" ROD GRIP JAW PAD (GH60 HAMMER)
18	4020470	9774	201280	3.25" ROD GRIP V-BLOCK RETAINING PIN
19	4020521	21114	203844	3.25" SPT SOLID DRIVE POINT W/ 1.50" MALE THREAD FOR SPLIT SPOON
20	4020522	20737	203799	3.25" SPT CUTTING SHOE W/ 2.38" ID x 3.750" OD FOR SPLIT SPOON
21	4020518	27194	600418	3.25" ROD WIPER
*	4020516	BU3250	601000	3.25" NYLON BRUSH

\* Image not shown. See page 50 for additional details.

# 3.50" PROBE TOOLS

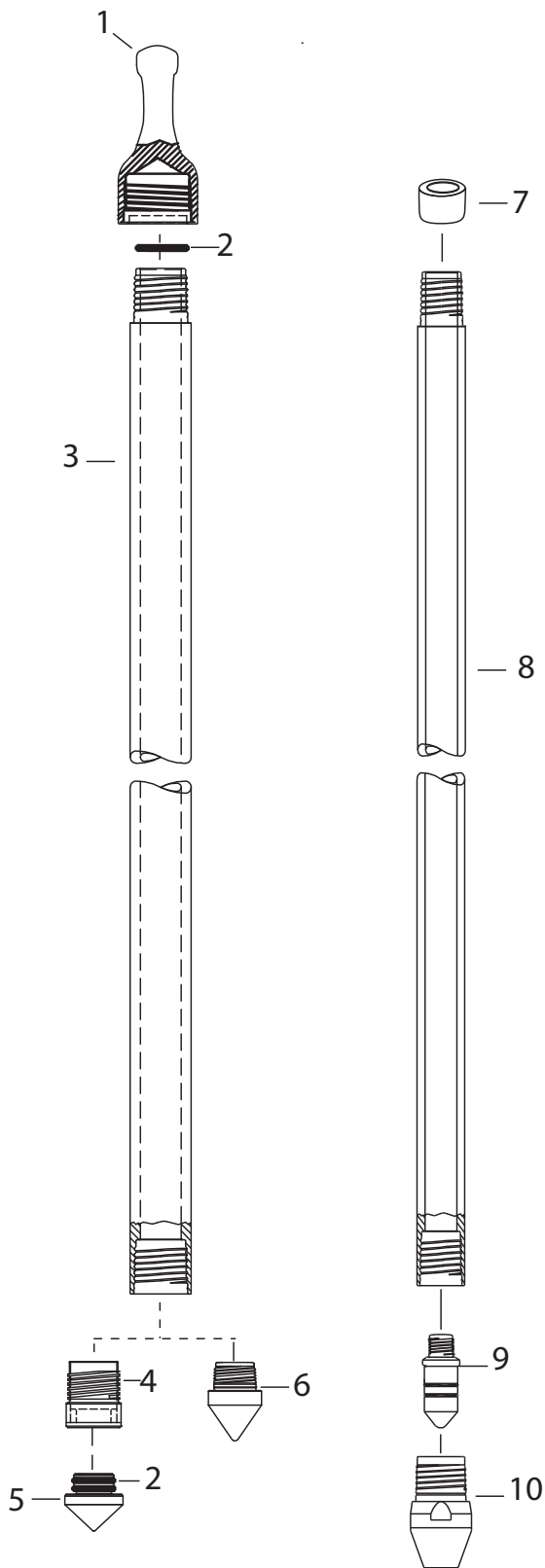


ACCESSORIES			
8A 	8B 	8C 	9 
10 	11 	12 	13 
14 	15 	16 	

## 3.50" PROBE TOOLS

3.50" PROBE TOOLS				
ITEM	HP PART #	GP PART #	GP MAT PART #	DESCRIPTION
1A	4030605	38982	208460	3.50" DRIVE CAP, THREADLESS (GH40 HAMMER)
1B	4030057	36642	207679	3.50" DRIVE CAP, THREADLESS (GH60/80 HAMMER)
2	4020601	51765	213362	3.50" X 12" PROBE ROD
	4030266	38173	208219	3.50" X 24" PROBE ROD
	4020602	N/A	N/A	3.50" X 36" PROBE ROD
	4020603	38952	214781	3.50" X 39"/1M PROBE ROD
	4030264	38951	208446	3.50" X 48" PROBE ROD
	4030265	36641	215664	3.50" X 60" PROBE ROD
3	4020606	N/A	N/A	3.50" EXPENDABLE POINT HOLDER SHORT (3.75" OD)
4	4030084	38955	208449	3.50" EXPENDABLE POINT HOLDER 39"/1M LONG
	4030075	38953	208447	3.50" EXPENDABLE POINT HOLDER 48" LONG
	4020240	37763	208069	3.50" EXPENDABLE POINT HOLDER 60" LONG
5	4030433	N/A	105218	O-RING, 3.50" EXPENDABLE POINT (26/PKG)
6	4020600	39182	208504	3.50" EXPENDABLE POINT W/ O-RING
7	4030305	36645	207680	3.50" SOLID DRIVE POINT
8A	4030056	49145	212290	3.50" HD PULL CAP
8B	4030009	38183	208220	3.50" FLANGE PULL ROD
8C	4030272	37898	208115	3.50" LIFTING SWIVEL PULL CAP, BOX DOWN
9	4020803	38983	208461	3.50" ROD GRIP HANDLE ASSEMBLY (GH40 HAMMER)
10	4020804	44688	210532	3.50" ROD GRIP HANDLE ASSEMBLY (GH60 HAMMER)
11	4020810	44689	210533	3.50" ROD GRIP BODY (GH60 HAMMER)
12	4020308	16792	202948	3.25"/3.50" ROD GRIP HAMMER V-BLOCK (GH60 HAMMER)
13	4030470	12126	201963	3.50" ROD GRIP JAW PAD (GH60 HAMMER)
14	4020316	6370	101149	3.50" ROD GRIP SCREW
15	4020470	9774	201280	3.50" ROD GRIP V-BLOCK RETAINING PIN
16	4020518	27194	600418	3.50" ROD WIPER

# 3.75" PROBE TOOLS

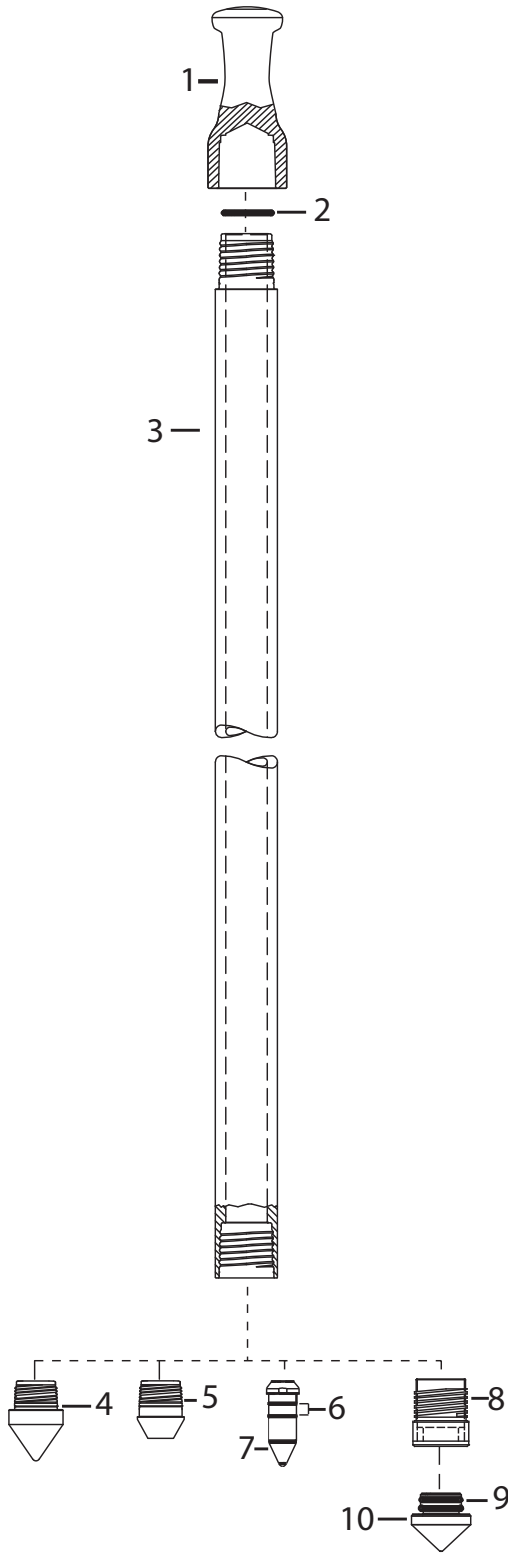


ACCESSORIES		
11A 	11B 	11C 
12 	13 	14 
15 	16 	17 

## 3.75" PROBE TOOLS

3.75" PROBE TOOLS				
ITEM	HP PART #	GP PART #	GP MAT PART #	DESCRIPTION
1	4030453	N/A	219276	3.75" DRIVE CAP, THREADLESS (GH60/80 HAMMER)
2	4030479	N/A	N/A	O-RING, 3.75" PROBE ROD (26/PKG)
3	4030457	N/A	220395	3.75" X 12" PROBE ROD
	4030456	N/A	219278	3.75" X 24" PROBE ROD
	4030459	N/A	N/A	3.75" X 39"/1M PROBE ROD
	4030458	N/A	220539	3.75" X 48" PROBE ROD
	4030462	N/A	219275	3.75" X 60" PROBE ROD
4	4030451	N/A	219559	3.75" EXPENDABLE POINT HOLDER SHORT, (3.75" OD)
5	4030464	N/A	219601	3.75" EXPENDABLE POINT W/ O-RING 4.00" OD
6	4030463	N/A	219277	3.75" SOLID DRIVE POINT
7	4030480	N/A	216256	3.75" SPT CENTERING DRIVE CAP, 2.25"
8	4020323	25351	204777	2.25" X 12" PROBE ROD
	4030244	25300	204766	2.25" X 48" PROBE ROD
	4030245	25301	204767	2.25" X 60" PROBE ROD
9	4030481	N/A	220635	3.75" SPT DRIVE POINT FOR 3.75" RODS (2.25" PIN UP X 2.80" OD)
10	4030482	N/A	219951	3.75" SPT CUTTING SHOE W/ 2.85" BORE FOR 3.75" RODS
11A	4030467	N/A	220535	3.75" PULL CAP
11B	4030469	N/A	220370	3.75" LIFTING SWIVEL PULL CAP, BOX DOWN
11C	4030471	N/A	220730	3.75" FLANGE PULL ROD
12	4030472	N/A	220413	3.75" ROD GRIP HANDLE ASSEMBLY (GH60 HAMMER)
13	4030473	N/A	N/A	3.75" ROD GRIP BODY (GH60 HAMMER)
14	4020308	N/A	N/A	3.75" ROD GRIP HAMMER V-BLOCK (GH60 HAMMER)
15	4030470	12126	201963	3.75" ROD GRIP JAW PAD (GH60 HAMMER)
16	4020316	6370	101149	3.75" ROD GRIP SCREW
17	4030474	N/A	220390	3.75" ROD WIPER

# 4.50" PROBE TOOLS



ACCESSORIES		
11A 	11B 	11C 
12 	13 	14 
15 	16 	17 

## 4.50" PROBE TOOLS

4.50" PROBE TOOLS				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	4020703	26622	205080	4.50" DRIVE CAP, BOX DOWN, THREADLESS (GH60/80 HAMMER)
	4020605	48762	212038	4.50" DRIVE CAP, PIN DOWN, THREADLESS (GH60/80 HAMMER)
2	4030398	34900	104730	O-RING, 4.50" PROBE ROD (25/PKG)
3	4020709	39302	208532	4.50" X 12" PROBE ROD
	4020706	31865	206412	4.50" X 24" PROBE ROD
	4020702	34008	206890	4.50" X 39"/1M PROBE ROD
	4020700	25404	204797	4.50" X 48" PROBE ROD
	4020704	28887	205555	4.50" X 60" PROBE ROD
4	4020815	26925	205120	4.50" SOLID POINT, THREADED (5.00" OD)
	4030369	35999	207515	4.50" SOLID POINT, THREADED (6.00" OD)
5	4030370	30004	205734	4.50" CASING SHOE (3.55" ID, 5.00" OD)
	4030315	35234	207243	4.50" CASING SHOE (3.55" ID, 6.00" OD)
6	4020836	32665	206593	O-RING, 4.50" SOLID DRIVE / DISCRETE POINT (10/PKG)
7	4020838	32663	206592	4.50" SOLID DRIVE / DISCRETE POINT
8	4020710	36574	207649	4.50" EXPENDABLE POINT HOLDER SHORT (4.50" OD)
9	4020708	7702	101467	O-RING, 4.50" EXPENDABLE POINT
10	4020045	36838	207735	4.50" EXPENDABLE POINT W/ O-RING (5.00" OD)
	4020136	39247	208510	4.50" EXPENDABLE POINT W/ O-RING (4.50" OD)
11A	4030067	37343	207873	4.50" HD PULL CAP
11B	4030061	35309	207255	4.50" FLANGE PULL ROD
11C	4020705	29502	205690	4.50" LIFTING SWIVEL PULL CAP, BOX DOWN
12	4020707	31909	206433	4.50" ROD GRIP HANDLE ASSEMBLY (GH60 HAMMER)
13	4020701	32279	206515	4.50" ROD GRIP BODY (GH60 HAMMER)
14	4020506	31690	206336	4.50" ROD GRIP HAMMER V-BLOCK (GH60 HAMMER)
15	4030470	12126	201963	4.50" ROD GRIP JAW PAD (GH60 HAMMER)
16	4020316	6370	101149	4.50" ROD GRIP SCREW
17	4030475	29976	600448	4.50" ROD WIPER





# SOIL SAMPLING SYSTEMS



The **Force** line of Direct Push Tooling includes a complete offering of single rod and dual tube soil sampling systems. Innovative manufacturing techniques coupled with world class raw materials ensure optimum performance, durability, and effective core recovery in a variety of overburden drilling conditions.

## Single Rod Systems:

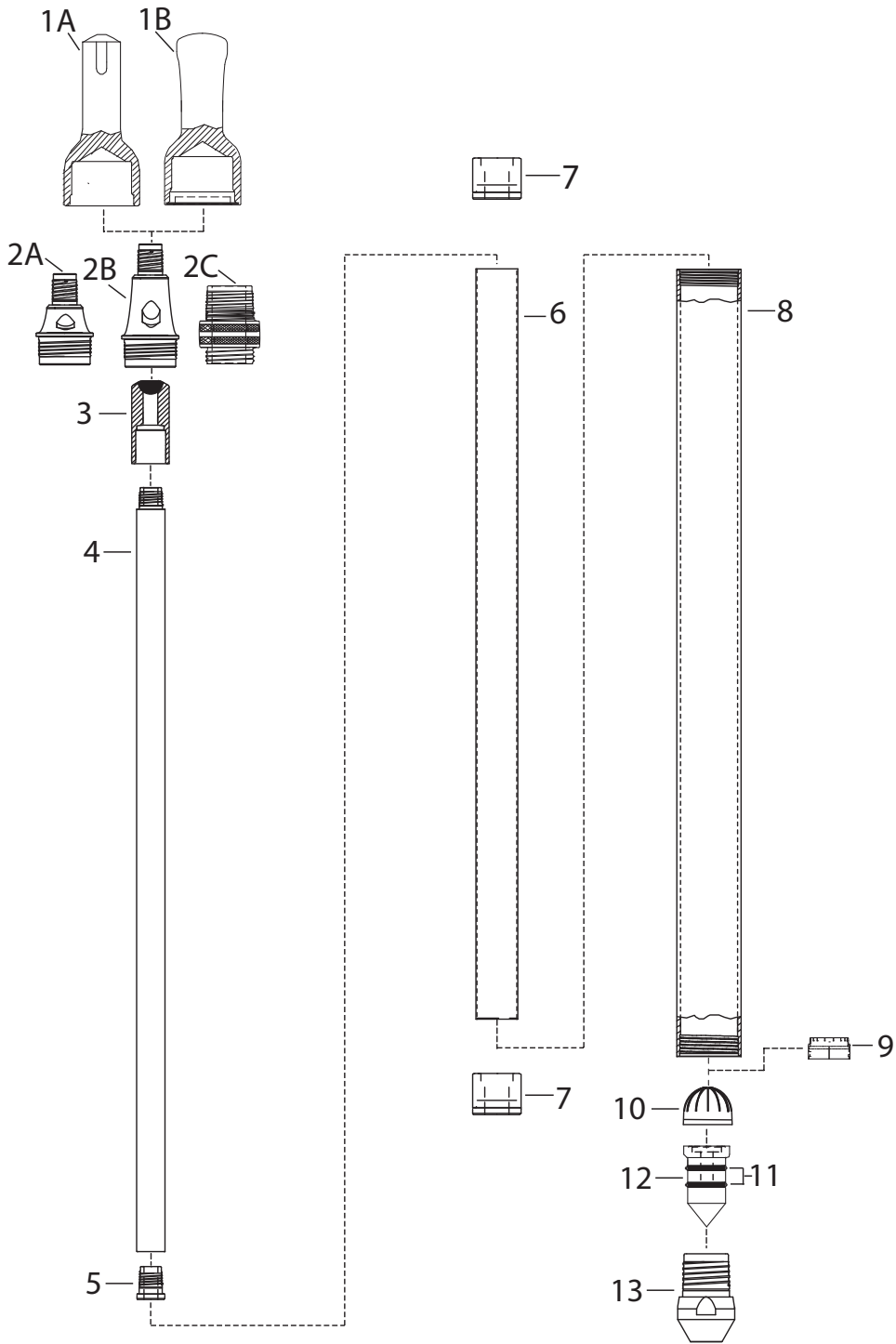
Single Rod Systems utilize a single rod string to connect the sampling equipment to the rig. After being advanced into the formation to depth, the entire drill string must be retracted to collect the sample. The **Force** offering includes MC5 and MC7 conventional single rod systems offering tried and true simplicity and efficiency.

## Dual Tube Systems:

Dual Tube Systems combine an inner and outer rod string. As the system is advanced into the soil, the soil sample is collected in a sample tube connected to the inner rod string. When at depth, the inner rod string is retracted to collect the sample. The outer rod(s) remain in the ground, thereby serving as a casing for the inner rod string. Dual tube systems offer a number of advantages including preventing cave-ins, sealing off formations from above, and providing the ability to complete a number of additional sampling and monitoring tasks in the borehole. Complete DT22, DT325, DT35, DT37, and DT45 systems are in stock and ready for delivery.

Please contact a **Force** representative for additional details, product availability, or assistance ordering **The Genuine Alternative!**

# MC5 SOIL SAMPLING SYSTEM



# MC5 SOIL SAMPLING SYSTEM

MC5 SOIL SAMPLING SYSTEM				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1A	4020303	31405	206187	2.25" DRIVE CAP, THREADLESS (GH40 HAMMER)
1B	4030046	31530	206249	2.25" DRIVE CAP, THREADLESS, LONG (GH60 HAMMER)
2A	4030040	26183	205021	MC5 DRIVE HEAD X 1.25" FOR STOP PIN
	4020806	28001	205372	MC5 DRIVE HEAD X 1.25" W/ 1/8" BORE NO STOP PIN
2B	4030042	22990	204257	MC5 DRIVE HEAD X 1.50" FOR STOP PIN
	4030280	27999	205371	MC5 DRIVE HEAD X 1.50" W/ 1/4" BORE NO STOP PIN
2C	4030045	28647	205476	MC5 DRIVE HEAD X 2.25" FOR STOP PIN
	4020812	28646	205475	MC5 DRIVE HEAD X 2.25" W/ 1.375" BORE
3	4030088	23639	204389	MC5 DRIVE CAP FOR CENTER RODS
4	4020227	43012	209949	1.25" X 36" LIGHTWEIGHT PROBE ROD
	4020226	32318	206525	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD
	4030224	21900	203988	1.25" X 48" LIGHTWEIGHT PROBE ROD
	4030277	27600	205232	1.25" X 60" LIGHTWEIGHT PROBE ROD
5	4020800	23641	204390	MC5 CENTER ROD PLUG 1.25" MALE THREAD
6	4020001	AT926K	213873	MC5 LINER CLEAR PVC 24" (66/BOX)
	4020814	AT921K	213872	MC5 LINER CLEAR PVC 36" (66/BOX)
	4020813	AT928K	213874	MC5 LINER CLEAR PVC 39"/1M (66/BOX)
	4020006	AT737K	600984	MC5 LINER CLEAR PVC 48" LIGHT DUTY (66/BOX)
	4020000	AT927K	600993	MC5 LINER CLEAR PVC 48" HEAVY DUTY (66/BOX)
	4020005	10074	600131	MC5 LINER CLEAR PVC 60" (66/BOX)
7	4020026	AT726K	213843	MC5 VINYL LINER CAPS (66/BOX)
8	4020841	24237	215665	MC5 SAMPLER TUBE 24"
	4020829	24238	204550	MC5 SAMPLER TUBE 36"
	4020830	24239	204551	MC5 SAMPLER TUBE 39"/1M
	4030035	22923	204218	MC5 SAMPLER TUBE 48"
	4030030	22992	204259	MC5 SAMPLER TUBE 60"
9	4020013	AT8533K	600988	MC5 LINER SPACER RING (500/PKG)
	4020013	AT8532K	213857	MC5 LINER SPACER RING (66/PKG)
10*	4020016	AT8534K	600989	MC5 CORE CATCHER (100/BOX)
	4020016	AT8531K	213856	MC5 CORE CATCHER (28/BOX)
11	4020009	DT4070R	213918	O-RING, MC5 PISTON POINT
12	4030079	28113	205387	MC5 PISTON POINT CLOSED STANDARD SIZE 1.50" OD W/ O-RING
	4030080	26865	205113	MC5 PISTON POINT CLOSED UNDER SIZED 1.35" OD W/ O-RINGS
13	4030062	26078	204985	MC5 CUTTING SHOE 1.25" ID W/ EXTENDED SHANK (2.375" OD)
	4020060	29552	205705	MC5 CUTTING SHOE 1.35" ID W/ STANDARD SHANK (2.375" OD)
	4030068	32035	206460	MC5 CUTTING SHOE 1.35" ID W/ EXTENDED SHANK (2.30" OD)
	4030060	22922	204217	MC5 CUTTING SHOE 1.50" ID W/ STANDARD SHANK (2.30" OD)
	4030070	23978	204500	MC5 CUTTING SHOE 1.50" ID W/ EXTENDED SHANK (2.375" OD)
	4030071	32490	206560	MC5 CUTTING SHOE W/ MC5 THREAD, STANDARD SHANK (2.25" OD)

\*Available May 2015.

# MC5 TOOLING & ACCESSORIES

## MC5 PISTON RODS

MC5 PISTON RODS			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4020825	10729	N/A	MC5 PISTON ROD 24"
4020826	10728	N/A	MC5 PISTON ROD 36"
4020824	10732	N/A	MC5 PISTON ROD 39"/1M
4030274	9038	201183	MC5 PISTON ROD 48"
4030281	10727	201470	MC5 PISTON ROD 60"

## MC5 LINERS

MC5 LINERS * (None Stock: Special Order Only)			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4020816	5131	200596	MC5 LINER CLEAR TEFLON 48"
4020004	38752	219147	MC5 LINER CLEAR TEFLON 60"
4020820	AT7235	213840	MC5 LINER SS 48"
4020821	16315	202873	MC5 LINER SS 60"
4020822	7332	N/A	MC5 LINER SS LONG SECTION
4020823	7333	N/A	MC5 LINER SS SHORT SECTION

\*Liner cutters available on request.

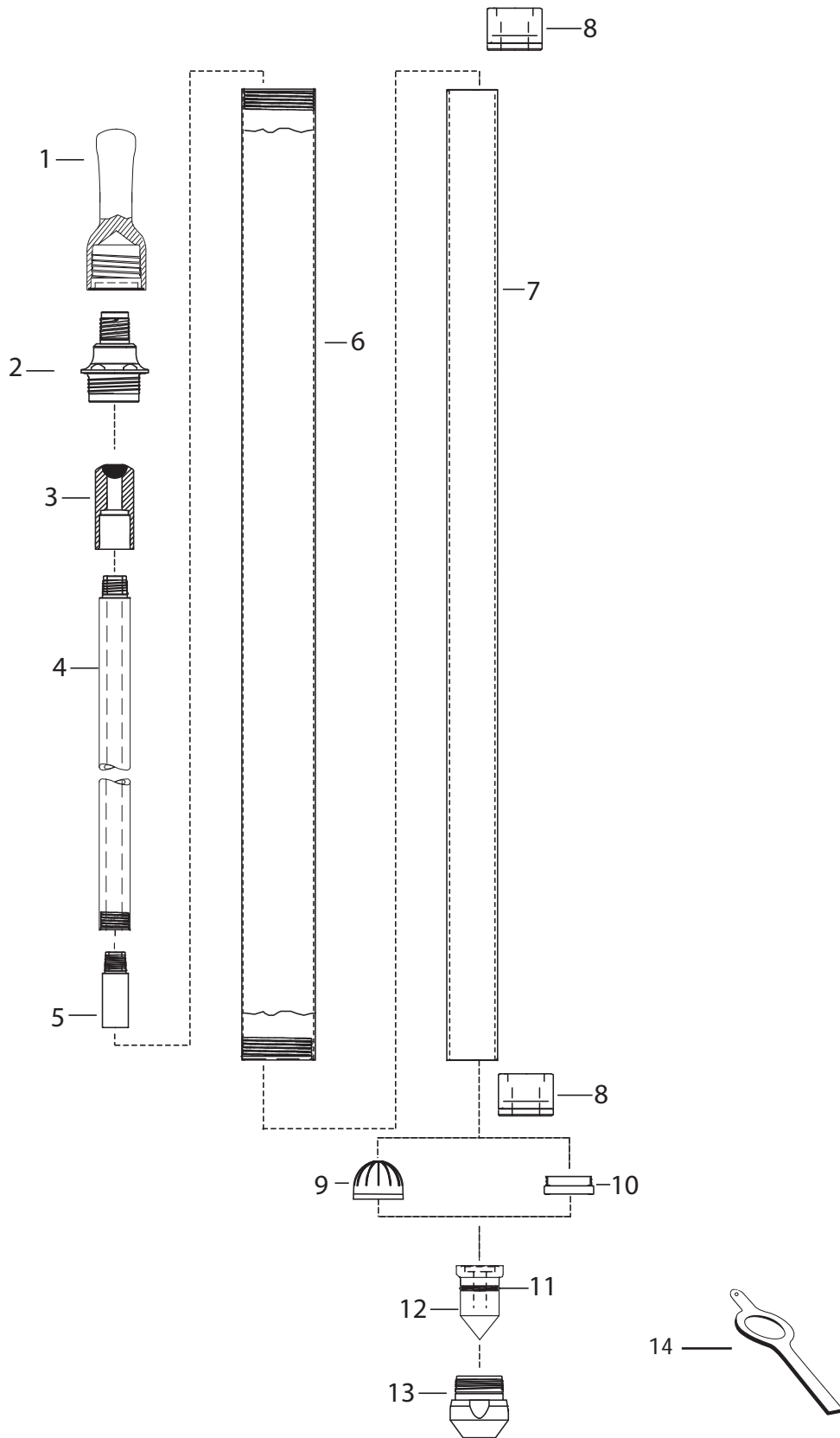
## MC5 MISCELLANEOUS TOOLS

MC5 ACCESSORIES AND MISCELLANEOUS TOOLS*			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4020839	9016	201179	MC5 STOP PIN COUPLER
4030452	9754	201276	MC QUICK LINKS STOP PIN REMOVER
4020811	N/A	N/A	MC5 DRIVE HEAD X AWJ BOX FOR STOP PIN
4020831	19520	203559	MC5 PLUNGER FOR HYDRAULIC LINER
4020828	29532	205697	MC5 ADAPTER FOR HYDRAULIC EXTRUDER
4020832	BU700	601003	MC5 NYLON BRUSH
4020837	29919	205731	MC5 CUTTING SHOE (2.25" OD) EXT SHANK
4030039	AT633	600977	TAP, 9/16" REVERSE THREAD
4030105	15527	202723	MC/MC5 STOP PIN FOR 1.25" & 1.50" DRIVE HEAD
4020840	10069	201349	MC/MC5 STOP PIN
4030435	AT6312R	213812	O-RING, MC5 STOP PINS (25/PKG)

\*See page 49 for Extension Rods.



# MC7 SOIL SAMPLING SYSTEM



# MC7 SOIL SAMPLING SYSTEM

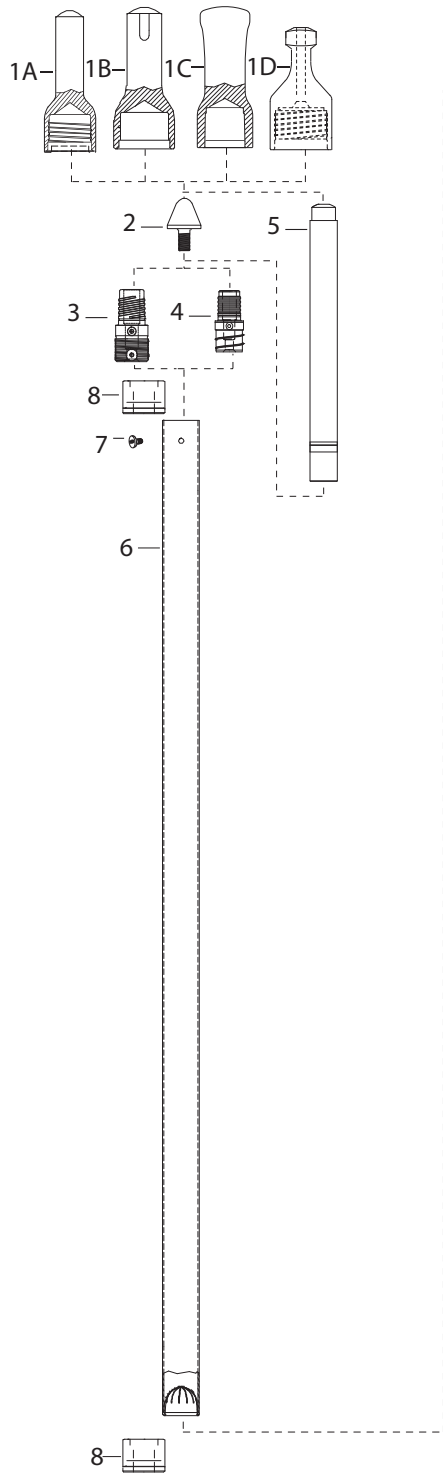
MC7 SOIL SAMPLING SYSTEM				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	4030046	31530	206249	2.25" DRIVE CAP, THREADLESS, LONG (GH60 HAMMER)
2	4020900	48423	211889	MC7 DRIVE HEAD W/ 2.25" PIN
3	4030088	23639	204389	MC5 DRIVE CAP FOR CENTER RODS
4	4030279	AT1212	213753	1.25" X 12" CENTER PROBE ROD
	4030270	AT1248	213769	1.25" X 48" CENTER PROBE ROD
	4030267	AT1260	213773	1.25" X 60" CENTER PROBE ROD
5	4020901	N/A	216119	MC7 CENTER ROD SPACER
6	4020904	N/A	216883	MC7 SAMPLE SHEATH 48"
	4020903	48302	211838	MC7 SAMPLE SHEATH 60"
	4020902	N/A	216885	MC7 SAMPLE SHEATH 72"
7	4020107	46125	600721	DT45 LINER CLEAR PVC 48" (18/BOX)
	4020105	46065	600719	DT45 LINER CLEAR PVC 60" (18/BOX)
	4030390	46066	600720	DT45 LINER CLEAR PVC 72" (18/BOX)
8	4020113	35806	207439	MC7/DT45 VINYL LINER CAPS
9*	4020906	34454	207000	MC7/DT45 CORE CATCHER
10	4020905	45603	210856	MC7 CORE CATCHER SPACER RING
11	4030044	19743	102981	O-RING, MC7 PISTON POINT
12	4020907	N/A	218055	MC7 PISTON POINT W/ O-RING
13	4020908	N/A	216121	MC7 SHOE CUTTING
14	4020909	30302	205773	MC7 CUTTING SHOE WRENCH / DT45 RETAINER WRENCH

\*Available May 2015.

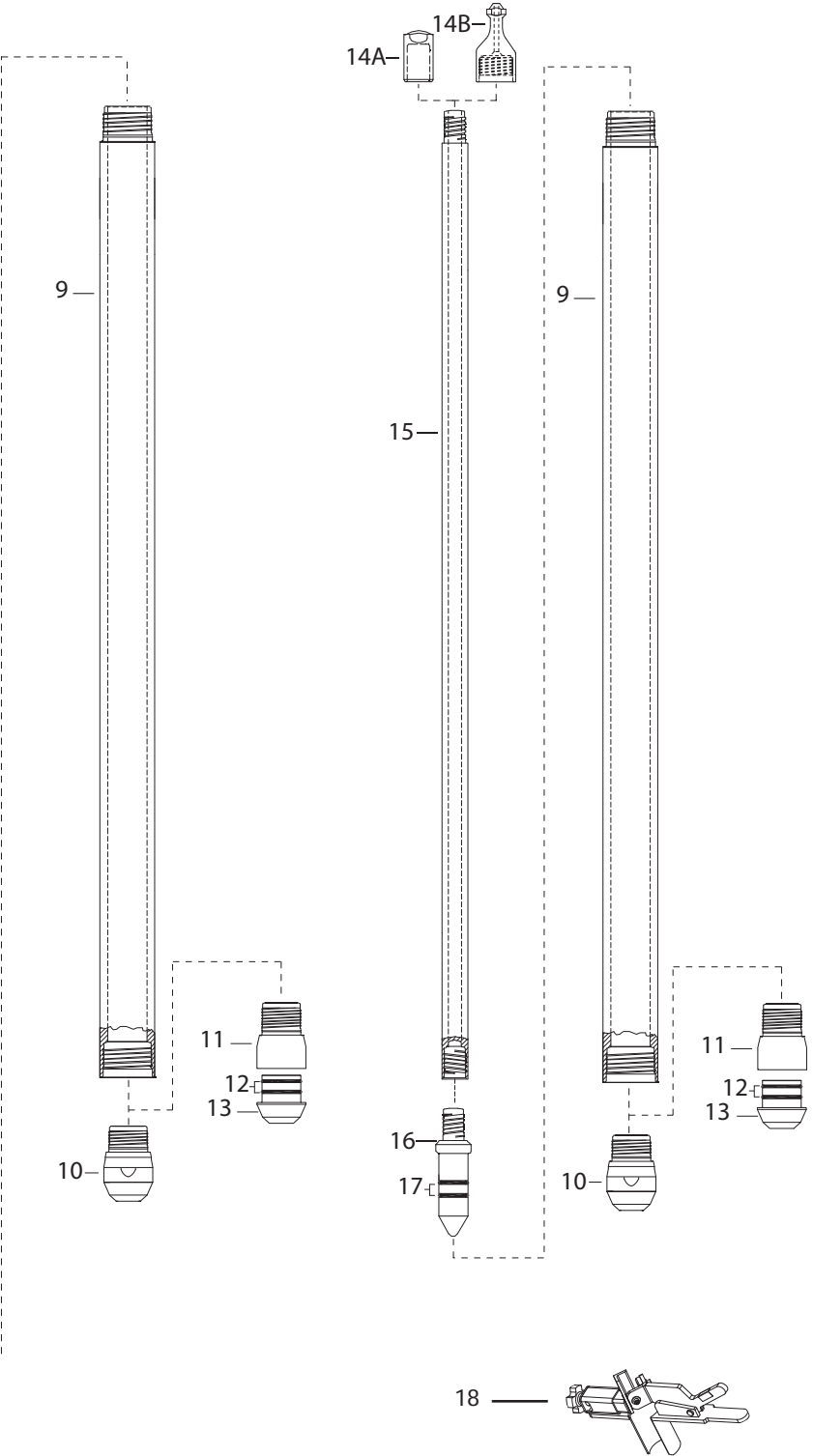


# DT22 SOIL SAMPLING SYSTEM

CONVENTIONAL DUAL TUBE CONFIGURATION



CONVENTIONAL DISCRETE POINT CONFIGURATION



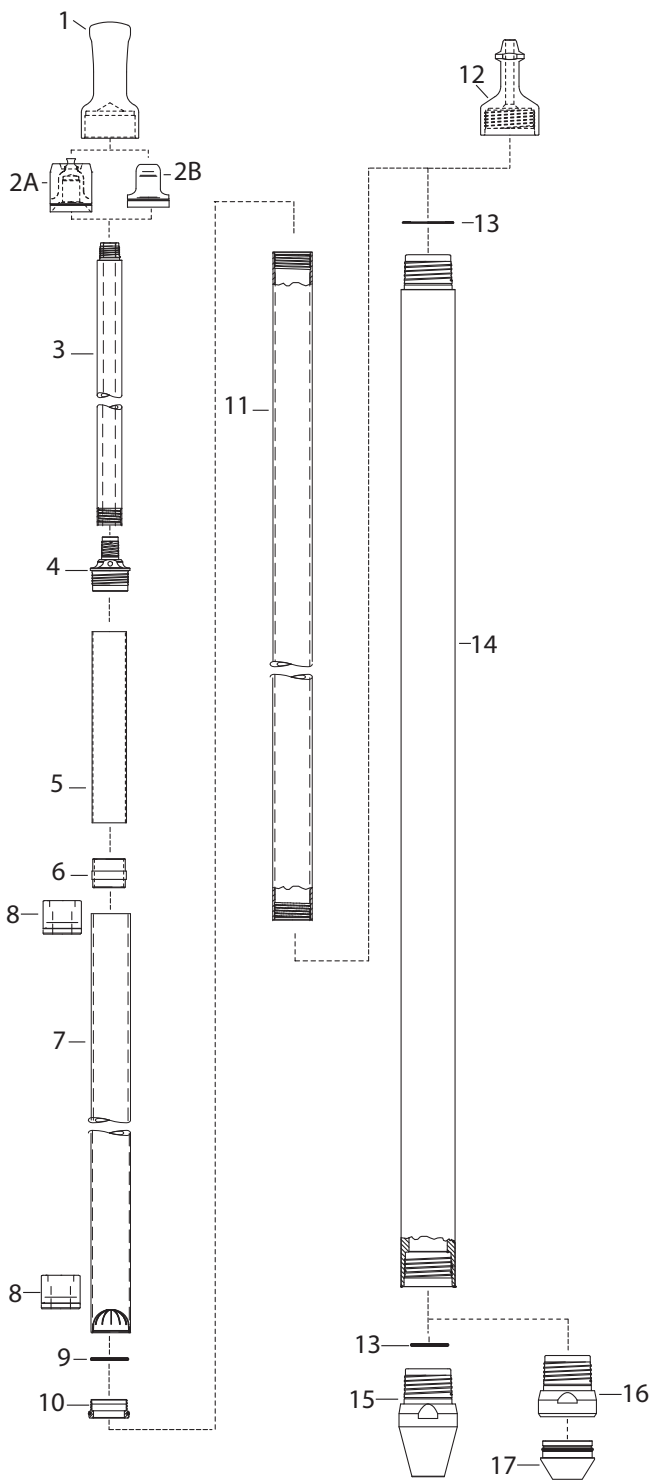
# DT22 SOIL SAMPLING SYSTEM

DT22 SOIL SAMPLING SYSTEM				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1A	4020304	25362	204787	2.25" DRIVE CAP, W/ THREADS (GH40 HAMMER)
1B	4020303	31405	206187	2.25" DRIVE CAP, THREADLESS (GH40 HAMMER)
1C	4030046	31530	206249	2.25" DRIVE CAP, THREADLESS, LONG (GH60 HAMMER)
1D	4020326	33622	206823	2.25" PULL CAP HD
2	4020175	DT4010	601006	DT22 DRIVE BUMPER, RUBBER
3	4030038	DT4052	213916	DT22 DRIVE HEAD FOR LINERS W/ 1.25" MALE THREAD UP
4	4030350	41675	209428	DT22 THREAD CUTTING DRIVE HEAD (FISHING TOOL)
5	4020802	49852	212548	DT22 DRIVE CUSHION ASSEMBLY
6	4020127	DT4024K	N/A	DT22 LINER 24" W/O INTEGRAL CORE CATCHER (50/BOX)
	4020129	DT4036K	213910	DT22 LINER 36" W/O INTEGRAL CORE CATCHER (50/BOX)
	4020125	DT4039K	213911	DT22 LINER 39"/1M W/O INTEGRAL CORE CATCHER (50/BOX)
	4020146	DT4048K	213914	DT22 LINER 48" W/O INTEGRAL CORE CATCHER (50/BOX)
	4020008	DT4061K	213917	DT22 LINER 60" W/O INTEGRAL CORE CATCHER (50/BOX)
	4020126	DT4124K	N/A	DT22 LINER 24" W/ INTEGRAL CORE CATCHER (50/BOX)
	4020128	DT4136K	213919	DT22 LINER 36" W/ INTEGRAL CORE CATCHER (50/BOX)
	4020124	DT4139K	213920	DT22 LINER 39"/1M W/ INTEGRAL CORE CATCHER (50/BOX)
	4020147	DT4148K	213922	DT22 LINER 48" W/ INTEGRAL CORE CATCHER (50/BOX)
4020007	DT4161K	213924	DT22 LINER 60" W/ INTEGRAL CORE CATCHER (50/BOX)	
7	4020121	13162	202221	DT22 BOLT FOR LINER DRIVE HEAD (20/PKG)
8	4020150	DT4026K	213909	DT22 VINYL LINER CAPS
9	4020323	25351	204777	2.25" X 12" PROBE ROD
	4030242	32656	206588	2.25" X 24" PROBE ROD
	4020324	33245	206706	2.25" X 36" PROBE ROD
	4020325	25352	204778	2.25" X 39"/1M PROBE ROD
	4030244	25300	204766	2.25" X 48" PROBE ROD
	4030245	25301	204767	2.25" X 60" PROBE ROD
10	4030072	25341	204774	DT22 SHOE STANDARD SIZE 2.375" OD X 1.125" ID
11	4030093	50271	212678	DT22 HOLDER FOR EXPENDABLE SHOES
	4030095	43128	209991	DT22 HOLDER FOR 1.625" OD EXPENDABLE POINTS
12	4020011	DT4045R	213913	O-RING, EXPENDABLE CUTTING SHOE (50/PKG)
13	4020307	50726	215278	DT22 EXPENDABLE CUTTING SHOE (2.375" OD) W/ O-RINGS
14A	4030043	22955	204236	DT22 DRIVE CAP 1.25" THREADLESS
14B	4030059	AT1204	213751	1.25" PULL CAP
15	4020227	43012	209949	1.25" X 36" LIGHTWEIGHT PROBE ROD
	4020226	32318	206525	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD
	4030224	21900	203988	1.25" X 48" LIGHTWEIGHT PROBE ROD
	4030277	27600	205232	1.25" X 60" LIGHTWEIGHT PROBE ROD
16	4030278	22956	204237	DT22 DISCRETE POINT FOR USE W/ 1.25" INNER RODS
17	4020009	DT4070R	213918	O-RING, DT22 DISCRETE POINT (25/PKG)
18	4020103	27216	205182	ADJUSTABLE CENTER ROD CLAMP FOR 1.25" RODS
*	4020058	DT4051K	213915	DT22 REBUILD KIT FOR LINER DRIVE HEAD

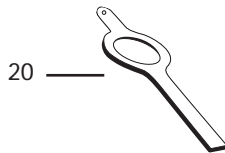
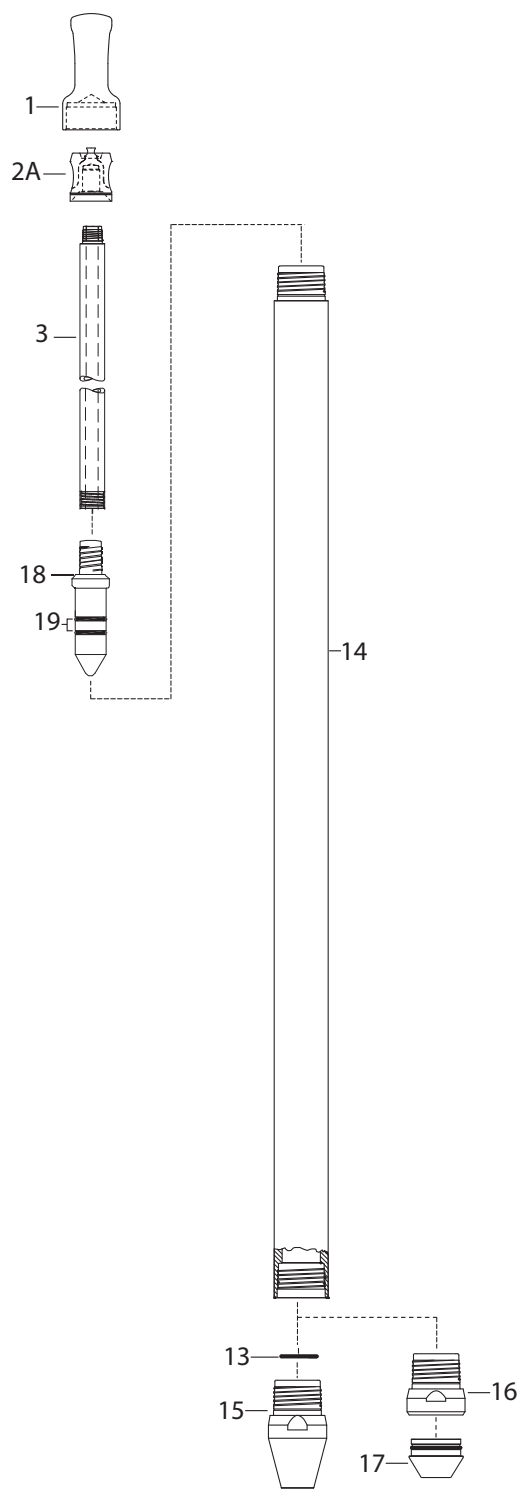
\* Rebuild kit not shown.

# DT325 SOIL SAMPLING SYSTEM

CONVENTIONAL DUAL TUBE CONFIGURATION



CONVENTIONAL DISCRETE POINT CONFIGURATION

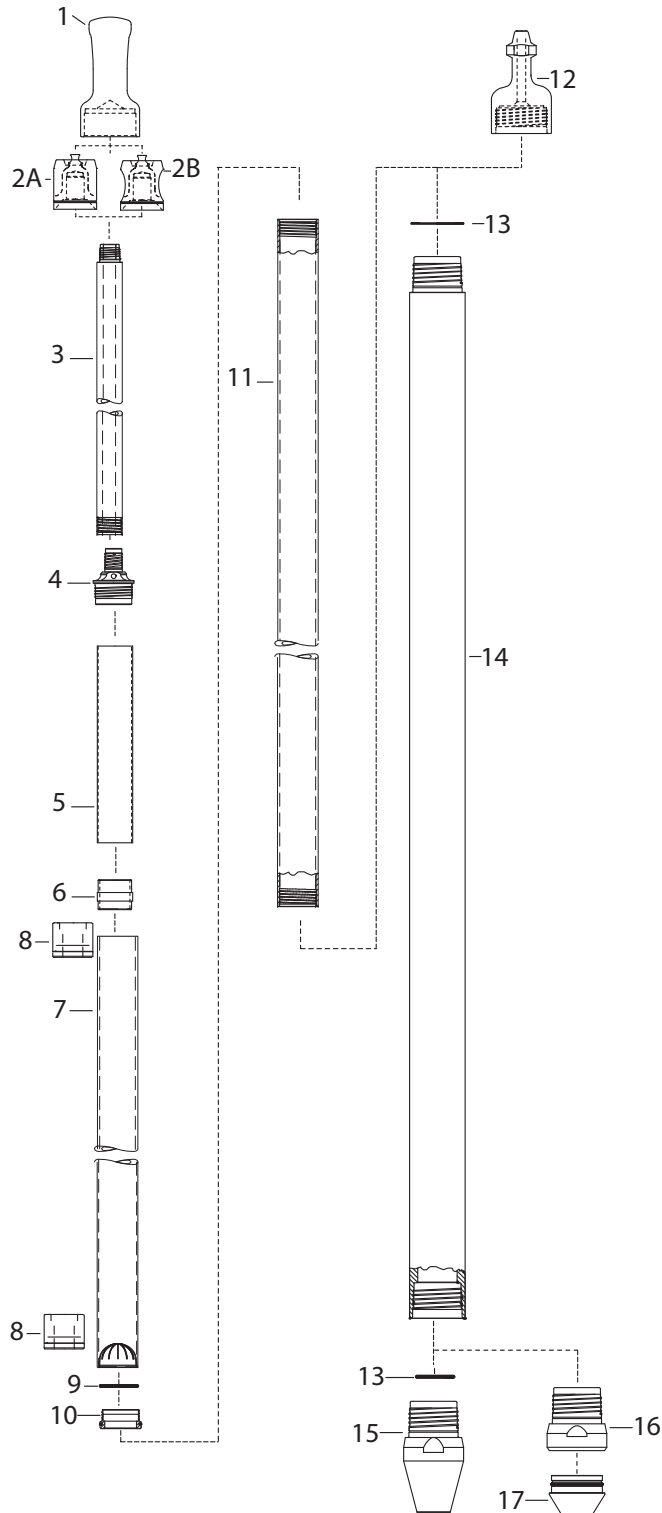


# DT325 SOIL SAMPLING SYSTEM

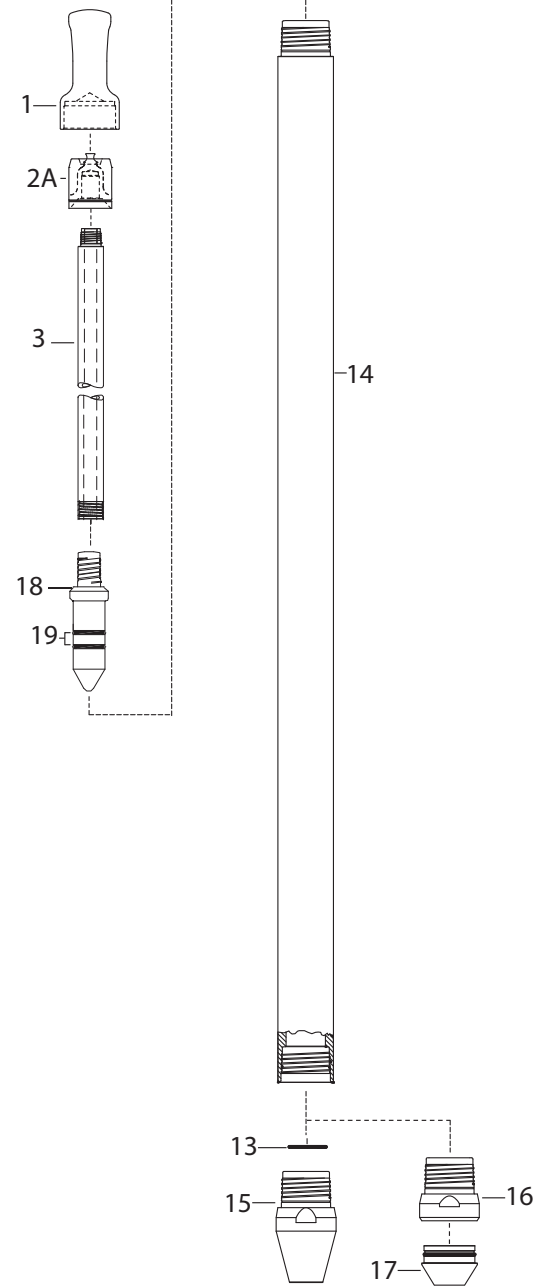
DT325 SOIL SAMPLING SYSTEM				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	4030049	9742	201275	3.25" DRIVE CAP, THREADLESS (GH60 HAMMER)
2A	4030318	37708	208053	DT325 BUFFERING DRIVE CAP
2B	4030268	12943	202145	DT325 CENTERING DRIVE CAP
3	4030279	AT1212	213753	1.25" X 12" PROBE ROD
	4020230	AT1239	213763	1.25" X 39"/1M PROBE ROD
	4030270	AT1248	213769	1.25" X 48" PROBE ROD
	4030267	AT1260	213773	1.25" X 60" PROBE ROD
	4020226	32318	206525	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD
	4030224	21900	203988	1.25" X 48" LIGHTWEIGHT PROBE ROD
	4030277	27600	205232	1.25" X 60" LIGHTWEIGHT PROBE ROD
4	4030338	10212	201385	DT325/DT35/DT37 DRIVE HEAD FOR SAMPLER SHEATH W/ 1.25" THREAD
5	4030346	29609	600443	DT325/DT35/DT37 LINER SPACER 11.50" REFILL
6	4030368	29358	205663	DT325/DT35/DT37 LINER SPACER CONNECTOR
7	4030348	27815	600424	DT325/DT35/DT37 LINER 39"/1M W/ CORE CATCHER (42/BOX)
	4020108	27814	600423	DT325/DT35/DT37 LINER 48" W/ CORE CATCHER (42/BOX)
	4020100	27813	600422	DT325/DT35/DT37 LINER 60" W/ CORE CATCHER (42/BOX)
	4020109	DT3248K	601004	DT325/DT35/DT37 LINER 48" W/O CORE CATCHER (42/BOX)
	4020101	DT3260K	601005	DT325/DT35/DT37 LINER 60" W/O CORE CATCHER (42/BOX)
8	4020112	17762	600232	DT325/DT35/DT37 VINYL LINER CAPS
9	4030352	28379	600428	O-RING, DT325 LINER RETAINER (25/PKG)
10	4030342	26718	205098	DT325/DT35/DT37 LINER RETAINER W/ GROOVE
	4030269	39011	208472	DT325/DT35/DT37 LINER RETAINER, HEAVY DUTY
11	4030358	27712	205265	DT325/DT35/DT37 SAMPLER SHEATH 39"/1M
	4030360	27711	205264	DT325/DT35/DT37 SAMPLER SHEATH 48"
	4030362	26719	205099	DT325/DT35/DT37 SAMPLER SHEATH 60"
	4030364	26805	205110	DT325/DT35/DT37 SAMPLER SHEATH 72"
12	4030050	13257	202234	3.25" PULL CAP
13	4020514	9960	201325	O-RING, DT325/DT35 CUTTING SHOE & PROBE ROD
14	4020508	13672	202313	3.25" X 12" PROBE ROD
	4020510	13925	202363	3.25" X 39"/1M PROBE ROD
	4020511	10594	201446	3.25" X 48" PROBE ROD
	4030250	9040	201185	3.25" X 60" PROBE ROD
15	4030322	26720	205100	DT325 CUTTING SHOE 1.75" ID X 3.450" OD
	4030077	28508	205449	DT325 CUTTING SHOE 1.85" ID
16	4030320	28339	205424	DT325 HOLDER FOR EXPENDABLE CUTTING SHOE
17	4030366	28341	205426	DT325/DT35/DT37 EXPENDABLE CUTTING SHOE (1.75" ID)
18	4030271	28509	205450	DT325/DT35 DISCRETE POINT 1.85" OD W/ 1.25" PIN UP
	4030336	27763	205279	DT325/DT35 DISCRETE POINT 1.75" OD W/ 1.25" PIN UP
19	4030356	13942	202366	O-RING, FOR DT325/DT35 DISCRETE POINT (25/PKG)
20	4030344	27838	205299	DT325/DT35 RETAINER WRENCH

# DT35 SOIL SAMPLING SYSTEM

CONVENTIONAL DUAL TUBE CONFIGURATION



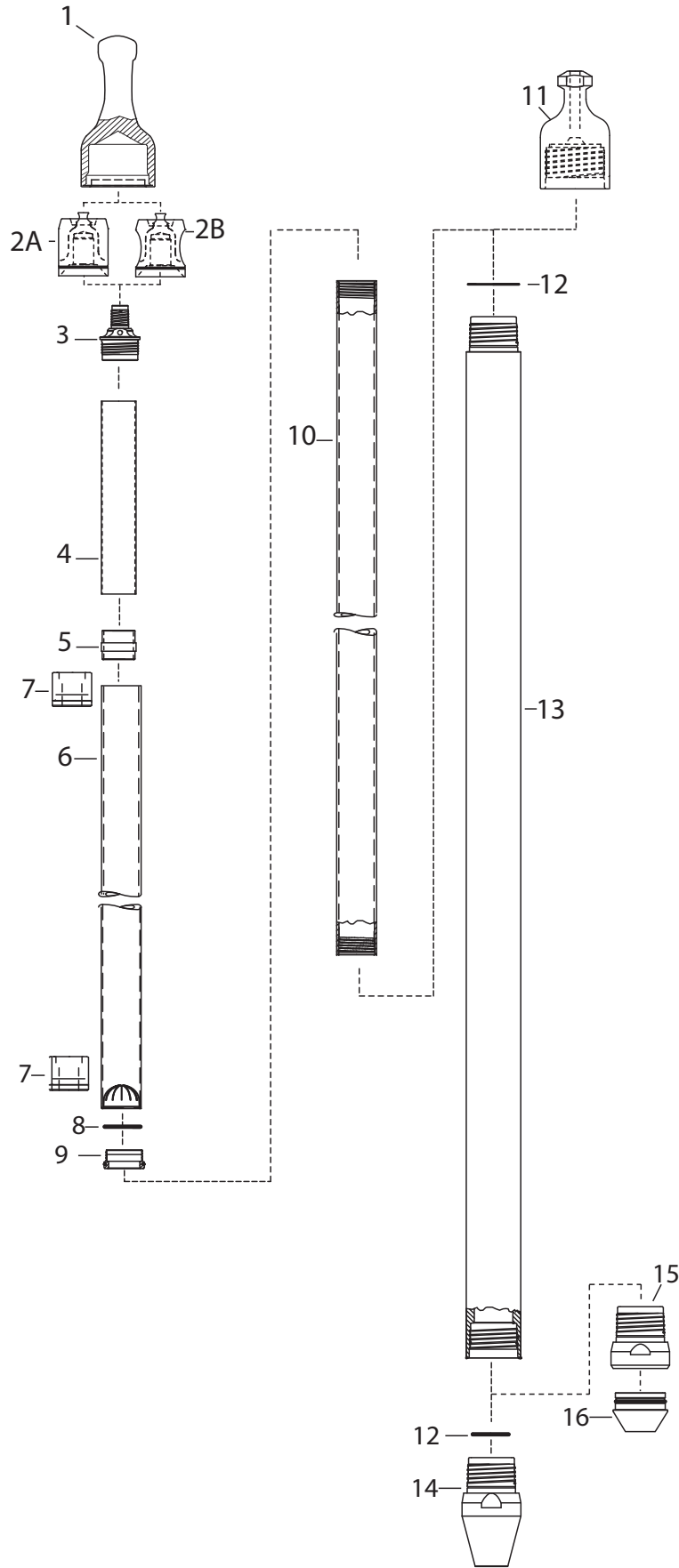
CONVENTIONAL DISCRETE POINT CONFIGURATION



# DT35 SOIL SAMPLING SYSTEM

DT35 SOIL SAMPLING SYSTEM				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	4030057	36642	207679	3.50" DRIVE CAP, THREADLESS (GH60/80 HAMMER)
2A	4030326	43239	210051	DT35/DT37 BUFFERING DRIVE CAP
	4030328	43240	210052	DT35/DT37 BUFFERING DRIVE CAP, HEAVY DUTY
2B	4030330	38381	208259	DT35/DT37 CENTERING DRIVE CAP
3	4020230	AT1239	213763	1.25" X 39"/1M PROBE ROD
	4030270	AT1248	213769	1.25" X 48" PROBE ROD
	4030267	AT1260	213773	1.25" X 60" PROBE ROD
	4020226	32318	206525	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD
	4030224	21900	203988	1.25" X 48" LIGHTWEIGHT PROBE ROD
	4030277	27600	205232	1.25" X 60" LIGHTWEIGHT PROBE ROD
4	4030338	10212	201385	DT325/DT35/DT37 DRIVE HEAD FOR SAMPLER SHEATH W/ 1.25" THREAD
5	4030346	29609	600443	DT325/DT35/DT37 LINER SPACER 11.50" REFILL
6	4030368	29358	205663	DT325/DT35/DT37 LINER SPACER CONNECTOR
7	4030348	27815	600424	DT325/DT35/DT37 LINER 39"/1M W/ CORE CATCHER (42/BOX)
	4020108	27814	600423	DT325/DT35/DT37 LINER 48" W/ CORE CATCHER (42/BOX)
	4020100	27813	600422	DT325/DT35/DT37 LINER 60" W/ CORE CATCHER (42/BOX)
	4020109	DT3248K	601004	DT325/DT35/DT37 LINER 48" W/O CORE CATCHER (42/BOX)
	4020101	DT3260K	601005	DT325/DT35/DT37 LINER 60" W/O CORE CATCHER (42/BOX)
8	4020112	17762	600232	DT325/DT35/DT37 VINYL LINER CAPS
9	4030352	28379	600428	O-RING, DT35 LINER RETAINER (25/PKG)
10	4030342	26718	205098	DT325/DT35/DT37 LINER RETAINER W/ GROOVE
	4030269	39011	208472	DT325/DT35/DT37 LINER RETAINER, HEAVY DUTY
11	4030358	27712	205265	DT325/DT35/DT37 SAMPLER SHEATH 39"/1M
	4030360	27711	205264	DT325/DT35/DT37 SAMPLER SHEATH 48"
	4030362	26719	205099	DT325/DT35/DT37 SAMPLER SHEATH 60"
	4030364	26805	205110	DT325/DT35/DT37 SAMPLER SHEATH 72"
12	4030056	49145	212290	DT35 3.50" PULL CAP
13	4020514	9960	201325	O-RING, DT325/DT35 CUTTING SHOE & PROBE ROD
14	4030266	38173	208219	3.50" X 24" PROBE ROD
	4020603	38952	214781	3.50" X 39"/1M PROBE ROD
	4030264	38951	208446	3.50" X 48" PROBE ROD
	4030265	36641	215664	3.50" X 60" PROBE ROD
15	4030076	37758	208066	DT35 CUTTING SHOE STANDARD 1.85" ID X 3.75" OD
	4030334	39178	208502	DT35 CUTTING SHOE 1.85" ID x 3.50" OD
16	4030332	36815	207726	DT35 HOLDER FOR EXPENDABLE CUTTING SHOES
17	4030366	28341	205426	DT325/DT35/DT37 EXPENDABLE CUTTING SHOE (1.75" ID)
18	4030271	28509	205450	DT325/DT35 DISCRETE POINT 1.85" OD W/ 1.25" PIN UP
	4030336	27763	205279	DT325/DT35 DISCRETE POINT 1.75" OD W/ 1.25" PIN UP
19	4030356	13942	202366	O-RING, FOR DT325/DT35 DISCRETE POINT (25/PKG)
20	4030444	27838	205299	DT325/DT35 RETAINER WRENCH

# DT37 SOIL SAMPLING SYSTEM

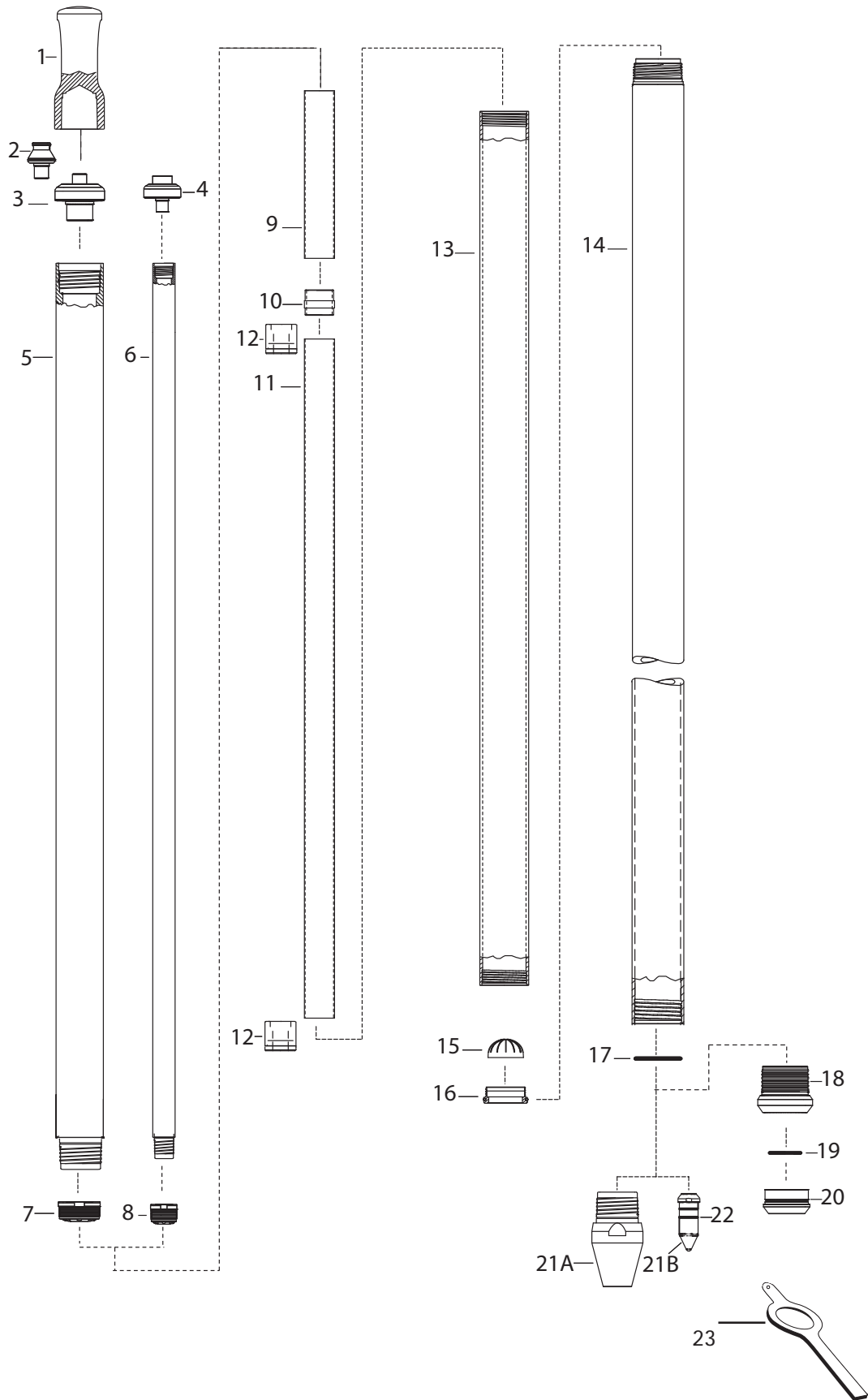


# DT37 SOIL SAMPLING SYSTEM

DT37 SOIL SAMPLING SYSTEM				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	4030453	N/A	219276	3.75" DRIVE CAP, THREADLESS (GH60/80 HAMMER)
2A	4030326	43239	210051	DT35/DT37 BUFFERING DRIVE CAP
	4030328	43240	210052	DT35/DT37 BUFFERING DRIVE CAP, HEAVY DUTY
2B	4030330	38381	208259	DT35/DT37 CENTERING DRIVE CAP
3	4030338	10212	201385	DT325/DT35/DT37 DRIVE HEAD FOR SAMPLER SHEATH W/ 1.25" THREAD
4	4030346	29609	600443	DT325/DT35/DT37 LINER SPACER 11.50" REFILL
5	4030368	29358	205663	DT325/DT35/DT37 LINER SPACER CONNECTOR
6	4030348	27815	600424	DT325/DT35/DT37 LINER 39"/1M W/ CORE CATCHER (42/BOX)
	4020108	27814	600423	DT325/DT35/DT37 LINER 48" W/ CORE CATCHER (42/BOX)
	4020100	27813	600422	DT325/DT35/DT37 LINER 60" W/ CORE CATCHER (42/BOX)
	4020109	DT3248K	601004	DT325/DT35/DT37 LINER 48" W/O CORE CATCHER (42/BOX)
	4020101	DT3260K	601005	DT325/DT35/DT37 LINER 60" W/O CORE CATCHER (42/BOX)
7	4020112	17762	600232	DT325/DT35/DT37 VINYL LINER CAPS
8	4030352	28379	600428	O-RING, DT37 LINER RETAINER (25/PKG)
9	4030342	26718	205098	DT325/DT35/DT37 LINER RETAINER W/ GROOVE
	4030269	39011	208472	DT325/DT35/DT37 LINER RETAINER, HEAVY DUTY
10	4030358	27712	205265	DT325/DT35/DT37 SAMPLER SHEATH 39"/1M
	4030360	27711	205264	DT325/DT35/DT37 SAMPLER SHEATH 48"
	4030362	26719	205099	DT325/DT35/DT37 SAMPLER SHEATH 60"
	4030364	26805	205110	DT325/DT35/DT37 SAMPLER SHEATH 72"
11	4030467	N/A	220535	DT37 3.5 PULL CAP
12	4030479	N/A	N/A	O-RING, DT37 CUTTING SHOE & PROBE ROD
13	4030457	N/A	220395	3.75" X 12" PROBE ROD
	4030456	N/A	219278	3.75" X 24" PROBE ROD
	4030459	N/A	N/A	3.75" X 39"/1M PROBE ROD
	4030458	N/A	220539	3.75" X 48" PROBE ROD
	4030462	N/A	219275	3.75" X 60" PROBE ROD
14	4030483	N/A	219582	DT37 CUTTING SHOE
15	4030484	N/A	219620	DT37 HOLDER FOR EXPENDABLE CUTTING SHOES
16	4030366	28341	205426	DT325/DT35/DT37 EXPENDABLE CUTTING SHOE (1.75" ID)



# DT45 SOIL SAMPLING SYSTEM



# DT45 SOIL SAMPLING SYSTEM

DT45 SOIL SAMPLING SYSTEM				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	4020703	26622	205080	4.50" DRIVE CAP, BOX DOWN, THREADLESS (GH60/80 HAMMER)
2	4030420	32381	206538	DT45 CENTERING DRIVE CAP 2.25" ROD
3	4030382	32694	206602	DT45 BUFFERING DRIVE CAP 2.25" ROD
4	4030380	32693	206601	DT45 BUFFERING DRIVE CAP 1.25" RODS
5	4020323	25351	204777	2.25" X 12" PROBE ROD
	4030242	32656	206588	2.25" X 24" PROBE ROD
	4020324	33245	206706	2.25" X 36" PROBE ROD
	4020325	25352	204778	2.25" X 39"/1M PROBE ROD
	4030244	25300	204766	2.25" X 48" PROBE ROD
	4030245	25301	204767	2.25" X 60" PROBE ROD
6	4030279	AT1212	213753	1.25" X 12" PROBE ROD
	4030222	AT1224	213758	1.25" X 24" PROBE ROD
	4020229	AT1236	213762	1.25" X 36" PROBE ROD
	4020230	AT1239	213763	1.25" X 39"/1M PROBE ROD
	4030270	AT1248	213769	1.25" X 48" PROBE ROD
	4030267	AT1260	213773	1.25" X 60" PROBE ROD
7	4030386	32335	206527	DT45 DRIVE HEAD FOR 2.25" CENTER RODS
8	4030384	30289	205770	DT45 DRIVE HEAD FOR 1.25" CENTER RODS
9	4030396	32526	600484	DT45 LINER SPACER 12"
10	4030392	30436	205797	DT45 LINER SPACER CONNECTOR
11	4020107	46125	600721	DT45 LINER CLEAR PVC 48"
	4020105	46065	600719	DT45 LINER CLEAR PVC 60"
	4030390	46066	600720	DT45 LINER CLEAR PVC 72"
12	4020113	35806	207439	DT45/MC7 VINYL LINER CAPS
13	4030408	34081	206898	DT45 SAMPLE TUBE 39"/1M
	4030410	30248	205760	DT45 SAMPLE TUBE 48"
	4030412	30250	205761	DT45 SAMPLE TUBE 60"
	4030414	30252	205762	DT45 SAMPLE TUBE 72"
14	4020709	39302	208532	4.50" X 12" PROBE ROD
	4020706	31865	206412	4.50" X 24" PROBE ROD
	4020702	34008	206890	4.50" X 39"/1M PROBE ROD
	4020700	25404	204797	4.50" X 48" PROBE ROD
	4020704	28887	205555	4.50" X 60" PROBE ROD
15*	4020906	34454	207000	DT45/MC7 CORE CATCHER
16	4030406	32349	206531	DT45 LINER RETAINER
17	4030398	34900	104730	O-RING, DT45 PROBE ROD
18	4030388	32940	206638	DT45 EXPENDABLE CUTTING SHOE HOLDER 4.50" OD (3.75 ID)
19	4030400	34888	600528	O-RING, DT45 EXPENDABLE CUTTING SHOE
20	4030418	34887	207105	DT45 EXPENDABLE CUTTING SHOE
21A	4030416	30450	205800	DT45 CUTTING SHOE
21B	4030404	34086	206901	DT45 SOLID DRIVE / DISCRETE POINT (2.25" BOX UP)
22	4030402	9751	101901	O-RING, DT45 SOLID DRIVE POINT
23	4020909	30302	205773	DT45 RETAINER WRENCH

\*Available May 2015.

Hole Products is constantly striving to improve its products and therefore reserves the right to change designs, materials, specifications and price without notice. © 2015, Hole Products, LLC.



## GROUNDWATER SAMPLING & ASSESSMENT SYSTEMS



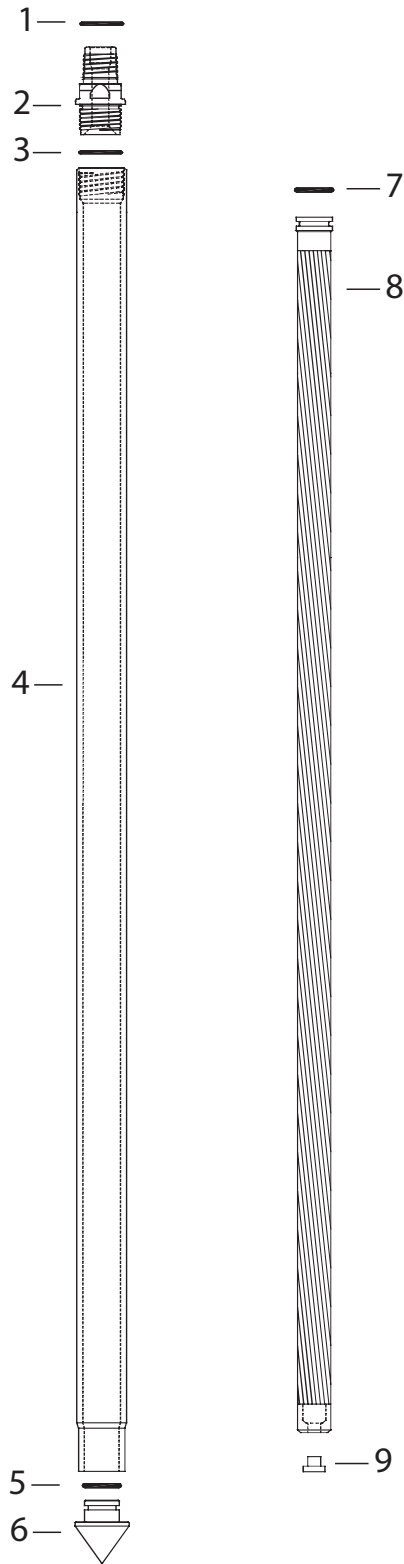
**Force DPT** offers groundwater sampling systems designed to economically and effectively obtain groundwater samples in unconsolidated formations, thus allowing the groundwater to be assessed for potential contamination during environmental site investigations.

The **Force SP16 and SP22** samplers are used in temporary installations to allow for quick discrete water sample collection. Upon completion of sampling activities these systems are extracted from the subsurface formation and reused for subsequent sampling events.

For small diameter monitoring well installations, **Force** offers a complete line of **Prepacked Screens and Accessories**. Prepacked screens allow for faster and more consistent installation than conventional monitoring well designs. **Force** prepacks are available in .75", 1.00", 1.50", and 2.00".

Please contact a **Force** representative for additional details, product availability, or assistance ordering **The Genuine Alternative!**

# SP16 GROUNDWATER SAMPLER



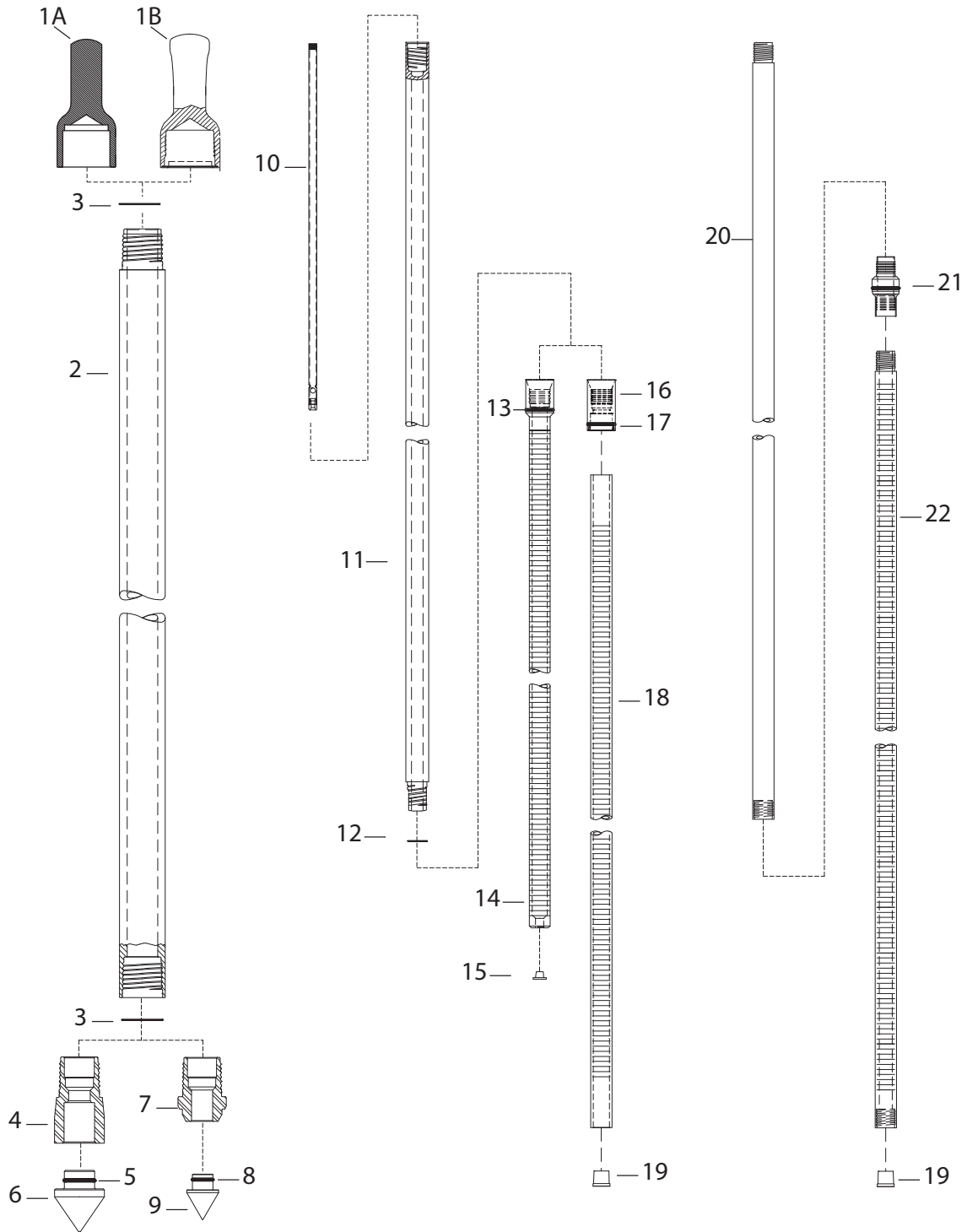
ACCESSORIES	
10	11
12	

# SP16 GROUNDWATER SAMPLER

SP16 GROUNDWATER SAMPLER				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	4030434	15389	202695	O-RING, SP16 PROBE ROD FOR TOP OF DRIVE HEAD
2	4030444	18307	203262	SP16 DRIVE HEAD W/ 1.50" THREAD & .500" BORE
	4030432	15188	202633	SP16 DRIVE HEAD W/ 1.50" THREAD & .625" BORE
	4030448	48110	211777	SP16 DRIVE HEAD W/ 1.25" THREAD & .500" BORE
	4030446	48109	211776	SP16 DRIVE HEAD W/ 1.25" THREAD & .625" BORE
3	4030428	13196	102256	O-RING, SP16 FOR BOTTOM OF DRIVE HEAD
4	4030430	15187	202632	SP16 SAMPLER SHEATH
5	4020110	GW1555R	214037	O-RING, ALL SP16 EXPENDABLE POINT
6	4020030	GW1555	N/A	SP16 EXPENDABLE POINT W/ 1.625" OD W/ O-RING
	4020030	GW1555K	214036	SP16 EXPENDABLE POINT W/ O-RING (25/PKG)
	4020030	GW1555L	214036	SP16 EXPENDABLE POINT W/ O-RING (120/PKG)
	4020466	GW1555AL	N/A	SP16 EXPENDABLE POINT W/ O-RING, ALUMINIUM (25/PKG)
	4030440	17066	213617	SP16 EXPENDABLE POINT W/ 1.75" OD W/ O-RING
	4030440	17066K	213617	SP16 EXPENDABLE POINT W/ 1.75" OD, W/ O-RINGS (25/PKG)
7	4020009	DT4070R	213918	O-RING, SP16 STAINLESS STEEL SCREEN HEAD
8	4020454	GW1520	214027	SP16 SCREEN, STAINLESS STEEL
	4020456	GW1530	214028	SP16 SCREEN, PVC REUSABLE
	4030442	16089	202821	SP16 SCREEN, PVC DISPOSABLE
9*	4030082	GW1552K	601033	SP16 GROUT PLUG (25/PKG)
10	4020458	GW1540	214030	SP16 GROUT PLUG PUSH ADAPTER
11	4020460	GW1535	214029	SP16 SCREEN PUSH ADAPTER
12	4020464	GW1545	214031	SP16 GROUT NOZZLE

\*Available May 2015.

# SP22 GROUNDWATER SAMPLER



# SP22 GROUNDWATER SAMPLER

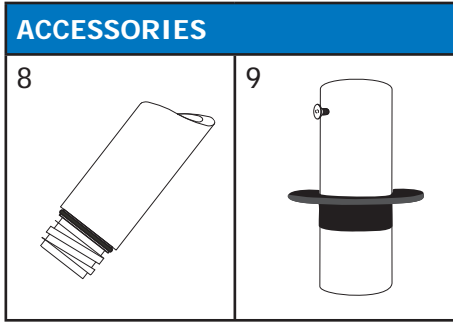
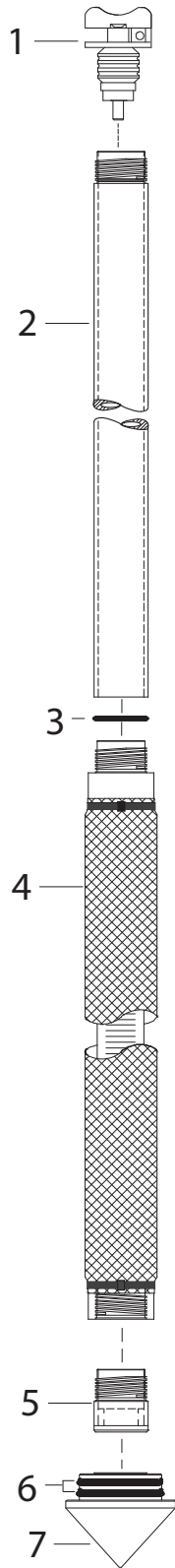
SP22 GROUNDWATER SAMPLER				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1A	4020303	31405	206187	2.25" DRIVE CAP, THREADLESS (GH40 HAMMER)
1B	4030046	31530	206249	2.25" DRIVE CAP, THREADLESS, LONG (GH60 HAMMER)
2	4020323	25351	204777	2.25" X 12" PROBE ROD
	4030242	32656	206588	2.25" X 24" PROBE ROD
	4020324	33245	206706	2.25" X 36" PROBE ROD
	4020325	25352	204778	2.25" X 39"/1M PROBE ROD
	4030244	25300	204766	2.25" X 48" PROBE ROD
	4030245	25301	204767	2.25" X 60" PROBE ROD
3	4020312	AT2100R	213790	O-RING, 2.25" PROBE ROD (25/PKG)
4	4020488	33764	206861	2.25" EXPENDABLE POINT HOLDER
5	4020426	2799	200282	O-RING, 2.25" EXPENDABLE POINT(32/PKG)
6	4020034	AT2015K	213788	2.25" EXPENDABLE POINT W/ O-RING
	4200034	AT2015K	213789	2.25" EXPENDABLE POINT W/ O-RING (32/PKG)
7	4030095	43128	209991	SP22 EXPENDABLE POINT HOLDER FOR 1.625" OD EXPENDABLE POINTS
8	4020110	GW1555R	214037	O-RING, SP15/SP16 EXPENDABLE POINT (32/PKG)
9	4020030	GW1555	214036	SP16 EXPENDABLE POINT W/ 1.625" OD W/ O-RING
	4020030	GW1555K	214036	SP16 EXPENDABLE POINT W/ O-RING (25/PKG)
	4020030	GW1555L	214036	SP16 EXPENDABLE POINT W/ O-RING (120/PKG)
	4020466	GW1555AL	N/A	SP16 EXPENDABLE POINT W/ O-RING, ALUMINIUM
	4030440	17066	216317	SP16 EXPENDABLE POINT W/ 1.75" OD W/ O-RING
	4030440	17066K	213617	SP16 EXPENDABLE POINT W/ 1.75" OD, W/ O-RINGS (25/PKG)
10	4020468	37893	208113	SP22 TUBING CHECK VALVE, STAINLESS
11	4020227	43012	209949	1.25" X 36" LIGHTWEIGHT PROBE ROD
	4020226	32318	206525	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD
	4030224	21900	203988	1.25" X 48" LIGHTWEIGHT PROBE ROD
	4030277	27600	205232	1.25" X 60" LIGHTWEIGHT PROBE ROD
12	4020217	AT1250R	213771	O-RING, 1.25" PROBE ROD (25/PKG)
13	4020009	DT4070R	213918	O-RING, STAINLESS STEEL SCREEN
14	4020472	38247	208238	SP22 X 12" STAINLESS STEEL SCREEN
	4030310	37894	208114	SP22 X 48" STAINLESS STEEL SCREEN
15*	4030082	GW1552K	601033	SP22 GROUT PLUG FOR STAINLESS STEEL SCREENS (25/PKG)
16	4020482	38657	208316	SP22 SCREEN HEAD ADAPTER (STAINLESS STEEL) FOR PVC SCREENS
17	4020012	17808	N/A	O-RING, SCREEN HEAD ADAPTER
18	4020478	38667	208319	SP22 X 12" PVC SCREEN (2/BOX)
	4020480	17194	600218	SP22 X 15" PVC SCREEN (2/BOX)
	4020476	38664	208318	SP22 X 48" PVC SCREEN (2/BOX)
19*	4020462	38968	600595	SP22 PVC BOTTOM SCREEN PLUG
20	5801015	11747	201813	SP22 X 60" PVC RISER (.750")
21	4020484	37871	208102	SP22 SCREEN HEAD ADAPTER (PVC) FOR PVC SCREENS
22	4030437	17474	203101	.75" X 60" SCH 40 PVC PIPE .010" SLOT
**	4020490	37853	208095	O-RING, SERVICE KIT FOR SP22
**	4020474	37852	208094	SET SCREW SERVICE KIT FOR SP22

\* Available May 2015.

\*\* Service kit not shown.



# PREPACKED SCREENS



# PREPACKED SCREENS

PREPACKED SCREENS				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
1	7850007	WP1775	601078	.75" LOCKABLE EXPANSION PLUG
	7850006	WP1710	601071	1.00" LOCKABLE EXPANSION PLUG
	7850004	WP1715	601072	1.50" LOCKABLE EXPANSION PLUG
	7850000	WP1720	601073	2.00" LOCKABLE EXPANSION PLUG
2	5801015	11747	201813	.75" X 60" PVC RISER
	5800000	12876	202136	1.00" X 60" PVC RISER
	5801002	17405	203081	1.50" X 60" PVC RISER
	5800005	32320	104378	2.00" X 60" PVC RISER
3	5650190	GW4401R	214070	O-RING, FOR .75" PVC RISER (32/PKG)
	5950210	13196	102256	O-RING, FOR 1.00" PVC RISER (32/PKG)
	5650275	18782	102881	O-RING, FOR 1.50" PVC RISER (32/PKG)
	5650305	N/A	N/A	O-RING, FOR 2.00" EXPENDABLE POINT(32/PKG)
4*	4020021	17466	203095	.75" X 60" x .010" SLOT PREPACKED SCREEN (1.40" OD) - 8TPI
	4020022	17467	203096	1.00" X 60" x .010" SLOT PREPACKED SCREEN (2.50" OD) - 8TPI
	4020033	17401	203079	1.50" X 60" x .010" SLOT PREPACKED SCREEN (2.50" OD) - 8TPI
	4020029	32954	206644	2.00" X 60" x .010" SLOT PREPACKED SCREEN (3.40" OD) - 2TPI
5	5650006	12385	202059	.75" PVC BOTTOM PLUG
	5650005	12881	202137	1.00" PVC BOTTOM PLUG
	5650009	17407	203082	1.50" PVC BOTTOM PLUG
	5650080	32456	104397	2.00" PVC BOTTOM PLUG
6	4020426	2799	200282	O-RING, FOR 2.25" EXPENDABLE POINT(32/PKG)
7	4020034	AT2015	213788	2.25" EXPENDABLE DRIVE POINT (FOR .75" PREPACKS)
	4020038	AT3215	213798	3.25" EXPENDABLE DRIVE POINT (FOR 1.00" OR 1.50" PREPACKS)
	4020600	39182	208504	3.50" EXPENDABLE DRIVE POINT (FOR 1.00" OR 1.50" PREPACKS)
	4020097	N/A	219601	3.75" EXPENDABLE DRIVE POINT (FOR 2.00" PREPACKS)
	4020045	36838	207735	4.50" EXPENDABLE DRIVE POINT (FOR 2.00" PREPACKS)
8	5950025	17474	203101	.75" X 60" SCH 40 PVC PIPE .010" SLOT- 8TPI
	5950000	12875	202135	1.00" X 60" SCH 40 PVC PIPE .010" SLOT- 8TPI
	5951001	17404	203080	1.50" X 60" SCH 40 PVC PIPE .010" SLOT- 8TPI
	5950005	36200	104852	2.00" X 60" SCH 40 PVC PIPE .010" SLOT- 2TPI
9	5700150	N/A	N/A	.75" WELL DEVELOPMENT TOOL "ENVIRONMENTAL SERIES"
	5700037	35364	207276	1.00" WELL DEVELOPMENT TOOL "ENVIRONMENTAL SERIES"
	5700160	34558	207012	1.50" WELL DEVELOPMENT TOOL "ENVIRONMENTAL SERIES"
	5700038	29149	205636	2.00" WELL DEVELOPMENT TOOL "ENVIRONMENTAL SERIES"

\* Other lengths and slot sizes available.



## TOOLING & ACCESSORIES



**Force DPT** includes a comprehensive line of additional direct push tooling and field accessories to meet the needs of even the most demanding project requirements.


Included in this section are expendable points and holders, solid points, pull caps, probe rods, extension rods, rod wipers, subs and adapters, retainer wrenches, and nylon brushes. These accessories are available in all sizes to complement our complete line of tooling, soil sampling, and groundwater sampling systems.


Everything a direct push drilling operation could need and more!


Products listed in this section of the catalog are representative of the industry's most common sizes and styles. Custom tooling and additional sizes are available upon request.


Please contact a **Force** representative for additional details, product availability, or assistance ordering **The Genuine Alternative!**


# EXPENDABLE POINT HOLDERS


1.25" EXPENDABLE POINT HOLDER FOR 1.00" POINT W/ 1.10" OD		
	HP PART #	4020212
	GP PART #	PR1215
	GP MAT #	214202


1.25" EXPENDABLE POINT HOLDER FOR 1.45" OD POINT		
	HP PART #	4030466
	GP PART #	AT1213
	GP MAT #	213754


1.50" EXPENDABLE POINT HOLDER FOR 1.00" POINT W/ 1.10" OD")		
	HP PART #	4020407
	GP PART #	21444
	GP MAT #	203895


1.50" EXPENDABLE POINT HOLDER FOR 1.70" OD POINT		
	HP PART #	4020406
	GP PART #	15132
	GP MAT #	202615


1.50" EXPENDABLE POINT HOLDER POST RUN TUBING THREAD		
	HP PART #	4020408
	GP PART #	22805
	GP MAT #	204179


2.25" EXPENDABLE POINT HOLDER 2.25" OD X 48"		
	HP PART #	4020309
	GP PART #	25355
	GP MAT #	204781


2.25" EXPENDABLE POINT HOLDER 2.25" OD X 60"		
	HP PART #	4020310
	GP PART #	25356
	GP MAT #	204782


2.25" EXPENDABLE POINT HOLDER 2.25" X 2.25" OD SHORT		
	HP PART #	4020311
	GP PART #	28662
	GP MAT #	205481


2.25" EXPENDABLE POINT HOLDER 2.25" X 2.50" OD SHORT		
	HP PART #	4020139
	GP PART #	25353
	GP MAT #	204779


3.25" EXPENDABLE POINT HOLDER 3.25" OD X 39"/1M		
	HP PART #	4020501
	GP PART #	13926
	GP MAT #	202364


3.25" EXPENDABLE POINT HOLDER 3.25" OD X 48"		
	HP PART #	4020504
	GP PART #	10596
	GP MAT #	201447


3.25" EXPENDABLE POINT HOLDER 3.25" OD X 60"		
	HP PART #	4030055
	GP PART #	9796
	GP MAT #	201282


3.25" EXPENDABLE POINT HOLDER 3.25" x 3.25" OD SHORT		
	HP PART #	4030096
	GP PART #	N/A
	GP MAT #	N/A


3.25" EXPENDABLE POINT HOLDER 3.25" x 4.00" OD SHORT		
	HP PART #	4020140
	GP PART #	12270
	GP MAT #	202026


3.50" EXPENDABLE POINT HOLDER 3.50" OD x 39"/1M		
	HP PART #	4030084
	GP PART #	38955
	GP MAT #	208449

3.50" EXPENDABLE POINT HOLDER 3.50" OD X 48"		
	HP PART #	4030075
	GP PART #	38953
	GP MAT #	208447

3.50" EXPENDABLE POINT HOLDER 3.50" OD X 60"		
	HP PART #	4020240
	GP PART #	37763
	GP MAT #	208069

3.50" EXPENDABLE POINT HOLDER 3.50" X 3.50" OD SHORT		
	HP PART #	4020606
	GP PART #	N/A
	GP MAT #	N/A

3.75" EXPENDABLE POINT HOLDER 3.75" X 3.75" OD SHORT		
	HP PART #	4030451
	GP PART #	N/A
	GP MAT #	219559

4.50" EXPENDABLE POINT HOLDER 4.50" X 4.50" OD SHORT		
	HP PART #	4020710
	GP PART #	36574
	GP MAT #	207649

# EXPENDABLE POINTS


**1.00" W/ 1.10" OD  
EXPENDABLE POINT**

	HP PART #	4020835
	GP PART #	AT14
	GP MAT #	213778

**1.25" W/ 1.45" OD  
EXPENDABLE POINT W/ O-RING**

	HP PART #	4020208
	GP PART #	AT1214
	GP MAT #	N/A

**1.25" EXPENDABLE POINT W/ O-RING  
(1.45" OD) SOIL GAS IMPLANT**

	HP PART #	4020219
	GP PART #	PR1214
	GP MAT #	214201

**1.00" W/ 1.10" OD  
SOIL GAS IMPLANT ANCHOR**

	HP PART #	4030115
	GP PART #	PR14
	GP MAT #	214205

**1.50" SOIL GAS IMPLANT ANCHOR  
EXPENDABLE POINT**

	HP PART #	4020428
	GP PART #	19570
	GP MAT #	203578

**2.25" EXPENDABLE POINT  
2.45" OD EXT. SHANK W/ 3 O-RINGS**

No Photo Available	HP PART #	4020314
	GP PART #	19442
	GP MAT #	203530


**2.25" EXPENDABLE POINT  
2.45" OD STD FOR 1 O-RING**

	HP PART #	4020034
	GP PART #	AT2015
	GP MAT #	213788

**3.25" EXPENDABLE POINT  
W/ O-RING - ALUMINIUM**

	HP PART #	4020505
	GP PART #	N/A
	GP MAT #	N/A

**3.25" EXPENDABLE POINT  
5" OD W/ O-RING -LONG**

	HP PART #	4020507
	GP PART #	N/A
	GP MAT #	N/A


**3.25" EXPENDABLE POINT  
W/ O-RING - STEEL**

	HP PART #	4020038
	GP PART #	AT3215
	GP MAT #	213798

**3.50" EXPENDABLE POINT  
W/ O-RING**

	HP PART #	4020600
	GP PART #	39182
	GP MAT #	208504


**3.75" EXPENDABLE POINT  
2.45" OD EXT SHANK W/ 3 O-RINGS**

	HP PART #	4030464
	GP PART #	N/A
	GP MAT #	219601


**4.50" EXPENDABLE POINT  
5" OD W/ O-RING**

	HP PART #	4020045
	GP PART #	36838
	GP MAT #	207735

**SP16 EXPENDABLE POINT  
W/ 1.75" OD (25/BOX)**





	HP PART #	4030440
	GP PART #	17066K
	GP MAT #	213617

**SP16 EXPENDABLE POINT  
W/ 1.625" OD (25/BOX)**

	HP PART #	4020030
	GP PART #	GW1555K
	GP MAT #	214036




# SOLID POINTS


SOLID POINTS				
ITEM	HP PART #	GP PART #	GP MAT #	DESCRIPTION
	4020221	AT1245	213767	1.25" W/ 1.45" OD
	4020241	AT1244	213766	1.25" W/ 1.75" OD
	4020242	AT1247	213768	1.25" W/ 2.00" OD
	4020243	AT1242	213765	1.25" W/ 2.50" OD
	4020244	AT1252	213772	1.25" W/ 3.00" OD
	4020420	21519	203909	1.50" W/ 1.50" OD
	4020421	15219	202637	1.50" W/ 1.70" OD
	4020423	12814	202121	1.50" W/ 3.00" OD
	4020422	14512	202494	1.50" W/ 2.50" OD
	4020319	25295	204764	2.25" W/ 2.50" OD
	4020320	25357	204783	2.25" W/ 3.00" OD
	4020321	25358	204784	2.25" W/ 3.50" OD
	4020520	9729	201273	3.25" W/ 3.50" OD
	4030305	36645	207680	3.50" W/ 3.75" OD
	4030463	N/A	219277	3.75" W/ 4.00" OD
	4020815	26925	205120	4.50" W/ 5.00" OD
	4030369	35999	207515	4.50" W/ 6.00" OD




# PULL CAPS


1.25" DRIVE/PULL CAP - LONG		
No Photo Available	HP PART #	4030468
	GP PART #	N/A
	GP MAT #	N/A


1.25" PULL CAP		
	HP PART #	4030059
	GP PART #	AT1204
	GP MAT #	213751


1.25" PULL CAP W/ 1/2" NPT FEMALE THREAD		
	HP PART #	4020833
	GP PART #	17267
	GP MAT #	203036


1.25" PULL CAP, SLOTTED		
	HP PART #	4020231
	GP PART #	AT1203
	GP MAT #	213750


1.25" PULL CAP FOR GROUT INJECTION W/ 1/2" QC COUPLER		
No Photo Available	HP PART #	4020232
	GP PART #	16697
	GP MAT #	202929


1.50" PULL CAP, STANDARD NECK		
	HP PART #	4030058
	GP PART #	15090
	GP MAT #	202598


1.50" PULL CAP, SLOTTED		
	HP PART #	4020415
	GP PART #	15164
	GP MAT #	202630


1.50" PULL CAP FOR GROUT INJECTION W/ 1/2" QC COUPLER		
	HP PART #	4020416
	GP PART #	16698
	GP MAT #	202930

2.25" PULL CAP HEAVY DUTY		
	HP PART #	4020326
	GP PART #	33622
	GP MAT #	206823

3.25" PULL CAP		
	HP PART #	4030050
	GP PART #	13257
	GP MAT #	202234

3.50" PULL CAP		
	HP PART #	4030056
	GP PART #	49145
	GP MAT #	212290

3.75" PULL CAP		
	HP PART #	4030094
	GP PART #	N/A
	GP MAT #	220535

4.50" PULL CAP		
	HP PART #	4030067
	GP PART #	37343
	GP MAT #	207873

LIFTING SWIVEL PULL CAP, BOX DOWN			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4030427	43343	210092	1.25" PULL CAP
4030345	42416	209748	1.50" PULL CAP
4020327	33882	206876	2.25" PULL CAP
4020517	35358	207272	3.25" PULL CAP
4030272	37898	208115	3.50" PULL CAP
4030469	N/A	220370	3.75" PULL CAP
4020705	29502	205690	4.50" PULL CAP



FLANGE PULL RODS			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4030025	35311	207256	2.25" PULL ROD
4030431	35369	207277	3.25" PULL ROD
4030009	38183	208220	3.50" PULL ROD
4030471	N/A	220730	3.75" PULL ROD
4030061	35309	207255	4.50" PULL ROD



# PROBE RODS

**FORCE** probe rods are manufactured using the industry's most cutting edge techniques and from a higher grade of alloy tubing, allowing for a tougher and harder heat treating process. Our unique thread gauging process ensures full compatibility with OEM threads, and our stringent tolerances enable us to make threads that are substantially more consistent than the competition. This adds up to a more durable and longer lasting industry-standard probe rod.



PROBE ROD DIMENSIONS				
SIZE	O.D.		I.D.	
	INCHES	MM	INCHES	MM
1.25"	1.25"	31.750	.625"	15.875
1.50"	1.50"	38.100	.625"	15.875
2.25"	2.25"	57.150	1.50"	38.100
3.25"	3.25"	82.550	2.625"	66.675
3.50"	3.50"	88.900	2.75"	69.850
3.75"	3.75"	95.250	3.00"	76.200
4.50"	4.50"	114.300	3.75"	95.250

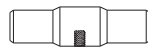



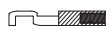

PROBE RODS			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4030279	AT1212	213753	1.25" X 12" PROBE ROD
4030222	AT1224	213758	1.25" X 24" PROBE ROD
4020229	AT1236	213762	1.25" X 36" PROBE ROD
4020230	AT1239	213763	1.25" X 39"/1M PROBE ROD
4030270	AT1248	213769	1.25" X 48" PROBE ROD
4030267	AT1260	213773	1.25" X 60" PROBE ROD
4030232	15471	202714	1.50" X 12" PROBE ROD
4020412	15472	202715	1.50" X 24" PROBE ROD
4020413	35325	207261	1.50" X 36" PROBE ROD
4020411	17899	203193	1.50" X 39"/1M PROBE ROD
4020414	13359	202248	1.50" X 48" PROBE ROD
4030235	11121	201682	1.50" X 60" PROBE ROD
4020323	25351	204777	2.25" X 12" PROBE ROD
4030242	32656	206588	2.25" X 24" PROBE ROD
4020324	33245	206706	2.25" X 36" PROBE ROD
4020325	25352	204778	2.25" X 39"/1M PROBE ROD
4030244	25300	204766	2.25" X 48" PROBE ROD
4030245	25301	204767	2.25" X 60" PROBE ROD
4020508	13672	202313	3.25" X 12" PROBE ROD
4030252	18405	203284	3.25" X 24" PROBE ROD
4020509	N/A	N/A	3.25" X 36" PROBE ROD
4020510	13925	202363	3.25" X 39"/1M PROBE ROD
4020511	10594	201446	3.25" X 48" PROBE ROD
4030250	9040	201185	3.25" X 60" PROBE ROD

PROBE RODS			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4020601	51765	213362	3.50" X 12" PROBE ROD
4030266	38173	208219	3.50" X 24" PROBE ROD
4020602	N/A	N/A	3.50" X 36" PROBE ROD
4020603	38952	214781	3.50" X 39"/1M PROBE ROD
4030264	38951	208446	3.50" X 48" PROBE ROD
4030265	36641	215664	3.50" X 60" PROBE ROD
4030457	N/A	220395	3.75" X 12" PROBE ROD
4030456	N/A	219278	3.75" X 24" PROBE ROD
4030459	N/A	N/A	3.75" X 39"/1M PROBE ROD
4030458	N/A	220539	3.75" X 48" PROBE ROD
4030462	N/A	219275	3.75" X 60" PROBE ROD
4020709	39302	208532	4.50" X 12" PROBE ROD
4020706	31865	206412	4.50" X 24" PROBE ROD
4020702	34008	206890	4.50" X 39"/1M PROBE ROD
4020700	25404	204797	4.50" X 48" PROBE ROD
4020704	28887	205555	4.50" X 60" PROBE ROD

## LIGHTWEIGHT PROBE RODS

LIGHTWEIGHT PROBE RODS			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4020227	43012	209949	1.25" X 36" LIGHTWEIGHT PROBE ROD
4020226	32318	206525	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD
4030224	21900	203988	1.25" X 48" LIGHTWEIGHT PROBE ROD
4030277	27600	205232	1.25" X 60" LIGHTWEIGHT PROBE ROD

## EXTENSION RODS & ACCESSORIES

EXTENSION RODS & ACCESSORIES				
HP PART #	GP PART #	GP MAT #	DESCRIPTION	
4020169	AT67	213832	36" EXTENSION ROD SS	
4020168	AT675	213835	39"/1M EXTENSION ROD SS	
4020167	AT671	213833	48" EXTENSION ROD SS	
4020166	10073	201352	60" EXTENSION ROD SS	
4020160	AT69	213837	EXTENSION ROD HANDLE	
4030426	AT6712	213834	EXTENSION ROD CENTERING PLUG FOR STOP PIN	
4030452	9754	201276	QUICK LINK STOP PIN REMOVER	
4030476	AT68	213836	EXTENSION ROD COUPLER	
4020170*	AT695	213838	EXTENSION ROD QUICK LINK PIN	
4020171*	AT696	213839	EXTENSION ROD QUICK LINK BOX	

\*Available May 2015.

## ROD WIPERS

ROD WIPERS			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4020211	23852	600341	1.25"/1.50" PROBE ROD WIPER
4020331	26876	600412	2.25" PROBE ROD WIPER
4020518	27194	600418	3.25" PROBE ROD WIPER
4020518	27194	600418	3.50" PROBE ROD WIPER
4030474	N/A	220390	3.75" PROBE ROD WIPER
4030475	22976	600448	4.50" PROBE ROD WIPER

## NYLON BRUSHES

NYLON BRUSHES			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4030477	BU1250	600996	1.25"/1.50" NYLON BRUSH
4020302	BU2125	600998	2.25" NYLON BRUSH
4020516	BU3250	601000	3.25" NYLON BRUSH
4020832	BU700	601003	MC5 NYLON BRUSH
4030478	BU300	600999	GROUNDWATER TOOL BRUSH

## SUBS & ADAPTERS

SUBS & ADAPTERS*			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4020350	AT1228	213761	ADAPTER, 1.25" PIN X AW PIN
4020200	15812	202789	ADAPTER, 1.25" BOX TO 1.50" PIN
4020352	32696	206603	ADAPTER, 1.50" PIN X AW BOX
4020351	17320	203052	ADAPTER, 1.50" PIN X AW PIN
4020353	17885	203192	ADAPTER, 1.50" PIN X AWJ PIN
4020354	17884	203191	ADAPTER, 1.50" BOX X AWJ PIN
4020201	15813	202790	ADAPTER, 1.50" BOX TO 1.25" PIN
4020355	35972	207506	ADAPTER, 2.25" PIN X AWJ PIN
4020356	45769	210906	ADAPTER, 2.25" BOX X AWJ PIN
4020300	25359	204785	ADAPTER, 2.25" BOX TO 1.50" PIN
4020301	25360	204786	ROD TO CAP ADAPTER, 2.25" PIN TO HSA

\*Additional sizes and styles available on request.

## RETAINER WRENCHES

RETAINER WRENCHES			
HP PART #	GP PART #	GP MAT #	DESCRIPTION
4030344	27838	205299	DT325/DT35 RETAINER WRENCH
4020909	30302	205773	MC7 CUTTING SHOE WRENCH / DT45 RETAINER WRENCH

# PART NUMBER REFERENCE GUIDE:

## Geoprobe® Part # to Hole Products Part #

GEOPROBE® PART #	HOLE PRODUCTS PART #	DESCRIPTION	PAGE #
2799	4020426	O-RING, 2.25" EXP. POINT (32/PKG)	7, 39, 41
5131	4020816	MC5 LINER CLEAR TEFLON 48"	20
5867	4020214	1.00"/1.25" ROD GRIP JAW (GH40)	3
6370	4020316	3.25" ROD GRIP SCREW	9
6370	4020316	3.50" ROD GRIP SCREW	11
6370	4020316	3.75" ROD GRIP SCREW	13
6370	4020316	4.50" ROD GRIP SCREW	15
7332	4020822	MC5 LINER SS LONG SECTION	20
7333	4020823	MC5 LINER SS SHORT SECTION	20
7702	4020708	"O-RING, 4.50"" EXP. POINT	15
8398	4020204	1.25" DRIVE CAP, THREADLESS (GH60)	3
9016	4020839	MC5 STOP PIN COUPLER	20
9038	4030274	MC5 PISTON ROD 48"	20
9040	4030250	3.25" X 60" PROBE ROD	9, 27, 48
9096	4020527	3.25" ROD GRIP BODY (GH60)	9
9729	4020520	3.25" SOLID DRIVE POINT (3.50" OD)	9
9742	4030049	3.25" DRIVE CAP, THREADLESS (GH60)	9, 27
9751	4030402	O-RING, DT45 SOLID DRIVE POINT	33
9754	4030452	MC/MC5 QUICK LINK STOP PIN REMOVER	20, 50
9757	4020526	3.25" ROD GRIP HANDLE ASSEMBLY (GH60)	9
9774	4020470	3.25" ROD GRIP V-BLOCK RETAINING PIN	9
9774	4020470	3.50" ROD GRIP V-BLOCK RETAINING PIN	11
9796	4030055	3.25" EXP. POINT HOLDER 60" LONG	9
9960	4020514	O-RING, 3.25" PROBE ROD (25/PKG)	9
9960	4020514	O-RING, DT325/DT35 CUTTING SHOE	27, 29
10069	4020840	MC/MC5 STOP PIN FOR 1.25" & 2.25" DRIVE HEADS	20
10073	4020166	60" EXTENSION ROD SS	50
10074	4020005	MC5 LINER CLEAR PVC 60" (66/BOX)	19
10212	4030338	DT325/DT35/DT37 DRIVE HEAD FOR SAMPLER SHEATH W/ 1.25" THREAD	27, 29, 31
10594	4020511	3.25" X 48" PROBE ROD	9, 27, 48
10596	4020504	3.25" EXP. POINT HOLDER 48" LONG	9
10605	4020500	3.25" DRIVE CAP, THREADLESS (GH40)	9
10727	4030281	MC5 PISTON ROD 60"	20
10728	4020826	MC5 PISTON ROD 36"	20
10729	4020825	MC5 PISTON ROD 24"	20
10732	4020824	MC5 PISTON ROD 39"/1M	20
11121	4030235	1.50" X 60" PROBE ROD	5, 48
11747	5801015	SP22 X 60" PVC RISER (.750")	39
11747	5801015	.75" X 60" PVC RISER	41
12126	4030470	"3.25"" ROD GRIP JAW PAD (GH60)	9
12126	4030470	3.50" ROD GRIP JAW PAD (GH60)	11
12126	4030470	3.75" ROD GRIP JAW PAD (GH60)	13
12126	4030470	4.50" ROD GRIP JAW PAD (GH60)	15
12228	4020525	3.25" ROD GRIP JAW (GH40)	9
12235	4020523	3.25" ROD GRIP HANDLE ASSEMBLY (GH40)	9
12270	4020140	3.25" EXP. POINT HOLDER SHORT (4.00" OD)	9
12385	5650006	.75" PVC BOTTOM PLUG	41
12787	4030041	1.50" DRIVE CAP, THREADLESS (GH60)	5
12814	4020423	1.50" SOLID DRIVE POINT THREADED (3.00" OD)	5
12875	5950000	1.00" X 60" PVC PIPE .010" SLOT	41
12876	5800000	1.00" X 60" PVC RISER	41
12881	5650005	1.00" PVC BOTTOM PLUG	41
12943	4030268	DT325 CENTERING DRIVE CAP	27
13162	4020121	DT22 BOLT FOR LINER DRIVE HEAD (20/PKG)	25
13196	4030428	O-RING, SP16 FOR BOTTOM OF DRIVE HEAD	37
13257	4030050	3.25" PULL CAP	9, 27
13359	4020414	1.50" X 48" PROBE ROD	5, 48

\* Available May 2015.

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GEOPROBE® PART #	HOLE PRODUCTS PART #	DESCRIPTION	PAGE #
13672	4020508	3.25" X 12" PROBE ROD	9, 29, 48
13896	4020315	2.25" EXP. POINT IMPLANT ANCHOR (2.45" OD)	7
13925	4020510	3.25" X 39"/1M PROBE ROD	9, 27, 48
13926	4020501	3.25" EXP. POINT HOLDER 1M LONG	9
13942	4030356	"O-RING, FOR DT325/DT35 DISCRETE POINT (25/PKG)	27
13942	4030356	"O-RING, FOR DT325/DT35 DISCRETE POINT (25/PKG)	29
14506	4020330	2.25" CENTERING TOOL FOR EXTENSION RODS	7
14512	4020422	1.50" SOLID DRIVE POINT THREADED (2.50" OD)	5
15090	4030058	1.50" PULL CAP STANDARD NECK	5
15132	4020406	1.50" EXP. POINT HOLDER FOR 1.70" OD POINT	5
15164	4020415	1.50" PULL CAP W/ SLOT	5
15187	4030430	SP16 SAMPLER SHEATH	37
15188	4030432	SP16 DRIVE HEAD W/ 1.50" THREAD & .625" BORE	37
15219	4020421	1.50" SOLID DRIVE POINT THREADED (1.70" OD)	5
15275	4020216	1.25"/1.50" ROD GRIP JAW (GH60)	3, 5
15389	4030429	O-RING FOR 1.50" PROBE ROD (25/PKG)	5
15389	4030434	O-RING, SP16 PROBE ROD FOR TOP OF DRIVE HEAD	37
15471	4030232	1.50" X 12" PROBE ROD	5, 48
15472	4020412	1.50" X 24" PROBE ROD	5, 48
15527	4030105	MC/MC5 STOP PIN FOR 1.50" DRIVE HEAD	20
15554	4020220	1.25"/1.50" ROD GRIP HANDLE ASSEMBLY (GH60)	3, 5
15582	4030069	1.50" ROD GRIP JAW (GH40)	5
15590	4020403	1.50" DRIVE CAP, W/ THREADS (GH40)	5
15607	4020402	1.50" DRIVE CAP, SLOTTED, W/ THREADS (GH40)	5
15812	4020200	ADAPTER, 1.25" BOX TO 1.50" PIN	3, 5, 50
15813	4020201	ADAPTER, 1.50" BOX TO 1.25" PIN	3, 5, 50
16089	4030442	SP16 SCREEN, PVC DISPOSABLE	37
16315	4020821	MC5 LINER SS 60"	20
16490	4020519	"O-RING, 3.25"" EXP. POINT (EACH)	9
16697	4020232	1.25" GROUT INJECTION PULL CAP	3
16698	4020416	1.50" GROUT INJECTION PULL CAP	5
16792	4020308	"3.25""/3.50"" ROD GRIP HAMMER V-BLOCK (GH60)	9, 11
17066	4030440	SP16 EXP. POINT W/ 1.75" OD W/ O-RING	37, 39
17194	4020480	SP22 X 15" PVC SCREEN (2/BOX)	39
17267	4020833	1.25" PULL CAP W/ 1/2" NPT FEMALE THREAD	3
17401	4020033	1.50" X 60" X .010" SLOT PREPACKED SCREEN (2.50" OD) - 8TPI	41
17404	5951001	1.50" X 60" PVC PIPE .010" SLOT	41
17405	5801002	1.50" X 60" PVC RISER	41
17407	5650009	1.50" PVC BOTTOM PLUG	41
17466	4020021	.75" X 60" X .010" SLOT PREPACKED SCREEN (1.40" OD) - 8TPI	41
17467	4020022	1.00" X 60" X .010" SLOT PREPACKED SCREEN (2.50" OD) - 8TPI	41
17474	4030437	.75" X 60" SCH 40 PVC PIPE .010" SLOT	39, 41
17762	4020112	DT325/DT35/DT37 VINYL LINER CAPS	27, 29, 31
17808	4020012	O-RING, SCREEN HEAD ADAPTER	39
17899	4020411	1.50" X 39"/1M PROBE ROD	5, 48
18307	4030444	SP16 DRIVE HEAD W/ 1.50" THREAD & .500" BORE	37
18405	4030252	3.25" X 24" PROBE ROD	9, 48
19442	4020314	2.25" EXP. POINT EXT. SHANK (2.45" OD) W/ 3 O-RINGS	7
19520	4020831	MC5 PLUNGER FOR HYDRAULIC LINER	20
19743	4030044	O-RING, MC7 PISTON POINT	23
20737	4020522	3.25" SPT CUTTING SHOE W/ 2.38" ID X 3.750" OD FOR SPLIT SPOON	9
21075	4020401	1.50" DRIVE CAP, SLOTTED, THREADLESS(GH40)	5
21114	4020521	3.25" SPT SOLID DRIVE POINT W/ 1.50" MALE THREAD FOR SPLIT SPOON	9
21444	4020407	1.50" EXP. POINT HOLDER FOR 1.10" OD POINT	5
21519	4020420	1.50" SOLID DRIVE POINT THREADED (1.50" OD)	5

# PART NUMBER REFERENCE GUIDE:

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GEOPROBE® PART #	HOLE PRODUCTS PART #	DESCRIPTION	PAGE #
21900	4030224	1.25" X 48" LIGHTWEIGHT PROBE ROD	3, 19, 25, 27, 29, 39, 49
22922	4030060	MC5 CUTTING SHOE 1.50" ID W/ STANDARD SHANK (2.30" OD)	19
22923	4030035	MC5 SAMPLER TUBE 48"	19
22955	4030043	DT22 DRIVE CAP 1.25" THREADLESS	25
22956	4030278	DT22 DISCRETE POINT FOR USE W/ 1.25" INNER RODS	25
22976	4030475	4.50" PROBE ROD WIPER	50
22990	4030042	MC5 DRIVE HEAD X 1.50" FOR STOP PIN	19
22992	4030030	MC5 SAMPLER TUBE 60"	19
23418	4020203	1.25"/1.50" ROD GRIP BODY (GH60)	3, 5
23639	4030088	MC5 DRIVE CAP FOR CENTER RODS	19, 23
23641	4020800	MC5 CENTER ROD PLUG 1.25" MALE THREAD	19
23663	4020202	1.25"/1.50" ROD GRIP BODY (GH40)	3, 5
23664	4020336	2.25" ROD GRIP BODY (GH40)	7
23665	4020524	3.25" ROD GRIP BODY (GH40)	9
23666	4020333	2.25" ROD GRIP BODY (GH60)	7
23852	4020211	1.25"/1.50" ROD WIPER	3, 5, 50
23978	4030070	MC5 CUTTING SHOE 1.50" ID W/ EXT. SHANK (2.375" OD)	19
24237	4020841	MC5 SAMPLER TUBE 24"	19
24238	4020829	MC5 SAMPLER TUBE 36"	19
24239	4020830	MC5 SAMPLER TUBE 39"/1M	19
25295	4020319	2.25" SOLID DRIVE POINT (2.50" OD)	7
25300	4030244	2.25" x 48" PROBE ROD	7, 13, 25, 33, 39, 48
25301	4030245	2.25" x 60" PROBE ROD	7, 13, 25, 33, 39, 48
25341	4030072	DT22 SHOE STANDARD SIZE 2.375" OD X 1.125" ID	25
25351	4020323	2.25" x 12" PROBE ROD	7, 13, 25, 33, 39, 48
25352	4020325	2.25" x 39"/1M PROBE ROD	7, 13, 25, 33, 39, 48
25353	4020139	2.25" EXP. POINT HOLDER SHORT (2.50" OD)	7
25355	4020309	2.25" EXP. POINT HOLDER 48" LONG (2.25" OD)	7
25356	4020310	2.25" EXP. POINT HOLDER 60" LONG (2.25" OD)	7
25357	4020320	2.25" SOLID DRIVE POINT (3.00" OD)	7
25358	4020321	2.25" SOLID DRIVE POINT (3.50" OD)	7
25359	4020300	ADAPTER, 2.25" BOX TO 1.50" PIN	7, 50
25360	4020301	ROD TO CAP ADAPTER, 2.25" PIN TO HSA	7, 50
25362	4020304	2.25" DRIVE CAP, W/ THREADS (GH40)	7, 25
25404	4020700	4.50" X 48" PROBE ROD	15, 33, 48
26078	4030062	MC5 CUTTING SHOE 1.25" ID W/ EXT. SHANK (2.375" OD)	19
26183	4030040	MC5 DRIVE HEAD X 1.25" FOR STOP PIN	19
26622	4020703	4.50" DRIVE CAP, BOX DOWN, THREADLESS (GH60/80)	15, 33
26718	4030342	DT325/DT35/DT37 LINER RETAINER W/ GROOVE	27, 29, 31
26719	4030362	DT325/DT35/DT37 SAMPLER SHEATH 60"	27, 29, 31
26720	4030322	DT325 CUTTING SHOE 1.75" ID X 3.450" OD	27
26805	4030364	DT325/DT35/DT37 SAMPLER SHEATH 72"	27, 29, 31
26865	4030080	MC5 POINT CLOSED PISTON UNDER SIZED 1.35" OD W/ O-RINGS	19
26876	4020331	2.25" ROD WIPER	7, 50
26925	4020815	4.50" SOLID POINT, THREADED (5.00" OD)	15
27194	4020518	3.25" ROD WIPER	9, 50
27194	4020518	3.50" ROD WIPER	11, 50
27216	4020103	ADJUSTABLE CENTER ROD CLAMP FOR 1.25" RODS	25
27600	4030277	1.25" X 60" LIGHTWEIGHT PROBE ROD	3
27600	4030277	1.25" X 60" LIGHTWEIGHT PROBE ROD	19, 25, 27, 29, 39, 49
27711	4030360	DT325/DT35/DT37 SAMPLER SHEATH 48"	27, 29, 31
27712	4030358	DT325/DT35/DT37 SAMPLER SHEATH 39"/1M	27, 29, 31

GEOPROBE® PART #	HOLE PRODUCTS PART #	DESCRIPTION	PAGE #
27763	4030336	DT325/DT35 DISCRETE POINT 1.75" OD W/ 1.25" PIN UP	27, 29
27813	4020100	DT325/DT35/DT37 LINER 60" W/ CORE CATCHER (42/BOX)	27, 29, 31
27814	4020108	DT325/DT35/DT37 LINER 48" W/ CORE CATCHER (42/BOX)	27, 29, 31
27815	4030348	DT325/DT35/DT37 LINER 39"/1M W/ CORE CATCHER (42/BOX)	27, 29, 31
27838	4030344	DT325/DT35 RETAINER WRENCH	27, 29, 31
27999	4030280	MC5 DRIVE HEAD X 1.50" W/ 1/4" BORE NO STOP PIN	19
28001	4020806	MC5 DRIVE HEAD X 1.25" W/ 1/8" BORE NO STOP PIN	19
28113	4030079	MC5 POINT CLOSED PISTON STANDARD SIZE 1.50" OD W/ O-RING	19
28339	4030320	DT325 HOLDER FOR EXP. CUTTING SHOE	27
28341	4030366	DT325/DT35/DT37 EXP. CUTTING SHOE (1.75" ID)	27, 29, 31
28379	4030352	O-RING, DT325, DT35, DT37 LINER RETAINER (25/PKG)	27, 29, 31
28508	4030077	DT325 CUTTING SHOE 1.85" ID	27
28509	4030271	DT325/DT35 DISCRETE POINT 1.85" OD W/ 1.25" PIN UP	27, 29
28646	4020812	MC5 DRIVE HEAD X 2.25" W/ 1.375" BORE	19
28647	4030045	MC5 DRIVE HEAD X 2.25" FOR STOP PIN	19
28662	4020311	2.25" EXP. POINT HOLDER SHORT( 2.25" OD)	7
28887	4020704	4.50" X 60" PROBE ROD	15, 33, 48
28930	4020334	2.25" ROD GRIP JAW (GH60)	7
29149	5700038	2.00" WELL DEVELOPMENT TOOL "ENV. SERIES"	41
29358	4030368	DT325/DT35/DT37 LINER SPACER CONNECTOR	27, 29, 31
29385	4020332	2.25" ROD GRIP HANDLE ASSEMBLY (GH60)	7
29457	4020337	2.25" ROD GRIP JAW (GH40)	7
29461	4020335	2.25" ROD GRIP HANDLE ASSEMBLY (GH40)	7
29502	4020705	4.50" LIFTING SWIVEL PULL CAP, BOX DOWN	15
29532	4020828	MC5 ADAPTER FOR HYDRAULIC EXTRUDER	20
29552	4020060	MC5 CUTTING SHOE 1.35" ID W/ STANDARD EXT. SHANK (2.375" OD)	19
29609	4030346	DT325/DT35/DT37 LINER SPACER 11.50" REFILL	27, 29, 31
29919	4020837	MC5 CUTTING SHOE (2.25" OD) EXT SHANK	20
29976	4030475	4.50" ROD WIPER	15
30004	4030370	4.50" CASING SHOE (3.55" ID, 5.00" OD)	15
30248	4030410	DT45 SAMPLE TUBE 48"	33
30250	4030412	DT45 SAMPLE TUBE 60"	33
30252	4030414	DT45 SAMPLE TUBE 72"	33
30289	4030384	DT45 DRIVE HEAD FOR 1.25" CENTER RODS	33
30302	4020909	MC7 CUTTING SHOE WRENCH / DT45 RETAINER WRENCH	23, 33, 50
30436	4030392	DT45 LINER SPACER CONNECTOR	33
30450	4030416	DT45 CUTTING SHOE	33
31405	4020303	2.25" DRIVE CAP, THREADLESS (GH40)	7, 19, 25, 39
31499	4020234	1.25" LEAF PULLER ASSEMBLY	3
31530	4030046	2.25" DRIVE CAP, THREADLESS, LONG (GH60)	7, 19, 23, 25, 39
31690	4020506	4.50" ROD GRIP HAMMER V-BLOCK (GH60)	15
31865	4020706	4.50" X 24" PROBE ROD	15, 33, 48
31909	4020707	4.50" ROD GRIP HANDLE ASSEMBLY (GH60)	15
32035	4030068	MC5 CUTTING SHOE 1.35" ID W/ EXT. SHANK (2.30" OD)	19
32279	4020701	4.50" ROD GRIP BODY (GH60)	15
32318	4020226	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD	3, 19, 25, 27, 29, 39, 49
32320	5800005	2.00" X 60" PVC RISER	41
32335	4030386	DT45 DRIVE HEAD FOR 2.25" CENTER RODS	33
32349	4030406	DT45 LINER RETAINER	33
32381	4030420	DT45 CENTERING DRIVE CAP 2.25" ROD	33
32456	5650080	2.00" PVC BOTTOM PLUG	41
32490	4030071	MC5 CUTTING SHOE W/ MC5 THREAD, STANDARD SHANK (2.25" OD)	19
32526	4030396	DT45 LINER SPACER 12"	33
32656	4030242	2.25" x 24" PROBE ROD	7, 25, 33, 39, 48

\* Available May 2015.

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32663	4020838	4.50" SOLID DRIVE / DISCRETE POINT	15
32665	4020836	O-RING, 4.50" SOLID DRIVE / DISCRETE POINT (10/PKG)	15
32693	4030380	DT45 DRIVE CAP BUFFERING 1.25" RODS	33
32694	4030382	DT45 DRIVE CAP BUFFERING 2.25" ROD	33
32940	4030388	DT45 EXP. CUTTING SHOE HOLDER 4.50" OD (3.75 ID)	33
32952	4020329	2.25" LEAF PULLER ASSEMBLY	7
32954	4020029	2.00" X 60" X .010" SLOT PREPACKED SCREEN (3.40" OD) - 2TPI	41
33245	4020324	2.25" X 36" PROBE ROD	7, 25, 33, 39, 48
33622	4020326	2.25" PULL CAP HD	7, 25
33764	4020488	"2.25"" EXP. POINT HOLDER	39
33882	4020327	2.25" LIFTING SWIVEL PULL CAP, BOX DOWN	7
34008	4020702	4.50" X 39"/1M PROBE ROD	15, 33, 48
34081	4030408	DT45 SAMPLE TUBE 39"/1M	33
34086	4030404	DT45 SOLID DRIVE / DISCRETE POINT (2.25" BOX UP)	33
34454	4020906*	MC7/DT45 CORE CATCHER	23, 33
34558	5700160	1.50" WELL DEVELOPMENT TOOL"ENV. SERIES"	41
34887	4030418	DT45 EXP. CUTTING SHOE	33
34888	4030400	O-RING, DT45 EXP. CUTTING SHOE	33
34900	4030398	"O-RING, 4.50"" PROBE ROD (25/PKG)	15, 33
35234	4030315	4.50" CASING SHOE (3.55" ID, 6.00" OD)	15
35309	4030061	4.50" FLANGE PULL ROD	15
35311	4030025	2.25" FLANGE PULL ROD	7
35325	4020413	1.50" X 36" PROBE ROD	5, 48
35358	4020517	3.25" LIFTING SWIVEL PULL CAP, BOX DOWN	9
35364	5700037	1.00" WELL DEVELOPMENT TOOL "ENV. SERIES"	41
35369	4030431	3.25" FLANGE PULL ROD	9
35392	4020206	1.25" DRIVE CAP, LONG, THREADLESS (GH40)	3
35621	4020328	2.25" LIFTING SWIVEL PULL CAP, PIN DOWN	7
35806	4020113	MC7/DT45 VINYL LINER CAPS	23, 33
35999	4030369	4.50" SOLID POINT, THREADED (6.00" OD)	15
36200	5950005	2.00" X 60" PVC PIPE .010" SLOT	41
36574	4020710	4.50" EXP. POINT HOLDER SHORT (4.50" OD)	15
36641	4030265	3.50" X 60" PROBE ROD	11, 29, 48
36642	4030057	3.50" DRIVE CAP, THREADLESS (GH60/80)	11, 29
36645	4030305	3.50" SOLID DRIVE POINT	11
36815	4030332	DT35 HOLDER FOR EXP. CUTTING SHOES	29
36838	4020045	4.50" EXP. POINT W/ O-RING (5.00" OD)	15
36838	4020045	4.50" EXP. DRIVE POINT (FOR 2.00" PREPACKS)	41
37275	4030421	2.25" GROUT INJECTION PULL CAP	7
37303	4020452	O-RING, 1.25", 1.50", 2.25" GROUT INJECTION PULL CAP	3, 5, 7
37343	4030067	4.50" HD PULL CAP	15
37708	4030318	DT325 BUFFERING DRIVE CAP	27
37758	4030076	DT35 CUTTING SHOE STANDARD 1.85" ID X 3.75" OD	29
37763	4020240	3.50" EXP. POINT HOLDER 60" LONG	11
37852	4020474	SET SCREW SERVICE KIT FOR SP22	39
37853	4020490	O-RING, SERVICE KIT FOR SP22	39
37871	4020484	SP22 SCREEN HEAD ADAPTER (PVC) FOR PVC SCREENS	39
37893	4020468	SP22 CHECK VALVE TUBING, STAINLESS	39
37894	4030310	SP22 X 48" STAINLESS STEEL SCREEN	39
37898	4030272	3.50" LIFTING SWIVEL PULL CAP, BOX DOWN	11
38173	4030266	3.50" X 24" PROBE ROD	11, 29, 48
38183	4030009	3.50" FLANGE PULL ROD	11
38247	4020472	SP22 X 12" STAINLESS STEEL SCREEN	39
38381	4030330	DT35/DT37 CENTERING DRIVE CAP	29, 31
38657	4020482	SP22 SCREEN HEAD ADAPTER (SS) FOR PVC SCREENS	39
38664	4020476	SP22 X 48" PVC SCREEN (2/BOX)	39

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38667	4020478	SP22 X 12" PVC SCREEN (2/BOX)	39
38752	4020004	MC5 LINER CLEAR TEFLON 60"	20
38951	4030264	3.50" X 48" PROBE ROD	11, 29, 48
38952	4020603	3.50" X 39"/1M PROBE ROD	11, 29, 48
38953	4030075	3.50" EXP. POINT HOLDER 48" LONG	11
38955	4030084	3.50" EXP. POINT HOLDER 1M LONG	11
38968	4020462*	SP22 PVC BOTTOM SCREEN PLUG	39
38982	4030605	3.50" DRIVE CAP, THREADLESS (GH40)	11
38983	4020803	3.50" ROD GRIP HANDLE ASSEMBLY (GH40)	11
39011	4030269	DT325/DT35/DT37 LINER RETAINER, HEAVY DUTY	27, 29, 31
39178	4030334	DT35 CUTTING SHOE 1.85" ID X 3.50" OD	29
39182	4020600	3.50" EXP. POINT W/ O-RING	11, 41
39247	4020136	4.50" EXP. POINT W/ O-RING (4.50" OD)	15
39302	4020709	4.50" X 12" PROBE ROD	15, 33, 48
40167	4020417	1.50" LEAF PULLER ASSEMBLY	5
41675	4030350	DT22 THREAD CUTTING DRIVE HEAD (FISHING TOOL)	25
42416	4030345	1.50" LIFTING SWIVEL PULL CAP	5
43012	4020227	1.25" X 36" LIGHTWEIGHT PROBE ROD	3, 19, 25, 39, 49
43128	4030095	DT22/SP22 EXP. POINT HOLDER FOR 1.625" OD EXP. POINTS	25, 39
43239	4030326	DT35/DT37 BUFFERING DRIVE CAP	29, 31
43240	4030328	DT35/DT37 BUFFERING DRIVE CAP, HEAVY DUTY	29, 31
43343	4030427	1.25" LIFTING SWIVEL PULL CAP	3
44688	4020804	3.50" ROD GRIP HANDLE ASSEMBLY (GH60)	11
44689	4020810	3.50" ROD GRIP BODY (GH60)	11
45603	4020905	MC7 CORE CATCHER SPACER RING	23
46065	4020105	DT45 LINER CLEAR PVC 60" (18/BOX)	23, 33
46066	4030390	DT45 LINER CLEAR PVC 72" (18/BOX)	23, 33
46125	4020107	DT45 LINER CLEAR PVC 48" (18/BOX)	23, 33
48109	4030446	SP16 DRIVE HEAD W/ 1.25" THREAD & .625" BORE	37
48110	4030448	SP16 DRIVE HEAD W/ 1.25" THREAD & .500" BORE	37
48181	4030026	2.25" DRIVE CAP, SLOTTED, THREADLESS (GH60)	7
48302	4020903	MC7 SAMPLE SHEATH 60"	23
48423	4020900	MC7 DRIVE HEAD W/ 2.25" PIN	23
48762	4020605	4.50" DRIVE CAP, PIN DOWN, THREADLESS (GH60/80)	15
49145	4030056	3.50" HD/DT35 PULL CAP	11, 29
49852	4020802	DRIVE CUSHION ASSEMBLY	25
50271	4030093	DT22 HOLDER FOR EXP. SHOES	25
50726	4020307	DT22 EXP. CUTTING SHOE (2.375" OD) W/ O-RINGS	25
51765	4020601	3.50" X 12" PROBE ROD	11, 48
17066K	4030440	SP16 EXP. POINT W/ 1.75" OD, W/ O-RINGS (25/PKG)	37, 39
AT1200	4030007	1.25" DRIVE CAP, SHORT, W/ THREADS (G40 HAMMER)	3
AT1202	4020205	1.25" DRIVE CAP, SLOTTED, 5.50" LONG (GH40)	3
AT1203	4020231	1.25" PULL CAP, SLOTTED	3
AT1204	4030059	1.25" PULL CAP	3, 25
AT1212	4030279	1.25" X 12" PROBE ROD	3, 23, 27, 33, 48
AT1213	4030466	1.25" EXP. POINT HOLDER for 1.45" OD EXP. POINT	3
AT1214	4020208	1.25" EXP. POINT W/ O-RING (1.45" OD)	3
AT1214R	4030425	O-RING, 1.25" FOR 1.45" OD EXP. POINT (25/PKG)	3
AT1224	4030222	1.25" X 24" PROBE ROD	3, 33, 48
AT1236	4020229	1.25" X 36" PROBE ROD	3, 33, 48
AT1239	4020230	1.25" X 39"/1M PROBE ROD	3, 27, 29, 33, 48
AT1242	4020243	1.25" SOLID DRIVE POINT (2.50" OD)	3
AT1244	4020241	1.25" SOLID DRIVE POINT (1.75" OD)	3
AT1245	4020221	1.25" SOLID DRIVE POINT (1.45" OD)	3
AT1247	4020242	1.25" SOLID DRIVE POINT (2.00" OD)	3

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AT1248	4030270	1.25" X 48" PROBE ROD	3, 23, 27, 29, 33, 48
AT1250R	4020217	O-RING, 1.25" PROBE ROD (25/PKG)	3, 39
AT1250R	4020217	O-RING, 1.25" PROBE ROD (25/PKG)	39
AT1252	4020244	1.25" SOLID DRIVE POINT (3.00" OD)	3
AT1260	4030267	1.25" X 60" PROBE ROD	3, 23, 27, 29, 33, 48
AT1266	4020209	1.25" DRIVE CAP, GAS SAMPLING	3
AT1266R	4020218	O-RING, 1.25" GAS SAMPLING CAP (25/PKG)	3
AT14	4020835	1.00" EXP POINT (1.10" OD)	3, 5
AT14R	4030225	O-RING, 1.00" FOR 1.10" OD EXP. POINT (25/PKG)	3, 5
AT2015	4020034	2.25" EXP. POINT STANDARD (2.45" OD) W/ 1 O-RING	7
AT2015	4020034	2.25" EXP. DRIVE POINT (FOR .75" PREPACKS)	41
AT2015K	4200034	2.25" EXP. POINT W/ O-RING (32/PKG)	39
AT2100R	4020312	O-RING, 2.25" PROBE ROD (25/PKG)	7, 39
AT3215	4020038	3.25" EXP. POINT W/ O-RING - STEEL	9
AT3215	4020038	3.25" EXP. DRIVE POINT (FOR 1.00" OR 1.50" PREPACKS)	41
AT3215R	4020513	"O-RING, 3.25"" EXP. POINT (26/PKG)	9
AT6312R	4030435	O-RING, MC5 STOP PINS (25/PKG)	20
AT633	4030039	"TAP, 9/16"" REVERSE THREAD	20
AT67	4020169	36" EXTENSION ROD SS	49
AT671	4020167	48" EXTENSION ROD SS	50
AT6712	4030426	EXTENSION ROD CENTERING PLUG FOR STOP PIN	50
AT675	4020168	39"/1M EXTENSION ROD SS	50
AT68	4030476	EXTENSION ROD COUPLER	50
AT69	4020160	EXTENSION ROD HANDLE	50
AT695	4020170*	EXTENSION ROD QUICK LINK PIN	50
AT696	4020171*	EXTENSION ROD QUICK LINK BOX	50
AT7235	4020820	MC5 LINER SS 48"	20
AT726K	4020026	MC5 VINYL LINER CAPS (66/BOX)	19
AT737K	4020006	MC5 LINER CLEAR PVC 48" LIGHT DUTY (66/BOX)	19
AT8531K	4020016*	MC5 CORE CATCHER (28/BOX)	19
AT8532K	4020013	MC5 LINER SPACER RING (66/PKG)	19
AT8533K	4020013	MC5 LINER SPACER RING (500/PKG)	19
AT8534K	4020016*	MC5 CORE CATCHER (100/BOX)	19
AT921K	4020814	MC5 LINER CLEAR PVC 36" (66/BOX)	19
AT926K	4020001	MC5 LINER CLEAR PVC 24" (66/BOX)	19
AT927K	4020000	MC5 LINER CLEAR PVC 48" HEAVY DUTY (66/BOX)	19
AT928K	4020813	MC5 LINER CLEAR PVC 39"/1M (66/BOX)	19
BU1250	4030477	1.25"/1.50" NYLON BRUSH	3, 50
BU2125	4020302	2.25" NYLON BRUSH	7, 50
BU300	4030478	GROUNDWATER TOOL BRUSH	50
BU3250	4020516	3.25" NYLON BRUSH	9, 50
BU700	4020832	MC5 NYLON BRUSH	20, 50
DT3248K	4020109	DT325/DT35/DT37 LINER 48" W/O CORE CATCHER (42/BOX)	27, 29, 31
DT3260K	4020101	DT325/DT35/DT37 LINER 60" W/O CORE CATCHER (42/BOX)	27, 29, 31
DT4010	4020175	DT22 DRIVE BUMPER, RUBBER	25
DT4024K	4020127	DT22 LINER 24" W/O INTEGRAL CORE CATCHER (50/BOX)	25
DT4026K	4020150	DT22 VINYL LINER CAPS	25
DT4036K	4020129	DT22 LINER 36" W/O INTEGRAL CORE CATCHER (50/BOX)	25
DT4039K	4020125	DT22 LINER 39"/1M W/O INTEGRAL CORE CATCHER (50/BOX)	25
DT4045R	4020011	O-RING, EXP. CUTTING SHOE (50/PKG)	25
DT4048K	4020146	DT22 LINER 48" W/O INTEGRAL CORE CATCHER (50/BOX)	25
DT4051K	4020058	DT22 REBUILD KIT FOR LINER DRIVE HEAD	25
DT4052	4030038	DT22 DRIVE HEAD FOR LINERS W/ 1.25" MALE THREAD UP	25
DT4061K	4020008	DT22 LINER 60" W/O INTEGRAL CORE CATCHER (50/BOX)	25

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DT4070R	4020009	O-RING, MC5 PISTON POINT	19
DT4070R	4020009	O-RING, DT22 DISCRETE POINT (25/PKG)	25
DT4070R	4020009	O-RING, SP16 STAINLESS STEEL SCREEN HEAD	37
DT4070R	4020009	O-RING, STAINLESS STEEL SCREEN	39
DT4124K	4020126	DT22 LINER 24" W/ INTEGRAL CORE CATCHER (50/BOX)	25
DT4136K	4020128	DT22 LINER 36" W/ INTEGRAL CORE CATCHER (50/BOX)	25
DT4139K	4020124	DT22 LINER 39"/1M W/ INTEGRAL CORE CATCHER (50/BOX)	25
DT4148K	4020147	DT22 LINER 48" W/ INTEGRAL CORE CATCHER (50/BOX)	25
DT4161K	4020007	DT22 LINER 60" W/ INTEGRAL CORE CATCHER (50/BOX)	25
GH1255	4020210	1.25" ROD GRIP HANDLE ASSEMBLY (GH40)	3
GH1555	4020425	1.50" ROD GRIP HANDLE ASSEMBLY (GH40)	5
GW1520	4020454	SP16 SCREEN, STAINLESS STEEL	37
GW1530	4020456	SP16 SCREEN, PVC REUSABLE	37
GW1535	4020460	"SP16 SCREEN PUSH ADAPTER	37
GW1540	4020458	"SP16 GROUT PLUG PUSH ADAPTER	37
GW1545	4020464	SP16 GROUT NOZZLE	37
GW1552K	4030082*	SP16/SP22 GROUT PLUG (25/PKG)	37, 39
GW1555	4020030	SP16 EXP. POINT W/ 1.625" OD W/ O-RING	37, 39
GW1555AL	4020466	SP16 EXP. POINT W/ O-RING, ALUMINIUM (25/PKG)	37, 39
GW1555K	4020030	SP16 EXP. POINT W/ O-RING (25/PKG)	37, 39
GW1555L	4020030	SP16 EXP. POINT W/ O-RING (120/PKG)	37, 39
GW1555R	4020110	O-RING, SP15/SP16 EXP. POINT (32/PKG)	37, 39
PR1214	4020219	1.25" EXP. POINT W/ O-RING (1.45" OD) SOIL GAS IMPLANT	3
PR1215	4020212	1.25" EXP. POINT HOLDER FOR 1.10" OD EXP. POINT	3
PR14	4030115	1.00" EXP. POINT W/ 1.10" OD FOR SOIL GAS IMPLANTS W/ O-RING	3, 5
WP1710	7850006	1.00" LOCKABLE EXPANSION PLUG	41
WP1715	7850004	1.50" LOCKABLE EXPANSION PLUG	41
WP1720	7850000	2.00" LOCKABLE EXPANSION PLUG	41
WP1775	7850007	.75" LOCKABLE EXPANSION PLUG	41

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101149	4020316	3.25" ROD GRIP SCREW	9
101149	4020316	3.50" ROD GRIP SCREW	11
101149	4020316	3.75" ROD GRIP SCREW	13
101149	4020316	4.50" ROD GRIP SCREW	15
101467	4020708	"O-RING, 4.50" EXP. POINT	15
101901	4030402	O-RING, DT45 SOLID DRIVE POINT	33
102256	4030428	O-RING, SP16 FOR BOTTOM OF DRIVE HEAD	37
102981	4030044	O-RING, MC7 PISTON POINT	23
104378	5800005	2.00" X 60" PVC RISER	41
104397	5650080	2.00" PVC BOTTOM PLUG	41
104730	4030398	"O-RING, 4.50" PROBE ROD (25/PKG)	15, 33
104852	5950005	2.00" X 60" PVC PIPE .010" SLOT	41
105017	4020452	O-RING, 1.25", 1.50", 2.25" GROUT INJECTION PULL CAP	3, 5, 7
105218	4030433	O-RING, 3.50" EXP. POINT (26/PKG)	11
200282	4020426	O-RING, 2.25" EXP. POINT (32/PKG)	7, 39, 41
200596	4020816	MC5 LINER CLEAR TEFLON 48"	20
200685	4020214	1.00"/1.25" ROD GRIP JAW (GH40)	3
201089	4020204	1.25" DRIVE CAP, THREADLESS (GH60)	3
201179	4020839	MC5 STOP PIN COUPLER	20
201183	4030274	MC5 PISTON ROD 48"	20
201185	4030250	3.25" X 60" PROBE ROD	9, 27, 48
201189	4020527	3.25" ROD GRIP BODY (GH60)	9
201273	4020520	3.25" SOLID DRIVE POINT (3.50" OD)	9
201275	4030049	3.25" DRIVE CAP, THREADLESS (GH60)	9, 27
201276	4030452	MC/MC5 QUICK LINK STOP PIN REMOVER	20, 50
201277	4020526	3.25" ROD GRIP HANDLE ASSEMBLY (GH60)	9
201280	4020470	3.25" ROD GRIP V-BLOCK RETAINING PIN	9
201280	4020470	3.50" ROD GRIP V-BLOCK RETAINING PIN	11
201282	4030055	3.25" EXP. POINT HOLDER 60" LONG	9
201325	4020514	O-RING, 3.25" PROBE ROD (25/PKG)	9
201325	4020514	O-RING, DT325/DT35 CUTTING SHOE	27, 29
201349	4020840	MC/MC5 STOP PIN FOR 1.25" & 2.25" DRIVE HEADS	20
201352	4020166	60" EXTENSION ROD SS	50
201385	4030338	DT325/DT35/DT37 DRIVE HEAD FOR SAMPLER SHEATH W/ 1.25" THREAD	27, 29, 31
201446	4020511	3.25" X 48" PROBE ROD	9, 27, 48
201447	4020504	3.25" EXP. POINT HOLDER 48" LONG	9
201448	4020500	3.25" DRIVE CAP, THREADLESS (GH40)	9
201470	4030281	MC5 PISTON ROD 60"	20
201682	4030235	1.50" X 60" PROBE ROD	5, 48
201813	5801015	SP22 X 60" PVC RISER (.750")	39
201813	5801015	.75" X 60" PVC RISER	41
201963	4030470	"3.25" ROD GRIP JAW PAD (GH60)"	9
201963	4030470	3.50" ROD GRIP JAW PAD (GH60)	11
201963	4030470	3.75" ROD GRIP JAW PAD (GH60)	13
201963	4030470	4.50" ROD GRIP JAW PAD (GH60)	15
202008	4020525	3.25" ROD GRIP JAW (GH40)	9
202012	4020523	3.25" ROD GRIP HANDLE ASSEMBLY (GH40)	9
202026	4020140	3.25" EXP. POINT HOLDER SHORT (4.00" OD)	9
202059	5650006	.75" PVC BOTTOM PLUG	41
202115	4030041	1.50" DRIVE CAP, THREADLESS (GH60)	5
202121	4020423	1.50" SOLID DRIVE POINT THREADED (3.00" OD)	5
202135	5950000	1.00" X 60" PVC PIPE .010" SLOT	41
202136	5800000	1.00" X 60" PVC RISER	41
202137	5650005	1.00" PVC BOTTOM PLUG	41
202145	4030268	DT325 CENTERING DRIVE CAP	27
202221	4020121	DT22 BOLT FOR LINER DRIVE HEAD (20/PKG)	25
202234	4030050	3.25" PULL CAP	9, 27

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202248	4020414	1.50" X 48" PROBE ROD	5, 48
202313	4020508	3.25" X 12" PROBE ROD	9, 29, 48
202356	4020315	2.25" EXP. POINT IMPLANT ANCHOR (2.45" OD)	7
202363	4020510	3.25" X 39"/1M PROBE ROD	9, 27, 48
202364	4020501	3.25" EXP. POINT HOLDER 1M LONG	9
202366	4030356	"O-RING, FOR DT325/DT35 DISCRETE POINT (25/PKG)	27
202366	4030356	"O-RING, FOR DT325/DT35 DISCRETE POINT (25/PKG)	29
202491	4020330	2.25" CENTERING TOOL FOR EXTENSION RODS	7
202494	4020422	1.50" SOLID DRIVE POINT THREADED (2.50" OD)	5
202598	4030058	1.50" PULL CAP STANDARD NECK	5
202615	4020406	1.50" EXP. POINT HOLDER FOR 1.70" OD POINT	5
202630	4020415	1.50" PULL CAP W/ SLOT	5
202632	4030430	SP16 SAMPLER SHEATH	37
202633	4030432	SP16 DRIVE HEAD W/ 1.50" THREAD & .625" BORE	37
202637	4020421	1.50" SOLID DRIVE POINT THREADED (1.70" OD)	5
202660	4020216	1.25"/1.50" ROD GRIP JAW (GH60)	3, 5
202695	4030429	O-RING FOR 1.50" PROBE ROD (25/PKG)	5
202695	4030434	O-RING, SP16 PROBE ROD FOR TOP OF DRIVE HEAD	37
202714	4030232	1.50" X 12" PROBE ROD	5, 48
202715	4020412	1.50" X 24" PROBE ROD	5, 48
202723	4030105	MC/MC5 STOP PIN FOR 1.50" DRIVE HEAD	20
202724	4020220	1.25"/1.50" ROD GRIP HANDLE ASSEMBLY (GH60)	3, 5
202730	4030069	1.50" ROD GRIP JAW (GH40)	5
202736	4020403	1.50" DRIVE CAP, W/ THREADS (GH40)	5
202743	4020402	1.50" DRIVE CAP, SLOTTED, w/ THREADS (GH40)	5
202789	4020200	ADAPTER, 1.25" BOX TO 1.50" PIN	3, 5, 50
202790	4020201	ADAPTER, 1.50" BOX TO 1.25" PIN	3, 5, 50
202821	4030442	SP16 SCREEN, PVC DISPOSABLE	37
202873	4020821	MC5 LINER SS 60"	20
202929	4020232	1.25" GROUT INJECTION PULL CAP	3
202930	4020416	1.50" GROUT INJECTION PULL CAP	5
202948	4020308	"3.25"/3.50" ROD GRIP HAMMER V-BLOCK (GH60)	9, 11
203036	4020833	1.25" PULL CAP W/ 1/2" NPT FEMALE THREAD	3
203079	4020033	1.50" X 60" X .010" SLOT PREPACKED SCREEN (2.50" OD) 8TPI	41
203080	5951001	1.50" X 60" PVC PIPE .010" SLOT	41
203081	5801002	1.50" X 60" PVC RISER	41
203082	5650009	1.50" PVC BOTTOM PLUG	41
203095	4020021	.75" X 60" X .010" SLOT PREPACKED SCREEN (1.40" OD) - 8TPI	41
203096	4020022	1.00" X 60" X .010" SLOT PREPACKED SCREEN (2.50" OD) - 8TPI	41
203101	4030437	.75" X 60" SCH 40 PVC PIPE .010" SLOT	39, 41
203193	4020411	1.50" X 39"/1M PROBE ROD	5, 48
203262	4030444	SP16 DRIVE HEAD W/ 1.50" THREAD & .500" BORE	37
203284	4030252	3.25" X 24" PROBE ROD	9, 48
203530	4020314	2.25" EXP. POINT EXT. SHANK (2.45" OD) W/ 3 O-RINGS	7
203559	4020831	MC5 PLUNGER FOR HYDRAULIC LINER	20
203799	4020522	3.25" SPT CUTTING SHOE W/ 2.38" ID X 3.750" OD FOR SPLIT SPOON	9
203844	4020521	3.25" SPT SOLID DRIVE POINT W/ 1.50" MALE THREAD FOR SPLIT SPOON	9
203895	4020407	1.50" EXP. POINT HOLDER FOR 1.10" OD POINT	5
203909	4020420	1.50" SOLID DRIVE POINT THREADED (1.50" OD)	5
203988	4030224	1.25" X 48" LIGHTWEIGHT PROBE ROD	3, 19, 25, 27, 29, 39, 49
204217	4030060	MC5 CUTTING SHOE 1.50" ID W/ STANDARD SHANK (2.30" OD)	19
204218	4030035	MC5 SAMPLER TUBE 48"	19
204236	4030043	DT22 DRIVE CAP 1.25" THREADLESS	25
204237	4030278	DT22 DISCRETE POINT FOR USE W/ 1.25" INNER RODS	25

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204257	4030042	MC5 DRIVE HEAD X 1.50" FOR STOP PIN	19
204259	4030030	MC5 SAMPLER TUBE 60"	19
204305	4020203	1.25"/1.50" ROD GRIP BODY (GH60)	3, 5
204389	4030088	MC5 DRIVE CAP FOR CENTER RODS	19, 23
204390	4020800	MC5 CENTER ROD PLUG 1.25" MALE THREAD	19
204400	4020202	1.25"/1.50" ROD GRIP BODY (GH40)	3, 5
204401	4020336	2.25" ROD GRIP BODY (GH40)	7
204402	4020524	3.25" ROD GRIP BODY (GH40)	9
204403	4020333	2.25" ROD GRIP BODY (GH60)	7
204500	4030070	MC5 CUTTING SHOE 1.50" ID W/ EXT. SHANK (2.375" OD)	19
204550	4020829	MC5 SAMPLER TUBE 36"	19
204551	4020830	MC5 SAMPLER TUBE 39"/1M	19
204764	4020319	2.25" SOLID DRIVE POINT (2.50" OD)	7
204766	4030244	2.25" x 48" PROBE ROD	7, 13, 25, 33, 39, 48
204767	4030245	2.25" x 60" PROBE ROD	7, 13, 25, 33, 39, 48
204774	4030072	DT22 SHOE STANDARD SIZE 2.375" OD X 1.125" ID	25
204777	4020323	2.25" x 12" PROBE ROD	7, 13, 25, 33, 39, 48
204778	4020325	2.25" x 39"/1M PROBE ROD	7, 13, 25, 33, 39, 48
204779	4020139	2.25" EXP. POINT HOLDER SHORT (2.50" OD)	7
204781	4020309	2.25" EXP. POINT HOLDER 48" LONG ( 2.25" OD)	7
204782	4020310	2.25" EXP. POINT HOLDER 60" LONG 2.25" OD)	7
204783	4020320	2.25" SOLID DRIVE POINT (3.00" OD)	7
204784	4020321	2.25" SOLID DRIVE POINT (3.50" OD)	7
204785	4020300	ADAPTER, 2.25" BOX TO 1.50" PIN	7, 50
204786	4020301	ROD TO CAP ADAPTER, 2.25" PIN TO HSA	7, 50
204787	4020304	2.25" DRIVE CAP, W/ THREADS (GH40)	7, 25
204797	4020700	4.50" X 48" PROBE ROD	15, 33, 48
204985	4030062	MC5 CUTTING SHOE 1.25" ID W/ EXT. SHANK (2.375" OD)	19
205021	4030040	MC5 DRIVE HEAD X 1.25" FOR STOP PIN	19
205080	4020703	4.50" DRIVE CAP, BOX DOWN, THREADLESS (GH60/80)	15, 33
205098	4030342	DT325/DT35/DT37 LINER RETAINER W/ GROOVE	27, 29, 31
205099	4030362	DT325/DT35/DT37 SAMPLER SHEATH 60"	27, 29, 31
205100	4030322	DT325 CUTTING SHOE 1.75" ID X 3.450" OD	27
205110	4030364	DT325/DT35/DT37 SAMPLER SHEATH 72"	27, 29, 31
205113	4030080	MC5 POINT CLOSED PISTON UNDER SIZED 1.35" OD W/ O-RINGS	19
205120	4020815	4.50" SOLID POINT, THREADED (5.00" OD)	15
205182	4020103	ADJUSTABLE CENTER ROD CLAMP FOR 1.25" RODS	25
205232	4030277	1.25" X 60" LIGHTWEIGHT PROBE ROD	3
205232	4030277	1.25" X 60" LIGHTWEIGHT PROBE ROD	19, 25, 27, 29, 39, 49
205264	4030360	DT325/DT35/DT37 SAMPLER SHEATH 48"	27, 29, 31
205265	4030358	DT325/DT35/DT37 SAMPLER SHEATH 39"/1M	27, 29, 31
205279	4030336	DT325/DT35 DISCRETE POINT 1.75" OD W/ 1.25" PIN UP	27, 29
205299	4030344	DT325/DT35 RETAINER WRENCH	27, 29, 31
205371	4030280	MC5 DRIVE HEAD X 1.50" W/ 1/4" BORE NO STOP PIN	19
205372	4020806	MC5 DRIVE HEAD X 1.25" W/ 1/8" BORE NO STOP PIN	19
205387	4030079	MC5 POINT CLOSED PISTON STANDARD SIZE 1.50" OD W/ O-RING	19
205424	4030320	DT325 HOLDER FOR EXP. CUTTING SHOE	27
205426	4030366	DT325/DT35/DT37 EXP. CUTTING SHOE (1.75" ID)	27, 29, 31
205449	4030077	DT325 CUTTING SHOE 1.85" ID	27
205450	4030271	DT325/DT35 DISCRETE POINT 1.85" OD W/ 1.25" PIN UP	27, 29
205475	4020812	MC5 DRIVE HEAD X 2.25" W/ 1.375" BORE	19
205476	4030045	MC5 DRIVE HEAD X 2.25" FOR STOP PIN	19
205481	4020311	2.25" EXP. POINT HOLDER SHORT( 2.25" OD)	7
205555	4020704	4.50" X 60" PROBE ROD	15, 33, 48

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205636	5700038	2.00" WELL DEVELOPMENT TOOL "ENV. SERIES"	41
205663	4030368	DT325/DT35/DT37 LINER SPACER CONNECTOR	27, 29, 31
205664	4020332	2.25" ROD GRIP HANDLE ASSEMBLY (GH60)	7
205676	4020337	2.25" ROD GRIP JAW (GH40)	7
205678	4020335	2.25" ROD GRIP HANDLE ASSEMBLY (GH40)	7
205690	4020705	4.50" LIFTING SWIVEL PULL CAP, BOX DOWN	15
205697	4020828	MC5 ADAPTER FOR HYDRAULIC EXTRUDER	20
205705	4020060	MC5 CUTTING SHOE 1.35" ID W/ STANDARD EXT. SHANK (2.375" OD)	19
205731	4020837	MC5 CUTTING SHOE (2.25" OD) EXT SHANK	20
205734	4030370	4.50" CASING SHOE (3.55" ID, 5.00" OD)	15
205760	4030410	DT45 SAMPLE TUBE 48"	33
205761	4030412	DT45 SAMPLE TUBE 60"	33
205762	4030414	DT45 SAMPLE TUBE 72"	33
205770	4030384	DT45 DRIVE HEAD FOR 1.25" CENTER RODS	33
205773	4020909	MC7 CUTTING SHOE WRENCH / DT45 RETAINER WRENCH	23, 33, 50
205797	4030392	DT45 LINER SPACER CONNECTOR	33
205800	4030416	DT45 CUTTING SHOE	33
206187	4020303	2.25" DRIVE CAP, THREADLESS (GH40)	7, 19, 25, 39
206239	4020234	1.25" LEAF PULLER ASSEMBLY	3
206249	4030046	2.25" DRIVE CAP, THREADLESS, LONG (GH60)	7, 19, 25, 39
206336	4020506	4.50" ROD GRIP HAMMER V-BLOCK (GH60)	15
206412	4020706	4.50" X 24" PROBE ROD	15, 33, 48
206433	4020707	4.50" ROD GRIP HANDLE ASSEMBLY (GH60)	15
206460	4030068	MC5 CUTTING SHOE 1.35" ID W/ EXT. SHANK (2.30" OD)	19
206515	4020701	4.50" ROD GRIP BODY (GH60)	15
206525	4020226	1.25" X 39"/1M LIGHTWEIGHT PROBE ROD	3, 19, 25, 27, 29, 39, 49
206527	4030386	DT45 DRIVE HEAD FOR 2.25" CENTER RODS	33
206531	4030406	DT45 LINER RETAINER	33
206538	4030420	DT45 CENTERING DRIVE CAP 2.25" ROD	33
206560	4030071	MC5 CUTTING SHOE W/ MC5 THREAD, STANDARD SHANK (2.25" OD)	19
206588	4030242	2.25" x 24" PROBE ROD	7, 25, 33, 39, 48
206592	4020838	4.50" SOLID DRIVE / DISCRETE POINT	15
206593	4020836	O-RING, 4.50" SOLID DRIVE / DISCRETE POINT (10/PKG)	15
206601	4030380	DT45 DRIVE CAP BUFFERING 1.25" RODS	33
206602	4030382	DT45 DRIVE CAP BUFFERING 2.25" ROD	33
206638	4030388	DT45 EXP. CUTTING SHOE HOLDER 4.50" OD (3.75 ID)	33
206643	4020329	2.25" LEAF PULLER ASSEMBLY	7
206644	4020029	2.00" X 60" X .010" SLOT PREPACKED SCREEN (3.40" OD) - 2TPI	41
206706	4020324	2.25" x 36" PROBE ROD	7, 25, 33, 39, 48
206823	4020326	2.25" PULL CAP HD	7, 25
206861	4020488	"2.25"" EXP. POINT HOLDER	39
206876	4020327	2.25" LIFTING SWIVEL PULL CAP, BOX DOWN	7
206890	4020702	4.50" X 39"/1M PROBE ROD	15, 33, 48
206898	4030408	DT45 SAMPLE TUBE 39"/1M	33
206901	4030404	DT45 SOLID DRIVE / DISCRETE POINT (2.25" BOX UP)	33
207000	4020906*	MC7/DT45 CORE CATCHER	23, 33
207012	5700160	1.50" WELL DEVELOPMENT TOOL"ENV. SERIES"	41
207105	4030418	DT45 EXP. CUTTING SHOE	33
207243	4030315	4.50" CASING SHOE (3.55" ID, 6.00" OD)	15
207255	4030061	4.50" FLANGE PULL ROD	15
207256	4030025	2.25" FLANGE PULL ROD	7
207261	4020413	1.50" X 36" PROBE ROD	5, 48
207272	4020517	3.25" LIFTING SWIVEL PULL CAP, BOX DOWN	9
207276	5700037	1.00" WELL DEVELOPMENT TOOL "ENV. SERIES"	41

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207277	4030431	3.25" FLANGE PULL ROD	9
207282	4020206	1.25" DRIVE CAP, LONG, THREADLESS (GH40)	3
207352	4020328	2.25" LIFTING SWIVEL PULL CAP, PIN DOWN	7
207439	4020113	MC7/DT45 VINYL LINER CAPS	23, 33
207515	4030369	4.50" SOLID POINT, THREADED (6.00" OD)	15
207649	4020710	4.50" EXP. POINT HOLDER SHORT (4.50" OD)	15
207679	4030057	3.50" DRIVE CAP, THREADLESS (GH60/80)	11, 29
207680	4030305	3.50" SOLID DRIVE POINT	11
207726	4030332	DT35 HOLDER FOR EXP. CUTTING SHOES	29
207735	4020045	4.50" EXP. POINT W/ O-RING (5.00" OD)	15
207735	4020045	4.50" EXP. DRIVE POINT (FOR 2.00" PREPACKS)	41
207845	4030421	2.25" GROUT INJECTION PULL CAP	7
207873	4030067	4.50" HD PULL CAP	15
208053	4030318	DT325 BUFFERING DRIVE CAP	27
208066	4030076	DT35 CUTTING SHOE STANDARD 1.85" ID X 3.75" OD	29
208069	4020240	3.50" EXP. POINT HOLDER 60" LONG	11
208094	4020474	SET SCREW SERVICE KIT FOR SP22	39
208095	4020490	O-RING, SERVICE KIT FOR SP22	39
208102	4020484	SP22 SCREEN HEAD ADAPTER (PVC) FOR PVC SCREENS	39
208113	4020468	SP22 CHECK VALVE TUBING, STAINLESS	39
208114	4030310	SP22 X 48" STAINLESS STEEL SCREEN	39
208115	4030272	3.50" LIFTING SWIVEL PULL CAP, BOX DOWN	11
208219	4030266	3.50" X 24" PROBE ROD	11, 29, 48
208220	4030009	3.50" FLANGE PULL ROD	11
208238	4020472	SP22 X 12" STAINLESS STEEL SCREEN	39
208259	4030330	DT35/DT37 CENTERING DRIVE CAP	29, 31
208316	4020482	SP22 SCREEN HEAD ADAPTER (SS) FOR PVC SCREENS	39
208318	4020476	SP22 X 48" PVC SCREEN (2/BOX)	39
208319	4020478	SP22 X 12" PVC SCREEN (2/BOX)	39
208446	4030264	3.50" X 48" PROBE ROD	11, 29, 48
208447	4030075	3.50" EXP. POINT HOLDER 48" LONG	11
208449	4030084	3.50" EXP. POINT HOLDER 1M LONG	11
208460	4030605	3.50" DRIVE CAP, THREADLESS (GH40)	11
208461	4020803	3.50" ROD GRIP HANDLE ASSEMBLY (GH40)	11
208472	4030269	DT325/DT35/DT37 LINER RETAINER, HEAVY DUTY	27, 29, 31
208502	4030334	DT35 CUTTING SHOE 1.85" ID X 3.50" OD	29
208504	4020600	3.50" EXP. POINT W/ O-RING	11, 41
208510	4020136	4.50" EXP. POINT W/ O-RING (4.50" OD)	15
208532	4020709	4.50" X 12" PROBE ROD	15, 33, 48
208806	4020417	1.50" LEAF PULLER ASSEMBLY	5
209428	4030350	DT22 THREAD CUTTING DRIVE HEAD (FISHING TOOL)	25
209748	4030345	1.50" LIFTING SWIVEL PULL CAP	5
209949	4020227	1.25" X 36" LIGHTWEIGHT PROBE ROD	3, 19, 25, 39, 49
209991	4030095	DT22/SP22 EXP. POINT HOLDER FOR 1.625" OD EXP. POINTS	25, 39
210051	4030326	DT35/DT37 BUFFERING DRIVE CAP	29, 31
210052	4030328	DT35/DT37 BUFFERING DRIVE CAP, HEAVY DUTY	29, 31
210092	4030427	1.25" LIFTING SWIVEL PULL CAP	3
210532	4020804	3.50" ROD GRIP HANDLE ASSEMBLY (GH60)	11
210533	4020810	3.50" ROD GRIP BODY (GH60)	11
210856	4020905	MC7 CORE CATCHER SPACER RING	23
211776	4030446	SP16 DRIVE HEAD W/ 1.25" THREAD & .625" BORE	37
211777	4030448	SP16 DRIVE HEAD W/ 1.25" THREAD & .500" BORE	37
211798	4030026	2.25" DRIVE CAP, SLOTTED, THREADLESS (GH60)	7
211838	4020903	MC7 SAMPLE SHEATH 60"	23
211889	4020900	MC7 DRIVE HEAD W/ 2.25" PIN	23
212038	4020605	4.50" DRIVE CAP, PIN DOWN, THREADLESS (GH60/80)	15
212290	4030056	3.50" HD/DT35 PULL CAP	11, 29

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213617	4030440	SP16 EXP. POINT W/ 1.75" OD W/ O-RING	37, 39
213617	4030440	SP16 EXP. POINT W/ 1.75" OD, W/ O-RINGS (25/PKG)	37, 39
213748	4030007	1.25" DRIVE CAP, SHORT, W/ THREADS (G40 HAMMER)	3
213749	4020205	1.25" DRIVE CAP, SLOTTED, 5.50" LONG (GH40)	3
213750	4020231	1.25" PULL CAP, SLOTTED	3
213751	4030059	1.25" PULL CAP	3, 25
213753	4030279	1.25" X 12" PROBE ROD	3, 23, 27, 33, 48
213754	4030466	1.25" EXP. POINT HOLDER FOR 1.45" OD EXP. POINT	3
213758	4030222	1.25" X 24" PROBE ROD	3, 33, 48
213762	4020229	1.25" X 36" PROBE ROD	3, 33, 48
213763	4020230	1.25" X 39"/1M PROBE ROD	3, 27, 29, 33, 48
213765	4020243	1.25" SOLID DRIVE POINT (2.50" OD)	3
213766	4020241	1.25" SOLID DRIVE POINT (1.75" OD)	3
213767	4020221	1.25" SOLID DRIVE POINT (1.45" OD)	3
213768	4020242	1.25" SOLID DRIVE POINT (2.00" OD)	3
213769	4030270	1.25" X 48" PROBE ROD	3, 23, 27, 29, 33, 48
213771	4020217	O-RING, 1.25" PROBE ROD (25/PKG)	3, 39
213772	4020244	1.25" SOLID DRIVE POINT (3.00" OD)	3
213773	4030267	1.25" X 60" PROBE ROD	3, 23, 27, 29, 33, 48
213775	4020209	1.25" DRIVE CAP, GAS SAMPLING	3
213776	4020218	O-RING, 1.25" GAS SAMPLING CAP (25/PKG)	3
213778	4020835	1.00" EXP. POINT (1.10" OD)	3, 5
213782	4030225	O-RING, 1.00" FOR 1.10" OD EXP. POINT (25/PKG)	3, 5
213788	4020034	2.25" EXP. POINT STANDARD (2.45" OD) W/ 1 O-RING	7
213788	4020034	2.25" EXP. DRIVE POINT (FOR .75" PREPACKS)	41
213788	4020034	2.25" EXP. POINT W/ O-RING (32/PKG)	39
213790	4020312	O-RING, 2.25" PROBE ROD (25/PKG)	7, 39
213798	4020038	3.25" EXP. POINT W/ O-RING - STEEL	9
213798	4020038	3.25" EXP. DRIVE POINT (FOR 1.00" OR 1.50" PREPACKS)	41
213800	4020513	"O-RING, 3.25" EXP. POINT (26/PKG)	9
213812	4030435	O-RING, MC5 STOP PINS (25/PKG)	20
213832	4020169	36" EXTENSION ROD SS	49
213833	4020167	48" EXTENSION ROD SS	50
213834	4030426	EXTENSION ROD CENTERING PLUG FOR STOP PIN	50
213835	4020168	39"/1M EXTENSION ROD SS	50
213836	4030476	EXTENSION ROD COUPLER	50
213837	4020160	EXTENSION ROD HANDLE	50
213838	4020170*	EXTENSION ROD QUICK LINK PIN	50
213839	4020171*	EXTENSION ROD QUICK LINK BOX	50
213840	4020820	MC5 LINER SS 48"	20
213843	4020026	MC5 VINYL LINER CAPS (66/BOX)	19
213856	4020016*	MC5 CORE CATCHER (28/BOX)	19
213857	4020013	MC5 LINER SPACER RING (66/PKG)	19
213872	4020814	MC5 LINER CLEAR PVC 36" (66/BOX)	19
213873	4020001	MC5 LINER CLEAR PVC 24" (66/BOX)	19
213874	4020813	MC5 LINER CLEAR PVC 39"/1M (66/BOX)	19
213909	4020150	DT22 VINYL LINER CAPS	25
213910	4020129	DT22 LINER 36" W/O INTEGRAL CORE CATCHER (50/BOX)	25
213911	4020125	DT22 LINER 39"/1M W/O INTEGRAL CORE CATCHER (50/BOX)	25
213913	4020011	O-RING, EXP. CUTTING SHOE (50/PKG)	25
213914	4020146	DT22 LINER 48" W/O INTEGRAL CORE CATCHER (50/BOX)	25
213915	4020058	DT22 REBUILD KIT FOR LINER DRIVE HEAD	25
213916	4030038	DT22 DRIVE HEAD FOR LINERS W/ 1.25" MALE THREAD UP	25

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213917	4020008	DT22 LINER 60" W/O INTEGRAL CORE CATCHER (50/BOX)	25
213918	4020009	O-RING, MC5 PISTON POINT	19
213918	4020009	O-RING, DT22 DISCRETE POINT (25/PKG)	25
213918	4020009	O-RING, SP16 STAINLESS STEEL SCREEN HEAD	37
213918	4020009	O-RING, STAINLESS STEEL SCREEN	39
213919	4020128	DT22 LINER 36" W/ INTEGRAL CORE CATCHER (50/BOX)	25
213920	4020124	DT22 LINER 39"/1M W/ INTEGRAL CORE CATCHER (50/BOX)	25
213922	4020147	DT22 LINER 48" W/ INTEGRAL CORE CATCHER (50/BOX)	25
213924	4020007	DT22 LINER 60" W/ INTEGRAL CORE CATCHER (50/BOX)	25
213950	4020210	1.25" ROD GRIP HANDLE ASSEMBLY (GH40)	3
213951	4020425	1.50" ROD GRIP HANDLE ASSEMBLY (GH40)	5
214027	4020454	SP16 SCREEN, STAINLESS STEEL	37
214028	4020456	SP16 SCREEN, PVC REUSABLE	37
214029	4020460	*SP16 SCREEN PUSH ADAPTER	37
214030	4020458	*SP16 GROUT PLUG PUSH ADAPTER	37
214031	4020464	SP16 GROUT NOZZLE	37
214036	4020030	SP16 EXP. POINT W/ O-RING (25/PKG)	37, 39
214036	4020030	SP16 EXP. POINT W/ O-RING (120/PKG)	37, 39
214037	4020110	O-RING, SP15/SP16 EXP. POINT (32/PKG)	37, 39
214201	4020219	1.25" EXP. POINT W/ O-RING (1.45" OD) SOIL GAS IMPLANT	3
214202	4020212	1.25" EXP. POINT HOLDER FOR 1.10" OD EXP. POINT	3
214205	4030115	1.00" EXP. POINT W/ 1.10" OD FOR SOIL GAS IMPLANTS W/ O-RING	3, 5
214781	4020603	3.50" X 39"/1M PROBE ROD	11, 29, 48
215278	4020307	DT22 EXP. CUTTING SHOE (2.375" OD) W/ O-RINGS	25
215664	4030265	3.50" X 60" PROBE ROD	11, 29, 48
215665	4020841	MC5 SAMPLER TUBE 24"	19
216119	4020901	MC7 CENTER ROD SPACER	23
216121	4020908	MC7 SHOE CUTTING	23
216256	4030480	3.75" SPT CENTERING DRIVE CAP, 2.25"	13
216883	4020904	MC7 SAMPLE SHEATH 48"	23
216885	4020902	MC7 SAMPLE SHEATH 72"	23
218055	4020907	MC7 PISTON POINT W/ O-RING	23
219147	4020004	MC5 LINER CLEAR TEFLON 60"	20
219275	4030462	3.75" X 60" PROBE ROD	13
219275	4030462	3.75" X 60" PROBE ROD	31
219275	4030462	3.75" X 60" PROBE ROD	48
219276	4030453	3.75" DRIVE CAP, THREADLESS (GH60/80)	13
219276	4030453	3.75" DRIVE CAP, THREADLESS (GH60/80)	31
219277	4030463	3.75" SOLID DRIVE POINT	13
219278	4030456	3.75" X 24" PROBE ROD	13
219278	4030456	3.75" X 24" PROBE ROD	31
219278	4030456	3.75" X 24" PROBE ROD	48
219559	4030451	3.75" EXP. POINT HOLDER SHORT(3.75 OD)	13
219582	4030483	DT37 CUTTING SHOE	31
219601	4030464	3.75" EXP. POINT W/ O-RING 4.00" OD	13
219601	4020097	3.75" EXP. DRIVE POINT	41
219620	4030484	DT37 HOLDER FOR EXP. CUTTING SHOES	31
219951	4030482	3.75" SPT CUTTING SHOE W/ 2.85" BORE FOR 3.75" RODS	13
220370	4030469	3.75" LIFTING SWIVEL PULL CAP, BOX DOWN	13
220390	4030474	3.75" ROD WIPER	13
220390	4030474	3.75" PROBE ROD WIPER	50
220395	4030457	3.75" X 12" PROBE ROD	13
220395	4030457	3.75" X 12" PROBE ROD	31
220395	4030457	3.75" X 12" PROBE ROD	48
220413	4030472	3.75" ROD GRIP HANDLE ASSEMBLY (GH60)	13
220535	4030467	3.75" PULL CAP	13

\* Available May 2015.

GEOPROBE® MAT #	HOLE PRODUCTS PART #	DESCRIPTION	PAGE #
220535	4030467	DT37 3.5 PULL CAP	31
220539	4030458	3.75" X 48" PROBE ROD	13
220539	4030458	3.75" X 48" PROBE ROD	31
220539	4030458	3.75" X 48" PROBE ROD	48
220635	4030481	3.75" SPT DRIVE POINT FOR 3.75" RODS (2.25" PIN UP X 2.80" OD)	13
220730	4030471	3.75" FLANGE PULL ROD	13
600131	4020005	MC5 LINER CLEAR PVC 60" (66/BOX)	19
600207	4020519	*O-RING, 3.25" EXP. POINT (EACH)	9
600218	4020480	SP22 X 15" PVC SCREEN (2/BOX)	39
600232	4020112	DT325/DT35/DT37 VINYL LINER CAPS	27, 29, 31
600341	4020211	1.25"/1.50" ROD WIPER	3, 5, 50
600412	4020331	2.25" ROD WIPER	7, 50
600418	4020518	3.25" ROD WIPER	9, 50
600418	4020518	3.50" ROD WIPER	11, 50
600422	4020100	DT325/DT35/DT37 LINER 60" W/ CORE CATCHER (42/BOX)	27, 29, 31
600423	4020108	DT325/DT35/DT37 LINER 48" W/ CORE CATCHER (42/BOX)	27, 29, 31
600424	4030348	DT325/DT35/DT37 LINER 39"/1M W/ CORE CATCHER (42/BOX)	27, 29, 31
600428	4030352	O-RING, DT325, DT35, DT37 LINER RETAINER (25/PKG)	27, 29, 31
600443	4030346	DT325/DT35/DT37 LINER SPACER 11.50" REFILL	27, 29, 31
600448	4030475	4.50" PROBE ROD WIPER	50
600448	4030475	4.50" ROD WIPER	15
600484	4030396	DT45 LINER SPACER 12"	33
600528	4030400	O-RING, DT45 EXP. CUTTING SHOE	33
600595	4020462*	SP22 PVC BOTTOM SCREEN PLUG	39
600719	4020105	DT45 LINER CLEAR PVC 60" (18/BOX)	23, 33
600720	4030390	DT45 LINER CLEAR PVC 72" (18/BOX)	23, 33
600721	4020107	DT45 LINER CLEAR PVC 48" (18/BOX)	23, 33
600977	4030039	*TAP, 9/16" REVERSE THREAD	20
600984	4020006	MC5 LINER CLEAR PVC 48" LIGHT DUTY (66/BOX)	19
600988	4020013	MC5 LINER SPACER RING (500/PKG)	19
600989	4020016*	MC5 CORE CATCHER (100/BOX)	19
600993	4020000	MC5 LINER CLEAR PVC 48" HEAVY DUTY (66/BOX)	19
600996	4030477	1.25"/1.50" NYLON BRUSH	3, 50
600998	4020302	2.25" NYLON BRUSH	7, 50
600999	4030478	GROUNDWATER TOOL BRUSH	50
601000	4020516	3.25" NYLON BRUSH	9, 50
601003	4020832	MC5 NYLON BRUSH	20, 50
601004	4020109	DT325/DT35/DT37 LINER 48" W/O CORE CATCHER (42/BOX)	27, 29, 31
601005	4020101	DT325/DT35/DT37 LINER 60" W/O CORE CATCHER (42/BOX)	27, 29, 31
601006	4020175	DT22 DRIVE BUMPER, RUBBER	25
601033	4030082*	SP16/SP22 GROUT PLUG (25/PKG)	37, 39
601071	7850006	1.00" LOCKABLE EXPANSION PLUG	41
601072	7850004	1.50" LOCKABLE EXPANSION PLUG	41
601073	7850000	2.00" LOCKABLE EXPANSION PLUG	41
601078	7850007	.75" LOCKABLE EXPANSION PLUG	41
N/A	4020822	MC5 LINER SS LONG SECTION	20
N/A	4020823	MC5 LINER SS SHORT SECTION	20
N/A	4020826	MC5 PISTON ROD 36"	20
N/A	4020825	MC5 PISTON ROD 24"	20
N/A	4020824	MC5 PISTON ROD 39"/1M	20
N/A	4020012	O-RING, SCREEN HEAD ADAPTER	39
N/A	4020401	1.50" DRIVE CAP, SLOTTED, THREADLESS(GH40)	5
N/A	4020208	1.25" EXP. POINT W/ O-RING (1.45" OD)	3
N/A	4030425	O-RING, 1.25" FOR 1.45" OD EXP. POINT (25/PKG)	3
N/A	4020127	DT22 LINER 24" W/O INTEGRAL CORE CATCHER (50/BOX)	25
N/A	4020126	DT22 LINER 24" W/ INTEGRAL CORE CATCHER (50/BOX)	25
N/A	4020030	SP16 EXP. POINT W/ 1.625" OD W/ O-RING	37, 39
N/A	4020466	SP16 EXP. POINT W/ O-RING, ALUMINIUM (25/PKG)	37, 39

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# AUGER TOOLS

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## AUGER TOOLS



Augers and their associated tooling are used in several drilling markets including geotechnical, environmental, exploration, and construction. Augers are recognized as versatile and effective tools for advancing the borehole, and therefore are the preferred drilling method for a variety of applications.

Hollow stem augers are commonly used for soil sampling and ground water monitoring. These augers work much like a temporary casing in that the centers of the augers are open to allow for soil and water sampling, and/or well installation.

Continuous flight augers are commonly used for construction, geotechnical, and mining applications. Continuous flight augers are manufactured with a solid center shaft and are available with several cutterhead styles to offer excellent performance in a variety of formations.

Contractors need a ready source for their augers, components, and accessories to keep their drilling operations on track and without downtime. Hole Products offers a complete line of quality hollow stem and continuous flight augers, cutterheads, bits, spare parts, and accessories. In addition, our sales team has the experience and knowledge necessary to offer troubleshooting and tooling solutions.

Please contact your Hole Products representative for additional details.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

# HOLLOW STEM AUGERS



## Overview:

Hollow stem augers are commonly used in the geotechnical, environmental, and construction drilling markets. They work much like a temporary casing in that the centers of the augers are open, thus allowing work to commence inside the augers using soil sampling equipment, down the hole hammers and coring tools, or for installing wells, tie back rods or cables and more.

## Drilling:

Hollow stem augers are commonly used with a plug assembly for the purpose of preventing soil from entering the inside (hollow stem) of the augers. The plug with pilot bit is held in place by a center drill rod and rod-to-cap adapter, bolted in the drive cap. This allows the pilot bit to turn in tandem with the auger. When the desired hole depth is achieved, the center rod, plug and pilot bit are removed, allowing sampling, coring or other work to commence inside the auger.

In water bearing sands, a flex plug can be used to prevent material from entering the hollow stem auger I.D., while continuing to allow for the sampling tube to pass through.

For applications not requiring sampling, a knock out plug can be inserted into the end of the cutterhead to eliminate the use of drill rods. When the desired hole depth is achieved, the plug may be knocked out of the bottom of the auger string to allow for well installation.

# HOLLOW STEM AUGERS

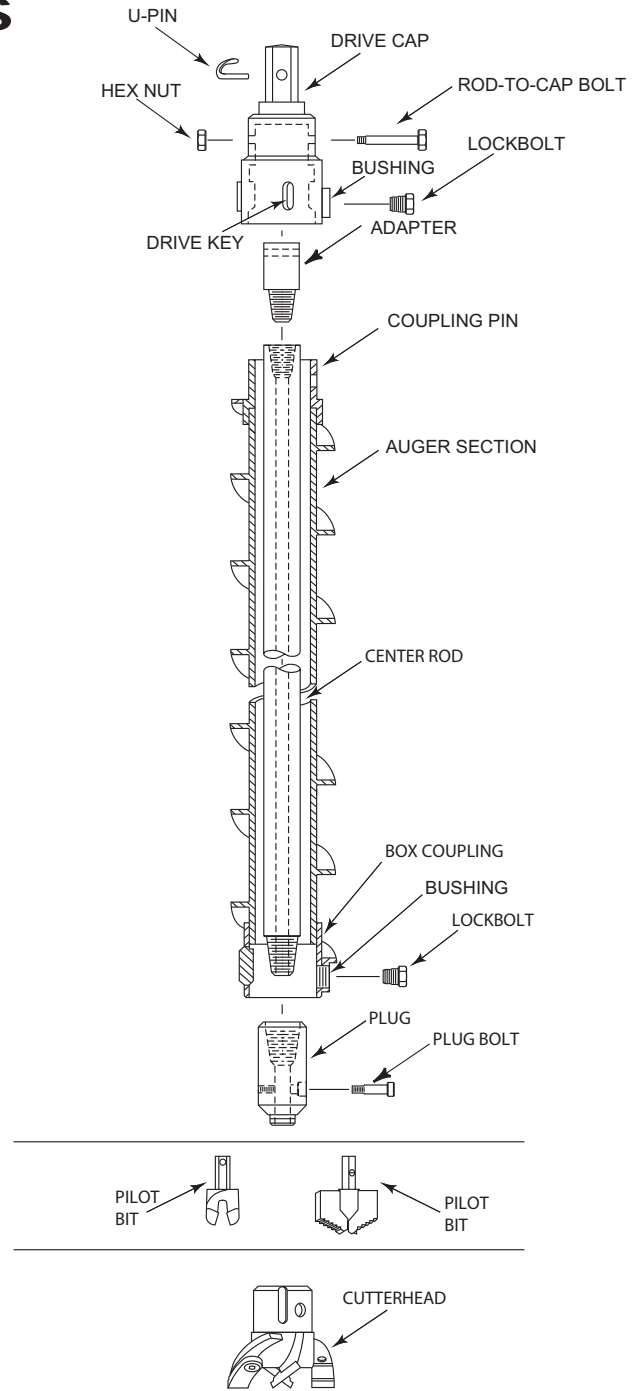
Hole Products offers standard and heavy duty hollow stem augers in five foot lengths (custom lengths available), sizes ranging from 2 1/4" through 10 1/4" (identified by the auger I.D.) and with a 2 key or 3 key drive system.

Diedrich and Acker octagonal style hollow stem augers are available upon request.

Standard duty augers are generally recommended for shallower drilling, (less than 70'), and for lower torque drill rigs.

Heavy duty augers feature heavier tool joints and larger auger bolts and drive keys. HD augers are generally recommended for drilling in excess of 70', and for higher torque drill rigs.

All augers are quality crafted from premium materials and include continuous hard faced flighting, to ensure performance and longevity in even the most demanding drilling conditions.

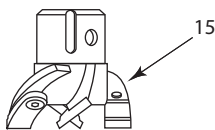
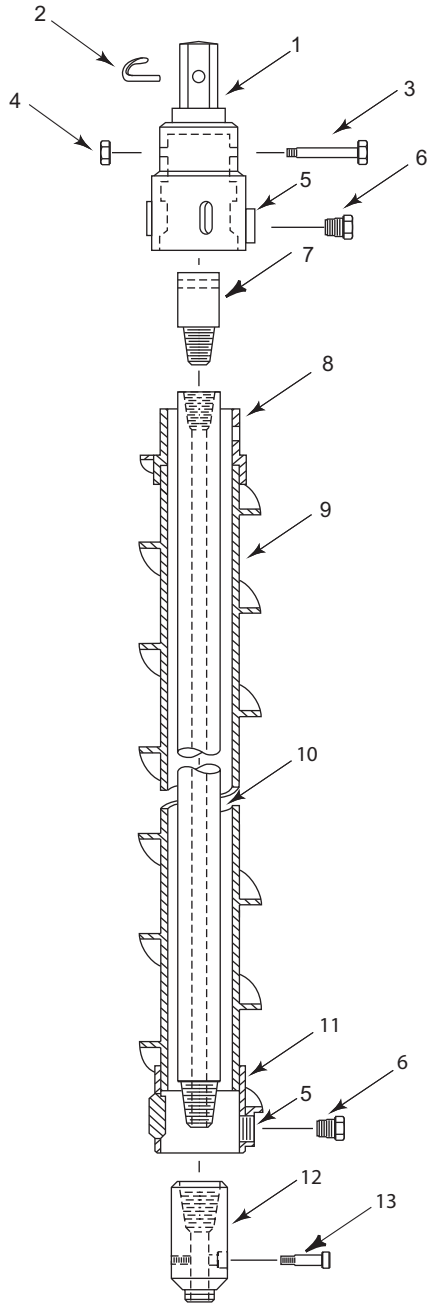


HOLLOW STEM AUGER SPECIFICATIONS							
AUGER I.D.		FLIGHT O.D.		CUTTERHEAD O.D.		WEIGHT	
INCHES	MM	INCHES	MM	INCHES	MM	LB	KG
2 1/4	57	5 5/8	143	6 1/2	165	52	23.0
3 1/4	83	6 1/2	165	7 1/4	184	69	31.3
4 1/4	108	7 5/8	194	8 1/2	216	90	40.8
6 1/4	159	9 5/8	244	11	279	105	47.6
6 5/8	168	10	254	11	279	105	47.6
8 1/4	210	12	305	13 3/4	349	144	65.3
10 1/4	260	14 1/4	362	15	381	256	116.1



# HOLLOW STEM AUGERS

## 2 1/4" - 2 KEY



2 1/4" HOLLOW STEM AUGERS		
ITEM	PART #	DESCRIPTION
	2 KEY (SD)	
1	1350001	DRIVE CAP: 1 1/8" HEX
1	1350000	DRIVE CAP: 1 5/8" HEX
1	1350002	DRIVE CAP: 2" HEX
2	1301025	U-PIN 1 1/8" STANDARD*
2	1301000	U-PIN 1 5/8" STANDARD*
2	1301001	U-PIN 2" STANDARD*
3	1301050	ROD-TO-CAP BOLT
4	1301065	HEX NUT
5	1250051	BUSHING, W/ OUT FLANGE
5	1250052	BUSHING W/ FLANGE
6	1301005	AUGER BOLT
7	1250210	ADAPTER: AW ROD TO DRIVE CAP**
7	1250088	ADAPTER: AWJ ROD TO DRIVE CAP**
7	1250215	ADAPTER: NW ROD TO DRIVE CAP**
7	1250089	ADAPTER: NWJ ROD TO DRIVE CAP**
8	1250220	PIN COUPLING, HEAT-TREATED (REPAIR ONLY)
9	1450000	AUGER SECTION - 5'0 (1.5M)***
10	3050010	AW CENTER ROD - 5'0 (1.5M)
10	3050000	AWJ CENTER ROD - 5'0 (1.5M)
10	2150020	NW CENTER ROD - 5'0 (1.5M)
10	3050020	NWJ CENTER ROD - 5'0 (1.5M)
11	1250225	BOX COUPLING (REPAIR ONLY)
12	1250230	PLUG - 13/16" (29MM) HEX TO AW BOX
12	1250235	PLUG - 13/16" (29MM) HEX TO AWJ BOX
12	1250240	PLUG - 13/16" (29MM) HEX TO NW BOX
12	1250245	PLUG - 13/16" (29MM) HEX TO NWJ BOX
13	1250250	PLUG BOLT
14	1250255	PILOT BIT, 2-PRONG, 13/16" (29MM) HEX
15	---	CUTTERHEAD****

\* Other u-pins available. See page 13.

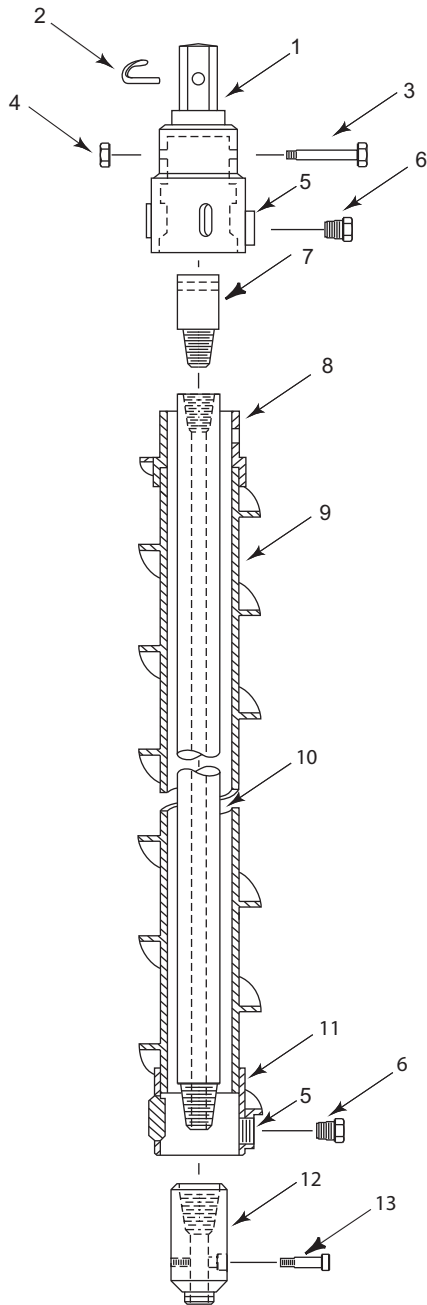
\*\* Other rod-to-cap adapters available upon request.

\*\*\* Additional lengths available.

\*\*\*\* Refer to Cutterhead Section on page 14.

# HOLLOW STEM AUGERS

## 3 1/4" - 2 KEY AND 3 KEY



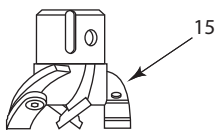
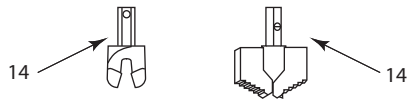
3 1/4" HOLLOW STEM AUGERS				
ITEM	PART #			DESCRIPTION
	2 KEY (SD)	2 KEY (HD)	3 KEY (SD)	
1	1350005	1350028	1350024	DRIVE CAP: 1 5/8" HEX
1	1350035	1350017	1350026	DRIVE CAP: 2" HEX
2	1301025	1301025	1301025	U-PIN 1 1/8" STANDARD*
2	1301000	1301000	1301000	U-PIN 1 5/8" STANDARD*
2	1301001	1301001	1301001	U-PIN 2" STANDARD*
3	1301055	1301055	1301055	ROD-TO-CAP BOLT
4	1301070	1301070	1301070	HEX NUT
5	1250051	1250130	1250305	REPAIR BUSHING W/OUT FLANGE
6	1301005	1301015	1301010	AUGER BOLT
7	1250210	1250210	1250210	ADAPTER: AW ROD TO DRIVE CAP**
7	1250088	1250088	1250088	ADAPTER: AWJ ROD TO DRIVE CAP**
7	1250215	1250215	1250215	ADAPTER: NW ROD TO DRIVE CAP**
7	1250089	1250089	1250089	ADAPTER: NWJ ROD TO DRIVE CAP**
8	1250135	1250260	1250265	PIN COUPLING, HEAT-TREATED (REPAIR ONLY)
9	1450005	1450006	1450015	AUGER SECTION - 5'0 (1.5M)***
10	3050010	3050010	3050010	AW CENTER ROD - 5'0 (1.5M)
10	3050000	3050000	3050000	AWJ CENTER ROD - 5'0 (1.5M)
10	2150020	2150020	2150020	NW CENTER ROD - 5'0 (1.5M)
10	3050020	3050020	3050020	NWJ CENTER ROD - 5'0 (1.5M)
11	1250270	1250275	1250280	BOX COUPLING (REPAIR ONLY)
12	1250285	1250285	1250285	PLUG - 1 1/8" (29MM) HEX TO AW BOX
12	1250290	1250290	1250290	PLUG - 1 1/8" (29MM) HEX TO AWJ BOX
12	1250295	1250295	1250295	PLUG - 1 1/8" (29MM) HEX TO NW BOX
12	1251008	1251008	1251008	PLUG - 1 1/8" (29MM) HEX TO NWJ BOX
13	1250300	1250300	1250300	PLUG BOLT
14	1251010	1251010	1251010	PILOT BIT, 2-PRONG, 1 1/8" (29MM) HEX
14	1250590	1250590	1250590	PILOT BIT, 3-WING, 1 1/8" (29MM) HEX
15	---	---	---	CUTTERHEADS****

\* Other u-pins available. See page 13.

\*\* Other rod-to-cap adapters available upon request.

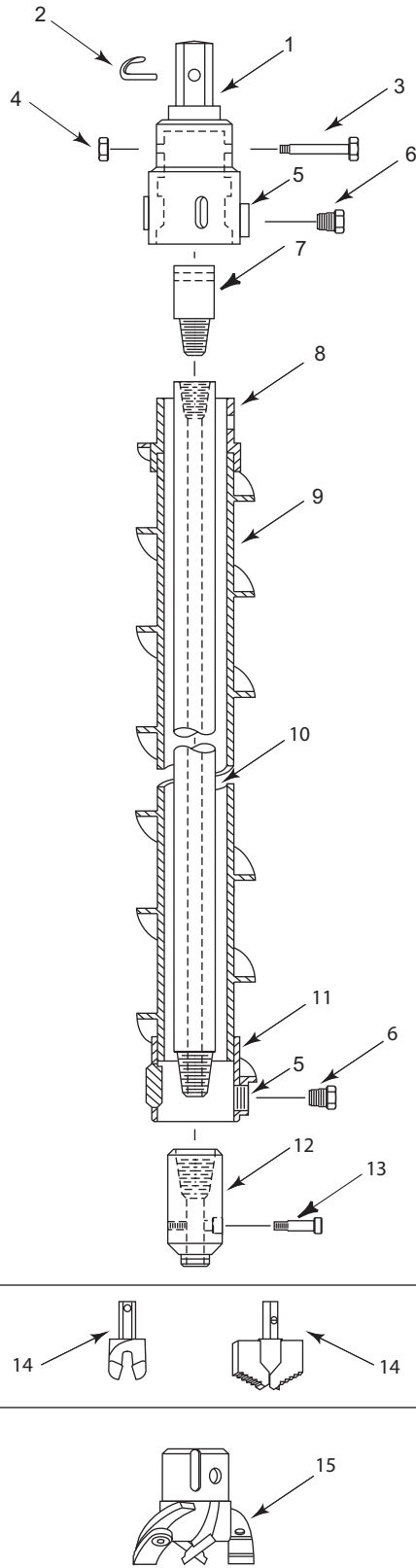
\*\*\* Additional lengths available.

\*\*\*\* Refer to Cutterhead Section on page 14.



# HOLLOW STEM AUGERS

## 4 1/4" - 2 KEY AND 3 KEY



4 1/4" HOLLOW STEM AUGERS				
ITEM	PART #			DESCRIPTION
	2 KEY (SD)	2 KEY (HD)	3 KEY (SD)	
1	1350015	1350022	1350021	DRIVE CAP: 1 5/8" HEX
1	1350003	1350016	1350040	DRIVE CAP: 2" HEX
2	1301025	1301025	1301025	U-PIN 1 1/8" STANDARD*
2	1301000	1301000	1301000	U-PIN 1 5/8" STANDARD*
2	1301001	1301001	1301001	U-PIN 2" STANDARD*
3	1301060	1301060	1301060	ROD-TO-CAP BOLT
4	1301075	1301075	1301075	HEX NUT
5	1250051	1250130	1350305	REPAIR BUSHING
6	1301005	1301015	1301010	AUGER BOLT
7	1250210	1250210	1250210	ADAPTER: AW ROD TO DRIVE CAP**
7	1250088	1250088	1250088	ADAPTER: AWJ ROD TO DRIVE CAP**
7	1250215	1250215	1250215	ADAPTER: NW ROD TO DRIVE CAP**
7	1250089	1250089	1250089	ADAPTER: NWJ ROD TO DRIVE CAP**
8	1251012	1250310	1250315	PIN COUPLING, HEAT-TREATED (REPAIR ONLY)
9	1450010	1450012	1450011	AUGER SECTION - 5'0 (1.5M)***
10	3050010	3050010	3050010	AW CENTER ROD - 5'0 (1.5M)
10	3050000	3050000	3050000	AWJ CENTER ROD - 5'0 (1.5M)
10	2150020	2150020	2150020	NW CENTER ROD - 5'0 (1.5M)
10	3050020	3050020	3050020	NWJ CENTER ROD - 5'0 (1.5M)
11	1251013	1250320	1250325	BOX COUPLING (REPAIR ONLY)
12	1250330	1250330	1250330	PLUG - 1 1/8" (29MM) HEX TO AW BOX
12	1250335	1250335	1250335	PLUG - 1 1/8" (29MM) HEX TO AWJ BOX
12	1250340	1250340	1250340	PLUG - 1 1/8" (29MM) HEX TO NW BOX
12	1251006	1251006	1251006	PLUG - 1 1/8" (29MM) HEX TO NWJ BOX
13	1250345	1250345	1250345	PLUG BOLT
14	1251007	1251007	1251007	PILOT BIT, 2-PRONG, 1 1/8" (29MM) HEX
14	1250595	1250595	1250595	PILOT BIT, 3-WING, 1 1/8" (29MM) HEX
15	---	---	---	CUTTERHEADS****

\* Other u-pins available. See page 13.

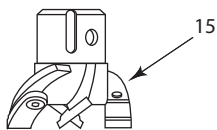
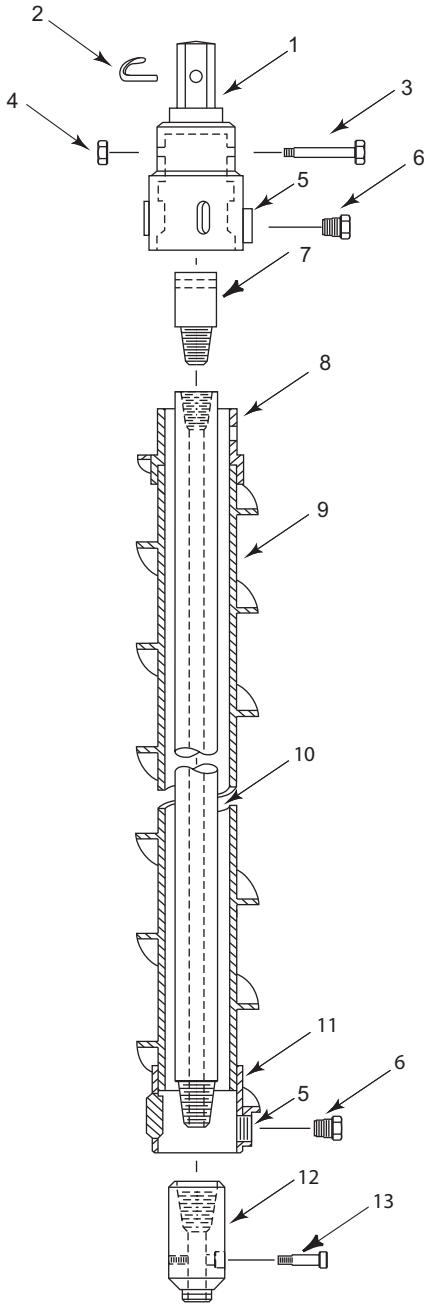
\*\* Other rod-to-cap adapters available upon request.

\*\*\* Additional lengths available.

\*\*\*\* Refer to Cutterhead Section on page 14.

# HOLLOW STEM AUGERS

## 6 1/4" - 2 KEY



6 1/4" HOLLOW STEM AUGERS			
ITEM	PART #		DESCRIPTION
	2 KEY (SD)	2 KEY (HD)	
1	1350018	1350045	DRIVE CAP: 1 5/8" HEX
1	1350030	1350033	DRIVE CAP: 2" HEX
2	1301025	1301025	U-PIN 1 1/8" STANDARD*
2	1301000	1301000	U-PIN 1 5/8" STANDARD*
2	1301001	1301001	U-PIN 2" STANDARD*
3	1301080	1301080	ROD-TO-CAP BOLT
4	1301090	1301090	HEX NUT
5	1250051	1250130	REPAIR BUSHING W/OUT FLANGE
6	1301005	1301015	AUGER BOLT
7	1250210	1250210	ADAPTER: AW ROD TO DRIVE CAP**
7	1250088	1250088	ADAPTER: AWJ ROD TO DRIVE CAP**
7	1250215	1250215	ADAPTER: NW ROD TO DRIVE CAP**
7	1250089	1250089	ADAPTER: NWJ ROD TO DRIVE CAP**
8	1250350	1250355	PIN COUPLING, HEAT-TREATED (REPAIR ONLY)
9	1450030	1450029	AUGER SECTION - 5'0. (1.5M)***
10	3050010	3050010	AW CENTER ROD - 5'0 (1.5M)
10	3050000	3050000	AWJ CENTER ROD - 5'0 (1.5M)
10	2150020	2150020	NW CENTER ROD - 5'0 (1.5M)
10	3050020	3050020	NWJ CENTER ROD - 5'0 (1.5M)
11	1250365	1250370	BOX COUPLING (REPAIR ONLY)
12	1250380	1250380	PLUG - 1 1/8" (29MM) HEX TO AW BOX
12	1250385	1250385	PLUG - 1 1/8" (29MM) HEX TO AWJ BOX
12	1250390	1250390	PLUG - 1 1/8" (29MM) HEX TO NW BOX
12	1250395	1250395	PLUG - 1 1/8" (29MM) HEX TO NWJ BOX
13	1250400	1250400	PLUG BOLT
14	1250405	1250405	PILOT BIT, 2-PRONG, 1 1/8" (29MM) HEX
14	1250580	1250580	PILOT BIT, 3-WING, 1 1/8" (29MM) HEX
15	---	---	CUTTERHEADS****

\* Other u-pins available. See page 13.

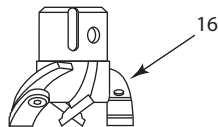
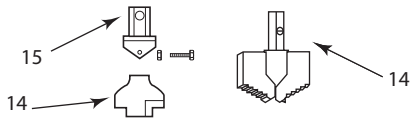
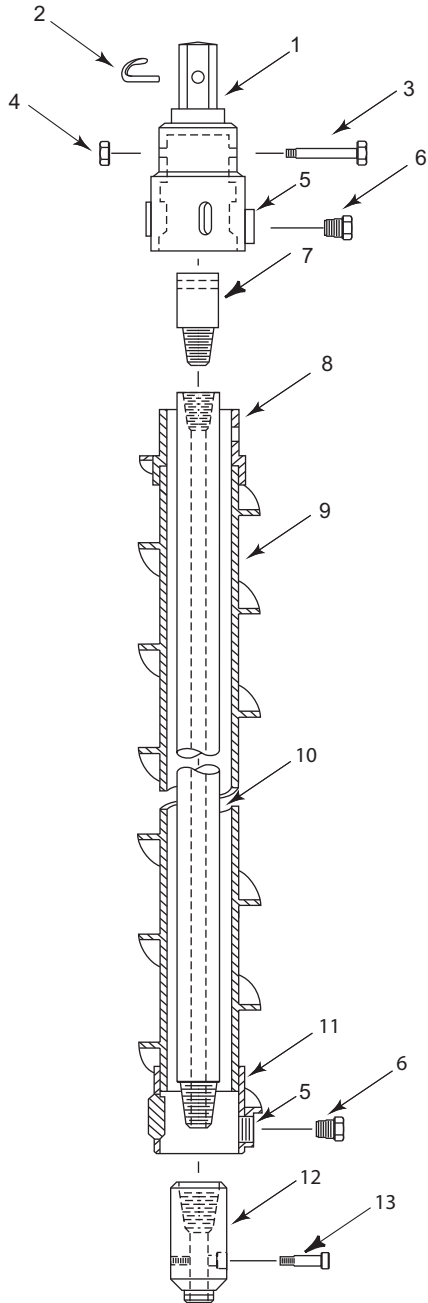
\*\* Other rod-to-cap adapters available upon request.

\*\*\* Additional lengths available.

\*\*\*\* Refer to Cutterhead Section on page 14.

# HOLLOW STEM AUGERS

## 6 5/8" - 3 KEY



6 5/8" HOLLOW STEM AUGERS		
ITEM	PART #	DESCRIPTION
	3 KEY (SD)	
1	1350023	DRIVE CAP: 1 5/8" HEX
1	1350050	DRIVE CAP: 2" HEX
2	1301025	U-PIN 1 1/8" STANDARD*
2	1301000	U-PIN 1 5/8" STANDARD*
2	1301001	U-PIN 2" STANDARD*
3	1301085	ROD-TO-CAP BOLT
4	1301095	HEX NUT
5	1250305	REPAIR BUSHING W/OUT FLANGE
6	1301010	AUGER BOLT
7	1250210	ADAPTER: AW ROD TO DRIVE CAP**
7	1250088	ADAPTER: AWJ ROD TO DRIVE CAP**
7	1250215	ADAPTER: NW ROD TO DRIVE CAP**
7	1250089	ADAPTER: NWJ ROD TO DRIVE CAP**
8	1250360	PIN COUPLING, HEAT-TREATED (REPAIR ONLY)
9	1450031	AUGER SECTION - 5'0. (1.5M)***
10	3050010	AW CENTER ROD - 5'0 (1.5M)
10	3050000	AWJ CENTER ROD - 5'0 (1.5M)
10	2150020	NW CENTER ROD - 5'0 (1.5M),
10	3050020	NWJ CENTER ROD - 5'0 (1.5M)
11	1250375	BOX COUPLING (REPAIR ONLY)
12	1250410	PLUG - 1 1/8" (29MM) HEX TO AW BOX
12	1250415	PLUG - 1 1/8" (29MM) HEX TO AWJ BOX
12	1250420	PLUG - 1 1/8" (29MM) HEX TO NW BOX
12	1250425	PLUG - 1 1/8" (29MM) HEX TO NWJ BOX
13	1250430	PLUG BOLT
14	1250435	PILOT BIT, 2-PRONG, 1 1/8" (29MM) HEX
14	1250585	PILOT BIT, 3-WING, 1 1/8" (29MM) HEX
15	1250440	PILOT BIT SHANK, 1 5/8" (41MM) HEX
16	---	CUTTERHEAD****

\* Other u-pins available. See page 13.

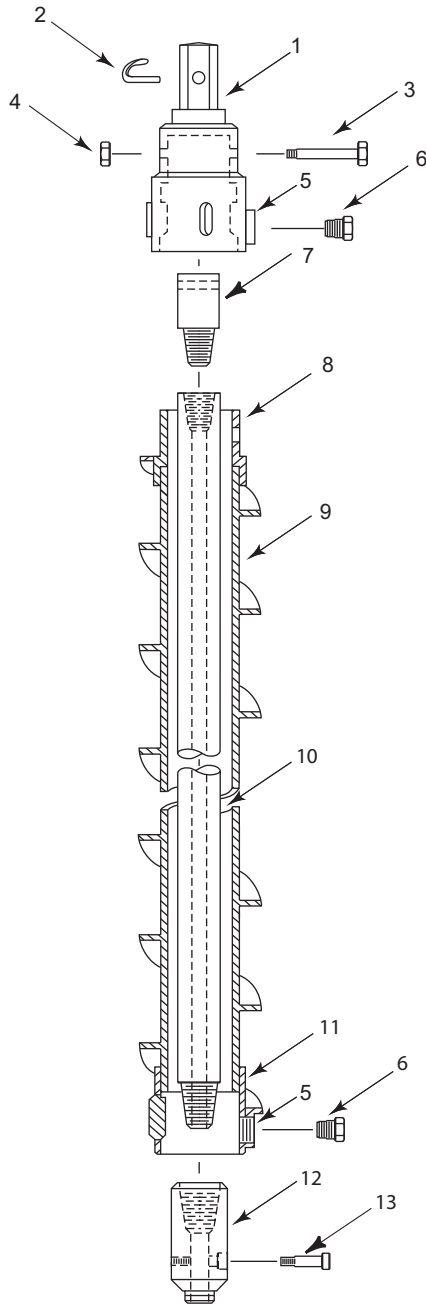
\*\* Other rod-to-cap adapters available upon request.

\*\*\* Additional lengths available.

\*\*\*\* Refer to Cutterhead Section on page 14.

# HOLLOW STEM AUGERS

## 8 1/4" - 2 KEY AND 3 KEY



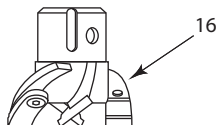
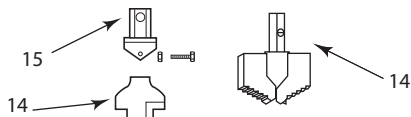
8 1/4" HOLLOW STEM AUGERS			
ITEM	PART #		DESCRIPTION
	2 KEY (HD)	3 KEY (SD)	
1	1350055	1350013	DRIVE CAP: 1 5/8" HEX
1	1350060	1350012	DRIVE CAP: 2" HEX
2	1301025	1301025	U-PIN 1 1/8" STANDARD*
2	1301000	1301000	U-PIN 1 5/8" STANDARD*
2	1301001	1301001	U-PIN 2" STANDARD*
3	1301100	1301100	ROD-TO-CAP BOLT
4	1301105	1301105	HEX NUT
5	1250130	1250305	REPAIR BUSHING W/OUT FLANGE
6	1301016	1301021	AUGER BOLT
7	1250210	1250210	ADAPTER: AW ROD TO DRIVE CAP**
7	1250088	1250088	ADAPTER: AWJ ROD TO DRIVE CAP**
7	1250215	1250215	ADAPTER: NW ROD TO DRIVE CAP**
7	1250089	1250089	ADAPTER: NWJ ROD TO DRIVE CAP**
8	1250450	1250455	PIN COUPLING, HEAT-TREATED (REPAIR ONLY)
9	1450040	1450026	AUGER SECTION - 5'0 (1.5M)***
10	3050010	3050010	AW CENTER ROD - 5'0 (1.5M)
10	3050000	3050000	AWJ CENTER ROD - 5'0 (1.5M)
10	2150020	2150020	NW CENTER ROD - 5'0 (1.5M)
10	3050020	3050020	NWJ CENTER ROD - 5'0 (1.5M)
11	1250465	1250470	BOX COUPLING (REPAIR ONLY)
12	1250475	1250475	PLUG - 1 1/8" (29MM) HEX TO AW BOX
12	1250480	1250480	PLUG - 1 1/8" (29MM) HEX TO AWJ BOX
12	1250485	1250485	PLUG - 1 1/8" (29MM) HEX TO NW BOX
12	1250490	1250490	PLUG - 1 1/8" (29MM) HEX TO NWJ BOX
13	1250495	1250495	PLUG BOLT
14	1250500	1250500	PILOT BIT, 2-PRONG, 1 1/8" (29MM) HEX
14	1250505	1250505	PILOT BIT, 3-WING, 1 1/8" (29MM) HEX
15	1251070	1251070	PILOT BIT SHANK, 1 5/8" (41MM) HEX
16	---	---	CUTTERHEADS****

\* Other u-pins available. See page 13.

\*\* Other rod-to-cap adapters available upon request.

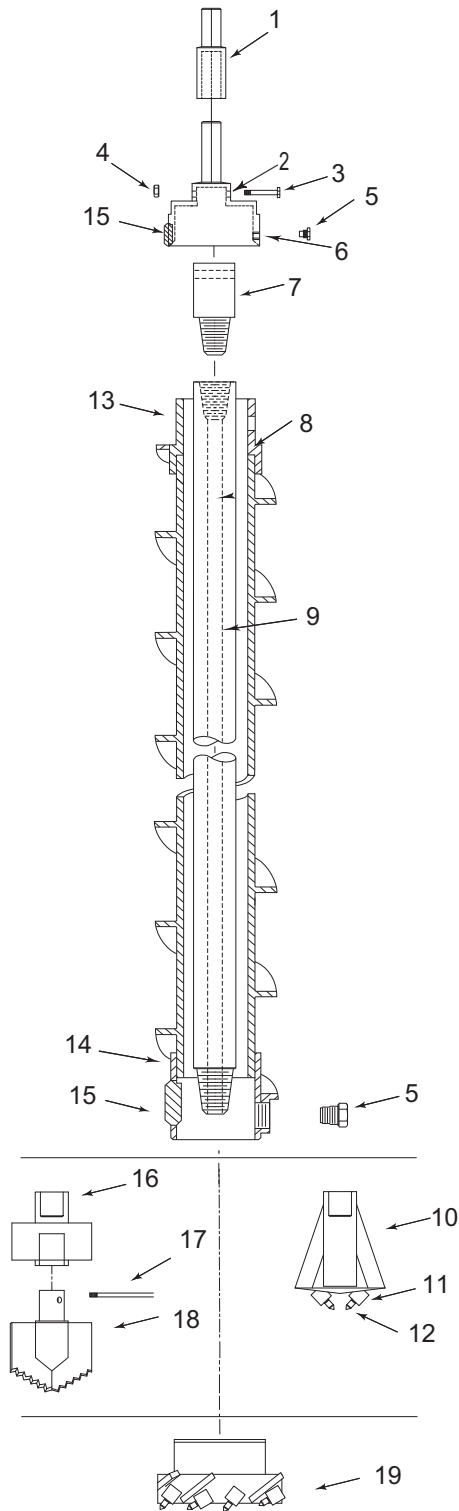
\*\*\* Additional lengths available.

\*\*\*\* Refer to Cutterhead Section on page 14.



# HOLLOW STEM AUGERS

## 10 1/4" - 3 KEY



10 1/4" HOLLOW STEM AUGERS		
ITEM	PART #	DESCRIPTION
	3 KEY (SD)	
1	1250027	ADAPTER AUGER 1 5/8" HEX TO 2" HEX SOCKET
2	1350075	DRIVE CAP 2" HEX
3	1301120	ROD BOLT
4	1301125	ROD NUT
5	1301021	LOCKBOLT-(2 REQ.)
6	1250305	REPAIR BUSHING W/OUT FLANGE
7	1250215	ADAPTER - NW ROD TO DRIVE CAP*
7	1250089	ADAPTER - NWJ ROT TO DRIVE CAP*
8	1450034	AUGER SECTION 5'0" (1.5M)**
9	2150020	NW ROD CENTER ROD 5'0 (1.5M)
	3050020	NWJ ROD CENTER ROD 5'0 (1.5M)
10	1250520	PLUG-PILOT BIT COMBO W/TEN BULLET BITS AND BLOCKS NW ROD
	1250525	PLUG-PILOT BIT COMBO W/TEN BULLET BITS AND BLOCKS NWJ ROD
11	1501015	BIT BLOCK
12	1501010	BULLET BIT
13	1250540	REPAIR PIN
14	1250555	REPAIR BOX
15	1250510	REPAIR KEY
16	1250560	NW ROD BOX CENTER PLUG
	1250565	NWJ ROD BOX CENTER PLUG
17	1250570	PILOT BOLT
18	1250575	3 - WING PILOT BIT
19	---	CUTTERHEADS***

\*Rod-to-cap adapter available upon request.

\*\*Additional lengths available.

\*\*\*Refer to Cutterhead Section on page 14.

# HOLLOW STEM AUGER COMPONENTS

Hole Products offers replacement bolts, bushings, and drive keys to fit standard and heavy duty hollow stem augers, ranging in size from 2 1/4" through 10 1/4" with either a 2 key or 3 key drive system.

AUGER BOLTS							
DESCRIPTION	2 1/4" (57 MM)	3 1/4" (83 MM)	4 1/4" (108 MM)	6 1/4" (155 MM)	6 5/8" (168 MM)	8 1/4" (210 MM)	10 1/4" (260 MM)
2 KEY SD	1301005	1301005	1301005	1301005	N/A	N/A	N/A
2 KEY HD	N/A	1301015	1301015	1301015	N/A	1301016	1301016
3 KEY SD	N/A	1301010	1301010	N/A	1301010	1301021	1301021

BUSHINGS W/ FLANGE							
DESCRIPTION	2 1/4" (57 MM)	3 1/4" (83 MM)	4 1/4" (108 MM)	6 1/4" (155 MM)	6 5/8" (168 MM)	8 1/4" (210 MM)	10 1/4" (260 MM)
2 KEY SD	1250052	1250052	1250052	1250052	N/A	N/A	N/A
3 KEY SD	N/A	1250053	1250053	N/A	1250048	1250895	1250900

BUSHINGS W/ OUT FLANGE							
DESCRIPTION	2 1/4" (57 MM)	3 1/4" (83 MM)	4 1/4" (108 MM)	6 1/4" (155 MM)	6 5/8" (168 MM)	8 1/4" (210 MM)	10 1/4" (260 MM)
2 KEY SD	1250051	1250051	1250051	1250051	N/A	N/A	N/A
2 KEY HD	N/A	1250130	1250130	1250130	N/A	1250130	1250130
3 KEY SD	N/A	1250305	1250305	N/A	1250305	1250305	1250305

DRIVE KEYS							
DESCRIPTION	2 1/4" (57 MM)	3 1/4" (83 MM)	4 1/4" (108 MM)	6 1/4" (155 MM)	6 5/8" (168 MM)	8 1/4" (210 MM)	10 1/4" (260 MM)
2 KEY SD	1250065	1250065	1250065	1250065	N/A	N/A	N/A
2 KEY HD	N/A	1250048	1250048	1250048	N/A	1250048	1250048
3 KEY SD	N/A	1250092	1250092	N/A	1250092	1250094	1250094



## U-PINS

U-pins are available in standard and long styles ranging in hex size from 13/16" through 2". Special sizes are available upon request.

U-PINS			
DESCRIPTION	MEASUREMENTS		PART #
	LENGTH	O.D.	
13/16" HEX - STANDARD	1 9/16"	3/8"	1301027
1 1/8" HEX - STANDARD	2"	1/2"	1301025
1 5/8" HEX - STANDARD	2 3/8"	5/8"	1301000
2" HEX - STANDARD	3 7/16"	5/8"	1301001
1 5/8" HEX - LONG	2 3/4"	5/8"	1301003





## HOLLOW STEM AUGER CUTTERHEADS



Hole Products offers a complete line of tough, quality built, hollow stem auger cutterheads and cutterhead components suitable for drilling in a variety of formations.

Please refer to the specific cutterhead section for details regarding their effectiveness in a particular formation.

Additional cutterhead styles including Diedrich and Acker octagonal style are available upon request.

Please contact your Hole Products representative for additional information and assistance selecting the cutterhead for your specific drilling conditions.

## 5-T CUTTERHEADS

5-T cutterheads feature carbide tipped square finger cutters, which are most effective in hard compacted clay formations.



2 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	1400010	1400020	1400030	1400310	N/A	N/A	N/A
2 KEY HEAVY DUTY CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400026	1400042	1400325	N/A	1400330	1400335
3 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400033	1400031	N/A	1400340	1400345	1400350

NUMBER OF PARTS REQUIRED FOR CUTTERHEADS								
DESCRIPTION	PART #	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
5-T CARBIDE TEETH	1501005	4	4	4	6	6	6	8
5-T BLOCK - ANGLED	1501024	2	2	2	3	3	3	4
5-T BLOCK - STRAIGHT	1501025	2	2	2	3	3	3	4

## BULLET CUTTERHEADS

Bullet cutterheads feature carbide-tipped round cutters, which are most effective in medium to hard formations such as hard clay, sandstone, limestone, gravel, cobbles, and shale.



2 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	1400005	1400015	1400035	1400051	N/A	N/A	N/A
2 KEY HEAVY DUTY CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400027	1400047	1400285	N/A	1400290	N/A
3 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400029	1400044	N/A	1400052	1400300	1400305

NUMBER OF PARTS REQUIRED FOR CUTTERHEADS								
DESCRIPTION	PART #	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
BULLET CUTTERS	1501010	4	4	6	8	8	10	10
BULLET BLOCKS	1501015	4	4	6	8	8	10	10

## SPADE CUTTERHEADS

Spade cutterheads feature carbide-tipped spade cutters, which are most effective in soft to medium formations such as clay, hard sandstone, and light to medium shale.



2 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	1400195	1400200	1400205	1400210	N/A	N/A	N/A
2 KEY HEAVY DUTY CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400225	1400230	1400235	N/A	1400240	N/A
3 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400250	1400255	N/A	1400260	1400265	1400270

NUMBER OF PARTS REQUIRED FOR CUTTERHEADS								
DESCRIPTION	PART #	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
SPADE CUTTERS - C87	1501021	2	3	4	5	5	5	8
SPADE BLOCKS - C87	1501022	2	3	4	5	5	5	8

## BLADE CUTTERHEADS

Blade cutterheads feature carbide-tipped blade cutters, which are most effective in soft to medium/soft formations such as dirt, clay, mild sandstone, and light shale.



2 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	1400115	1400120	1400125	1400130	N/A	N/A	N/A
2 KEY HEAVY DUTY CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400145	1400150	1400155	N/A	1400160	N/A
3 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400170	1400175	N/A	1400180	1400185	1400190

NUMBER OF PARTS REQUIRED FOR CUTTERHEADS								
DESCRIPTION	PART #	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
BLADE CUTTERS	1501030	2	3	4	4	5	6	8
BLADE CUTTER BOLTS	1501035	2	3	4	4	5	6	8

## SPADE/BULLET CUTTERHEADS

Spade/bullet cutterheads are most effective in soft to medium/hard formations such as clay, sandstone, hard shale, and soft limestone.



2 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	1400006	1400083	1400040	1400050	N/A	N/A	N/A

2 KEY HEAVY DUTY CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400080	1400041	1400435	N/A	1400055	N/A

3 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400025	1400060	N/A	1400445	1400056	1400450

NUMBER OF PARTS REQUIRED FOR CUTTERHEADS								
DESCRIPTION	PART #	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
SPADE CUTTERS - C87	1501021	2	2	3	4	4	4	5
SPADE BLOCKS - C87	1501022	2	2	3	4	4	4	5
BULLET CUTTER - C23	1501010	2	2	3	4	4	4	5
BULLET BLOCK - C20	1501015	2	2	3	4	4	4	5

## BLADE/BULLET CUTTERHEADS

Blade/Bullet cutterheads are most effective in soft to medium formations such as clay, hard sandstone, and hard shale.



2 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400355	1400360	1400365	N/A	N/A	N/A

2 KEY HEAVY DUTY CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400380	1400385	1400390	N/A	140400	N/A

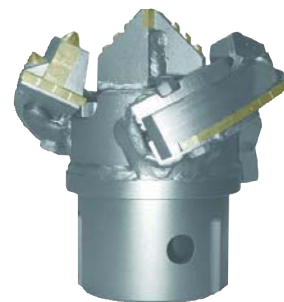
  

3 KEY STANDARD CUTTERHEAD							
DESCRIPTION	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400028	1400017	N/A	1400410	1400415	1400420

NUMBER OF PARTS REQUIRED FOR CUTTERHEADS								
DESCRIPTION	PART #	2 1/4"	3 1/4"	4 1/4"	6 1/4"	6 5/8"	8 1/4"	10 1/4"
BLADE CUTTERS	1501030	N/A	2	3	4	4	5	6
BLADE CUTTER BOLTS	1501035	N/A	2	3	4	4	5	6
BULLET CUTTERS	1501010	N/A	2	3	4	4	5	6
BULLET BLOCKS	1501015	N/A	2	3	4	4	5	6

## G.E.T. CUTTERHEADS

The bulldozer of the cutterhead world and designed to handle the toughest drilling conditions, G.E.T.s feature carbide reinforced cutting surfaces and field replaceable blades. Due to the design, cuttings are fed quickly up the augers, eliminating slough in the bottom of the hole. In addition, G.E.T.s can be fitted with a carbide center bit for fast and accurate starts on concrete and asphalt.

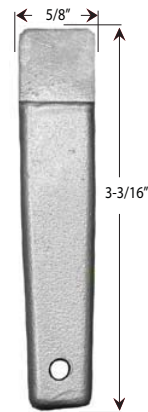
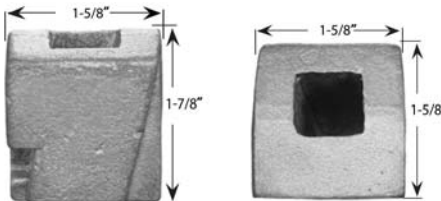
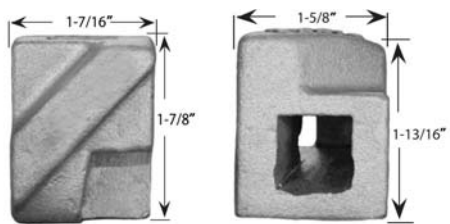
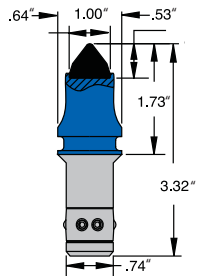
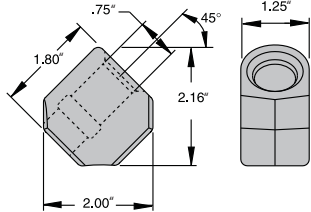
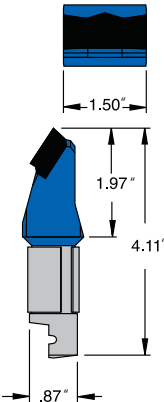
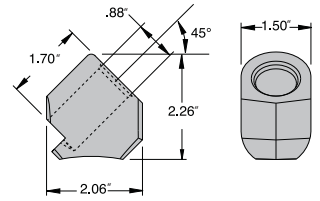
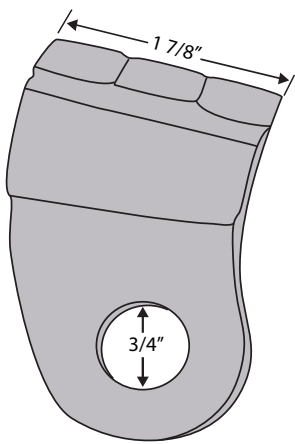


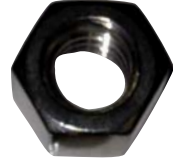



2 KEY STANDARD CUTTERHEAD					
DESCRIPTION	2 1/4"	3 1/4"	3 3/4"	4 1/4"	6 1/4"
COMPLETE CUTTERHEAD UNIT	1400500	1400505	1400530	1400540	1400565
BODY	1400070	1400075	1400074	1400077	1400590
2 KEY HEAVY DUTY CUTTERHEAD					
DESCRIPTION	2 1/4"	3 1/4"	3 3/4"	4 1/4"	6 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400510	1400535	1400545	1400570
BODY	N/A	1400079	1400086	1400078	1400595
3 KEY STANDARD CUTTERHEAD					
DESCRIPTION	2 1/4"	3 1/4"	3 3/4"	4 1/4"	6 5/8"
COMPLETE CUTTERHEAD UNIT	N/A	1400515	-----	1400550	1400575
BODY	N/A	1400081	-----	1400100	1400600
DD CUTTERHEAD					
DESCRIPTION	2 1/4"	3 1/4"	3 3/4"	4 1/4"	6 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400520	-----	1400555	1400580
BODY	N/A	1400072	-----	1400605	1400610
OCTAGONAL CUTTERHEAD					
DESCRIPTION	2 1/4"	3 1/4"	3 3/4"	4 1/4"	6 1/4"
COMPLETE CUTTERHEAD UNIT	N/A	1400525	-----	1400560	1400585
BODY	N/A	1400615	-----	1400620	1400625

NUMBER OF PARTS REQUIRED FOR CUTTERHEADS						
DESCRIPTION	PART #	2 1/4"	3 1/4"	3 3/4"	4 1/4"	6 1/4"
FLIGHT BIT	4750055	2	3	3	3	3
NUT, FLIGHT BIT	1301030	2	3	3	3	3
BOLT, FLIGHT BIT	1301020	2	3	3	3	3

OPTIONAL PARTS REQUIRED FOR CUTTERHEADS					
DESCRIPTION	2 1/4"	3 1/4"	3 3/4"	4 1/4"	6 1/4"
DRIVE PLATE, CENTER BIT	1250190	1250141	1250185	1250118	1250195
CUTTER, CENTER BIT	1501075	1501051	1501049	1501049	1501080
BOLTS, CENTER BIT	1501052	1501052	1501052	1501052	1501052

# REPLACEMENT CUTTERS & BLOCKS

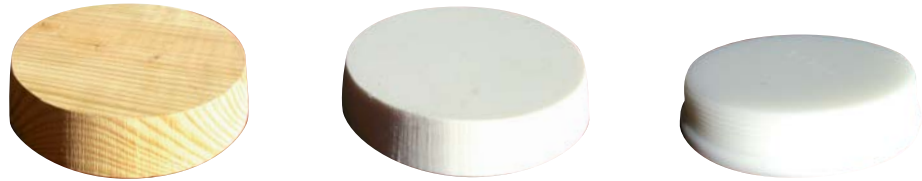
5-T CARBIDE TEETH	5-T BLOCK - ANGLED		5-T BLOCK - STRAIGHT	
#1501005	#1501024		#1501025	
				
BULLET CUTTER - C23	BULLET BLOCK - C20	SPADE CUTTERS - C87	SPADE BLOCK - C87B-I	
#1501010	#1501015	#1501021	#1501022	
				
BLADE CUTTERS	BLADE CUTTER BOLTS	G.E.T. FLIGHT BIT	G.E.T. NUT FLIGHT BIT	G.E.T. BOLT FLIGHT BIT
#1501030	#1501035	#4750055	#1301030	#1301020
				

\*Other sizes and configurations of cutters & blocks available upon request.

# HOLLOW STEM AUGER ACCESSORIES

## AUGER PLUGS

For applications not requiring sampling, a knock out plug can be inserted into the end of the cutterhead to advance the borehole and eliminate the use of drill rods. When the desired hole depth is achieved, the plug may be knocked out of the bottom of the auger string to allow for well installation.



AUGER PLUGS				
AUGER I.D.		WOOD	BEVELLED HDPE	LIPPED HDPE
IN	MM			
2 1/4"	57	1250030	1250625	1250600
3 1/4"	83	1250035	1250005	1250605
4 1/4"	108	1250040	1250010	1250009
6 1/4"	159	1250045	1250015	1250016
6 5/8"	168	1250046	1250153	1250610
8 1/4"	210	1250021	1250020	1250615
10 1/4"	260	1250008	1250160	1250620

## FLEX PLUGS

Flex Plugs can be used to prevent water bearing sands from entering the hollow stem auger I.D. during drilling, while continuing to allow for the sampling tube to pass through.

FLEX PLUGS		
AUGER I.D.		PART #
IN	MM	
2 1/4"	57	1250109
3 1/4"	83	1250110
4 1/4"	108	1250071
6 1/4"	155	1250073
6 5/8"	168	1250630



## AUGER FORKS

Auger forks are used to temporarily support hollow stem augers during removal of the drill string. Designs may vary from photo.

AUGER FORKS		
O.D		PART #
IN	MM	
2 1/4"	57	1250085
3 1/4"	83	1250095
4 1/4"	108	1250096
6 1/4"	159	1250635
6 5/8"	168	1250106
8 1/4"	210	1250080
10 1/4"	260	1250640

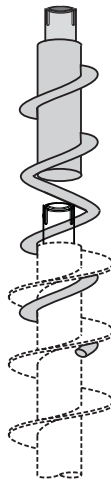


## AUGER RETRIEVERS

Auger retrievers are used for recovering hollow stem augers lost down the hole.

Outside type auger retrievers are designed to wrap around hollow stem augers and grasp the auger flights.

Internal type auger taps available on request.



## ADJUSTABLE HEX EXTENSIONS

Designed to extend augers, hex extension rods are used to compensate for the drill base height above the ground. Hex extension are adjustable from 24" through 36".



AUGER RETRIEVERS			
I.D.*		2 KEY SD**	3 KEY SD**
IN	MM		
2 1/4"	57	1250122	1250670
3 1/4"	83	1250645	1251020
4 1/4"	108	1250650	1250675
6 1/4"	159	1251005	N/A
6 5/8"	168	N/A	1250685
8 1/4"	210	1250660	1250690
10 1/4"	260	-----	1250695

\*Sizes identified by the auger I.D.

\*\*HD auger retrievers available on request.

ADJUSTABLE HEX EXTENSIONS		
HEX		PART #
IN	MM	
1 1/8"	29	4050032
1 5/8"	41	4050030
2"	51	4050031



## AUGER HOOKS

Auger Hooks fit into the lock bolt hole of the Hollow Stem Auger. They provide a fast and easy method for handling augers.



AUGER HOOKS*	
DESCRIPTION	PART #
AUGER HOOK	5160035

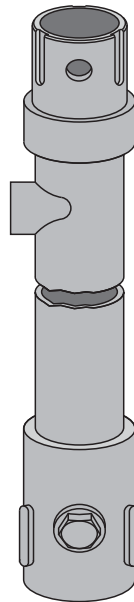
*\*Not designed for pulling augers.*

## WASH TEE

Used for mud rotary drilling, the hollow stem auger wash tee simplifies the recovery of circulation fluid by providing a return port directly to the recirculation tank. Wash tee tool joints match auger tools joints. Sizes are identified by hollow stem auger I.D.

Wash tees are available to fit all hollow stem augers offered at Hole Products.

Please contact your Hole Products representative for ordering details.

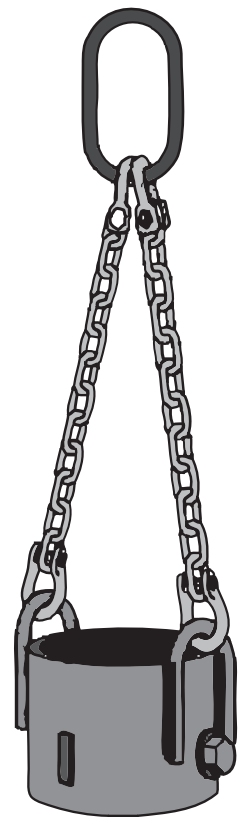


## HOISTING ASSEMBLY

Hollow stem auger hoisting assemblies are used to pull more than one hollow stem auger section at a time utilizing the rigs main hoist. During well installation, this allows the driller to pull and back fill more than five feet at a time.

Hoisting assemblies are available to fit all hollow stem augers offered at Hole Products.

Please contact your Hole Products representative for ordering details.



## CONTINUOUS FLIGHT AUGERS



### Overview:

Solid flight augers are commonly used in the mining, geotechnical, and construction drilling markets. When rotated into the ground, the continuous auger flights convey the material to the surface where they can be analyzed as necessary. Additional auger sections are connected to one another using a hex style coupling and u-pin to advance the drill string to the desired depth. In harder ground formations, the hole may remain open after the augers are removed, thus allowing work to commence inside the open hole.

### Drilling:

Continuous flight augers are combined with a cutterhead to advance the auger string into the ground. The cutterhead is designed to shave away at the formation, while the flight augers convey the material to the surface. The cutterhead is attached to the flight auger with a standard shank and socket connection, and held in place with a u-pin. When the desired hole depth is achieved, the auger string is simply rotated out of the hole.

# CONTINUOUS FLIGHT AUGERS

Hole Products offers rugged continuous flight augers in five foot lengths (custom and meter lengths available), sizes ranging from 2 1/2" through 12" (special sizes available) and with hex sizes 13/16", 1 1/8" and 1 5/8". **Continuous flight augers are identified by the hole size.**

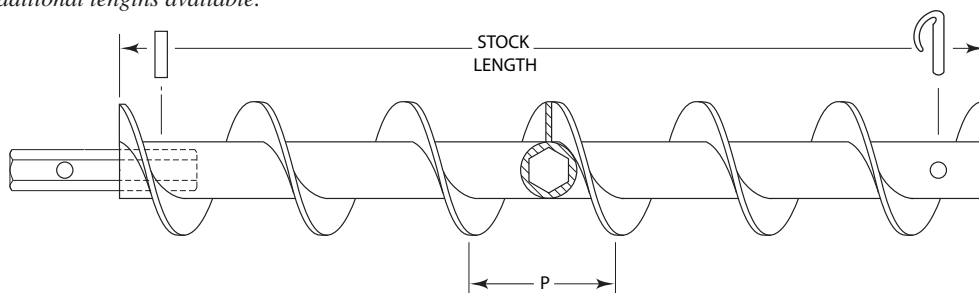
All continuous flight augers are manufactured using the highest quality steels and feature hard faced flight edges to ensure performance and longevity in even the most demanding drilling conditions.

Continuous flight auger sections feature field replaceable hex shanks and come standard with a u-pin.

Please contact your Hole Products representative for additional details and availability of custom auger sizes and lengths.

HEX CONTINUOUS FLIGHT AUGERS												
HOLE SIZE		AUGER DIAMETER		HEX CONN.		PITCH (P)		STOCK LENGTH		STOCK WEIGHT		PART #
IN	MM	IN	MM	IN	MM	IN	MM	FT	M	LB	KG	
2 1/2"	64	2 3/8"	60	13/16"	21	2"	51	5'	1.5	18	8.2	1550012
3"	76	2 5/8"	67	13/16"	21	2"	51	5'	1.5	22	10.0	1550020
3 1/2"	89	3 1/4"	83	1 1/8"	29	3 1/3"	85	5'	1.5	30	13.6	1550003
4 1/2"	114	4"	102	1 1/8"	29	3 1/3"	85	5'	1.5	34	15.4	1550006
4 1/2"	114	4"	102	1 5/8"	41	3 1/3"	85	5'	1.5	54	24.5	1550005
5"	127	4 1/2"	114	1 1/8"	29	4"	102	5'	1.5	36	16.3	1550115
5"	127	4 1/2"	114	1 5/8"	41	4"	102	5'	1.5	54	24.5	1550001
6"	152	5 1/2"	140	1 1/8"	29	5"	127	5'	1.5	40	18.1	1550030
6"	152	5 1/2"	140	1 5/8"	41	5"	127	5'	1.5	58	26.3	1550007
7"	178	6"	152	1 5/8"	41	5"	127	5'	1.5	64	29.0	N/A
8"	203	7"	178	1 5/8"	41	7"	178	5'	1.5	72	32.7	1550040
10"	254	8 1/2"	225	1 5/8"	41	7"	178	5'	1.5	---	---	1550045
12"	305	10"	254	1 5/8"	41	8"	203	5'	1.5	---	---	1550015

Note: Additional lengths available.



## CONTINUOUS FLIGHT AUGER COMPONENTS

Repair shanks allow for replacement of just the shank, versus replacing the entire auger. Shanks, groove pins, and u-pins are manufactured using cold drawn 4140 steel and are heat treated to ensure durability. Weldable repair shanks and sockets are available on request.

CONTINUOUS FLIGHT AUGER COMPONENTS				
ITEM #	DESCRIPTION	HEX SIZE		PART #
		IN	MM	
1	U-PIN	13/16"	21	1301027
1	U-PIN	1 1/8"	29	1301025
1	U-PIN	1 5/8"	41	1301000
2	REPAIR SHANK	13/16"	21	1250700
2	REPAIR SHANK	1 1/8"	29	1250705
2	REPAIR SHANK	1 5/8"	41	1250086
3	GROOVE PIN	13/16"	21	1250710
3	GROOVE PIN	1 1/8"	29	1250715
3	GROOVE PIN	1 5/8"	41	1250720



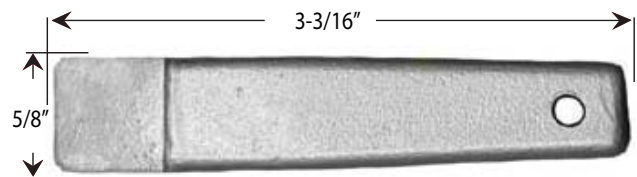
## FINGER BIT CUTTERHEAD

Finger bit cutterheads come standard with tungsten carbide bits and are suitable for abrasive conditions and light to moderate soil formations such as silt, sand, fine gravel, and shale. **Cutterhead sizes are identified by the hole size, not the actual flight diameter.**



COMPLETE FINGER BIT CUTTERHEAD								
HEX CONN.	HOLE SIZE							
	3 1/2"	4 1/2"	5"	6"	7"	8"	10"	12"
1 1/8" HEX	1400018	1400002	1400004	1400640	-----	-----	-----	-----
1 5/8" HEX	-----	1400000	1400011	1400680	1400690	1400685	1400695	1400700
2" HEX	-----	-----	-----	1400094	-----	1400735	1400740	1400745

REPLACEMENT FINGER BIT	
DESCRIPTION	PART #
STANDARD 5T BIT	1501005



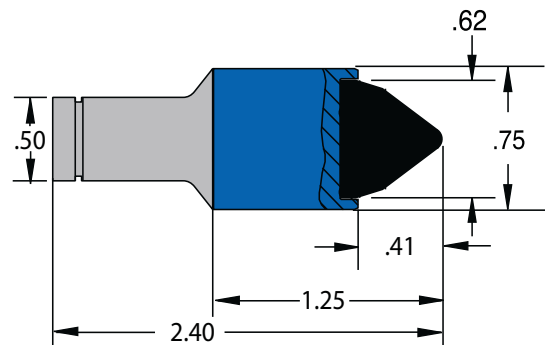
## BULLDOG CUTTERHEAD

Stong, durable multi-purpose auger head used in a wide range of drilling applications. Bits are designed to revolve during the cutting action for a more uniform wear pattern and longer performance. They are recommended for abrasive conditions and difficult hard formations. **Cutterhead sizes are identified by the hole size, not the actual flight diameter.**



COMPLETE BULLDOG CUTTERHEAD		
HEX CONN.	HOLE SIZE	
	4 1/2"	6"
1 1/8" HEX	1400014	1400084
1 5/8" HEX	1400001	1400085
2" HEX	-----	1400087
NO OF BITS / HEAD	6	8

REPLACEMENT BIT	
DESCRIPTION	PART #
CARBIDE INSERT BIT	1501050



## FISHTAIL CUTTERHEAD

Fishtail cutterheads are designed for drilling straight holes through semi-consolidated formations including sand, silt, gravel, and clay. Complete assemblies include bit and shank. Replacement bits and shanks are available. **Cutterhead sizes are identified by the hole size, not the actual flight diameter.**



COMPLETE FISHTAIL CUTTERHEAD W/ STANDARD TIP										
HEX CONN.	HOLE SIZE									
	2 1/2"	3"	3 1/2"	4 1/2"	5"	6"	7"	8"	10"	12"
13/16" HEX	1400790	1400795	-----	-----	-----	-----	-----	-----	-----	-----
1 1/8" HEX	1400750	1400755	1250163	1250101	1400760	1400765	-----	-----	-----	-----
1 5/8" HEX	-----	-----	-----	1400805	1400810	1400815	1400820	1400825	1400830	1400835
2" HEX	-----	-----	-----	-----	-----	1400865	-----	1400875	1400880	1400885

STANDARD TIP - BIT ONLY										
HOLE SIZE	2 1/2"	3"	3 1/2"	4 1/2"	5"	6"	7"	8"	10"	12"
PART #	1251025	1251030	1251035	1250101	1251040	1251045	1251050	1251055	1251060	1251065

CARBIDE TIP - BIT ONLY										
HOLE SIZE	2 1/2"	3"	3 1/2"	4 1/2"	5"	6"	7"	8"	10"	12"
PART #	1250725	1250730	1250108	1250055	1250735	1250167	1250740	250028	1250745	1250750

SHANK ONLY				
HEX	13/16"	1 1/8"	1 5/8"	2"
PART #	1250755	1250760	1250765	1250770

## MINING BIT

Tungsten carbide insert bit prongs maximize penetration and minimize machine load. Bits are recommended for medium hard non-uniform formations. Bits perform well in small bore horizontal or vertical holes. **Bit sizes are identified by the hole size, not the actual flight diameter.**



COMPLETE MINING BIT CUTTERHEAD				
HEX CONN.	HOLE SIZE			
	2"	2 1/2"	3"	3 1/2"
13/16" HEX	1250255	1400012	1250261	1250263
1 1/8" HEX	-----	-----	1250101	1250258

# CONTINUOUS FLIGHT AUGER ACCESSORIES

## AUGER FORKS

Auger forks are used to temporarily support continuous flight augers during removal of the drill string. Designs may vary from photo.

CONTINUOUS FLIGHT AUGER FORKS		
I.D.		PART #
IN	MM	
3"	76	1250775
4"	102	1250081
4 1/2"	114	1250780
6"	152	1250785
8"	203	1250131



## HOISTING CAPS

Auger hoisting caps are used to pull more than one continuous flight auger section at a time using the rigs main hoist.

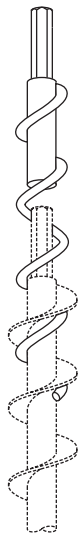


CONTINUOUS FLIGHT HOISTING CAPS		
HEX		PART #
IN	MM	
13/16"	21	5050115
1 1/8"	29	5050036
1 5/8"	41	5050035
2"	51	5050037

## AUGER RETRIEVERS

Auger retrievers are used for recovering continuous flight augers lost down the hole.

Outside type auger retrievers are designed to wrap around augers and grasp the auger flights. **Sizes are identified by the hole size.**



CONTINUOUS FLIGHT AUGER RETRIEVERS			
HEX		HOLE SIZE	PART #
IN	MM		
13/16"	21	2 1/2"	1550055
13/16"	21	3"	1550060
1 1/8"	29	3 1/2"	1550065
1 1/8"	29	4 1/2"	1550070
1 1/8"	29	5"	1550075
1 1/8"	29	6"	1550080
1 5/8"	41	4 1/2"	1550008
1 5/8"	41	5"	1550085
1 5/8"	41	6"	1550090
1 5/8"	41	7"	1550095
1 5/8"	41	8"	1550100
1 5/8"	41	10"	1550105
1 5/8"	41	12"	1550110

## OTHER ACCESSORIES

### AUGER ADAPTERS

Hole Products offers a large selection of quality auger adapters in hex sizes ranging from 13/16" through 2". Additional adapters including hex x round bar and custom designs are available on request.



HEX PIN X HEX BOX					
PIN		BOX			
IN	MM	13/16"	1 1/8"	1 5/8"	2"
1 1/8"	29	1250790	1250805	1250815	1250820
1 5/8"	41	1250795	1250075	1250076	1250027
2"	51	1250800	1250810	1250166	1250825

HEX BOX X HEX BOX					
BOX		BOX			
IN	MM	13/16"	1 1/8"	1 5/8"	2"
1 1/8"	29	1250830	1250840	1250855	1250870
1 5/8"	41	1250144	1250845	1250860	1251015
2"	51	1250835	1250850	1250865	1250875

### HAMMERS

Hole Products offers a variety of hammers for use on auger drilling operations.

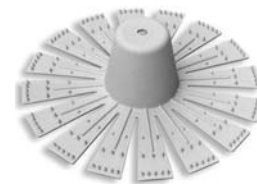
HAMMERS	
DESCRIPTION	PART #
ROCK PICK HAMMER	1250099
DRILLING HAMMER 2 LB	1250104
DEAD BLOW HAMMER	1250107
DRIVE PIN HAMMER	1250165



### STEMMING PLUGS

Hole Products offers a variety of tough, durable, stemming plugs fabricated of high density polyethylene. Stemming plugs provide an easy way of pre-sealing and/or plugging auger, diamond core, and blast hole borings.

STEMMING PLUG	
DIAMETER OF PLUG	PART #
3" - 4 1/2"	1250132
8"	1250120
13"	1250124







# CORING TOOLS

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## CORE DRILLING TOOLS



Diamond Core Drilling is a widely recognized method of rock drilling in both the mineral exploration and geotechnical drilling markets. The main purpose of core drilling is to obtain a sample (core) of the subsurface formation being drilled, which can be analyzed to determine the rock structure, hardness, mineral composition, etc.

A very efficient coring technique called wireline coring, makes it possible for the core sample to be retrieved from the bottom of the hole without removing the entire rod string. To retrieve the core sample, an overshot is lowered inside the drill rods on a wireline cable until it latches onto the spearhead point of the core barrel head assembly. Positive latching lifting dogs securely attach, and the core barrel inner tube containing the core sample is retracted to the surface using the wireline cable and winch.

Conventional coring is another method of drilling and acquiring rock samples. To retrieve the core sample in conventional coring, the entire rod string and core barrel assembly has to be removed from the hole. Conventional coring is much more time consuming than wireline coring, as each rod has to be removed from the hole individually.

Hole Products offers a complete line of quality wireline and conventional core drilling tools including core recovery systems, rods and casing, diamond products, components, accessories, and much more. In addition, our sales and support team has the knowledge and experience necessary to provide troubleshooting and onsite tooling solutions.

Please contact your Hole Products representative for additional details.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*



## V-core

Quality, innovative core tooling designed for safe and productive drilling. The V-Core line of industry compatible tooling includes core retrieval systems, diamond products, rods and casing, swivels and spares, core boxes, accessories, and much more.

## V-latch

The V-Latch head assembly combines the proven technology of the spring latch system with an improved mechanical latch retraction feature and latch design.

Worried about conversion to V-Latch? Don't be. Conversion is fast, easy, and inexpensive.

### **Mechanical Latch Retraction**

Reducing the number of stuck tubes and time consuming rod trips.

### **Independently Operating Latches**

Reducing the possibility of a mismatch.

### **Wider and Heavier Latches**

Reducing maintenance time and increasing locking strength.

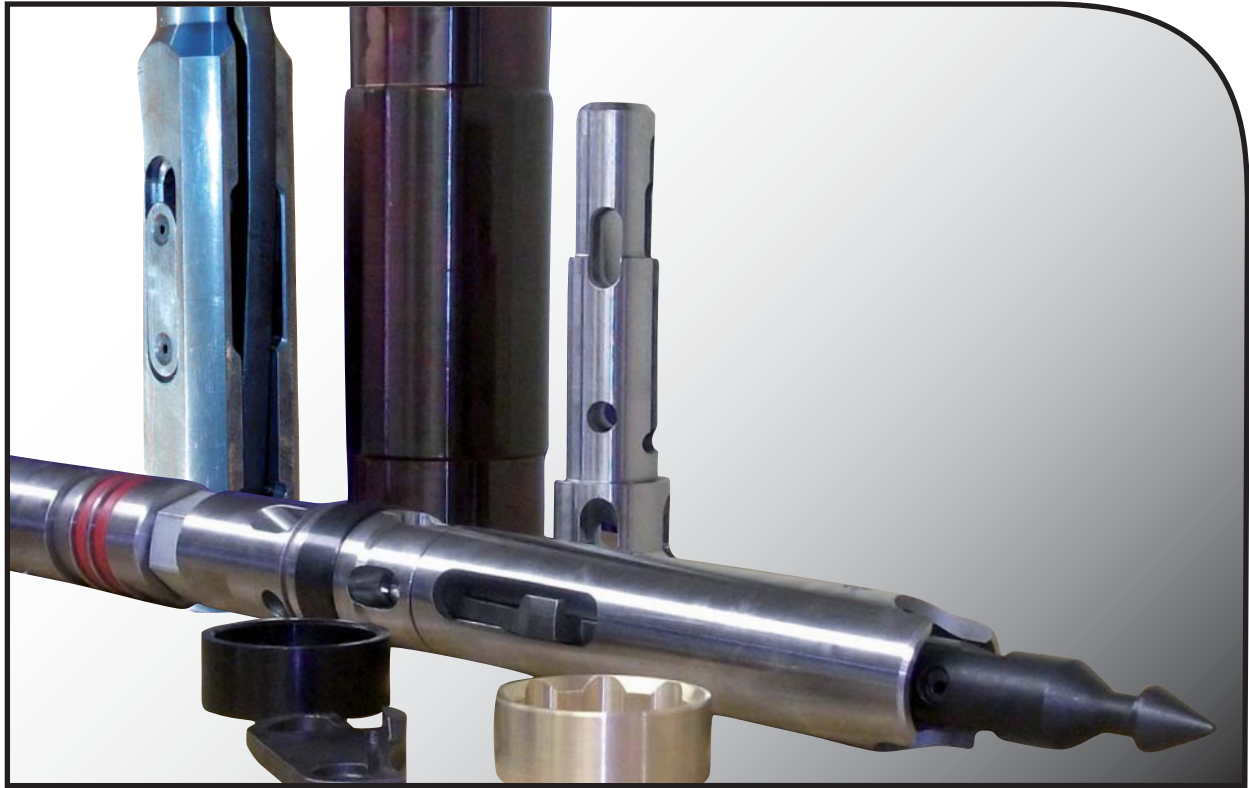
## V-lock

The V-Lock overshoot is designed for safe, reliable and fast core barrel retrieval. V-Lock overshoots are available in sizes B to P for above ground wireline coring systems.

### **Automatic Locking Feature**

The heavy duty lifting dogs automatically retract into position when the core barrel assembly is attached and lifted. No extra manual steps are required, reducing the potential for human error.

## CORING SYSTEMS



Hole Products' coring systems are available for wireline and conventional coring and offered in all standard DCDMA sizes. Optional thin kerf and triple tube designs are available to optimize productivity and core recovery in various formations. Whether you are drilling in competent, fractured or overburden formations, we have the coring system specifically designed to work for you.

**Standard** - Our standard coring system is recommended for drilling in most common coring conditions. The standard system is offered in both wireline (WL) and conventional (V) and available in DCDMA sizes B, N, H and P (call for A size systems).

**Thin Kerf** - The thin kerf system in both wireline (2WL) and conventional (V2), are designed to allow for a larger core sample while maintaining the same hole size. The narrower kerf of the system maximizes core recovery without sacrificing tooling strength. The standard thin kerf system is available in N size (call for additional sizes).

**Triple Tube** – Our triple barrels incorporate the use of a split liner to enable sample recovery when drilling soft or highly fractured formations. The triple tube system is offered in both wireline (3WL) and conventional (V3) and available in N, H and P sizes.

Please contact your Hole Products representative for additional details.

# HEAD ASSEMBLIES



Hole Products' offers V-latch and spring latch head assemblies in all standard DCDMA sizes. V-latch heads are available for wireline coring systems. Spring latch heads are available for wireline and conventional systems.

## V-LATCH

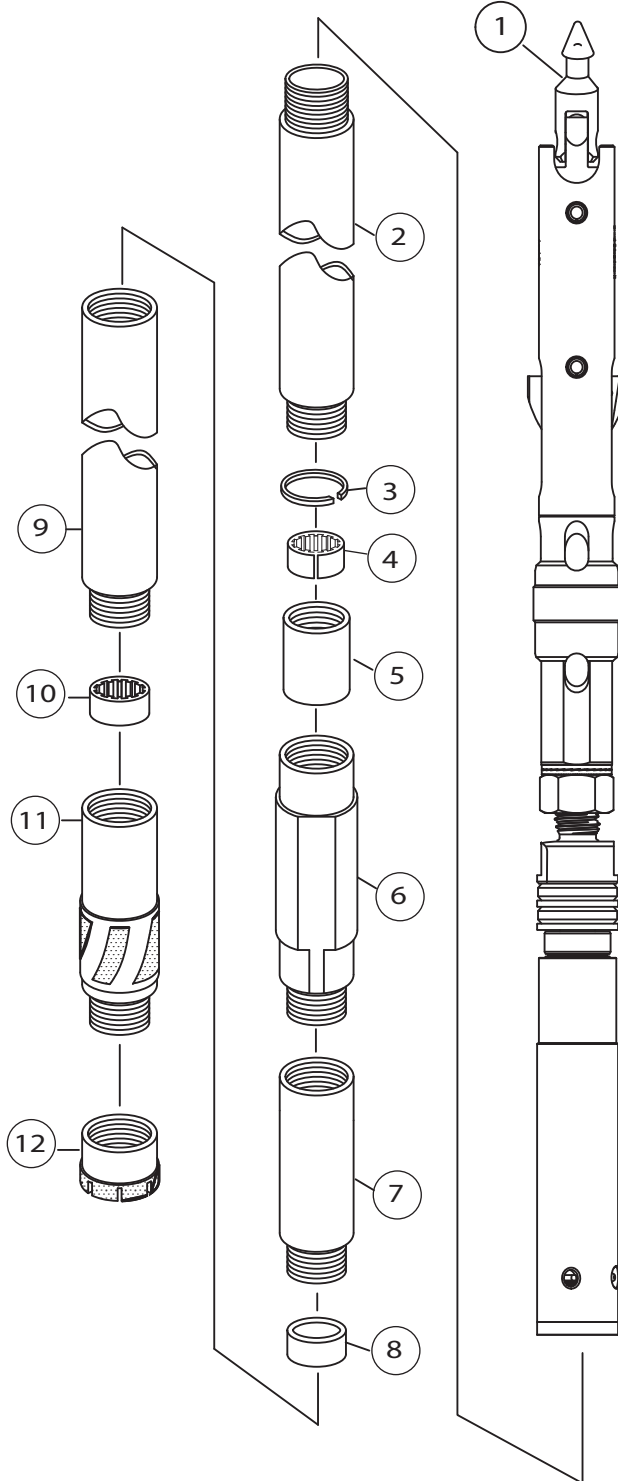
V-latch wireline head assemblies incorporate the proven technology of the spring latch head with wider and heavier latches. Wider and heavier latches mean less maintenance time and better locking strength. The mechanical latch retraction feature of the V-latch head assembly increases the power at which the latches retract. The system does not rely on the latch retracting case to retract the latches thus reducing the chance of a stuck tube.

Worried about conversion from other latch style assemblies? Don't be. Heads can be converted to V-latch in a few simple steps and at a minimal cost.

## SPRING LATCH

The spring latch head assembly is the veteran of wireline core barrel heads. This field proven design has been used and abused by drillers for decades. Modifications to this head have been made by Hole Products to improve the overall performance. These modifications include a pivoting spear point, core blockage indicator, landing indicator, and fluid retention valves. However, the latch design has remained unchanged.

# BWL V-LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	1700203	CORE BARREL ASSEMBLY 5FT
1-10	1700201	CORE BARREL ASSEMBLY 5FT W/ CHROME PLATED INNER TUBE
1-10	1700204	CORE BARREL ASSEMBLY 10FT
1-10	1700202	CORE BARREL ASSEMBLY 10FT W/ CHROME PLATED INNER TUBE

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	1700365	INNER TUBE ASSEMBLY 5FT
1-5	1700366	INNER TUBE ASSEMBLY 5FT W/ CHROME PLATED INNER TUBE
1-5	1700370	INNER TUBE ASSEMBLY 10FT
1-5	1700371	INNER TUBE ASSEMBLY 10FT W/ CHROME PLATED INNER TUBE

## CORE BARREL PARTS

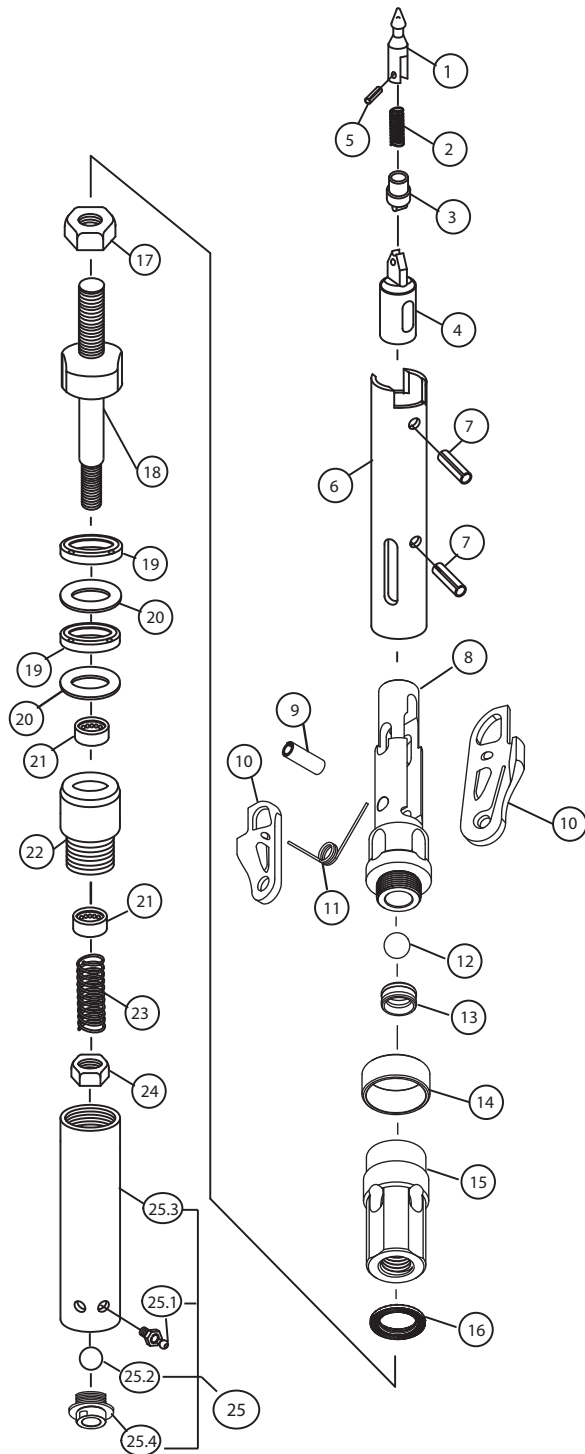
ITEM	PART #	DESCRIPTION
1	1700052	HEAD ASSEMBLY
2	1700065	INNER TUBE 5FT
	1700070	INNER TUBE 10FT
	1700066	INNER TUBE 5FT CHROME PLATED
	1700071	INNER TUBE 10FT CHROME PLATED
3	1700025	STOP RING
4	1700015	CORE LIFTER, FLUTED*
5	1700020	CORE LIFTER CASE
6	1700045	LOCKING COUPLING, FULL HOLE**
7	1700040	ADAPTER COUPLING
8	1700035	LANDING RING
9	1700001	OUTER TUBE 5FT
	1700002	OUTER TUBE 10FT
10	1700030	BRASS INNER TUBE STABILIZER RING
11	----	REAMING SHELL ***
12	----	CORE BIT ***

\*Additional options available. Refer to page 57 for details.

\*\*Additional options available. Refer to page 58 for details.

\*\*\* Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# BWL V-LATCH Head Assembly



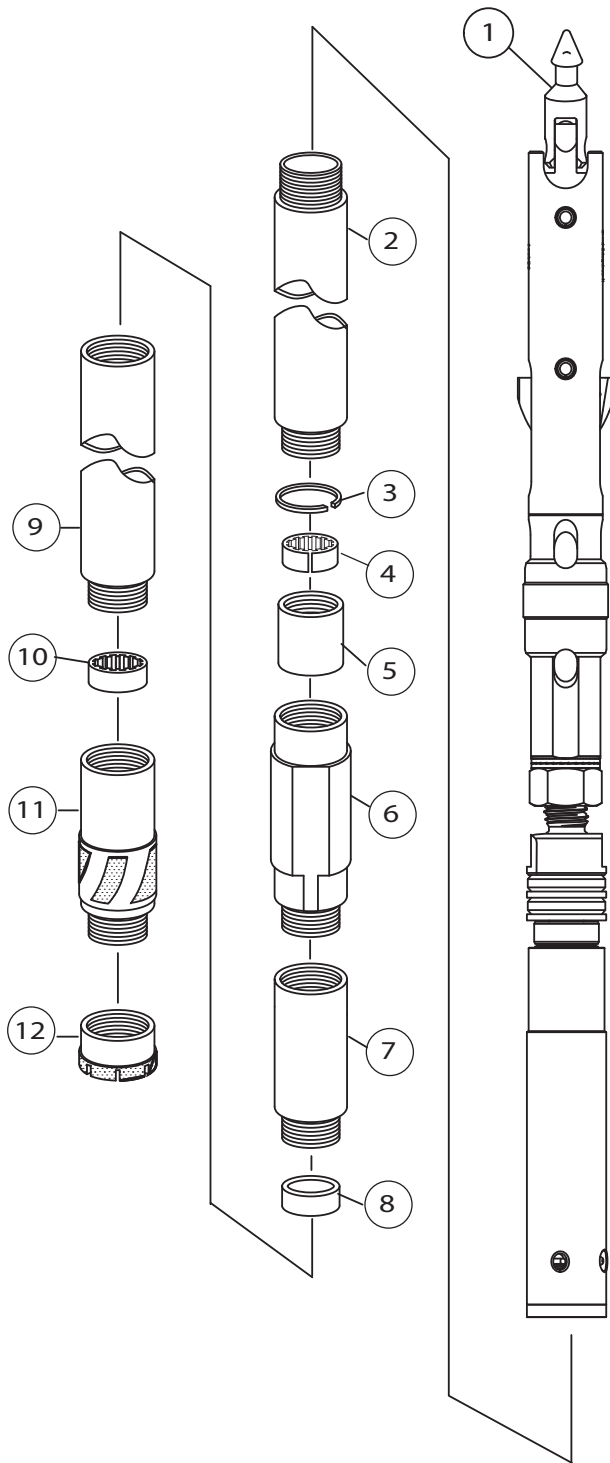
HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-25	1700052	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1700100	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1700105	LATCH RETRACTING CASE
7	1700225	SPRING PIN, 3/8" X 1 3/4" (QTY. 2)
8	1700130	UPPER LATCH BODY
9	1700231	COILED SPRING PIN, 3/8" X 1 1/4"
10	1700235	V-LATCH (QTY. 2)
11	1700240	LATCH SPRING
12	1700270	STAINLESS STEEL BALL, 22MM
13	1700140	LANDING INDICATOR BUSHING
14	1700210	LANDING SHOULDER
15	1700205	LOWER LATCH BODY
16	1700375	LOCK WASHER
17	1700250	HEX NUT
18	1700160	SPINDLE
19	1700165	SHUT-OFF VALVE, HARD (QTY. 2)*
20	1700170	SHUT-OFF WASHER (QTY. 2)
21	1700255	THRUST / HANGER BEARING (QTY. 2)
22	1700180	SPINDLE BUSHING
23	1700260	INNER TUBE COMPRESSION SPRING
24	1700190	SELF LOCKING NUT
25	1700265	INNER TUBE CAP ASSEMBLY (ITEMS: 25.1-25.4)
25.1	1950125	HYDRAULIC GREASE FITTING
25.2	1700270	STAINLESS STEEL BALL
25.3	1700195	INNER TUBE CAP
25.4	1700200	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.



# NWL V-LATCH Core Barrel Assembly



### COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	1950405	CORE BARREL ASSEMBLY 5FT
1-10	1950410	CORE BARREL ASSEMBLY 10FT

### COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	1950445	INNER TUBE ASSEMBLY 5FT
1-5	1950450	INNER TUBE ASSEMBLY 10FT

### CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	1950143	HEAD ASSEMBLY
2	1950020	INNER TUBE 5FT*
	1950025	INNER TUBE 10FT*
3	1950010	STOP RING
4	1950005	CORE LIFTER, FLUTED**
5	1950000	CORE LIFTER CASE
6	1950105	LOCKING COUPLING, FULL HOLE***
7	1950110	ADAPTER COUPLING
8	1950115	LANDING RING
9	1950030	OUTER TUBE 5FT
	1950035	OUTER TUBE 10FT
10	1950120	BRASS INNER TUBE STABILIZER RING
11	----	REAMING SHELL****
12	----	CORE BIT****

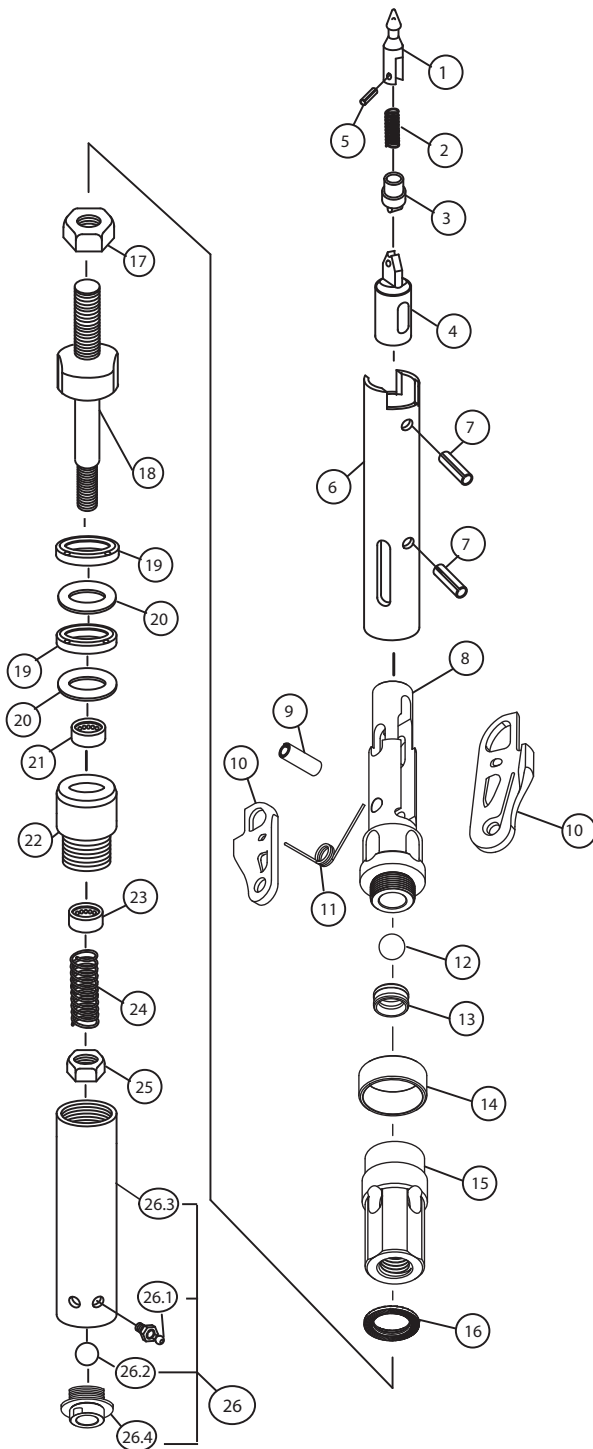
\*Optional chrome plated inner tubes available.

\*\*Additional options available. Refer to page 57 for details.

\*\*\*Additional options available. Refer to page 58 for details.

\*\*\*\* Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# NWL V-LATCH Head Assembly

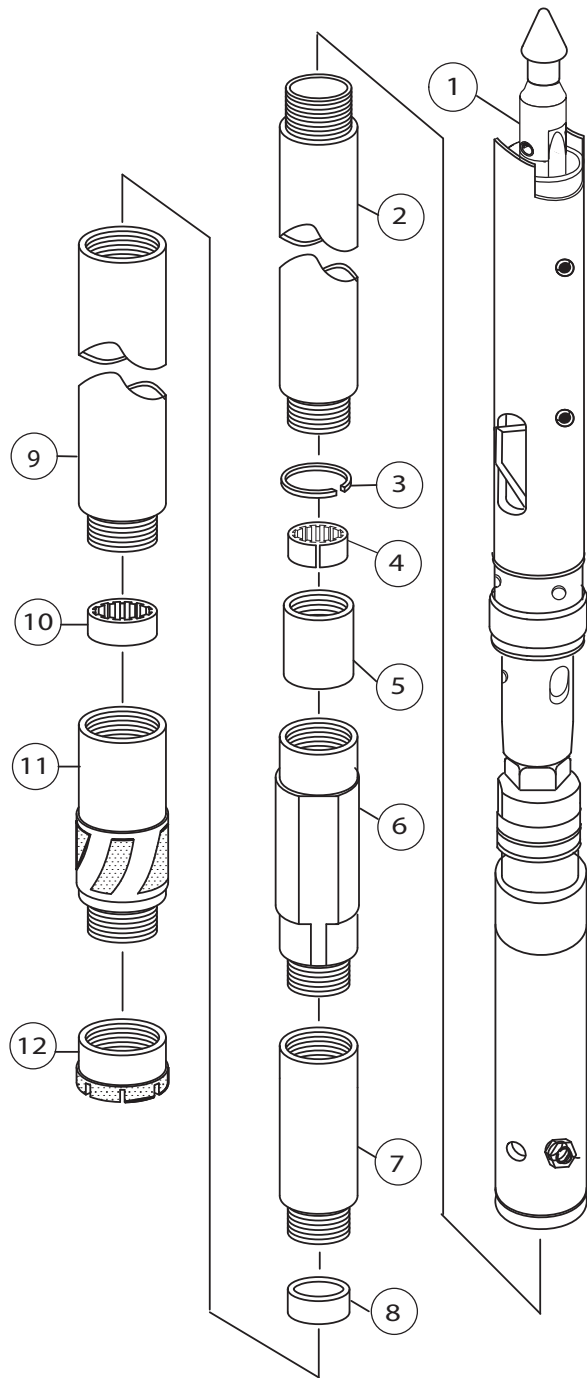


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1950143	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950310	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950315	UPPER LATCH BODY
9	1950354	COILED SPRING PIN, 1/2" X 1 1/2"
10	1950353	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1950045	STAINLESS STEEL BALL, 22MM
13	1950050	LANDING INDICATOR BUSHING
14	1950040	LANDING SHOULDER
15	1950145	LOWER LATCH BODY
16	1950237	LOCK WASHER
17	1950055	HEX NUT
18	1950060	SPINDLE
19	1950065	SHUT-OFF VALVE, HARD (QTY. 2)*
20	1950070	SHUT-OFF WASHER (QTY. 2)
21	1950075	THRUST BEARING
22	1950080	SPINDLE BUSHING
23	1950085	HANGER BEARING
24	1950090	INNER TUBE COMPRESSION SPRING
25	1950095	SELF LOCKING NUT
26	1950150	INNER TUBE CAP ASSEMBLY (ITEMS: 26.1-26.4)
26.1	1950125	HYDRAULIC GREASE FITTING
26.2	1950130	STAINLESS STEEL BALL
26.3	1950100	INNER TUBE CAP
26.4	1950135	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# NWL SPRING LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	1950245	CORE BARREL ASSEMBLY 5FT
1-10	1950250	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	1950355	INNER TUBE ASSEMBLY 5FT
1-5	1950350	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	1950140	HEAD ASSEMBLY
2	1950020	INNER TUBE 5FT*
	1950025	INNER TUBE 10FT*
3	1950010	STOP RING
4	1950005	CORE LIFTER, FLUTED**
5	1950000	CORE LIFTER CASE
6	1950105	LOCKING COUPLING, FULL HOLE***
7	1950110	ADAPTER COUPLING
8	1950115	LANDING RING
9	1950030	OUTER TUBE 5FT
	1950035	OUTER TUBE 10FT
10	1950120	BRASS INNER TUBE STABILIZER RING
11	----	REAMING SHELL****
12	----	CORE BIT****

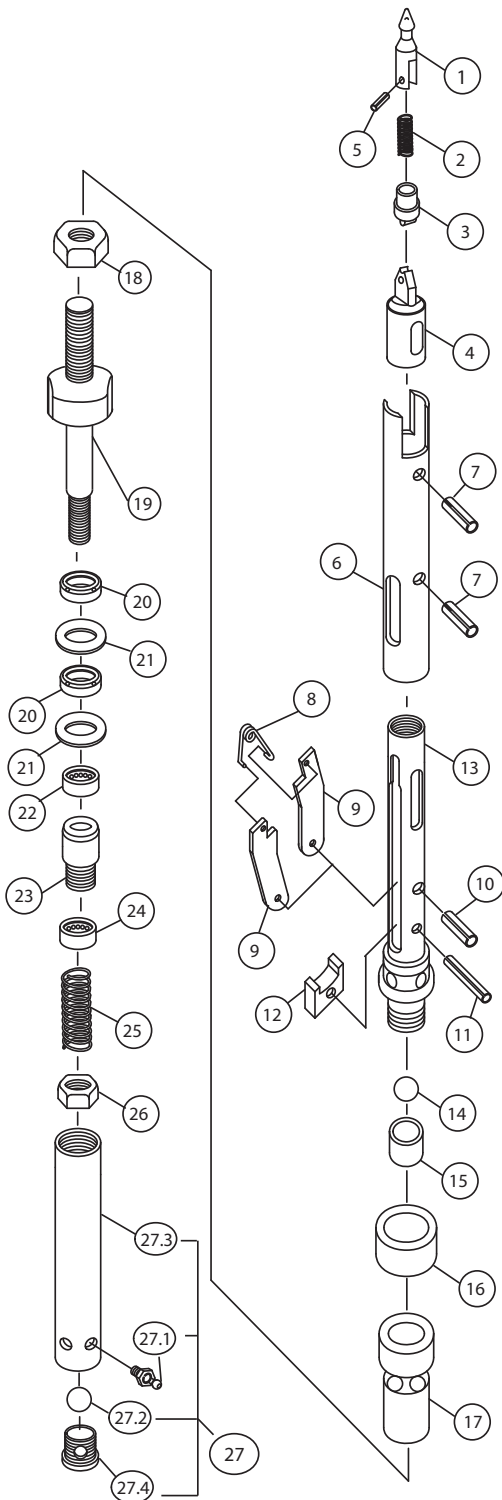
\*Optional chrome plated inner tubes available.

\*\*Additional options available. Refer to page 57 for details.

\*\*\*Additional options available. Refer to page 58 for details.

\*\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# NWL SPRING LATCH Head Assembly

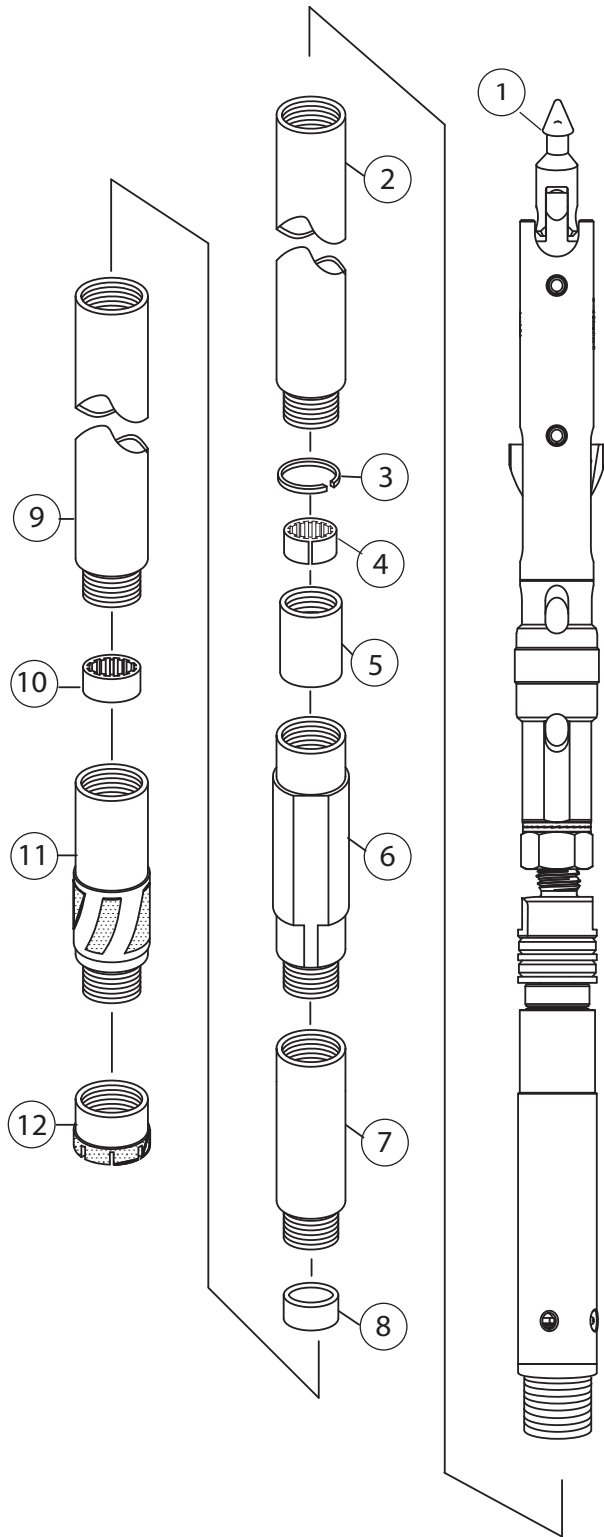


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1950140	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950195	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950205	LATCH SPRING
9	1950210	LATCH
10	1950215	SPRING PIN, 1/2" X 1 1/2"
11	1950220	SPRING PIN, 1/4" X 1 1/2"
12	1950225	LATCH SUPPORT
13	1950235	UPPER LATCH BODY
14	1950045	STAINLESS STEEL BALL, 22MM
15	1950050	LANDING INDICATOR BUSHING
16	1950040	LANDING SHOULDER
17	1950145	LOWER LATCH BODY
18	1950055	HEX NUT
19	1950060	SPINDLE
20	1950065	SHUT-OFF VALVE, HARD (QTY. 2)*
21	1950070	VALVE ADJUSTING WASHER (QTY. 2)
22	1950075	THRUST BEARING
23	1950080	SPINDLE BUSHING
24	1950085	HANGER BEARING
25	1950090	INNER TUBE COMPRESSION SPRING
26	1950095	SELF LOCKING NUT
27	1950150	INNER TUBE CAP ASSEMBLY (ITEMS: 27.1-27.4)
27.1	1950125	HYDRAULIC GREASE FITTING
27.2	1950130	STAINLESS STEEL BALL
27.3	1950100	INNER TUBE CAP
27.4	1950135	CHECK VALVE BODY

\* Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 14-15). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# N2WL V-LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	1850255	CORE BARREL ASSEMBLY 5FT
1-10	1850265	CORE BARREL ASSEMBLY 5FT W/ CHROME PLATED INNER TUBE
1-10	1850250	CORE BARREL ASSEMBLY 10FT
1-10	1850260	CORE BARREL ASSEMBLY 10FT W/ CHROME PLATED INNER TUBE

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	1850225	INNER TUBE ASSEMBLY 5FT
1-5	1850235	INNER TUBE ASSEMBLY 5FT W/ CHROME PLATED INNER TUBE
1-5	1850220	INNER TUBE ASSEMBLY 10FT
1-5	1850230	INNER TUBE ASSEMBLY 10FT W/ CHROME PLATED INNER TUBE

## CORE BARREL PARTS

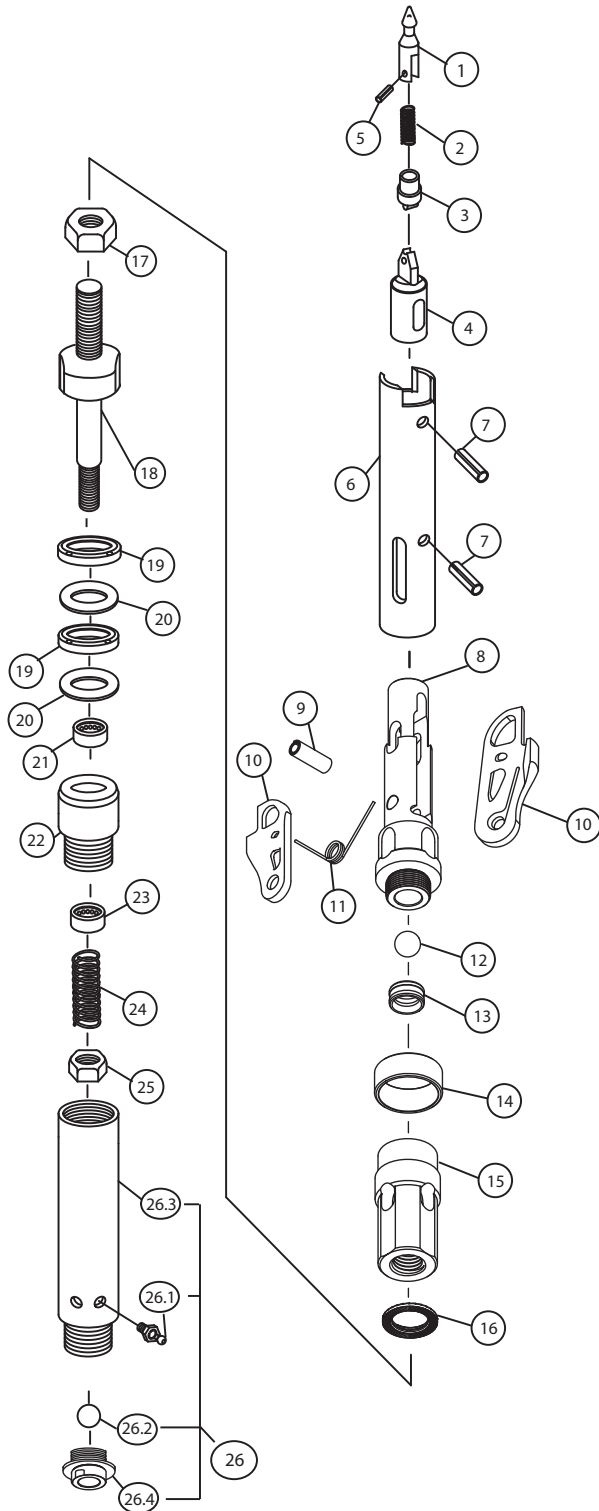
ITEM	PART #	DESCRIPTION
1	1850241	HEAD ASSEMBLY
2	1850100	INNER TUBE 5FT
	1850101	INNER TUBE 5FT CHROME PLATED
	1850105	INNER TUBE 10FT
	1850107	INNER TUBE 10FT CHROME PLATED
3	1850035	STOP RING
4	1850040	CORE LIFTER, FLUTED*
5	1850045	CORE LIFTER CASE
6	1950105	LOCKING COUPLING, FULL HOLE**
7	1950110	ADAPTER COUPLING
8	1850055	LANDING RING
	1950030	OUTER TUBE 5FT
9	1950035	OUTER TUBE 10FT
10	1850060	BRASS INNER TUBE STABILIZER RING
11	-----	REAMING SHELL***
12	-----	CORE BIT***

\*Additional options available. Refer to page 57 for details.

\*\*Additional options available. Refer to page 58 for details.

\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# N2WL V-LATCH Head Assembly

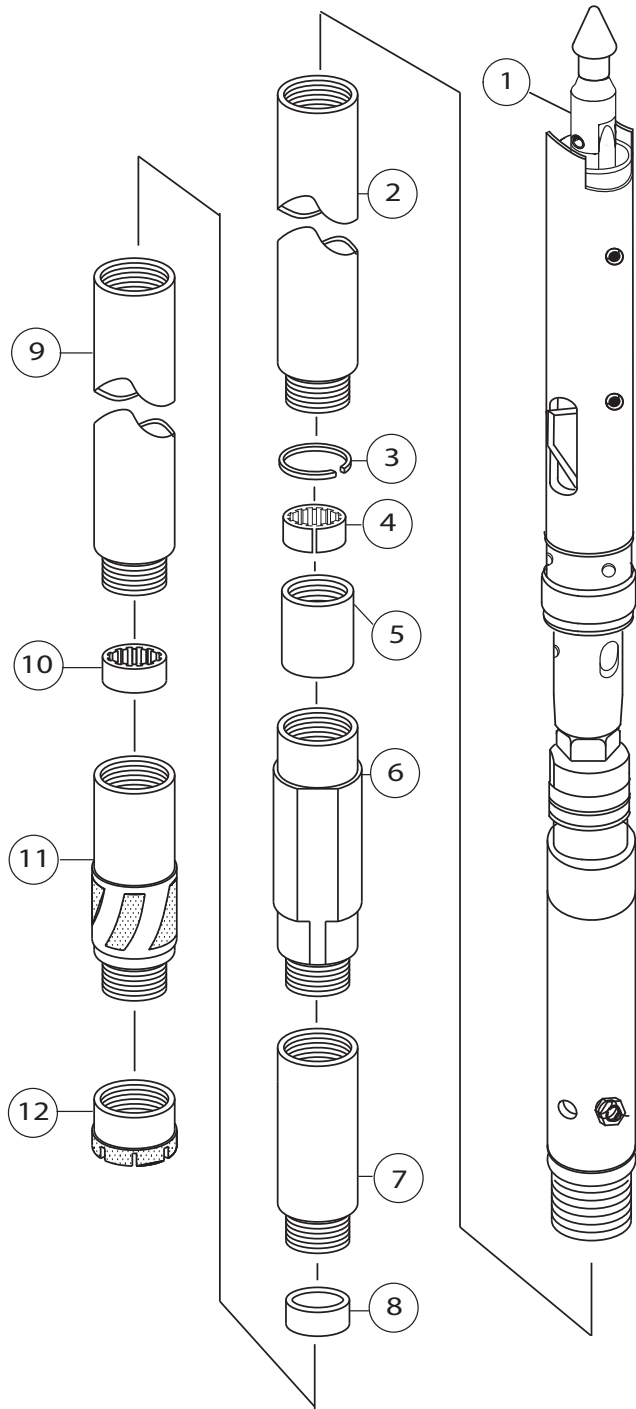


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1850241	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	BASE SPEARHEAD
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950310	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950315	UPPER LATCH BODY
9	1950354	COILED SPRING PIN, 1/2" X 1 1/2"
10	1950353	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1950045	STAINLESS STEEL BALL, 22MM
13	1950050	LANDING INDICATOR BUSHING
14	1850055	LANDING SHOULDER
15	1950145	LOWER LATCH BODY
16	1950237	LOCK WASHER
17	1950055	HEX NUT
18	1950060	SPINDLE
19	1950067	SHUT-OFF VALVE, HARD (QTY. 2)*
20	1950070	SHUT-OFF WASHER (QTY. 2)
21	1950075	THRUST BEARING
22	1950080	SPINDLE BUSHING
23	1950085	HANGER BEARING
24	1950090	INNER TUBE COMPRESSION SPRING
25	1950095	SELF LOCKING NUT
26	1850010	INNER TUBE CAP ASSEMBLY (ITEMS: 26.1-26.4)
26.1	1950125	HYDRAULIC GREASE FITTING
26.2	1950130	STAINLESS STEEL BALL
26.3	1850030	INNER TUBE CAP
26.4	1950135	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# N2WL SPRING LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	1850185	CORE BARREL ASSEMBLY 5FT
1-10	1850065	CORE BARREL ASSEMBLY 5FT W/CHROME PLATED INNER TUBE
1-10	1850190	CORE BARREL ASSEMBLY 10FT
1-10	1850070	CORE BARREL ASSEMBLY 10FT W/CHROME PLATED INNER TUBE

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	1850175	INNER TUBE ASSEMBLY 5FT
1-5	1850140	INNER TUBE ASSEMBLY 5FT W/CHROME PLATED INNER TUBE
1-5	1850180	INNER TUBE ASSEMBLY 10FT
1-5	1850135	INNER TUBE ASSEMBLY 10FT W/CHROME PLATED INNER TUBE

## CORE BARREL PARTS

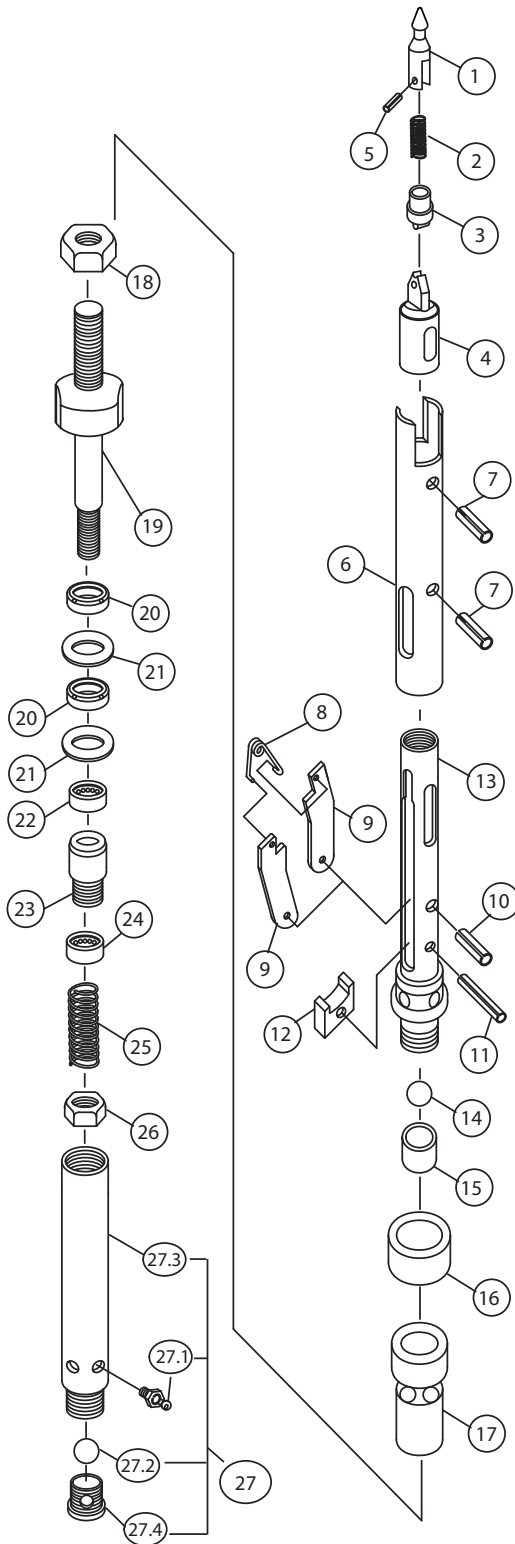
ITEM	PART #	DESCRIPTION
1	1850085	HEAD ASSEMBLY
2	1850100	INNER TUBE 5FT
	1850101	INNER TUBE 5FT CHROME PLATED
	1850105	INNER TUBE 10FT
	1850107	INNER TUBE 10FT CHROME PLATED
3	1850035	STOP RING
4	1850040	CORE LIFTER, FLUTED*
5	1850045	CORE LIFTER CASE
6	1950105	LOCKING COUPLING, FULL HOLE**
7	1950110	ADAPTER COUPLING
8	1850055	LANDING RING
9	1950030	OUTER TUBE 5FT
	1950035	OUTER TUBE 10FT
10	1850060	BRASS INNER TUBE STABILIZER RING
11	-----	REAMING SHELL***
12	-----	CORE BIT***

\*Additional options available. Refer to page 57 for details.

\*\*Additional options available. Refer to page 58 for details.

\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# N2WL SPRING LATCH Head Assembly



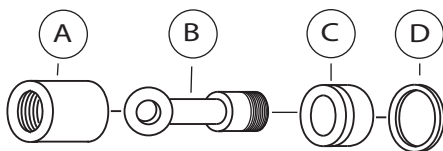
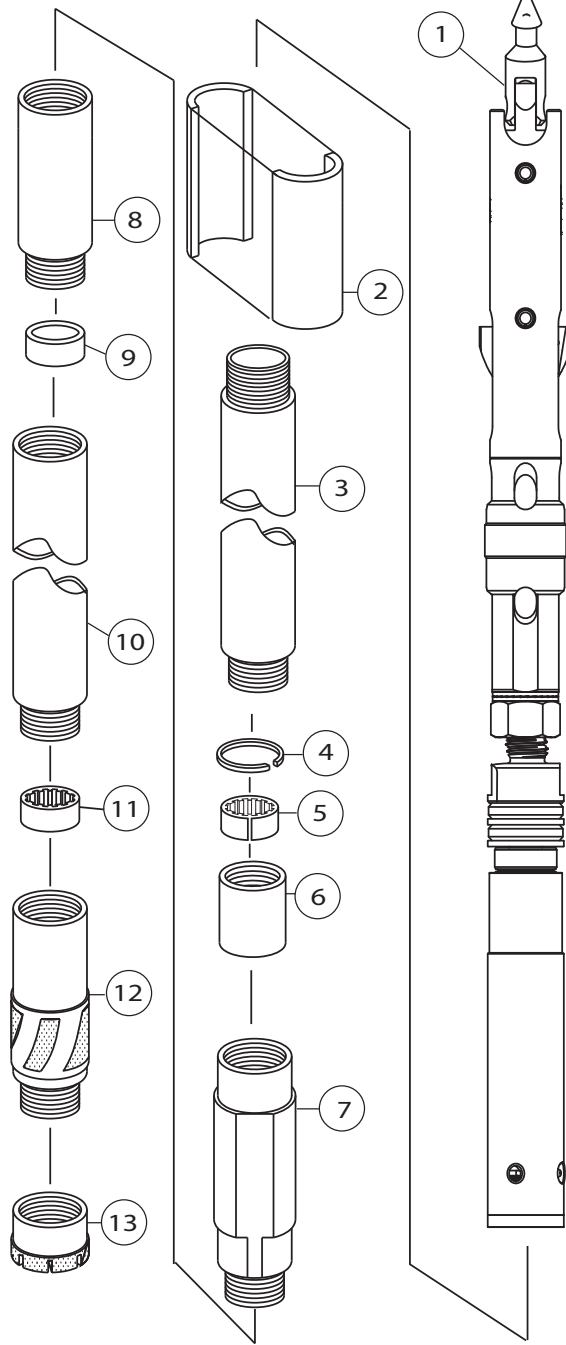
HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1850085	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	BASE SPEARHEAD
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950195	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950205	LATCH SPRING
9	1950210	LATCH (QTY. 2)
10	1950215	SPRING PIN, 1/2" X 1 1/2"
11	1950220	SPRING PIN, 1/4" X 1 1/2"
12	1950225	LATCH SUPPORT
13	1950235	UPPER LATCH BODY
14	1950045	STAINLESS STEEL BALL, 22MM
15	1950050	LANDING INDICATOR BUSHING
16	1850025	LANDING SHOULDER
17	1950145	LOWER LATCH BODY
18	1950055	HEX NUT
19	1950060	SPINDLE
20	1950065	SHUT-OFF VALVE, HARD (QTY. 2)*
21	1950070	VALVE ADJUSTING WASHER (QTY. 2)
22	1950075	THRUST BEARING
23	1950080	SPINDLE BUSHING
24	1950085	HANGER BEARING
25	1950090	INNER TUBE COMPRESSION SPRING
26	1950095	SELF LOCKING NUT
27	1850010	INNER TUBE CAP ASSEMBLY (ITEMS: 27.1-27.4)
27.1	1950125	HYDRAULIC GREASE FITTING
27.2	1950130	STAINLESS STEEL BALL
27.3	1850030	INNER TUBE CAP
27.4	1950135	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 14-15). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.



# N3WL V-LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-11	1900255	CORE BARREL ASSEMBLY 5FT
1-11	1900250	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-6	1900225	INNER TUBE ASSEMBLY 5FT
1-6	1900220	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	1950143	HEAD ASSEMBLY
2	1900120	INNER TUBE LINER SPLIT SS 5FT (1.5M)
	1900110	INNER TUBE LINER SPLIT SS 10FT (3M)
3	1950020	INNER TUBE 5FT
	1950025	INNER TUBE 10FT
4	1900070	STOP RING
5	1900000	CORE LIFTER, FLUTED*
6	1900005	CORE LIFTER CASE
7	1950105	LOCKING COUPLING, FULL HOLE**
8	1950110	ADAPTER COUPLING
9	1950115	LANDING RING
10	1950030	OUTER TUBE 5FT
	1950035	OUTER TUBE 10FT
11	1950120	BRASS INNER TUBE STABILIZER RING
12	----	REAMING SHELL***
13	----	CORE BIT***

\*Additional options available. Refer to page 57 for details.

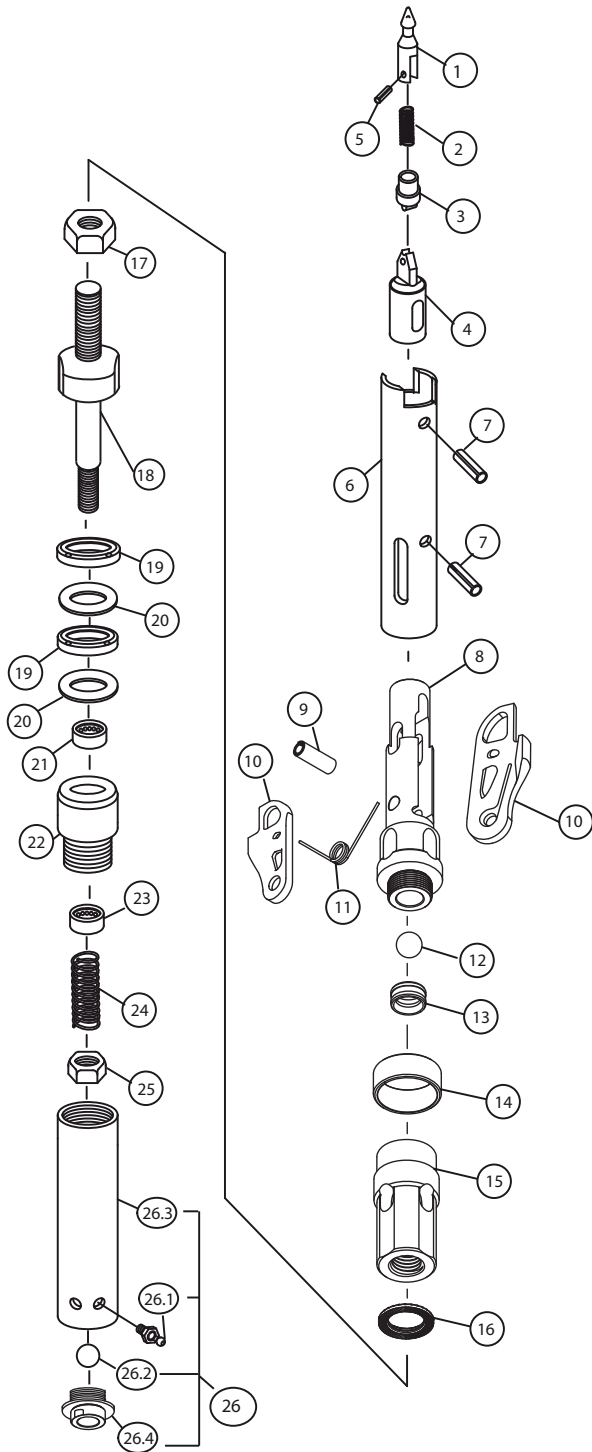
\*\*Additional options available. Refer to page 58 for details.

\*\*\* Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

## PUMP OUT GROUP

ITEM	PART #	DESCRIPTION
A-D	1900180	COMPLETE PUMP OUT ASSEMBLY
A	1900140	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	1900125	PUMP OUT PISTON
D	1900130	O-RING PUMP OUT PISTON

# N3WL V-LATCH Head Assembly

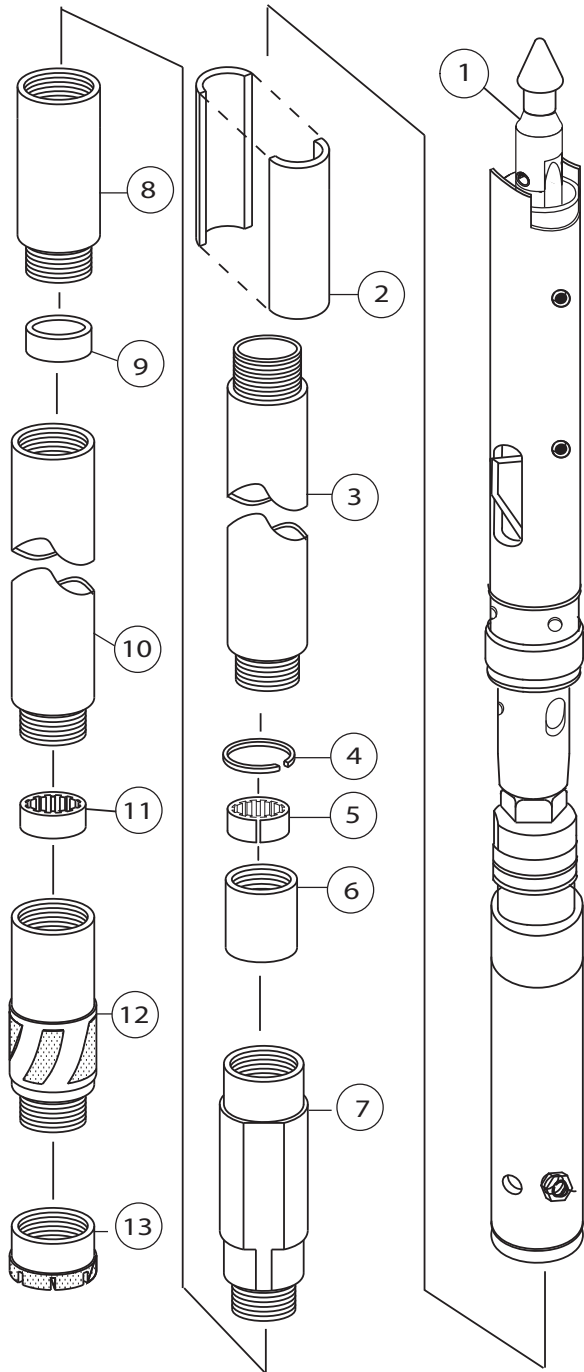


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1950143	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950310	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950315	UPPER LATCH BODY
9	1950354	COILED SPRING PIN, 1/2" X 1 1/2"
10	1950353	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1950045	STAINLESS STEEL BALL, 22MM
13	1950050	LANDING INDICATOR BUSHING
14	1950040	LANDING SHOULDER
15	1950145	LOWER LATCH BODY
16	1950237	LOCK WASHER
17	1950055	HEX NUT
18	1950060	SPINDLE
19	1950065	SHUT-OFF VALVE, HARD (QTY. 2)*
20	1950070	SHUT-OFF WASHER (QTY. 2)
21	1950075	THRUST BEARING
22	1950080	SPINDLE BUSHING
23	1950085	HANGER BEARING
24	1950090	INNER TUBE COMPRESSION SPRING
25	1950095	SELF LOCKING NUT
26	1950150	INNER TUBE CAP ASSEMBLY (ITEMS: 26.1-26.4)
26.1	1950125	HYDRAULIC GREASE FITTING
26.2	1950130	STAINLESS STEEL BALL
26.3	1950100	INNER TUBE CAP
26.4	1950100	INNER TUBE CAP

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# N3WL SPRING LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-11	1900050	CORE BARREL ASSEMBLY 5FT
1-11	1900055	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-6	1900175	INNER TUBE ASSEMBLY 5FT
1-6	1900170	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	1950140	HEAD ASSEMBLY
2	1900120	INNER TUBE LINER SPLIT SS 5FT (1.5M)
	1900110	INNER TUBE LINER SPLIT SS 10FT (3M)
3	1950020	INNER TUBE 5FT
	1950025	INNER TUBE 10FT
4	1900070	STOP RING
5	1900000	CORE LIFTER, FLUTED*
6	1900005	CORE LIFTER CASE
7	1950105	LOCKING COUPLING, FULL HOLE**
8	1950110	ADAPTER COUPLING
9	1950115	LANDING RING
10	1950030	OUTER TUBE 5FT
	1950035	OUTER TUBE 10FT
11	1950120	BRASS INNER TUBE STABILIZER RING
12	----	REAMING SHELL***
13	----	CORE BIT***

\* Additional options available. Refer to page 57 for details.

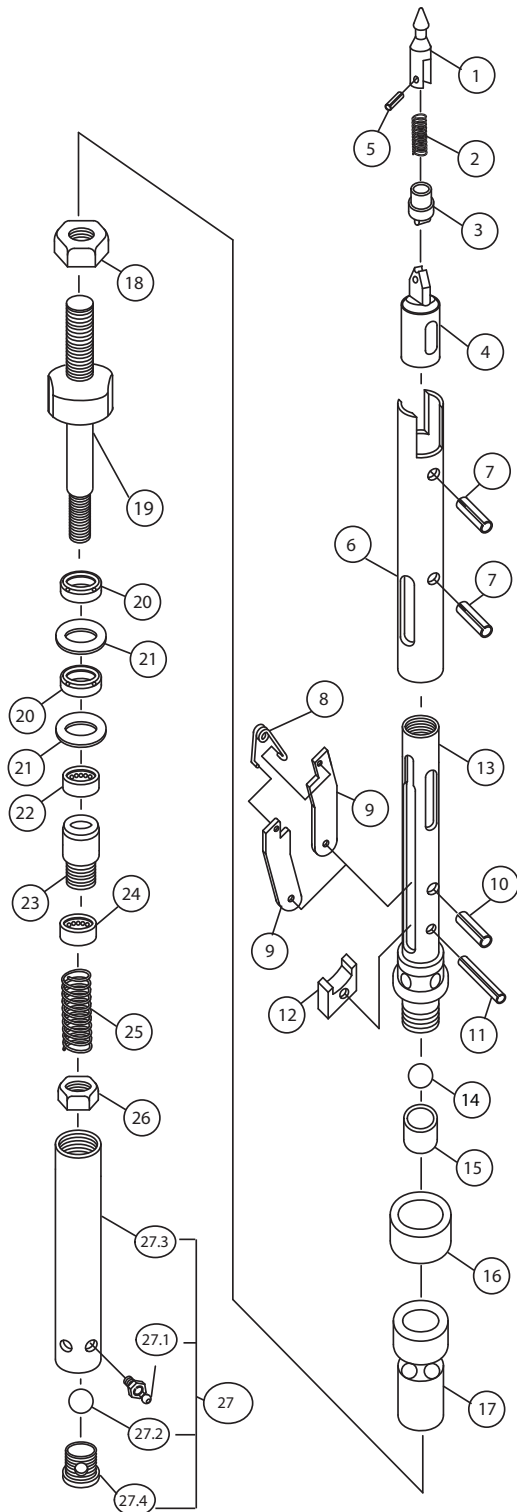
\*\* Additional options available. Refer to page 58 for details.

\*\*\* Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

## PUMP OUT GROUP

ITEM	PART #	DESCRIPTION
A-D	1900180	COMPLETE PUMP OUT ASSEMBLY
A	1900140	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	1900125	PUMP OUT PISTON
D	1900130	O-RING PUMP OUT PISTON

# N3WL SPRING LATCH Head Assembly

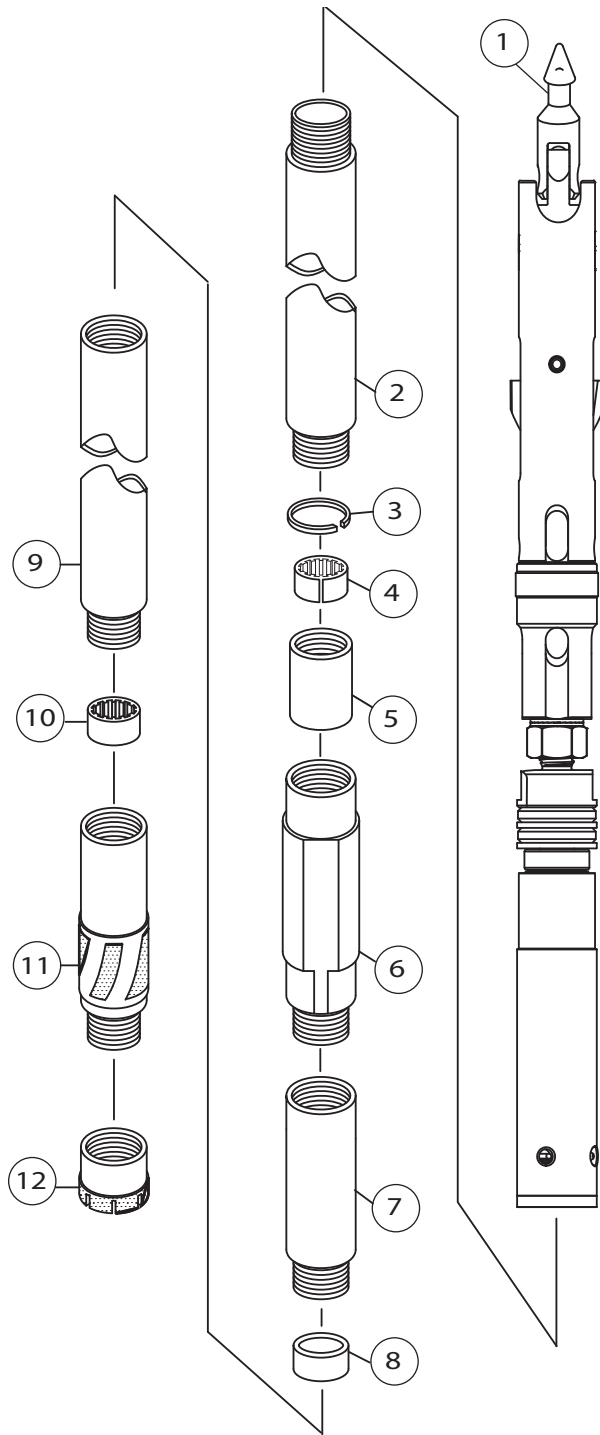


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1950140	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950195	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950205	LATCH SPRING
9	1950210	LATCH (QTY. 2)
10	1950215	SPRING PIN, 1/2" X 1 1/2"
11	1950220	SPRING PIN, 1/4" X 1 1/2"
12	1950225	LATCH SUPPORT
13	1950235	UPPER LATCH BODY
14	1950045	STAINLESS STEEL BALL, 22MM
15	1950050	LANDING INDICATOR BUSHING
16	1950040	LANDING SHOULDER
17	1950145	LOWER LATCH BODY
18	1950055	HEX NUT
19	1950060	SPINDLE
20	1950065	SHUT-OFF VALVE, HARD (QTY. 2)*
21	1950070	VALVE ADJUSTING WASHER (QTY. 2)
22	1950075	THRUST BEARING
23	1950080	SPINDLE BUSHING
24	1950085	HANGER BEARING
25	1950090	INNER TUBE COMPRESSION SPRING
26	1950095	SELF LOCKING NUT
27	1950150	INNER TUBE CAP ASSEMBLY (ITEMS: 27.1-27.4)
27.1	1950125	HYDRAULIC GREASE FITTING
27.2	1950130	STAINLESS STEEL BALL
27.3	1950100	INNER TUBE CAP
27.4	1950135	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 14-15). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# HWL V-LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	1800455	CORE BARREL ASSEMBLY 5FT
1-10	1800450	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	1800425	INNER TUBE ASSEMBLY 5FT
1-5	1800420	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

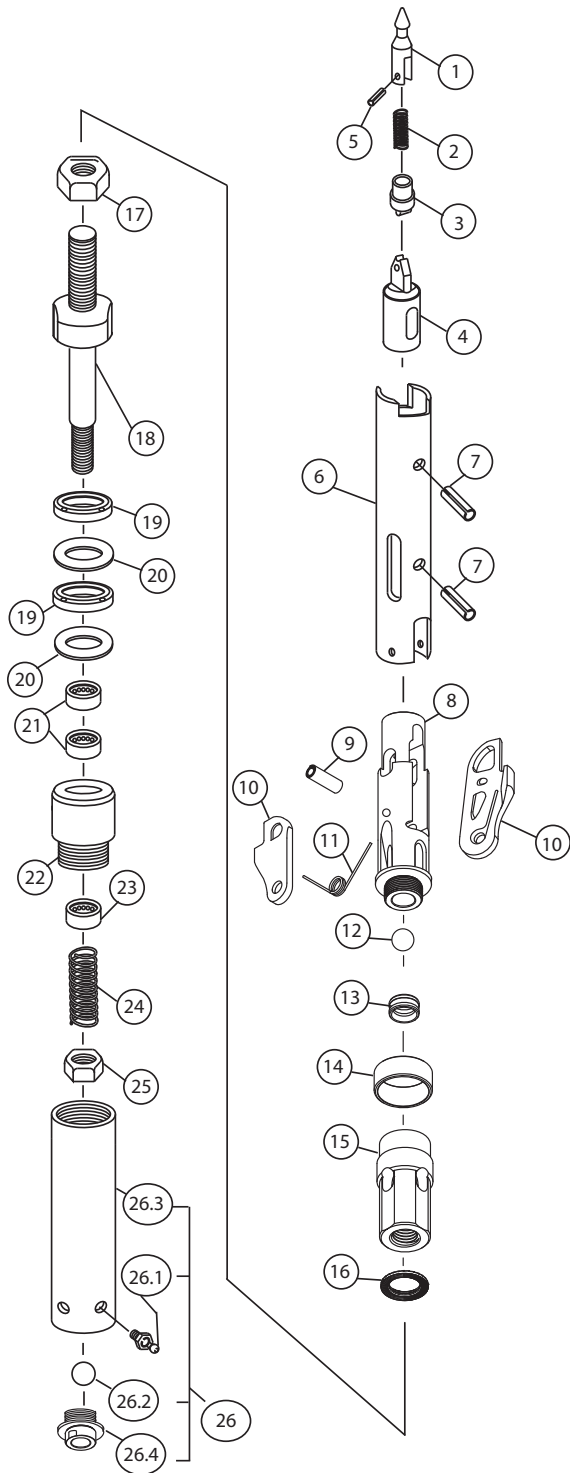
ITEM	PART #	DESCRIPTION
1	1800183	HEAD ASSEMBLY
2	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
3	1800020	STOP RING
4	1800015	CORE LIFTER, FLUTED*
5	1800010	CORE LIFTER CASE
6	1800090	LOCKING COUPLING, FULL HOLE**
7	1800130	ADAPTER COUPLING
8	1800135	LANDING RING
9	1800030	OUTER TUBE 5FT
	1800035	OUTER TUBE 10FT
10	1800260	BRASS INNER TUBE STABILIZER RING
11	-----	REAMING SHELL***
12	-----	CORE BIT***

\*Additional options available. Refer to page 57 for details.

\*\*Additional options available. Refer to page 58 for details.

\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# HWL V-LATCH Head Assembly

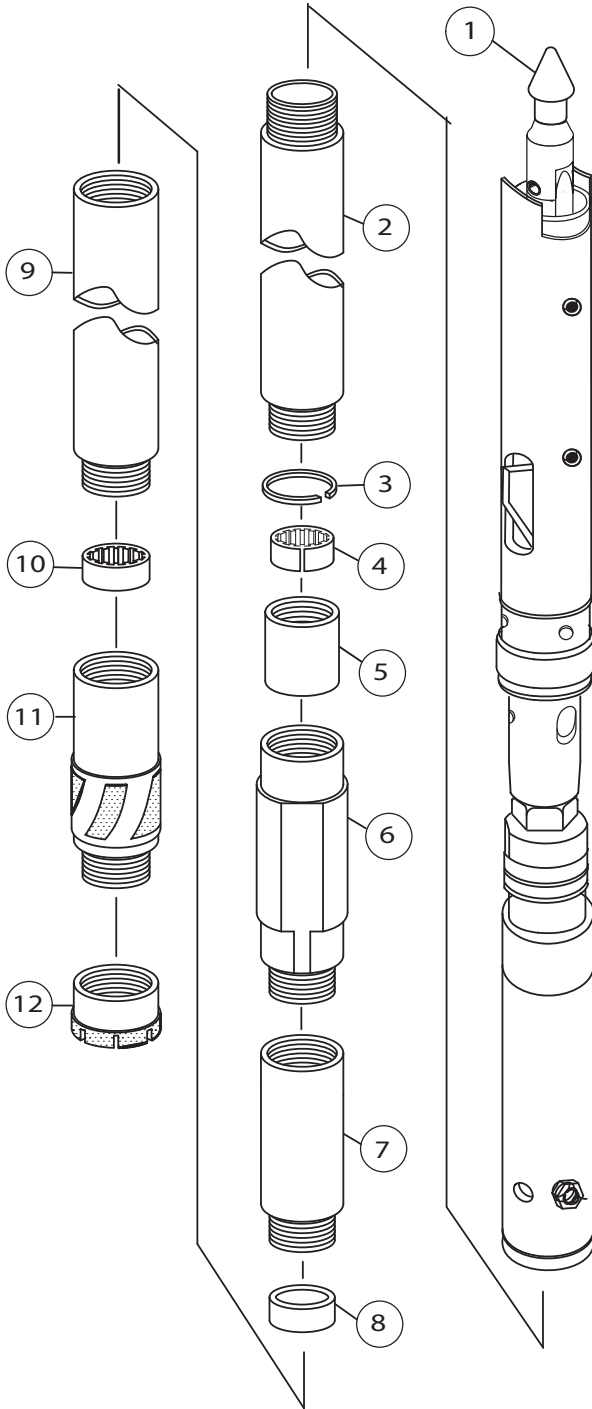


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1800183	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800300	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	UPPER LATCH BODY
9	1800375	COILED SPRING PIN, 1/2" X 2"
10	1800370	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1800050	STAINLESS STEEL BALL, 22MM
13	1800055	LANDING INDICATOR BUSHING
14	1800045	LANDING SHOULDER
15	1800040	LOWER LATCH BODY
16	1800255	LOCK WASHER
17	1800060	HEX NUT
18	1800065	SPINDLE
19	1800071	SHUT-OFF VALVE, HARD (QTY. 2)*
20	1800075	SHUT-OFF WASHER (QTY. 2)
21	1800081	THRUST BEARING
22	1800085	SPINDLE BUSHING
23	1800095	HANGER BEARING
24	1800100	INNER TUBE COMPRESSION SPRING
25	1800105	SELF LOCKING NUT
26	1800285	INNER TUBE CAP ASSEMBLY (ITEMS: 26.1-26.4)
26.1	1800115	HYDRAULIC GREASE FITTING
26.2	1800120	STAINLESS STEEL BALL
26.3	1800110	INNER TUBE CAP
26.4	1800125	CHECK VALVE BODY

\* Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# HWL SPRING LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	1800160	CORE BARREL ASSEMBLY 5FT
1-10	1800165	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	1800325	INNER TUBE ASSEMBLY 5FT
1-5	1800320	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

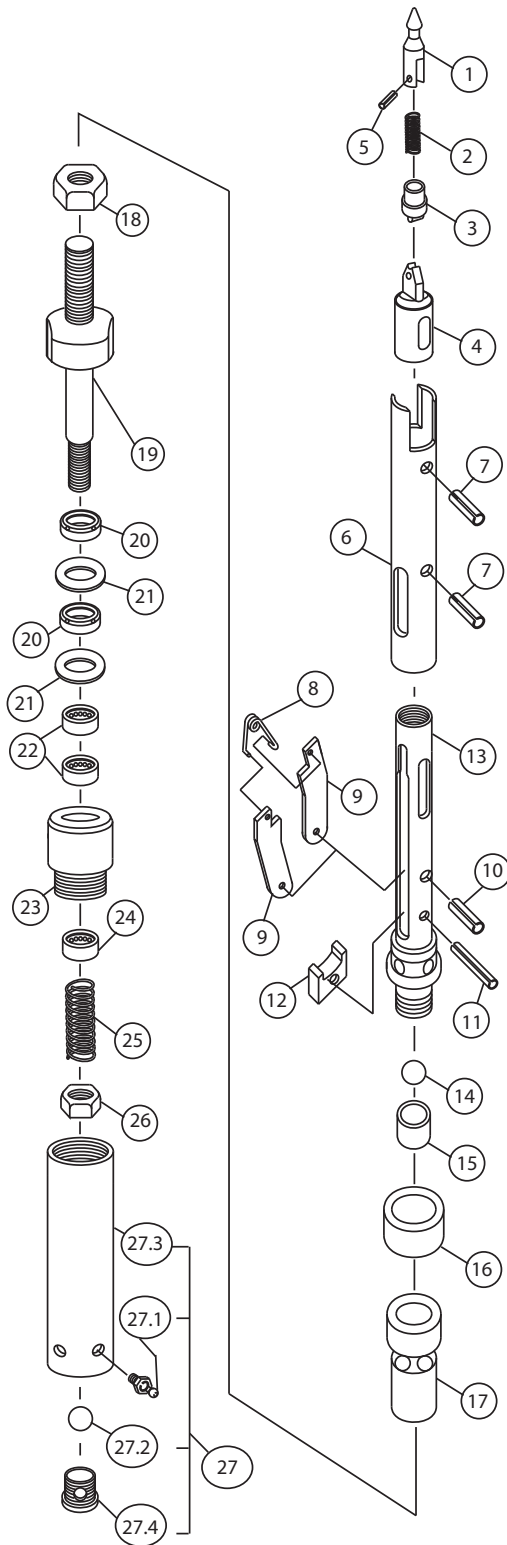
ITEM	PART #	DESCRIPTION
1	1800180	HEAD ASSEMBLY
2	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
3	1800020	STOP RING
4	1800015	CORE LIFTER, FLUTED*
5	1800010	CORE LIFTER CASE
6	1800090	LOCKING COUPLING, FULL HOLE**
7	1800130	ADAPTER COUPLING
8	1800135	LANDING RING
9	1800030	OUTER TUBE 5FT
	1800035	OUTER TUBE 10FT
10	1800260	BRASS INNER TUBE STABILIZER RING
11	-----	REAMING SHELL***
12	-----	CORE BIT ***

\*Additional options available. Refer to page 57 for details.

\*\*Additional options available. Refer to page 58 for details.

\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# HWL SPRING LATCH Head Assembly



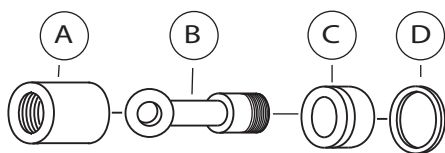
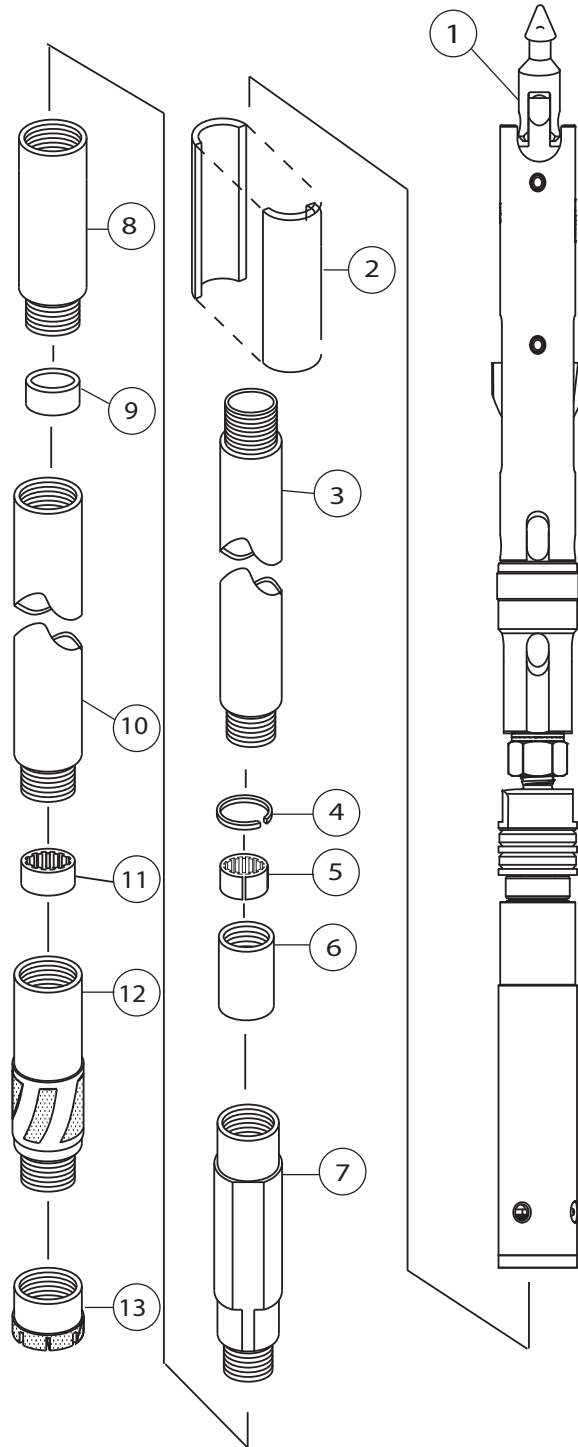
HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1800180	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800210	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800220	LATCH SPRING
9	1800225	LATCH (QTY. 2)
10	1950200	SPRING PIN, 1/2" X 2"
11	1800235	SPRING PIN, 3/8" X 2"
12	1800240	LATCH SUPPORT
13	1800250	UPPER LATCH BODY
14	1800050	STAINLESS STEEL BALL, 22MM
15	1800055	LANDING INDICATOR BUSHING
16	1800045	LANDING SHOULDER
17	1800040	LOWER LATCH BODY
18	1800060	HEX NUT
19	1800065	SPINDLE
20	1800071	SHUT-OFF VALVE, HARD (QTY. 2)*
21	1800075	VALVE ADJUST WASHER (QTY. 2)
22	1800081	THRUST BEARING
23	1800085	SPINDLE BUSHING
24	1800095	HANGER BEARING
25	1800100	INNER TUBE COMPRESSION SPRING
26	1800105	SELF LOCKING NUT
27	1800285	INNER TUBE CAP ASSEMBLY (ITEMS: 27.1-27.4)
27.1	1800115	HYDRAULIC GREASE FITTING
27.2	1800120	STAINLESS STEEL BALL
27.3	1800110	INNER TUBE CAP
27.4	1800125	CHECK VALVE BODY

\* Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 14-15). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.



# H3WL V-LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-11	1750255	CORE BARREL ASSEMBLY 5FT
1-11	1750250	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-6	1750225	INNER TUBE ASSEMBLY 5FT
1-6	1750220	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	1800183	HEAD ASSEMBLY
2	1750065	SPLIT INNER TUBE LINER SS 5FT (1.5M)
	1750070	SPLIT INNER TUBE LINER SS 10FT (3M)
3	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
4	1750050	STOP RING
5	1750020	CORE LIFTER, FLUTED*
6	1750025	CORE LIFTER CASE
7	1800090	LOCKING COUPLING, FULL HOLE**
8	1800130	ADAPTER COUPLING
9	1800135	LANDING RING
10	1800030	OUTER TUBE 5FT
	1800035	OUTER TUBE 10FT
11	1800260	BRASS INNER TUBE STABILIZER RING
12	-----	REAMING SHELL***
13	-----	CORE BIT***

\* Additional options available. Refer to page 57 for details.

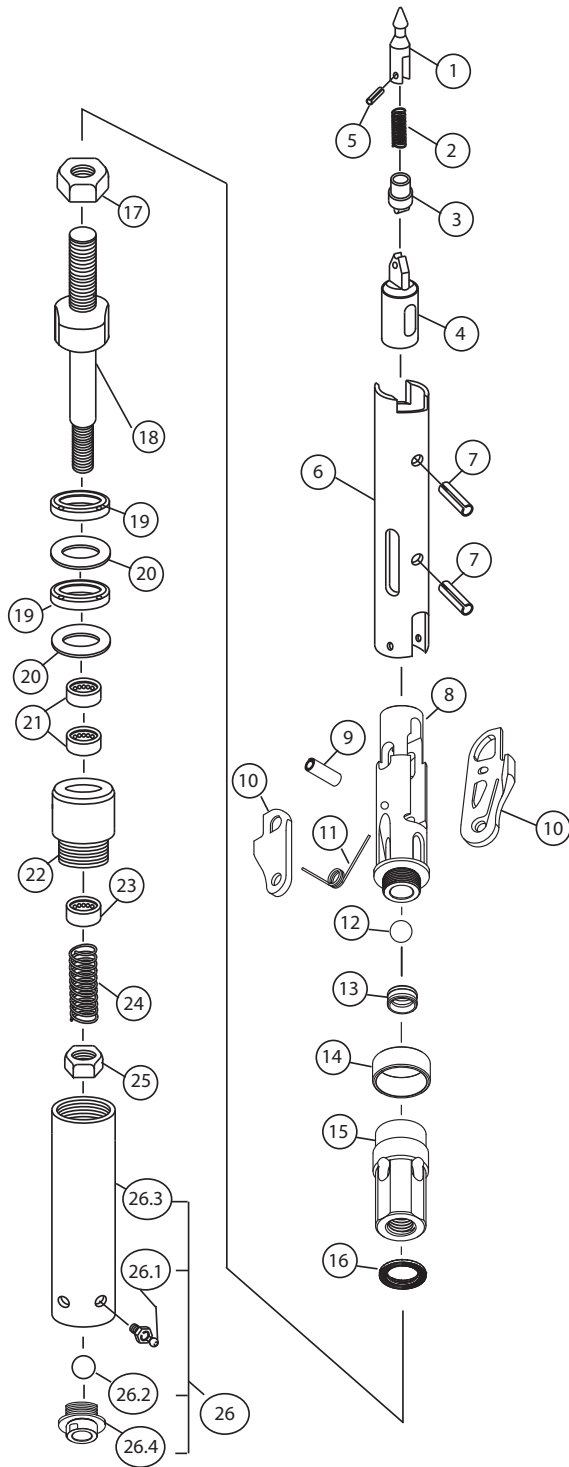
\*\* Additional options available. Refer to page 58 for details.

\*\*\* Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

## PUMP OUT GROUP

ITEM	PART #	DESCRIPTION
A-D	1750145	COMPLETE PUMP OUT ASSEMBLY
A	1750110	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	1750095	PUMP OUT PISTON
D	1750100	O-RING PUMP OUT PISTON

# H3WL V-LATCH Head Assembly

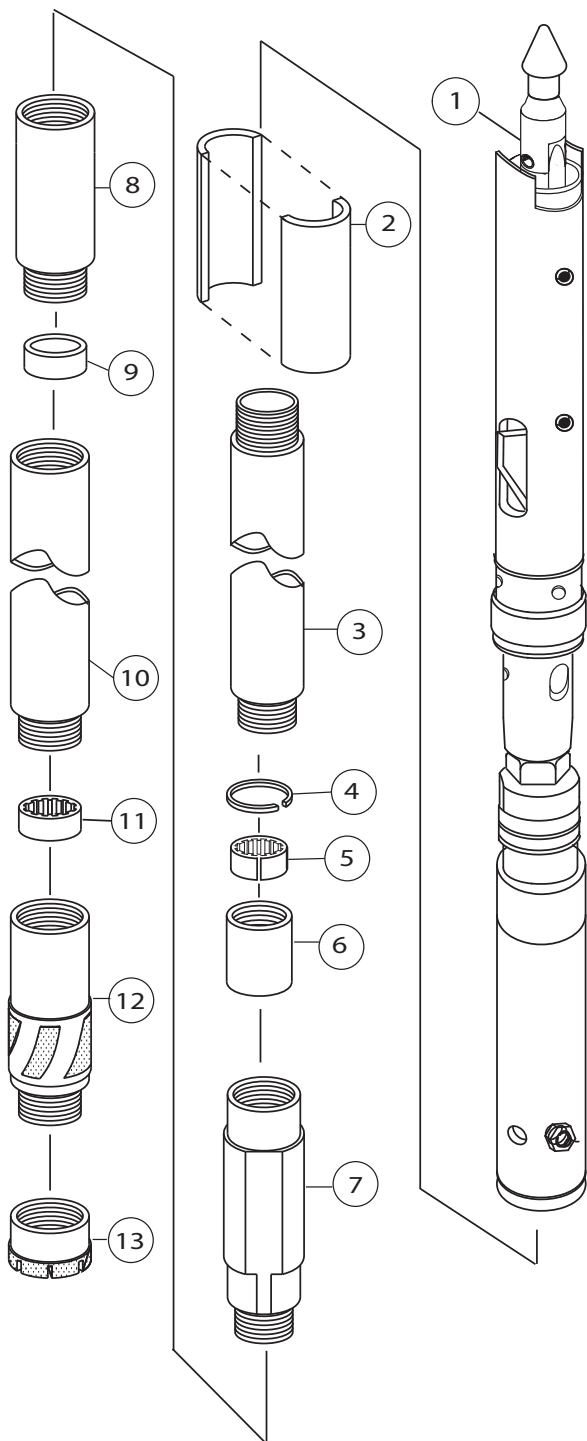


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1800183	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800300	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	UPPER LATCH BODY
9	1800375	COILED SPRING PIN, 1/2" X 2"
10	1800370	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1800050	STAINLESS STEEL BALL, 22MM
13	1800055	LANDING INDICATOR BUSHING
14	1800045	LANDING SHOULDER
15	1800040	LOWER LATCH BODY
16	1800255	LOCK WASHER
17	1800060	HEX NUT
18	1800065	SPINDLE
19	1800071	SHUT-OFF VALVE, HARD (QTY. 2)*
20	1800075	SHUT-OFF WASHER (QTY. 2)
21	1800081	THRUST BEARING
22	1800085	SPINDLE BUSHING
23	1800095	HANGER BEARING
24	1800100	INNER TUBE COMPRESSION SPRING
25	1800105	SELF LOCKING NUT
26	1800285	INNER TUBE CAP ASSEMBLY (ITEMS: 26.1-26.4)
26.1	1800115	HYDRAULIC GREASE FITTING
26.2	1800120	STAINLESS STEEL BALL
26.3	1800110	INNER TUBE CAP
26.4	1800125	CHECK VALVE BODY

\* Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# H3WL SPRING LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-11	1750030	CORE BARREL ASSEMBLY 5FT
1-11	1750035	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-6	1750140	INNER TUBE ASSEMBLY 5FT
1-6	1750135	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	1800180	HEAD ASSEMBLY
2	1750065	SPLIT INNER TUBE LINER SS 5FT (1.5M)
	1750070	SPLIT INNER TUBE LINER SS 10FT (3M)
3	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
4	1750050	STOP RING
5	1750020	CORE LIFTER, FLUTED*
6	1750025	CORE LIFTER CASE
7	1800090	LOCKING COUPLING, FULL HOLE**
8	1800130	ADAPTER COUPLING
9	1800135	LANDING RING
10	1800030	OUTER TUBE 5FT
	1800035	OUTER TUBE 10FT
11	1800260	BRASS INNER TUBE STABILIZER RING
12	-----	REAMING SHELL***
13	-----	CORE BIT***

\* Additional options available. Refer to page 57 for details.

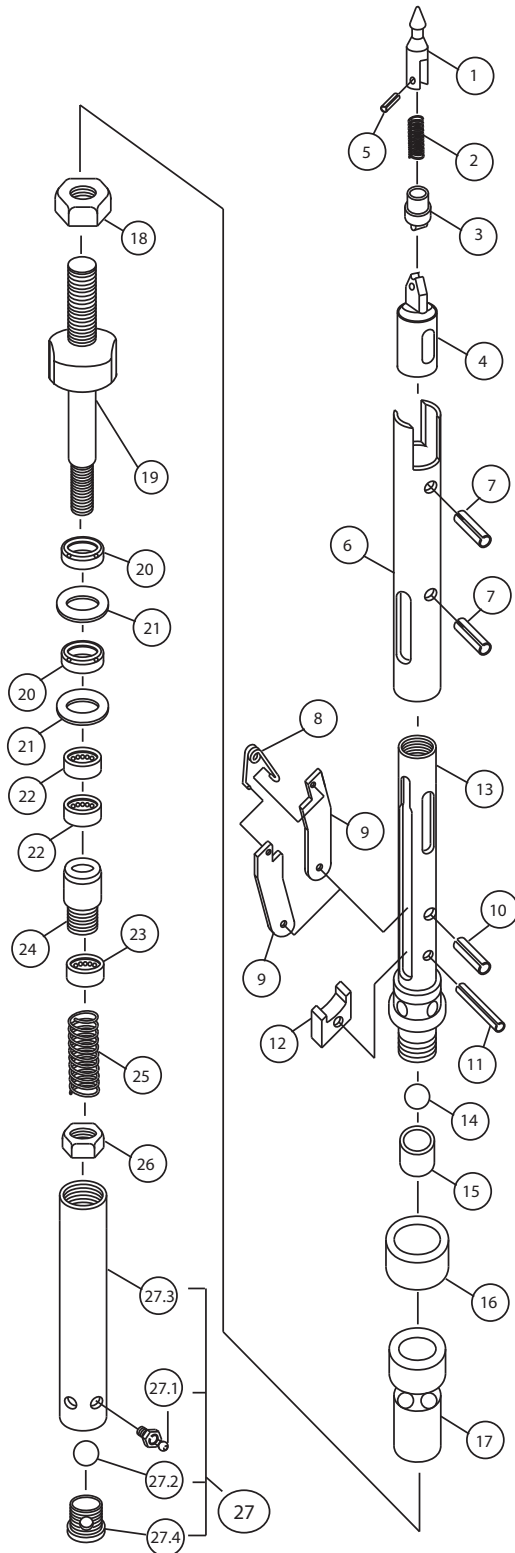
\*\* Additional options available. Refer to page 58 for details.

\*\*\* Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

## PUMP OUT GROUP

ITEM	PART #	DESCRIPTION
A-D	1750145	COMPLETE PUMP OUT ASSEMBLY
A	1750110	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	1750095	PUMP OUT PISTON
D	1750100	O-RING PUMP OUT PISTON

# H3WL SPRING LATCH Head Assembly

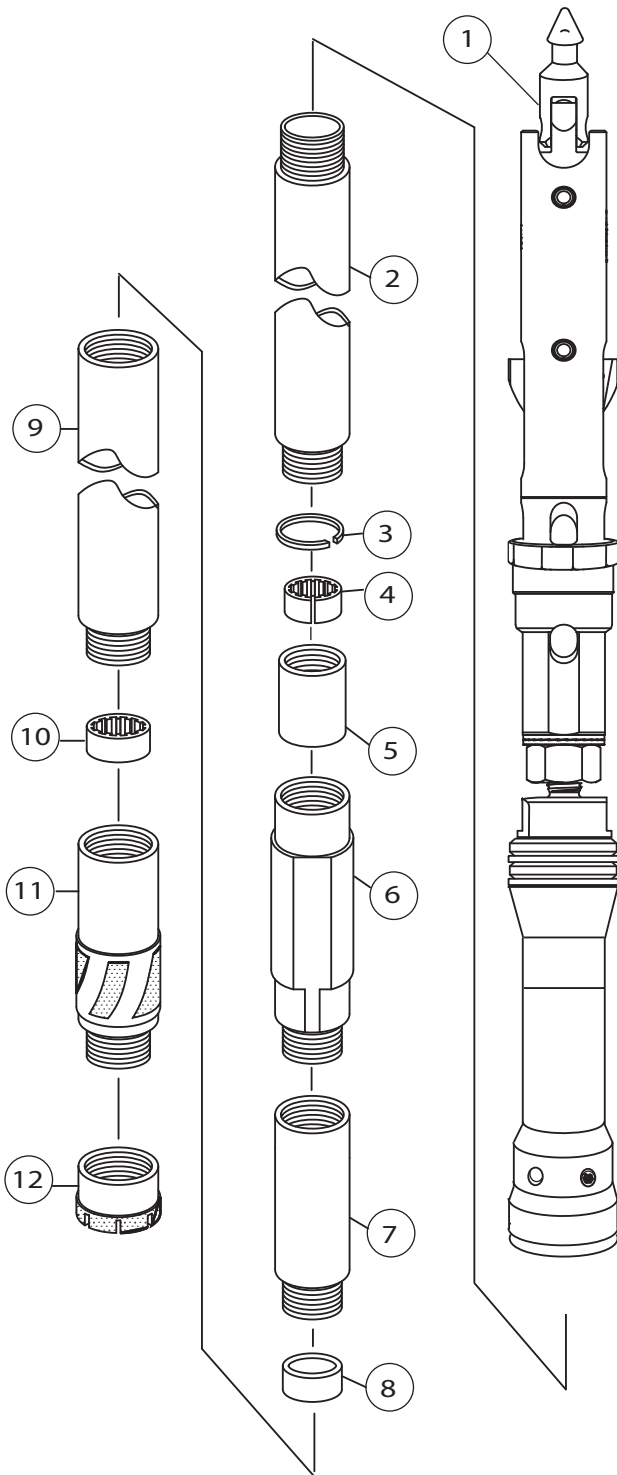


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1800180	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800210	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800220	LATCH SPRING
9	1800225	LATCH (QTY. 2)
10	1950200	SPRING PIN, 1/2" X 2"
11	1800235	SPRING PIN, 3/8" X 2"
12	1800240	LATCH SUPPORT
13	1800250	UPPER LATCH BODY
14	1800050	STAINLESS STEEL BALL, 22MM
15	1800055	LANDING INDICATOR BUSHING
16	1800045	LANDING SHOULDER
17	1800040	LOWER LATCH BODY
18	1800060	HEX NUT
19	1800065	SPINDLE
20	1800071	SHUT-OFF VALVE, HARD (QTY. 2)*
21	1800075	VALVE ADJUST WASHER (QTY. 2)
22	1800081	THRUST BEARING
23	1800085	SPINDLE BUSHING
24	1800095	HANGER BEARING
25	1800100	INNER TUBE COMPRESSION SPRING
26	1800105	SELF LOCKING NUT
27	1800285	INNER TUBE CAP ASSEMBLY (ITEMS: 27.1-27.4)
27.1	1800115	HYDRAULIC GREASE FITTING
27.2	1800120	STAINLESS STEEL BALL
27.3	1800110	INNER TUBE CAP
27.4	1800125	CHECK VALVE BODY

\* Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 14-15). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# PWL V-LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-10	2000355	CORE BARREL ASSEMBLY 5FT
1-10	2000350	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-5	2000325	INNER TUBE ASSEMBLY 5FT
1-5	2000320	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

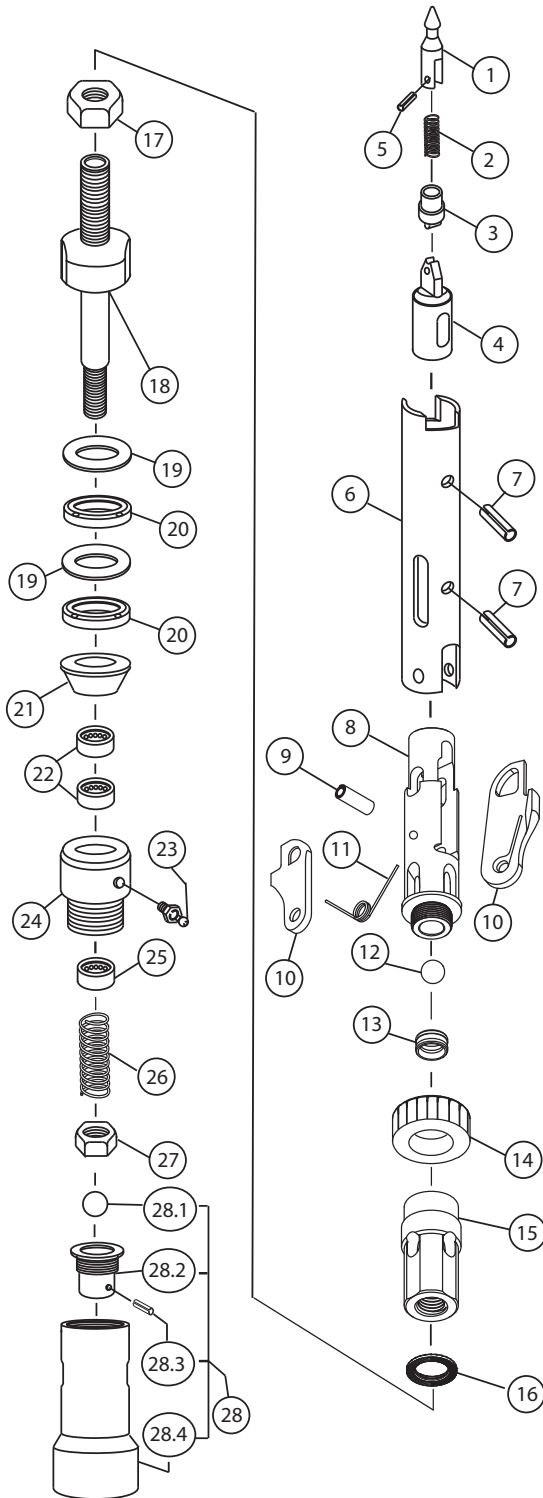
ITEM	PART #	DESCRIPTION
1	2000086	HEAD ASSEMBLY
2	2000004	INNER TUBE 5FT
	2000003	INNER TUBE 10FT
3	2000010	STOP RING
4	2000000	CORE LIFTER, FLUTED*
5	2000005	CORE LIFTER CASE
6	2000081	LOCKING COUPLING, FULL HOLE**
7	2000080	ADAPTER COUPLING
8	2000020	LANDING RING
9	2000007	OUTER TUBE 5FT
	2000026	OUTER TUBE 10FT
10	2000015	BRASS INNER TUBE STABILIZER RING
11	----	REAMING SHELL***
12	----	CORE BIT***

\*Additional options available. Refer to page 57 for details.

\*\* Additional options available. Refer to page 58 for details.

\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

# PWL V-LATCH Head Assembly

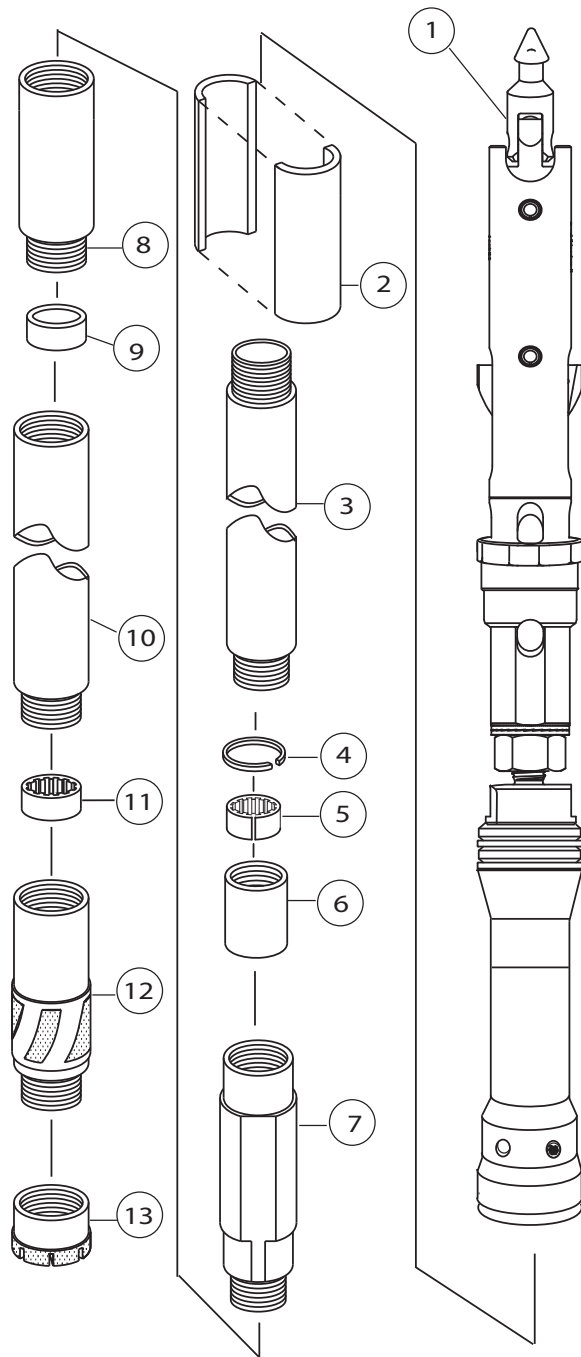


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-28	2000086	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	2000045	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	2000150	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	UPPER LATCH BODY
9	1800375	COILED SPRING PIN, 1/2" X 2"
10	2000131	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1800050	STAINLESS STEEL BALL, 22MM
13	1800055	LANDING INDICATOR BUSHING
14	2000050	LANDING SHOULDER
15	1800040	LOWER LATCH BODY
16	1800255	LOCK WASHER
17	2000160	HEX NUT
18	2000165	SPINDLE, HOLLOW
19	2000017	SHUT-OFF WASHER
20	2000016	SHUT-OFF VALVE, HARD*
21	2000037	TAPERED SHUT-OFF WASHER
22	2000101	THRUST BEARING (QTY. 2)
23	1800115	HYDRAULIC GREASE FITTING
24	2000175	SPINDLE BUSHING
25	2000170	HANGER BEARING
26	2000180	INNER TUBE COMPRESSION SPRING
27	2000185	SELF LOCKING NUT
28	2000190	INNER TUBE CAP ASSEMBLY (ITEMS: 28.1-28.4)
28.1	1800120	STAINLESS STEEL BALL
28.2	2000195	CHECK VALVE BODY
28.3	2000196	SPRING PIN 3/16" X 1 3/4"
28.4	2000018	INNER TUBE CAP

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# P3WL V-LATCH Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-11	2000345	CORE BARREL ASSEMBLY 5FT
1-11	2000340	CORE BARREL ASSEMBLY 10FT

## COMPLETE INNER TUBE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-6	2000335	INNER TUBE ASSEMBLY 5FT
1-6	2000330	INNER TUBE ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	2000086	HEAD ASSEMBLY
2	2000009	SPLIT INNER TUBE LINER SS 5FT (1.5M)
	2000008	SPLIT INNER TUBE LINER SS 10FT (3M)
3	2000003	INNER TUBE 10FT
	2000004	INNER TUBE 5FT
4	2000065	STOP RING
5	2000025	CORE LIFTER, FLUTED*
6	2000060	CORE LIFTER CASE
7	2000081	LOCKING COUPLING, FULL HOLE**
8	2000080	ADAPTER COUPLING
9	2000020	LANDING RING
10	2000007	OUTER TUBE 5FT
	2000026	OUTER TUBE 10FT
11	2000015	BRASS INNER TUBE STABILIZER RING
12	----	REAMING SHELL***
13	----	CORE BIT***

\*Additional options available. Refer to page 57 for details.

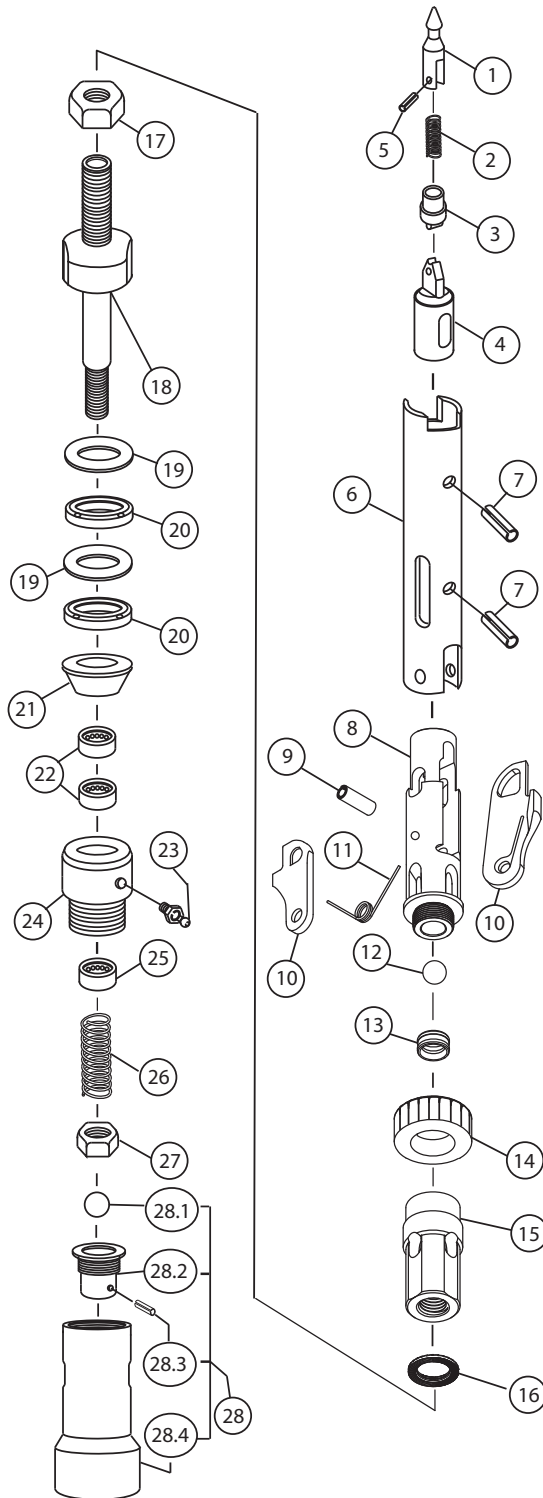
\*\*Additional options available. Refer to page 58 for details.

\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

## PUMP OUT GROUP

ITEM	PART #	DESCRIPTION
A-D	2000210	COMPLETE PUMP OUT ASSEMBLY
A	2000022	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	2000021	PUMP OUT PISTON
D	2000024	O-RING PUMP OUT PISTON

# P3WL V-LATCH Head Assembly



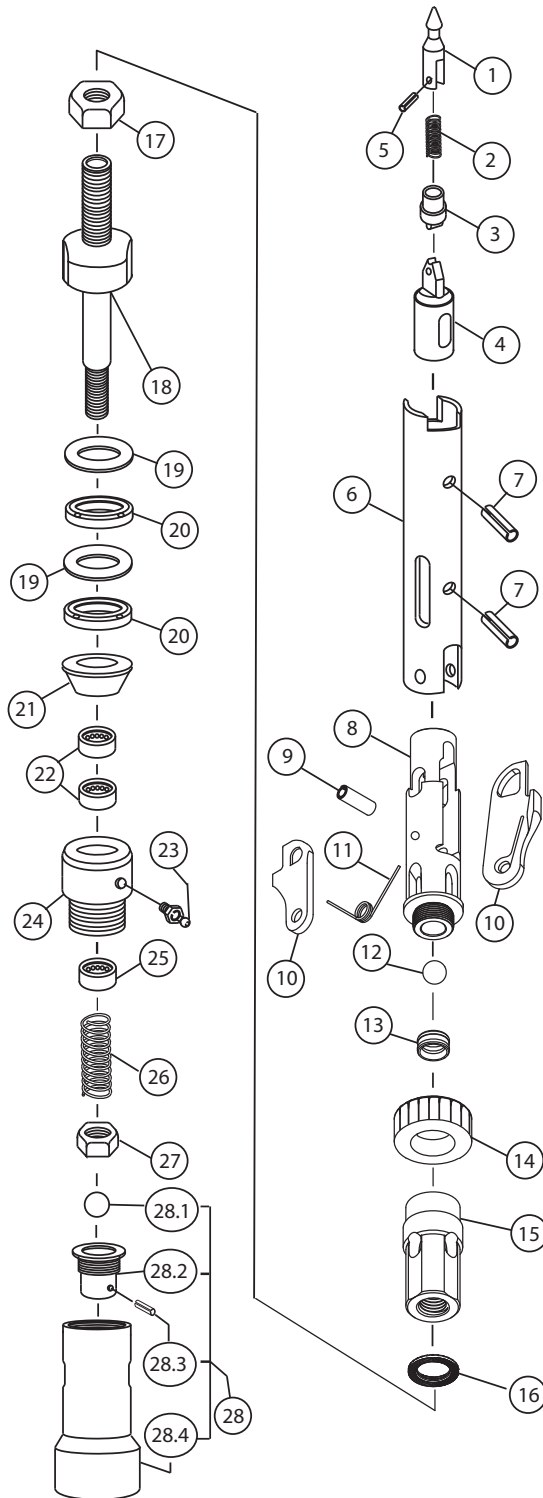
HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-28	2000086	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	2000045	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	2000150	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	UPPER LATCH BODY
9	1800375	COILED SPRING PIN, 1/2" X 2"
10	2000131	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1800050	STAINLESS STEEL BALL, 22MM
13	1800055	LANDING INDICATOR BUSHING
14	2000050	LANDING SHOULDER
15	1800040	LOWER LATCH BODY
16	1800255	LOCK WASHER
17	2000160	HEX NUT
18	2000165	SPINDLE
19	2000017	SHUT-OFF WASHER
20	2000016	SHUT-OFF VALVE, HARD*
21	2000037	TAPERED SHUT-OFF WASHER
22	2000101	THRUST BEARING (QTY. 2)
23	1800115	HYDRAULIC GREASE FITTING
24	2000175	SPINDLE BUSHING
25	2000170	HANGER BEARING
26	2000180	INNER TUBE COMPRESSION SPRING
27	2000185	SELF LOCKING NUT
28	2000190	INNER TUBE CAP ASSEMBLY (ITEMS: 28.1-28.3)
28.1	1800120	STAINLESS STEEL BALL
28.2	2000195	SPRING PIN
28.3	2000196	CHECK VALVE BODY
28.4	2000018	INNER TUBE CAP

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.



# P3WL V-LATCH Head Assembly

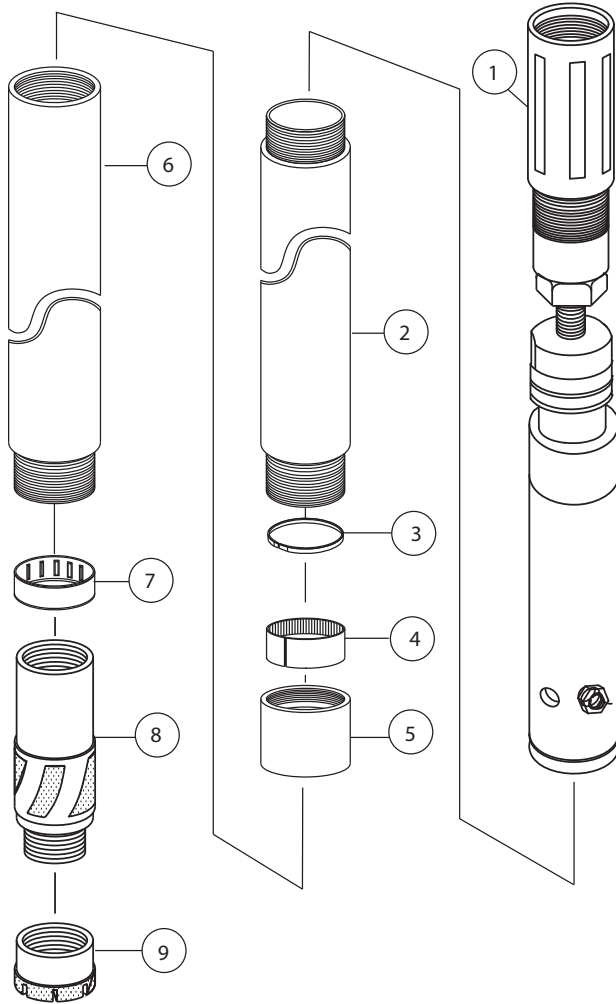


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-28	2000086	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	2000045	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	2000150	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	UPPER LATCH BODY
9	1800375	COILED SPRING PIN, 1/2" X 2"
10	2000131	V-LATCH (QTY. 2)
11	1950342	LATCH SPRING
12	1800050	STAINLESS STEEL BALL, 22MM
13	1800055	LANDING INDICATOR BUSHING
14	2000050	LANDING SHOULDER
15	1800040	LOWER LATCH BODY
16	1800255	LOCK WASHER
17	2000160	HEX NUT
18	2000165	SPINDLE
19	2000017	SHUT-OFF WASHER
20	2000016	SHUT-OFF VALVE, HARD*
21	2000037	TAPERED SHUT-OFF WASHER
22	2000101	THRUST BEARING (QTY. 2)
23	1800115	HYDRAULIC GREASE FITTING
24	2000175	SPINDLE BUSHING
25	2000170	HANGER BEARING
26	2000180	INNER TUBE COMPRESSION SPRING
27	2000185	SELF LOCKING NUT
28	2000190	INNER TUBE CAP ASSEMBLY (ITEMS: 28.1-28.3)
28.1	1800120	STAINLESS STEEL BALL
28.2	2000195	SPRING PIN
28.3	2000196	CHECK VALVE BODY
28.4	2000018	INNER TUBE CAP

\*Additional options available. Refer to page 59 for details.

Head assemblies are equipped with a landing indicator (item 12-13). The ball must be reset after each use. This can be done by prying the ball back through the bushing. If you do not wish to use the landing indicator, simply remove the ball. Use of the landing indicator requires a pump capable of producing 300PSI to activate indicator.

# NV CONVENTIONAL Core Barrel Assembly



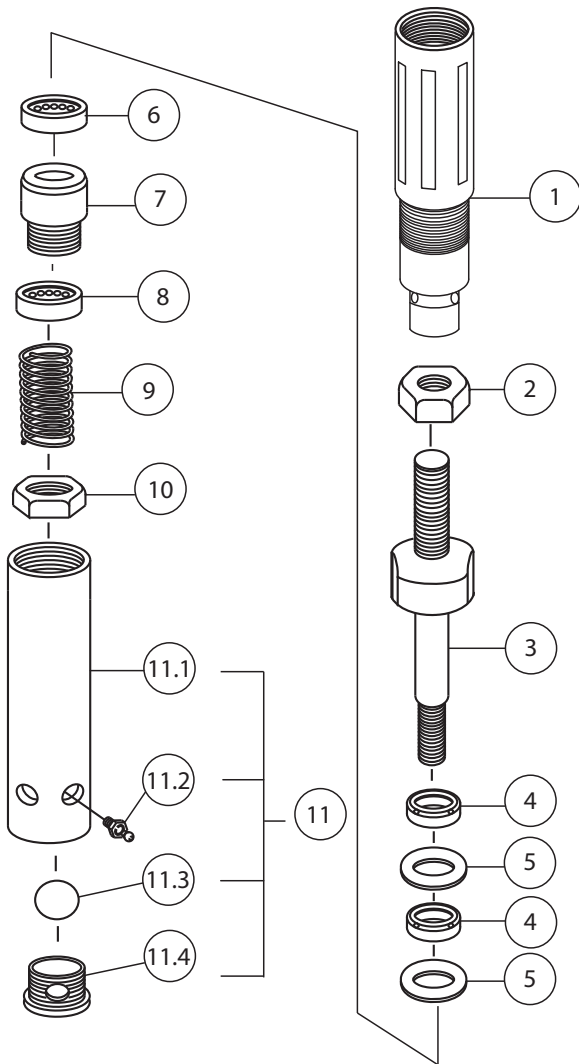
COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-7	1850150	CORE BARREL ASSEMBLY 5FT
	1850145	CORE BARREL ASSEMBLY 10FT

CORE BARREL PARTS		
ITEM	PART #	DESCRIPTION
1	2050190	HEAD ASSEMBLY
2	1950020	INNER TUBE 5FT
	1950025	INNER TUBE 10FT
3	1950010	STOP RING
4	1950005	CORE LIFTER, FLUTED*
5	1950000	CORE LIFTER CASE
6	1950030	OUTER TUBE 5FT
	1950035	OUTER TUBE 10FT
7	1950120	BRASS INNER TUBE STABILIZER RING
8	----	REAMING SHELL**
9	----	CORE BIT**

\* Additional options available. Refer to page 57 for details.

\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

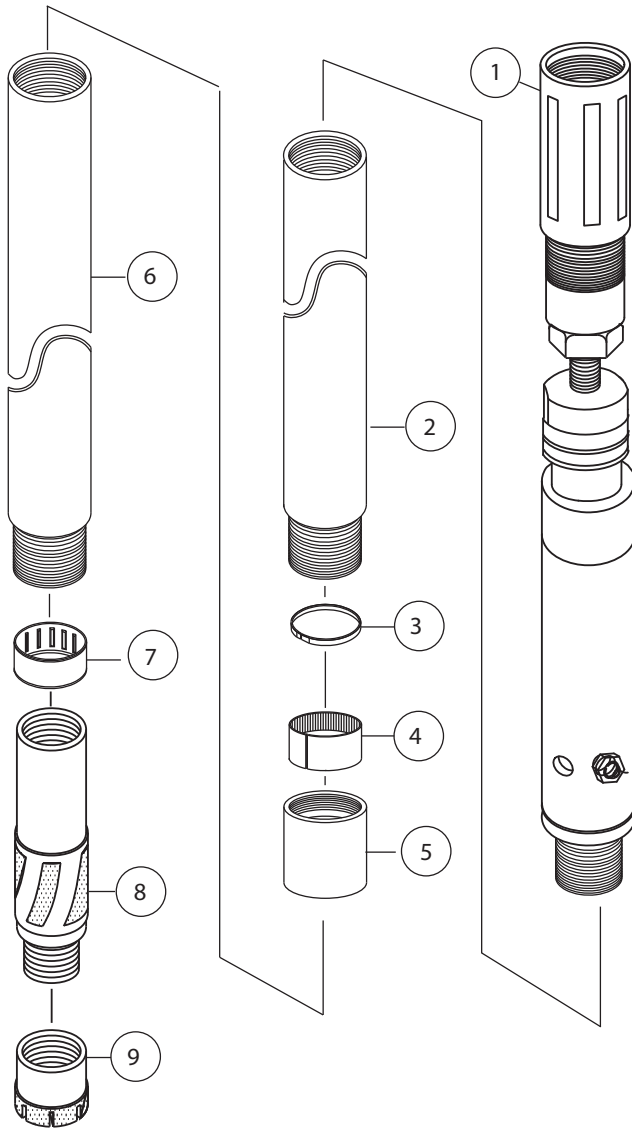
# NV CONVENTIONAL Head Assembly



HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2050190	NV HEAD ASSEMBLY, NWJ BOX CONNECTION
1	2050166	HEAD
2	1950055	HEX NUT
3	1950060	SPINDLE
4	1950065	SHUT-OFF VALVE, HARD*
5	1950070	VALVE ADJUSTING WASHER
6	1950075	THRUST BEARING
7	1950080	SPINDLE BUSHING
8	1950085	HANGER BEARING
9	1950090	INNER TUBE COMPRESSION SPRING
10	1950095	SELF LOCKING NUT
11	1950150	INNER TUBE CAP ASSEMBLY (ITEMS: 11.1-11.4)
11.1	1950100	INNER TUBE CAP
11.2	1950125	HYDRAULIC GREASE FITTING
11.3	1950130	STAINLESS STEEL BALL
11.4	1950135	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

# NV2 CONVENTIONAL Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

ITEM	PART #	DESCRIPTION
1-7	1850156	CORE BARREL ASSEMBLY 5FT
	1850160	CORE BARREL ASSEMBLY 5FT W/CHROME PLATED INNER TUBE
	1850158	CORE BARREL ASSEMBLY 10FT
	1850155	CORE BARREL ASSEMBLY 10FT W/CHROME PLATED INNER TUBE

## CORE BARREL PARTS

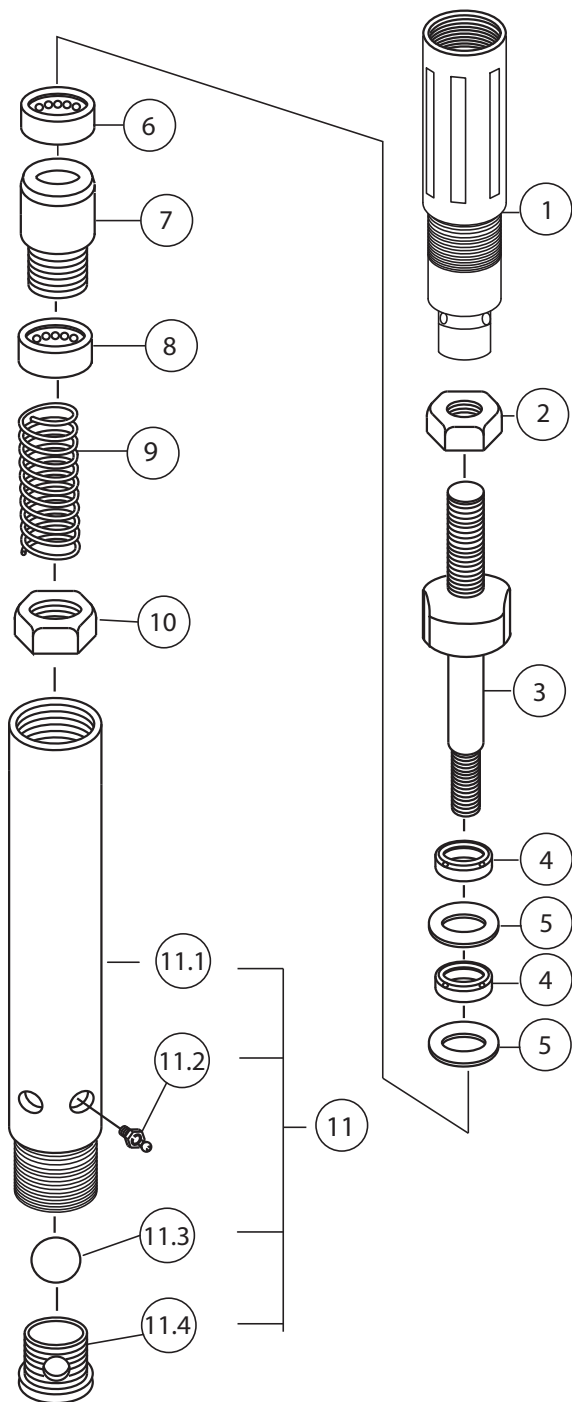
ITEM	PART #	DESCRIPTION
1	2050195	HEAD ASSEMBLY
2	1850100	INNER TUBE 5FT
	1850101	INNER TUBE 5FT CHROME PLATED*
	1850105	INNER TUBE 10FT
	1850107	INNER TUBE 10FT CHROME PLATED*
3	1850035	STOP RING
4	1850040	CORE LIFTER, FLUTED**
5	1850045	CORE LIFTER CASE
	1950030	OUTER TUBE 5FT
6	1950035	OUTER TUBE 10FT
7	1850060	BRASS INNER TUBE STABILIZER RING
8	----	REAMING SHELL***
9	----	CORE BIT***

\*Additional options available. Refer to page 59 for details.

\*\*Additional options available. Refer to page 57 for details.

\*\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

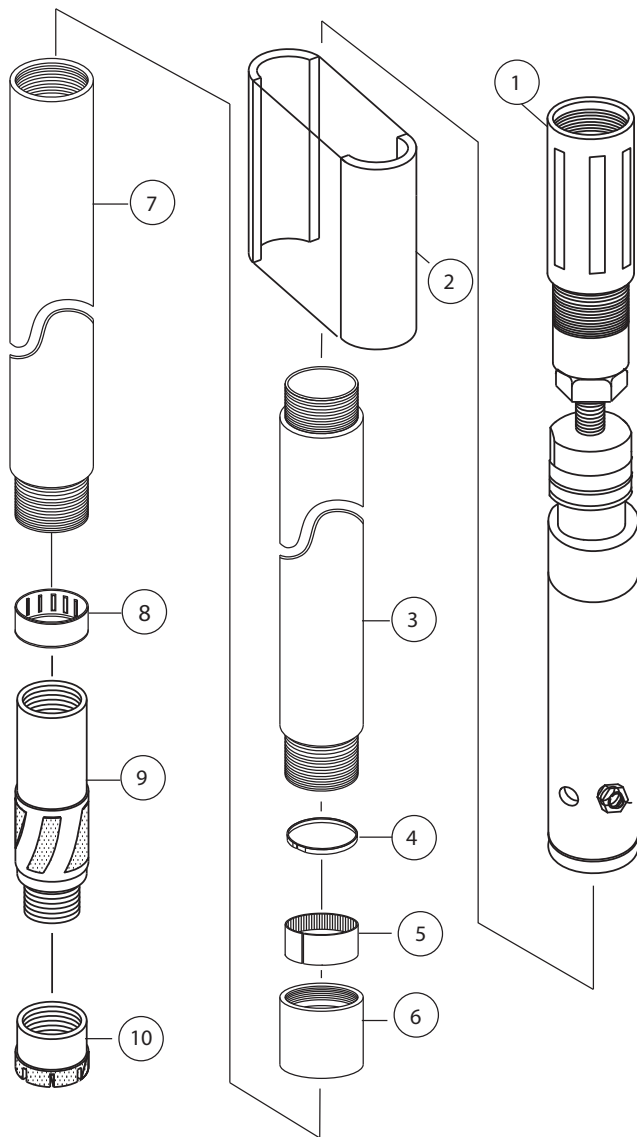
# NV2 CONVENTIONAL Head Assembly



HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2050195	NV2 HEAD ASSEMBLY NWJ BOX CONNECTION
1	2050166	HEAD
2	1950055	HEX NUT
3	1950060	SPINDLE
4	1950065	SHUT-OFF VALVE, HARD*
5	1950070	VALVE ADJUSTING WASHER
6	1950075	THRUST BEARING
7	1950080	SPINDLE BUSHING
8	1950085	HANGER BEARING
9	1950090	INNER TUBE COMPRESSION SPRING
10	1950095	SELF LOCKING NUT
11	1850010	INNER TUBE CAP ASSEMBLY (ITEMS: 11.1-11.4)
11.1	1850030	INNER TUBE CAP
11.2	1950125	HYDRAULIC GREASE FITTING
11.3	1950130	STAINLESS STEEL BALL
11.4	1950135	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

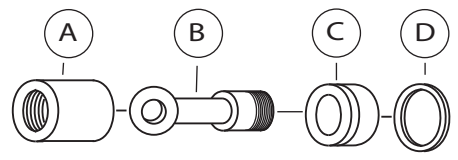
# NV3 CONVENTIONAL Core Barrel Assembly



COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-8	1850170	CORE BARREL ASSEMBLY 5FT
	1850165	CORE BARREL ASSEMBLY 10FT

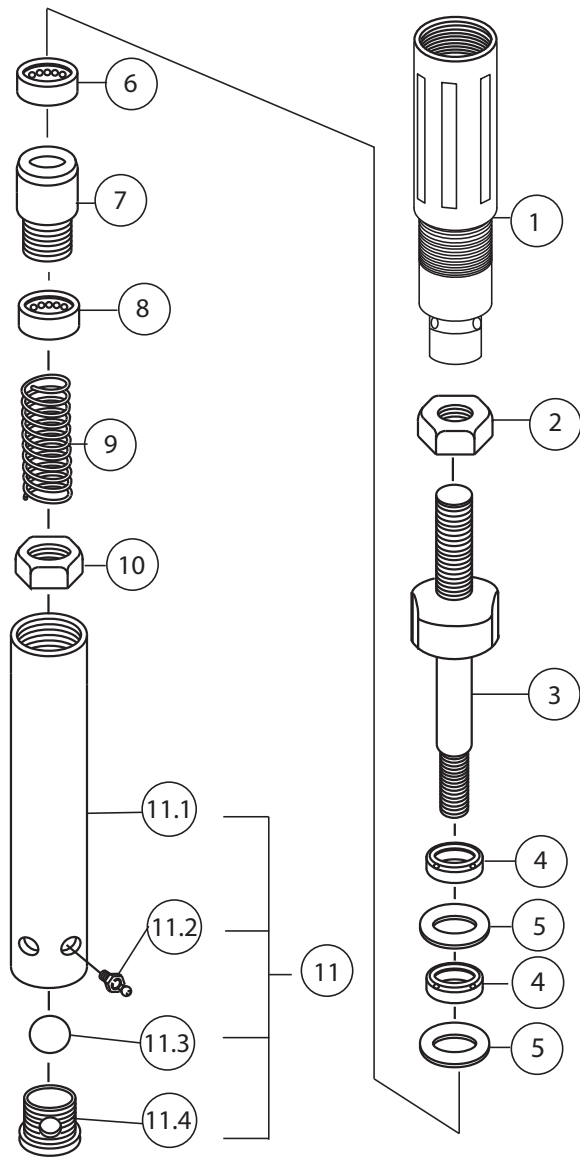
CORE BARREL PARTS		
ITEM	PART #	DESCRIPTION
1	2050190	HEAD ASSEMBLY
2	1900120	SPLIT INNER TUBE LINER SS 5FT (1.5M)
	1900110	SPLIT INNER TUBE LINER SS 10FT (3M)
3	1950020	INNER TUBE 5FT
	1950025	INNER TUBE 10FT
4	1900070	STOP RING
5	1900000	CORE LIFTER, FLUTED*
6	1900005	CORE LIFTER CASE
7	1950030	OUTER TUBE 5FT
	1950035	OUTER TUBE 10FT
8	1950120	BRASS INNER TUBE STABILIZER RING
9	-----	REAMING SHELL**
10	-----	CORE BIT**

\*Additional options available. Refer to page 57 for details.  
 \*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes and Reaming Shells section for additional details.



PUMP OUT GROUP		
ITEM	PART #	DESCRIPTION
A-D	1900180	COMPLETE PUMP OUT ASSEMBLY
A	1900140	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	1900125	PUMP OUT PISTON
D	1900130	O-RING PUMP OUT PISTON

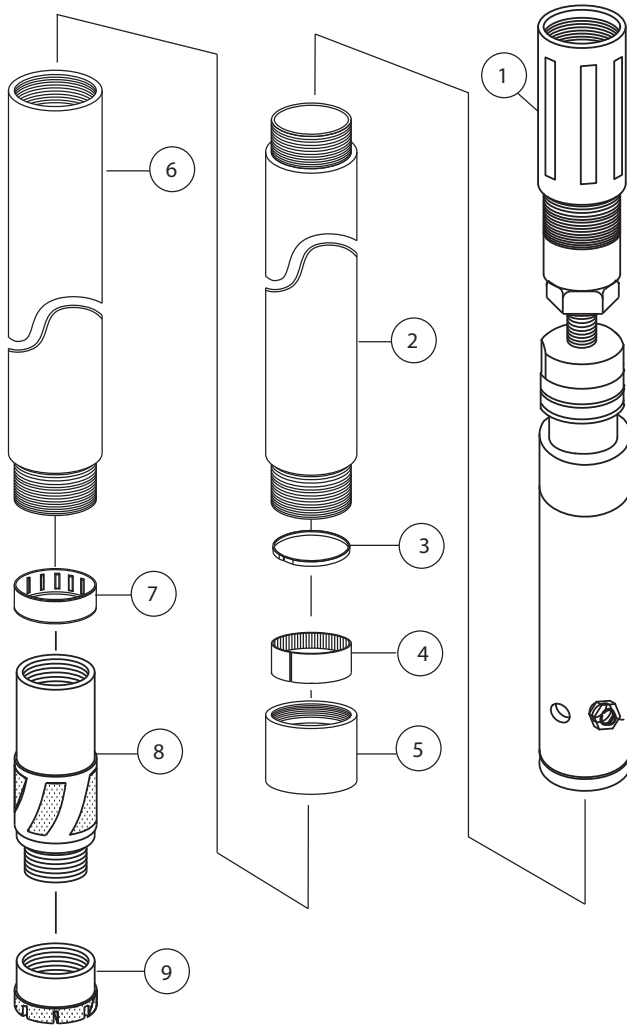
# NV3 CONVENTIONAL Head Assembly



HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2050190	NV HEAD ASSEMBLY NWJ BOX CONNECTION
1	2050166	HEAD
2	1950055	HEX NUT
3	1950060	SPINDLE, NV
4	1950065	SHUT-OFF VALVE, HARD*
5	1950070	VALVE ADJUSTING WASHER
6	1950075	THRUST BEARING
7	1950080	SPINDLE BUSHING
8	1950085	HANGER BEARING
9	1950090	INNER TUBE COMPRESSION SPRING
10	1950095	SELF LOCKING NUT
11	1950150	INNER TUBE CAP ASSEMBLY (ITEMS: 11.1-11.4)
11.1	1950100	INNER TUBE CAP
11.2	1950125	HYDRAULIC GREASE FITTING
11.3	1950130	STAINLESS STEEL BALL
11.4	1950135	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

# HV CONVENTIONAL Core Barrel Assembly



COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-7	1800168	CORE BARREL ASSEMBLY 5FT
	1800330	CORE BARREL ASSEMBLY 10FT

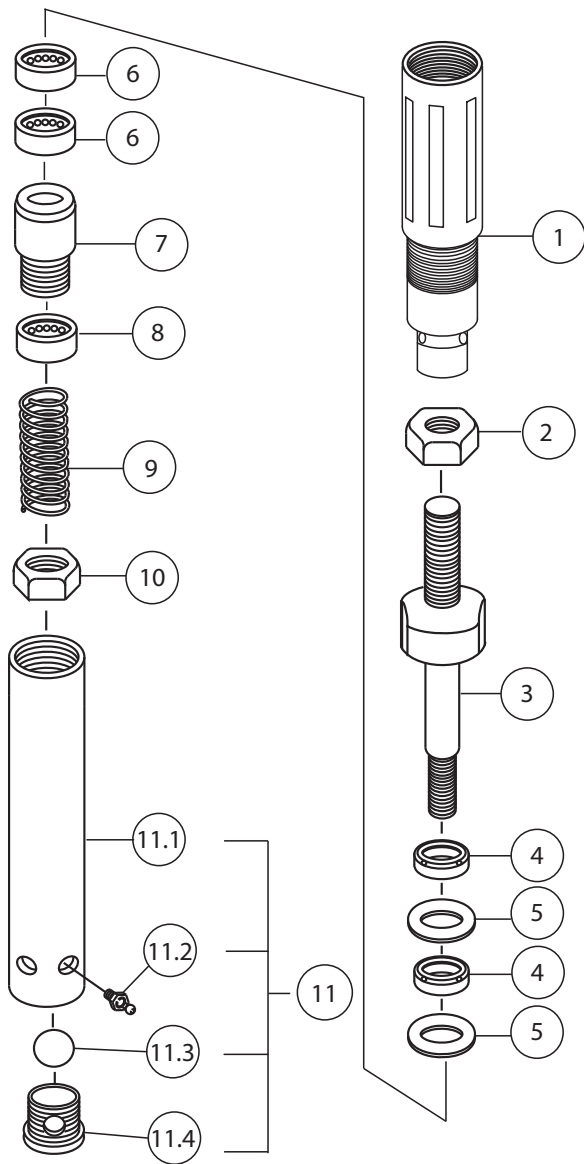
INNER TUBE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1	2050205	HEAD ASSEMBLY
2	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
3	1800020	STOP RING
4	1800015	CORE LIFTER, FLUTED*
5	1800010	CORE LIFTER CASE
6	1800030	OUTER TUBE 5FT
	1800035	OUTER TUBE 10FT
7	1800260	BRASS INNER TUBE STABILIZER RING
8	----	REAMING SHELL**
9	----	CORE BIT**

\*Additional options available. Refer to page 57 for details.

\*\* Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.



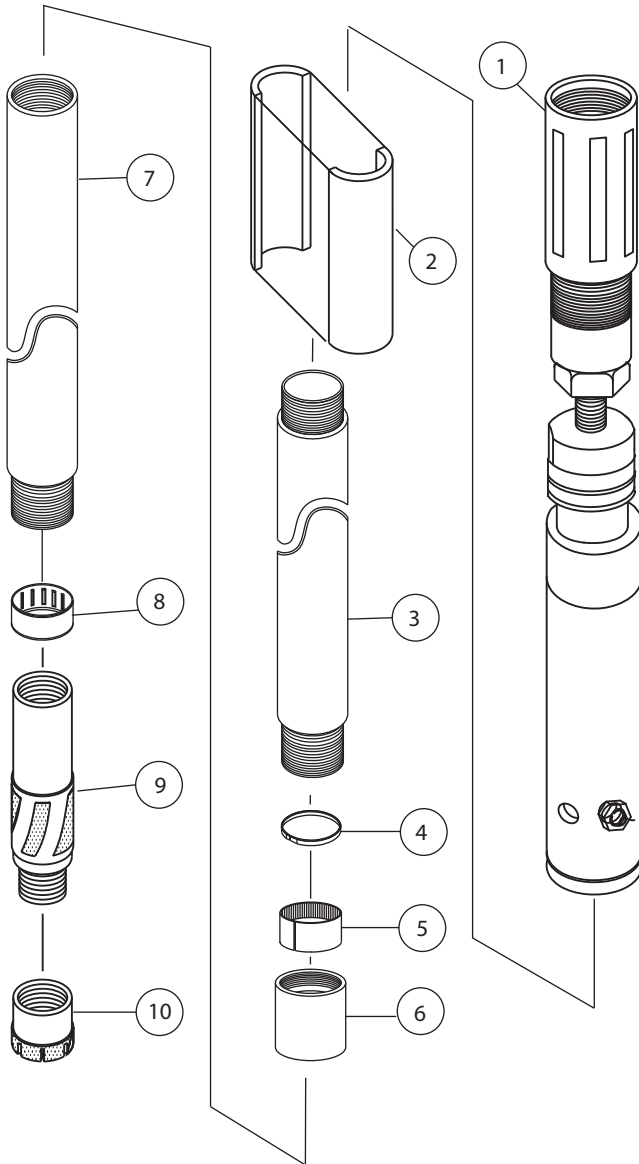
# HV CONVENTIONAL Head Assembly



HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2050205	HV HEAD ASSEMBLY, NWJ BOX CONNECTION
1	2050167	HEAD
2	1800060	HEX NUT
3	1800065	SPINDLE
4	1800071	SHUT-OFF VALVE, HARD*
5	1800075	VALVE ADJUSTING WASHER
6	1800081	THRUST BEARING (QTY. 2)
7	1800085	SPINDLE BUSHING
8	1800095	HANGER BEARING
9	1800100	INNER TUBE COMPRESSION SPRING
10	1800105	SELF LOCKING NUT
11	1800285	INNER TUBE CAP ASSEMBLY (ITEMS: 11.1-11.4)
11.1	1800110	INNER TUBE CAP
11.2	1800115	HYDRAULIC GREASE FITTING
11.3	1800120	STAINLESS STEEL BALL
11.4	1800125	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

# HV3 CONVENTIONAL Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

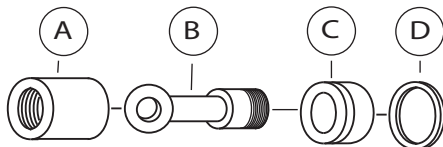
ITEM	PART #	DESCRIPTION
1-8	1800340	CORE BARREL ASSEMBLY 5FT
	1800335	CORE BARREL ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	2050205	HEAD ASSEMBLY
2	1750065	SPLIT INNER TUBE LINER SS 5FT (1.5M)
	1750070	SPLIT INNER TUBE LINER SS 10FT (3M)
3	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
4	1750050	STOP RING
5	1750020	CORE LIFTER, FLUTED*
6	1750025	CORE LIFTER CASE
7	1800030	OUTER TUBE 5FT
	1800035	OUTER TUBE 10FT
8	1800260	BRASS INNER TUBE STABILIZER RING
9	-----	REAMING SHELL**
10	-----	CORE BIT**

\*Additional options available. Refer to page 57 for details.

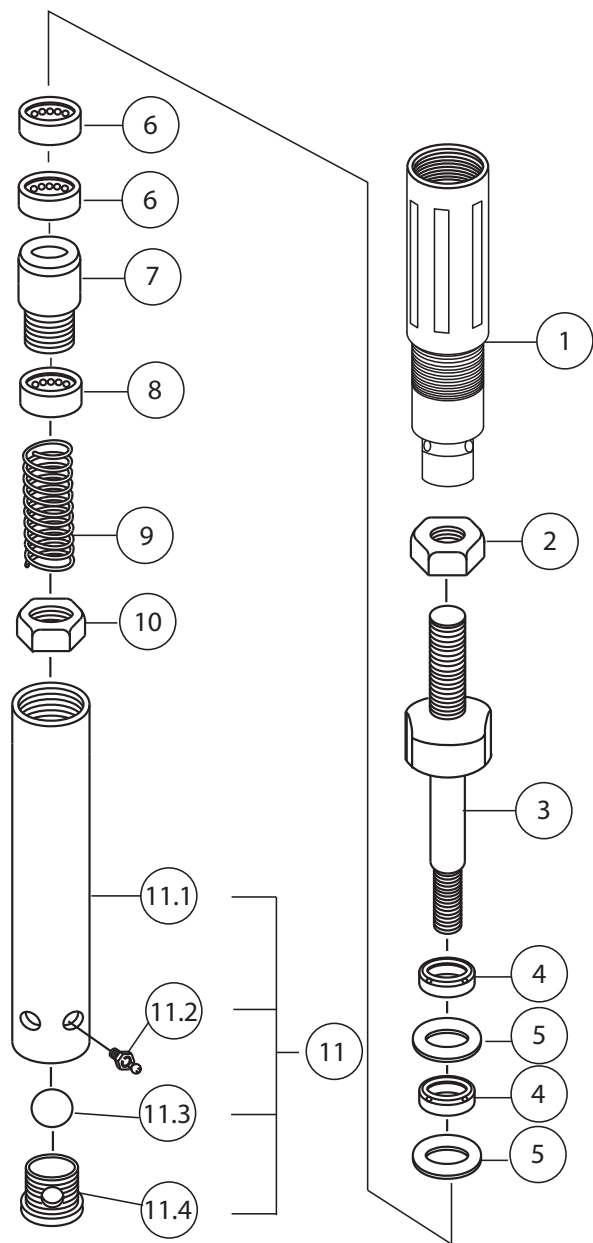
\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.



## PUMP OUT GROUP

ITEM	PART #	DESCRIPTION
A-D	1750145	COMPLETE PUMP OUT ASSEMBLY
A	1750110	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	1750095	PUMP OUT PISTON
D	1750100	O-RING PUMP OUT PISTON

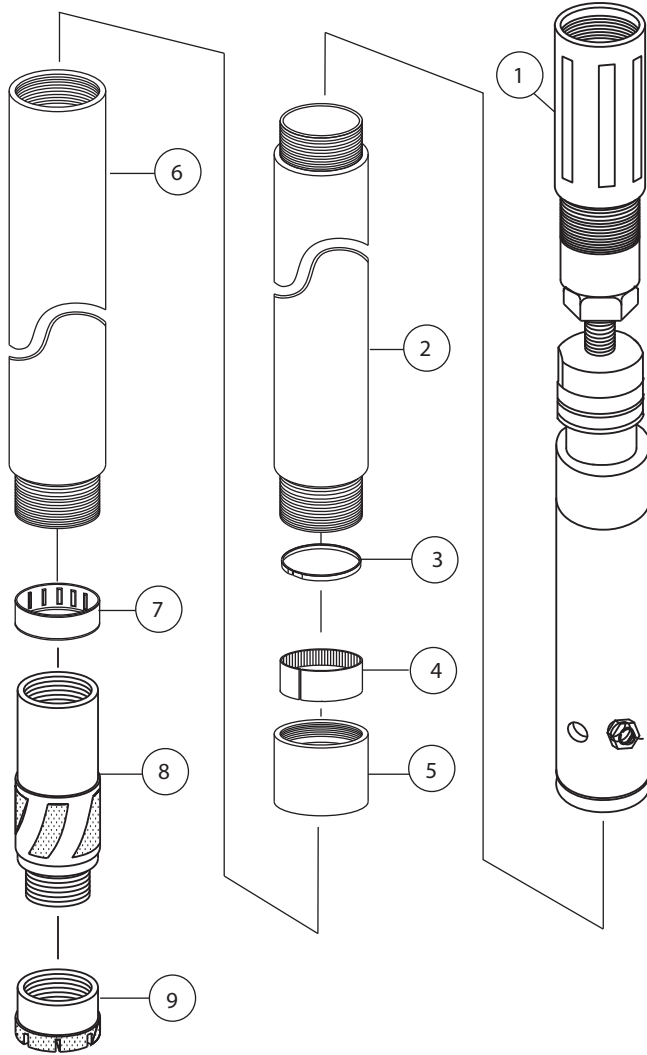
# HV3 CONVENTIONAL Head Assembly



HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2050205	HV HEAD ASSEMBLY NWJ BOX CONNECTION
1	2050167	HEAD
2	1800060	HEX NUT
3	1800065	SPINDLE
4	1800071	SHUT-OFF VALVE, HARD*
5	1800075	VALVE ADJUSTING WASHER
6	1800081	THRUST BEARING (QTY. 2)
7	1800085	SPINDLE BUSHING
8	1800095	HANGER BEARING
9	1800100	INNER TUBE COMPRESSION SPRING
10	1800105	SELF LOCKING NUT
11	1800285	INNER TUBE CAP ASSEMBLY (ITEMS: 11.1-11.4)
11.1	1800110	INNER TUBE CAP
11.2	1800115	HYDRAULIC GREASE FITTING
11.3	1800120	STAINLESS STEEL BALL
11.4	1800125	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

# PV CONVENTIONAL Core Barrel Assembly



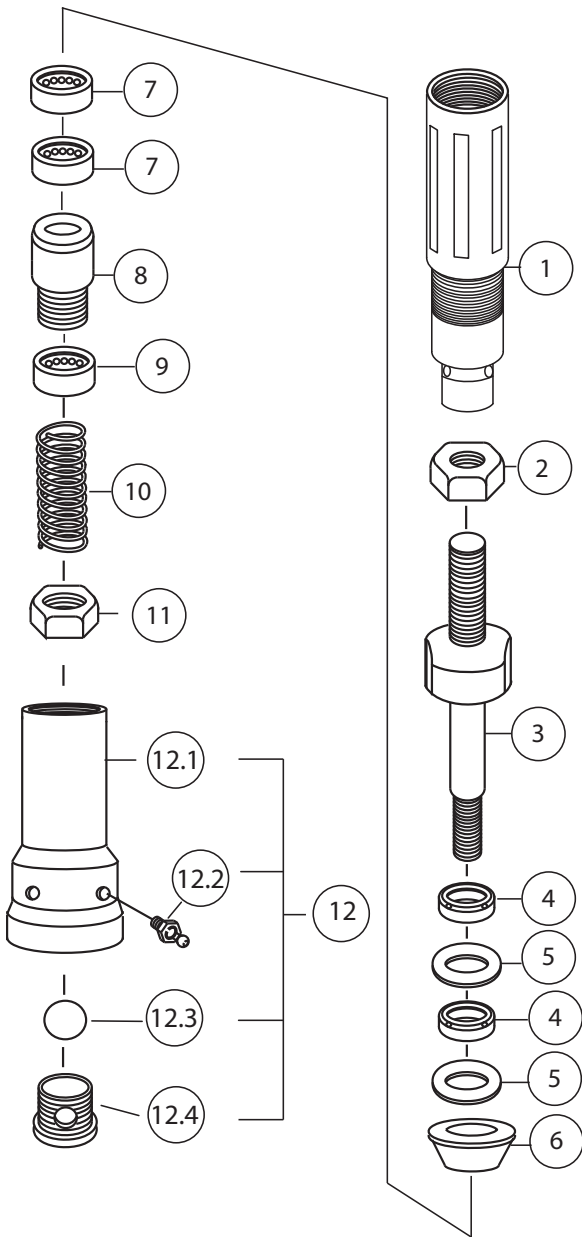
COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-7	2000295	CORE BARREL ASSEMBLY 5FT
	2000290	CORE BARREL ASSEMBLY 10FT

INNER TUBE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1	2000255	HEAD ASSEMBLY
2	2000003	INNER TUBE 10FT
	2000004	INNER TUBE 5FT
3	2000010	STOP RING
4	2000000	CORE LIFTER, FLUTED*
5	2000005	CORE LIFTER CASE
6	2000026	OUTER TUBE 10FT
	2000007	OUTER TUBE 5FT
7	2000015	BRASS INNER TUBE STABILIZER RING
8	----	REAMING SHELL**
9	----	CORE BIT**

\*Additional options available. Refer to page 57 for details.

\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.

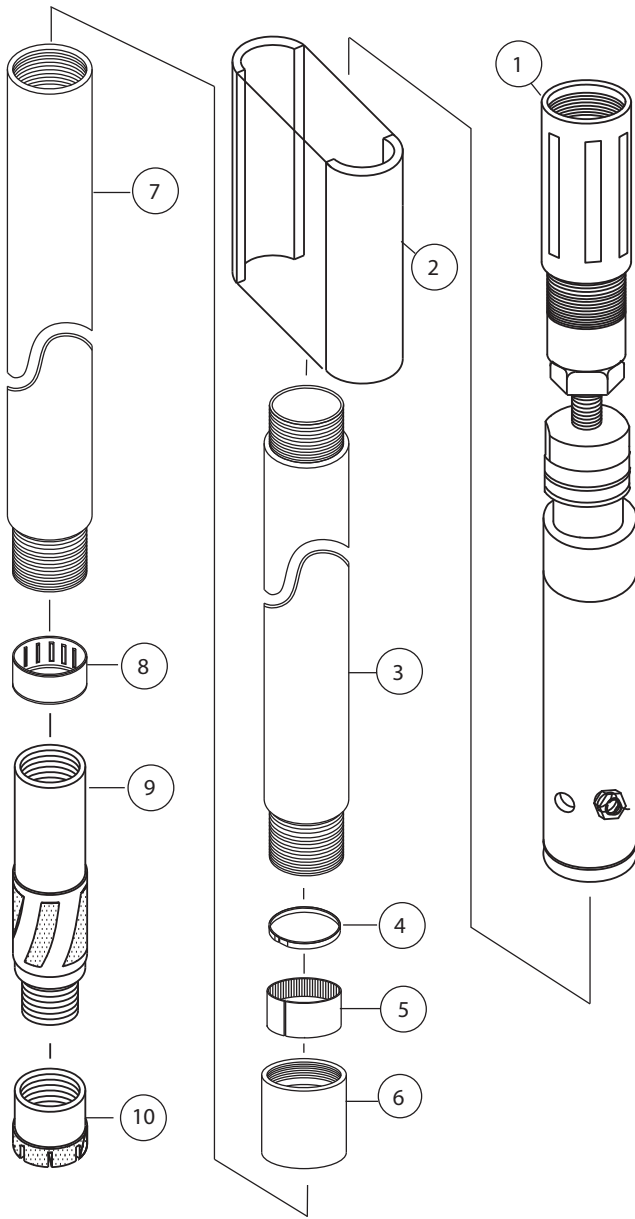
# PV CONVENTIONAL Head Assembly



HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2000255	PV HEAD ASSEMBLY, 2 7/8" API BOX CONNECTION
1	2000110	HEAD
2	2000160	HEX NUT
3	2000165	SPINDLE
4	2000016	SHUT-OFF VALVE, HARD*
5	2000017	VALVE ADJUSTING WASHER
6	2000037	TAPERED WASH SHOE
7	2000101	THRUST BEARING (QTY. 2)
8	2000175	SPINDLE BUSHING
9	2000170	HANGER BEARING
10	2000180	INNER TUBE COMPRESSION SPRING
11	2000185	SELF LOCKING NUT
12	2000190	INNER TUBE CAP ASSEMBLY (ITEMS: 12.1-12.4)
12.1	2000018	INNER TUBE CAP
12.2	1800115	HYDRAULIC GREASE FITTING
12.3	1800120	STAINLESS STEEL BALL
12.4	2000195	CHECK VALVE BODY

\*Additional options available. Refer to page 59 for details.

# PV3 CONVENTIONAL Core Barrel Assembly



## COMPLETE CORE BARREL ASSEMBLY

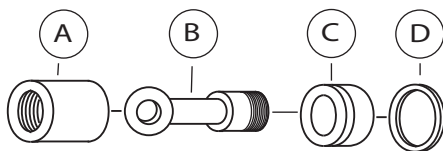
ITEM	PART #	DESCRIPTION
1-8	2000265	CORE BARREL ASSEMBLY 5FT
	2000260	CORE BARREL ASSEMBLY 10FT

## CORE BARREL PARTS

ITEM	PART #	DESCRIPTION
1	2000255	HEAD ASSEMBLY
2	2000008	SPLIT INNER TUBE LINER SS 10FT (3M)
	2000009	SPLIT INNER TUBE LINER SS 5FT (1.5M)
3	2000003	INNER TUBE 10FT
	2000004	INNER TUBE 5FT
4	2000065	STOP RING
5	2000025	CORE LIFTER, FLUTED*
6	2000060	CORE LIFTER CASE
7	2000026	OUTER TUBE 10FT
	2000007	OUTER TUBE 5FT
8	2000015	BRASS INNER TUBE STABILIZER RING
9	----	REAMING SHELL**
10	----	CORE BIT**

\*Additional options available. Refer to page 57 for details.

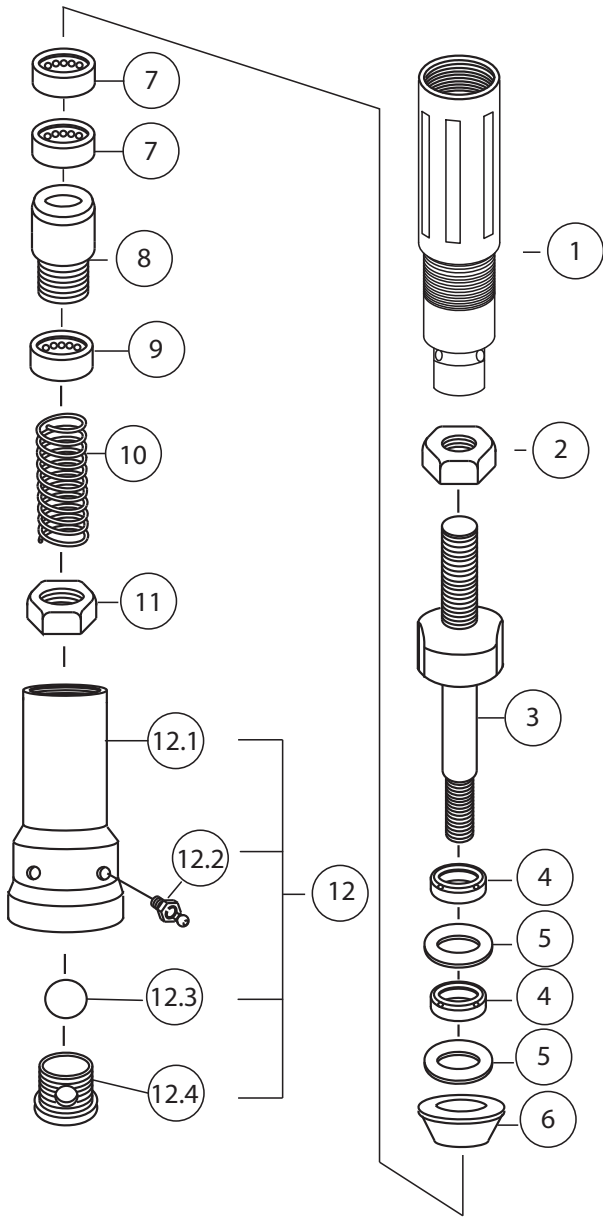
\*\*Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.



## PUMP OUT GROUP

ITEM	PART #	DESCRIPTION
A-D	2000210	COMPLETE PUMP OUT ASSEMBLY
A	2000022	PUMP OUT ADAPTER
B	1900135	PUMP OUT PISTON PLUG
C	2000021	PUMP OUT PISTON
D	2000024	O-RING PUMP OUT PISTON

# PV3 CONVENTIONAL Head Assembly



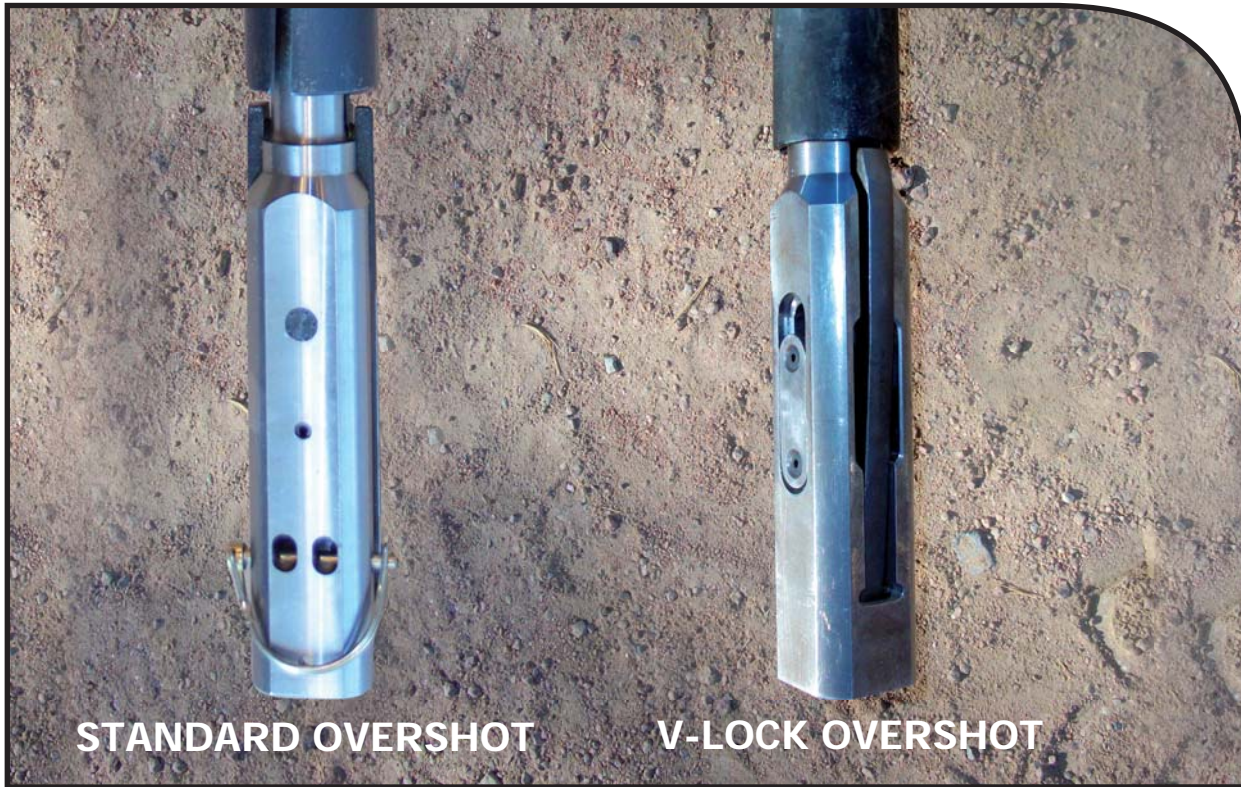
HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2000255	PV HEAD ASSEMBLY 2 7/8" API BOX CONNECTION
1	2000110	HEAD
2	2000160	HEX NUT
3	2000165	SPINDLE
4	2000016	SHUT-OFF VALVE, HARD*
5	2000017	VALVE ADJUSTING WASHER
6	2000037	TAPERED WASH SHOE
7	2000101	THRUST BEARING (QTY. 2)
8	2000175	SPINDLE BUSHING
9	2000170	HANGER BEARING
10	2000180	INNER TUBE COMPRESSION SPRING
11	2000185	SELF LOCKING NUT
12	2000190	INNER TUBE CAP ASSEMBLY (ITEMS: 12.1-12.4)
12.1	2000018	INNER TUBE CAP
12.2	1800115	HYDRAULIC GREASE FITTING
12.3	1800120	STAINLESS STEEL BALL
12.4	2000195	CHECK VALVE BODY

\* Additional options available. Refer to page 59 for details.





# OVERSHOTS



Overshots are a key component of wireline coring systems. To retrieve the core sample, the overshoot is lowered into the hole on a wire cable until it comes in contact with the spearhead point on the head assembly. Positive latching lifting dogs securely attach, and the inner tube assembly is pulled from the hole to retrieve the core.

Hole Products' overshoots are offered in V-lock and standard styles, and available in all DCDMA sizes. Overshoots work with all core barrel head assemblies within a size designation.

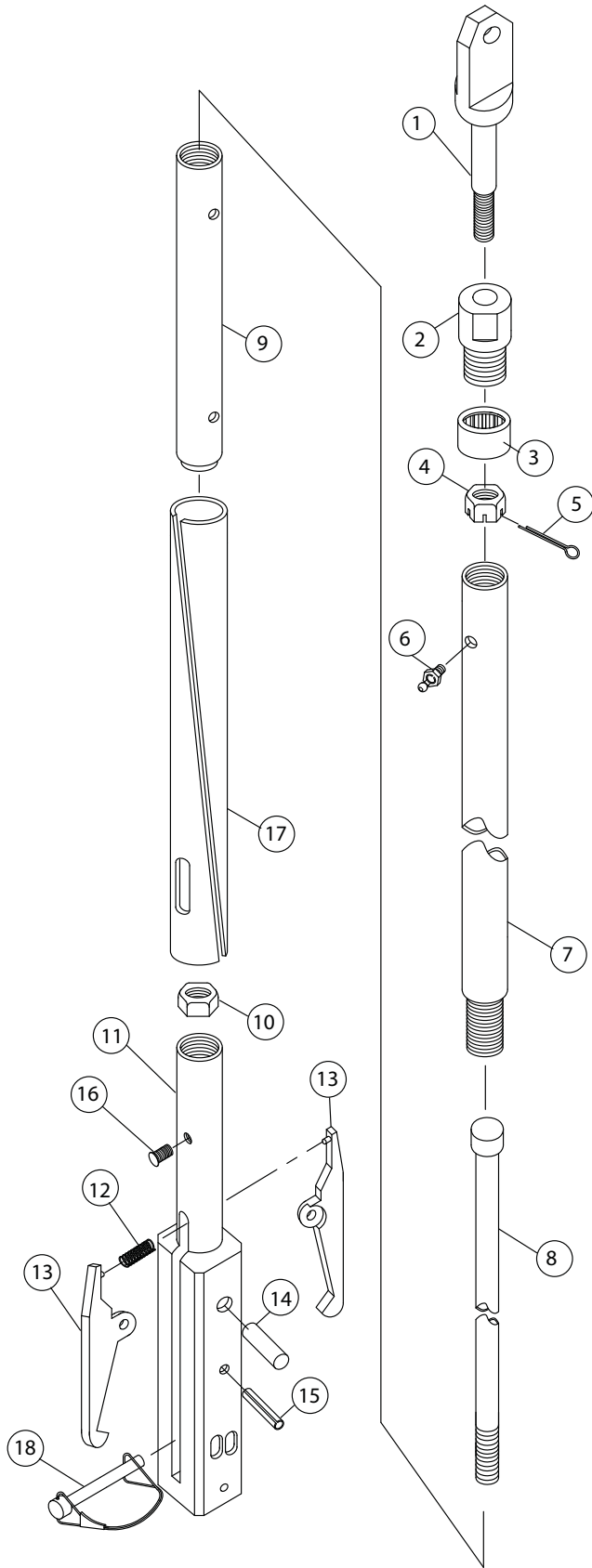
## STANDARD

Hole Products' standard overshoots feature a manual safety lock pin. Once the core filled inner tube is hoisted above the top of the drill rods the safety lock pin can be inserted through the overshoot head and under the spearhead point. This will allow the operator to hoist and remove the core sample from the inner tube.

## V-LOCK

Hole Products' V-lock overshoots are safe, reliable, fast, and easy to use. The automatic safety feature is designed to reduce the chance of an accidental release. When the inner tube assembly is attached and lifted, the lifting dogs automatically retract into position. No extra manual steps are required to activate the safety feature, thus reducing the potential for human error.

# BWL STANDARD OVERSHOT



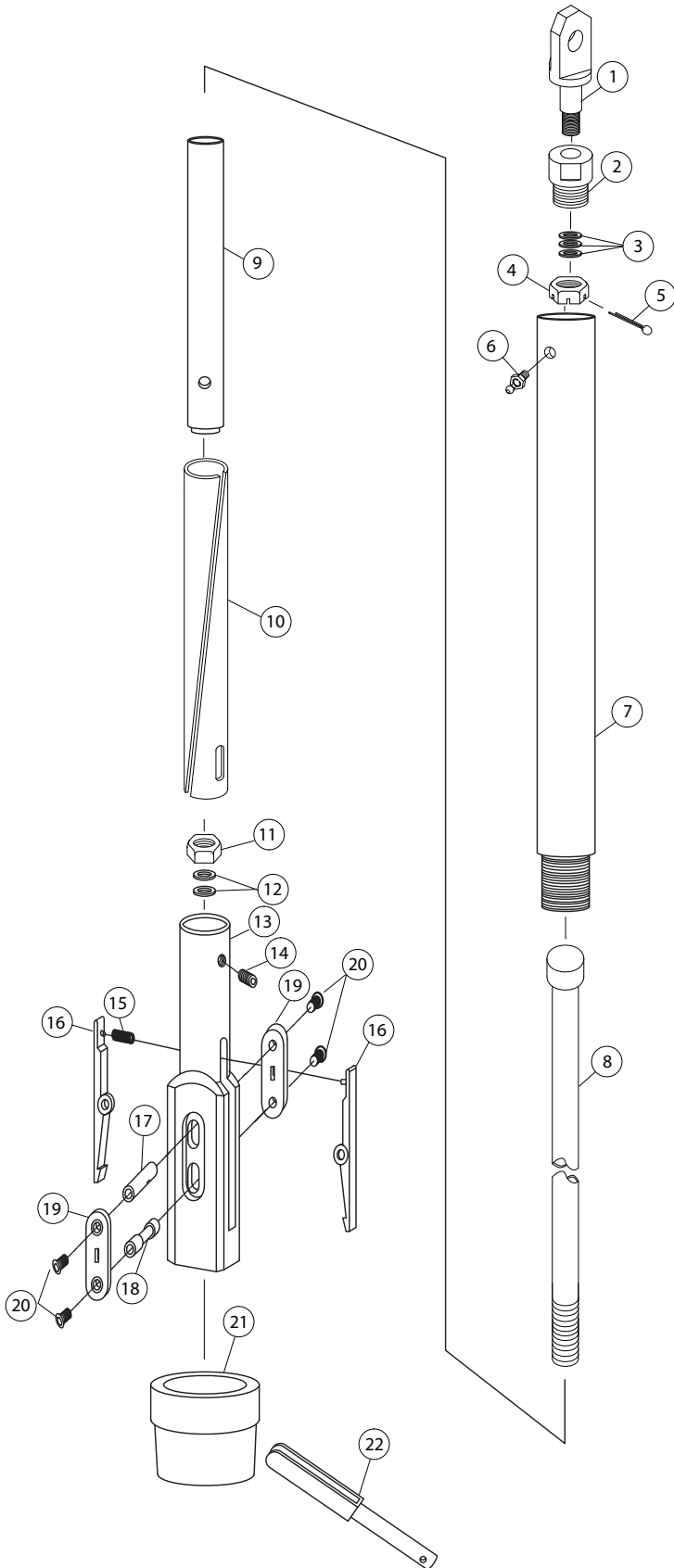
## COMPLETE BWL OVERSHOT ASSEMBLY

ITEM	PART #	DESCRIPTION
1-18	2512000	BWL OVERSHOT ASSEMBLY
1-5	2514110	CABLE SWIVEL ASSEMBLY

## BWL OVERSHOT

ITEM	PART #	DESCRIPTION
1	2514010	EYE BOLT
2	2514020	CABLE SWIVEL COLLAR
3	2514135	THRUST BEARING
4	2514030	CASTLE NUT
5	2514035	COTTER PIN, 3/32" X 3/4"
6	1950125	HYDRAULIC GREASE FITTING
7	2512030	OVERSHOT BODY
8	2512035	JAR STAFF
9	2512040	JAR TUBE WELDMENT
10	2512045	ADJUSTING HEX NUT
11	2512050	OVERSHOT HEAD
12	2512020	LIFTING DOG COMPRESSION SPRING
13	2512005	LIFTING DOG
14	2512010	PIN, 1/2" X 1-1/2"
15	2512015	SPRING PIN, 3/16" x 1-3/8"
16	2514155	SET SCREW
17	2512025	LOCKING SLEEVE
18	2514160	HEAD PIN

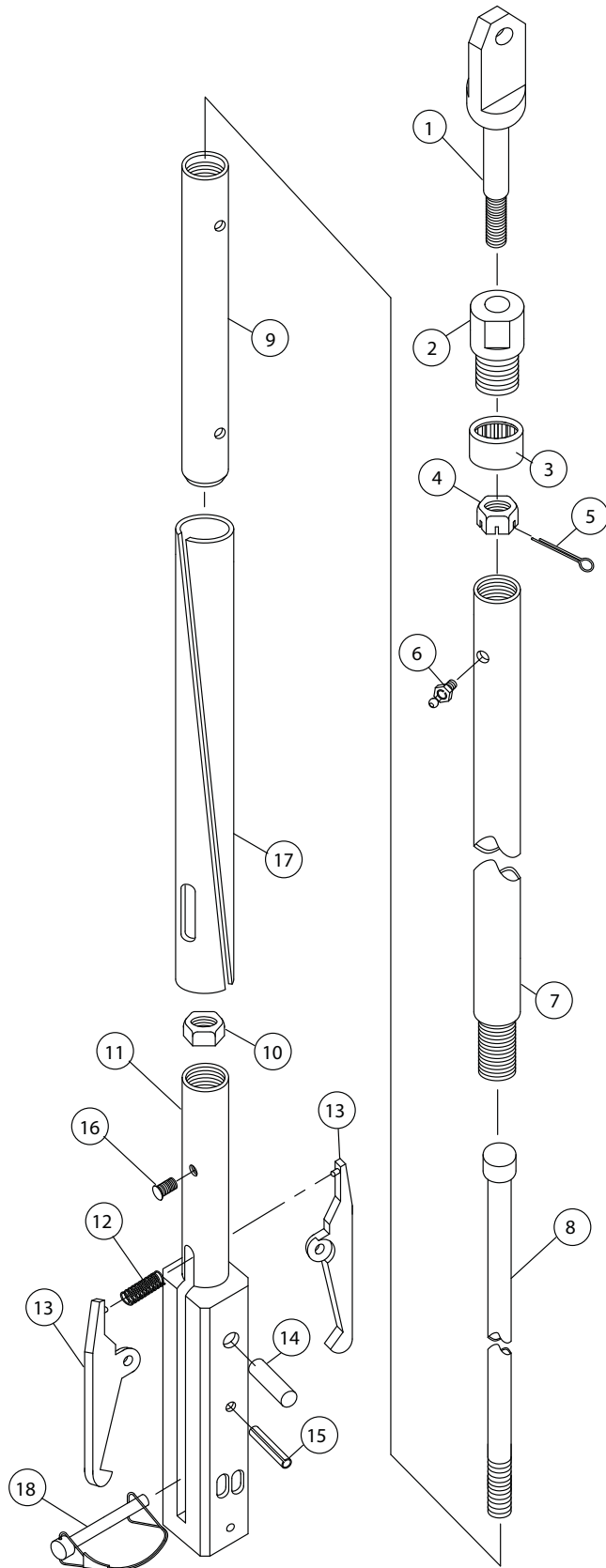
# BWL V-LOCK OVERSHOT



COMPLETE BWL V-LOCK OVERSHOT ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-21	2512055	BWL OVERSHOT ASSEMBLY
1-5	2512060	CABLE SWIVEL ASSEMBLY

BWL V-LOCK OVERSHOT		
ITEM	PART #	DESCRIPTION
1	2512065	EYE BOLT
2	2512070	CABLE SWIVEL COLLAR
3	2512075	THRUST BEARING
4	2512080	CASTLE NUT
5	2512085	COTTER PIN, 3/32" X 3/4"
6	2512090	HYDRAULIC GREASE FITTING
7	2512095	OVERSHOT BODY
8	2512100	JAR STAFF
9	2512105	JAR TUBE WELDMENT
10	2512110	LOCKING SLEEVE
11	2512115	ADJUSTING HEX NUT
12	2512120	LOCK WASHER
13	2512125	OVERSHOT HEAD
14	2512130	SET SCREW
15	2512135	LIFTING DOG COMPRESSION SPRING
16	2512140	LIFTING DOG
17	2512145	PIVOT PIN
18	2512150	SPECIAL PIN, 3/16" x 1-3/8"
19	2512155	PIN LINKS
20	2512160	CAP SCREW
21	2512165	LOADING FUNNEL
22	2512170	LOADING FORK TOOL

# NWL STANDARD OVERSHOT



## COMPLETE NWL OVERSHOT ASSEMBLY

ITEM	PART #	DESCRIPTION
1-18	1950015	NWL OVERSHOT ASSEMBLY
1-5	2514110	CABLE SWIVEL ASSEMBLY

## NWL OVERSHOT

ITEM	PART #	DESCRIPTION
1	2514010	EYE BOLT
2	2514020	CABLE SWIVEL COLLAR
3	2514135	THRUST BEARING
4	2514030	CASTLE NUT
5	2514035	COTTER PIN, 3/32" X 3/4"
6	1950125	HYDRAULIC GREASE FITTING
7	2514045	OVERSHOT BODY
8	2514060	JAR STAFF
9	2514050	JAR TUBE WELDMENT
10	2514150	ADJUSTING HEX NUT
11	2514080	OVERSHOT HEAD
12	2514130	LIFTING DOG COMPRESSION SPRING
13	1800290	LIFTING DOG
14	2514090	PIN, 1/2" X 1-13/16"
15	2514125	SPRING PIN, 1/4" X 1 3/4"
16	2514155	SET SCREW
17	2514065	LOCKING SLEEVE
18	2514160	HEAD PIN

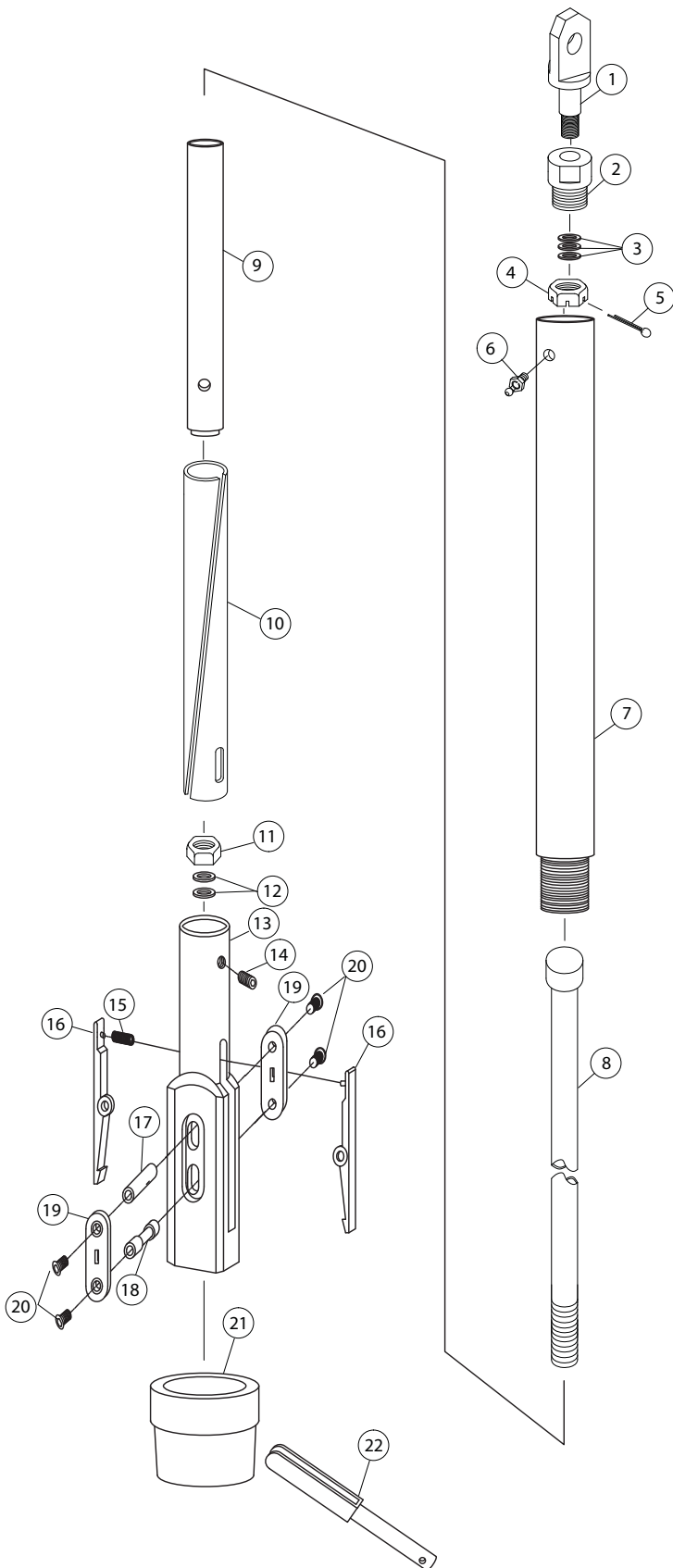
# NWL V-LOCK OVERSHOT

## COMPLETE NWL V-LOCK OVERSHOT ASSEMBLY

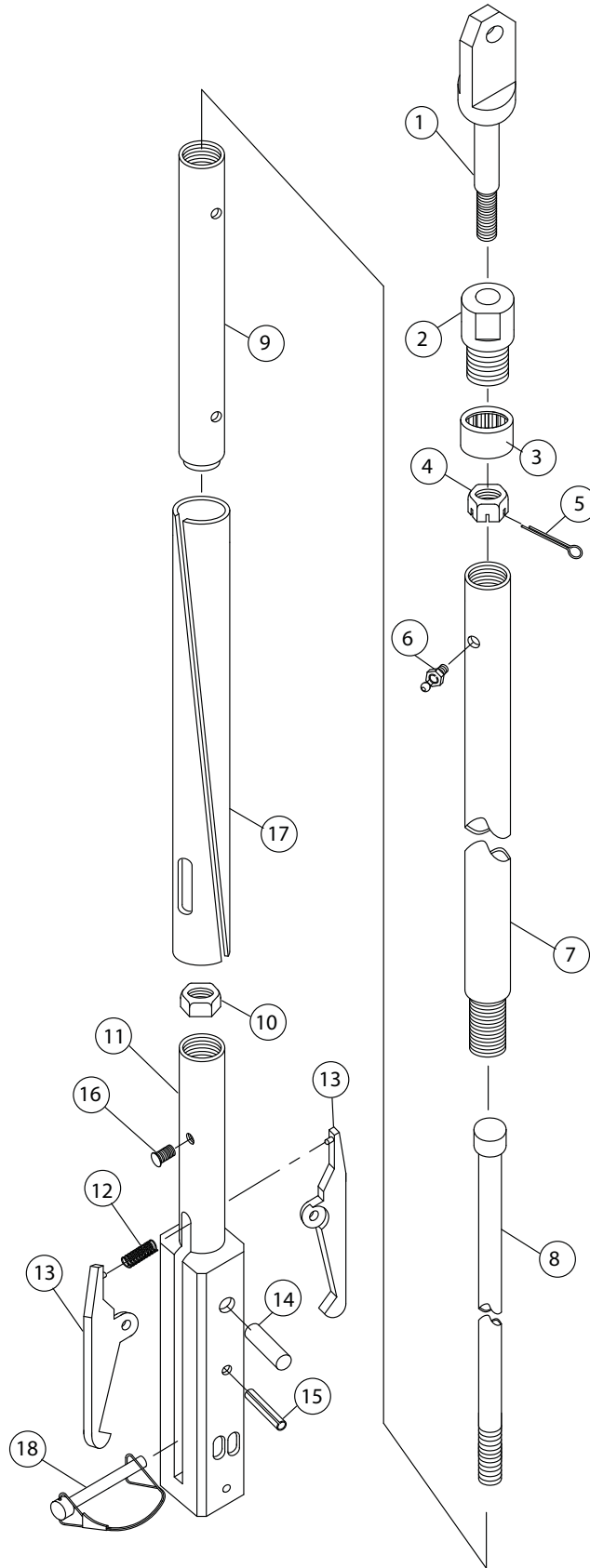
ITEM	PART #	DESCRIPTION
1-21	1950013	NWL OVERSHOT ASSEMBLY
1-5	2514110	CABLE SWIVEL ASSEMBLY

## NWL V-LOCK OVERSHOT

ITEM	PART #	DESCRIPTION
1	2514010	EYE BOLT
2	2514020	CABLE SWIVEL COLLAR
3	2514135	THRUST BEARING
4	2514030	CASTLE NUT
5	2514035	COTTER PIN, 3/32" X 3/4"
6	1950125	HYDRAULIC GREASE FITTING
7	2514045	OVERSHOT BODY
8	2514060	JAR STAFF
9	2514050	JAR TUBE WELDMENT
10	2514065	LOCKING SLEEVE
11	2514150	ADJUSTING HEX NUT
12	2514151	LOCK WASHER
13	2514046	OVERSHOT HEAD
14	2514155	SET SCREW
15	2514130	LIFTING DOG COMPRESSION SPRING
16	1800290	LIFTING DOG
17	2514072	PIVOT PIN
18	2514073	SPECIAL PIN, 3/16" x 1-3/8"
19	2514074	PIN LINKS
20	2514076	CAP SCREW
21	2514165	LOADING FUNNEL
22	2514170	LOADING FORK TOOL



# HWL STANDARD OVERSHOT



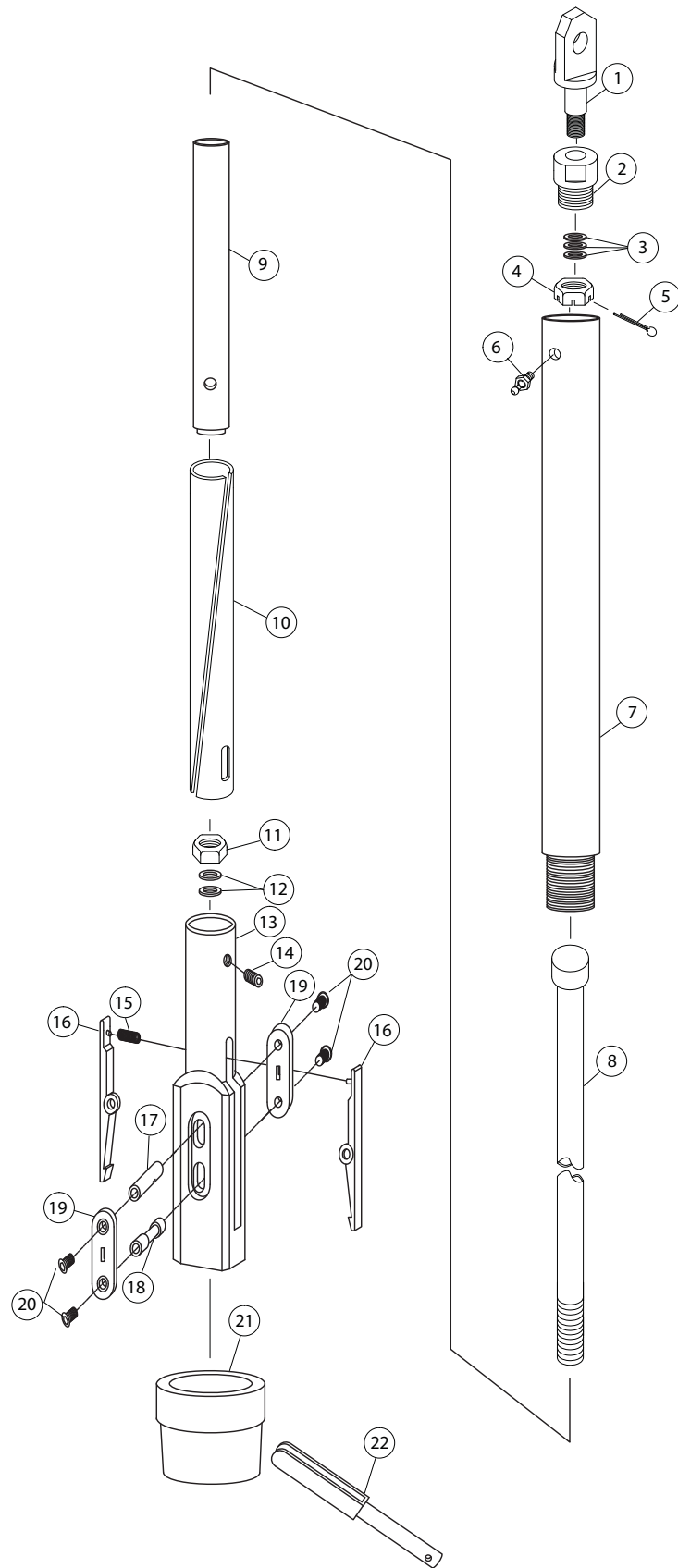
## COMPLETE HWL OVERSHOT ASSEMBLY

ITEM	PART #	DESCRIPTION
1-18	1800000	HWL OVERSHOT ASSEMBLY
1-5	2514110	CABLE SWIVEL ASSEMBLY

## HWL OVERSHOT

ITEM	PART #	DESCRIPTION
1	2514010	EYE BOLT
2	2514020	CABLE SWIVEL COLLAR
3	2514135	THRUST BEARING
4	2514030	CASTLE NUT
5	2514035	COTTER PIN, 3/32" X 3/4"
6	1950125	HYDRAULIC GREASE FITTING
7	2514045	OVERSHOT BODY
8	2514060	JAR STAFF
9	2514050	JAR TUBE WELDMENT
10	2514150	ADJUSTING HEX NUT
11	2516000	OVERSHOT HEAD
12	2514130	LIFTING DOG COMPRESSION SPRING
13	1800290	LIFTING DOG
14	2516025	PIN, 1/2" X 2 1/8"
15	2516015	SPRING PIN, 1/4" X 2"
16	2514155	SET SCREW
17	2514065	LOCKING SLEEVE
18	2514160	HEAD PIN

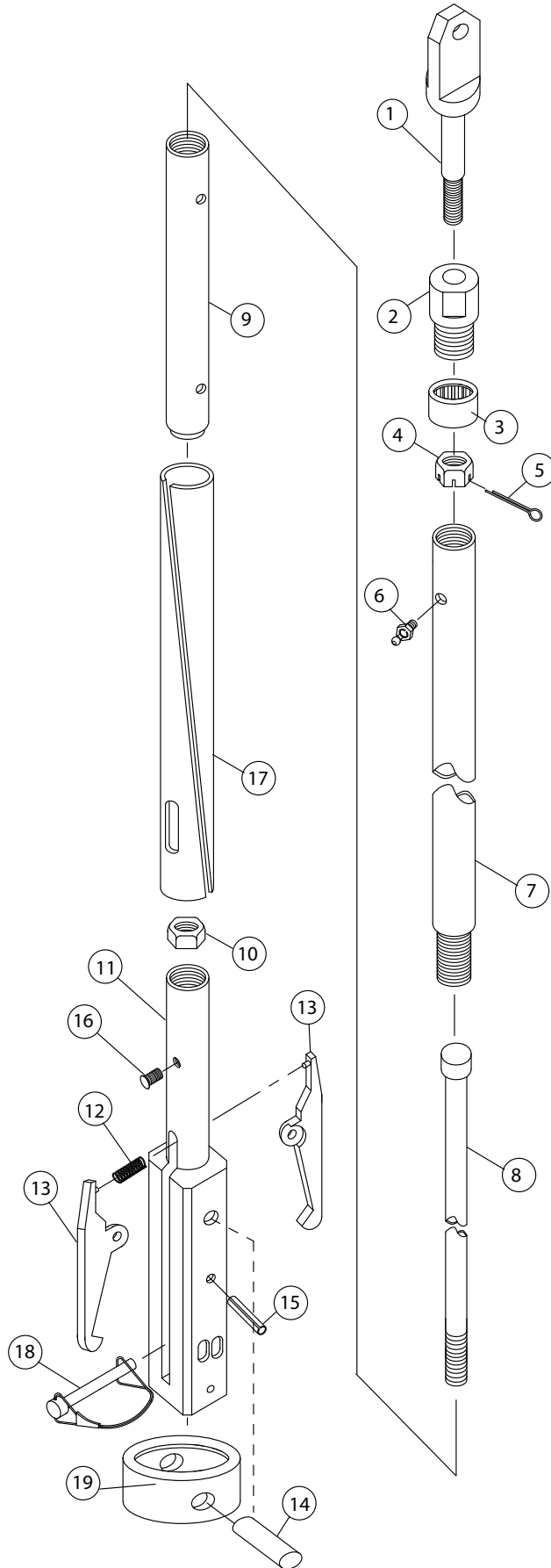
# HWL V-LOCK OVERSHOT



COMPLETE HWL V-LOCK OVERSHOT ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-21	2514118	HWL OVERSHOT ASSEMBLY
1-5	2514110	CABLE SWIVEL ASSEMBLY

HWL V-LOCK OVERSHOT		
ITEM	PART #	DESCRIPTION
1	2514010	EYE BOLT
2	2514020	CABLE SWIVEL COLLAR
3	2514135	THRUST BEARING
4	2514030	CASTLE NUT
5	2514035	COTTER PIN, 3/32" X 3/4"
6	1950125	HYDRAULIC GREASE FITTING
7	2514045	OVERSHOT BODY
8	2514060	JAR STAFF
9	2514050	JAR TUBE WELDMENT
10	2514065	LOCKING SLEEVE
11	2514150	ADJUSTING HEX NUT
12	2514151	LOCK WASHER
13	2516001	OVERSHOT HEAD
14	2514155	SET SCREW
15	2514130	LIFTING DOG COMPRESSION SPRING
16	1800290	LIFTING DOG
17	2514072	PIVOT PIN
18	2514073	SPECIAL PIN, 3/16" x 1-3/8"
19	2514074	PIN LINKS
20	2514076	CAP SCREW
21	2516035	LOADING FUNNEL
22	2514170	LOADING FORK TOOL

# PWL STANDARD OVERSHOT



## COMPLETE PWL OVERSHOT ASSEMBLY

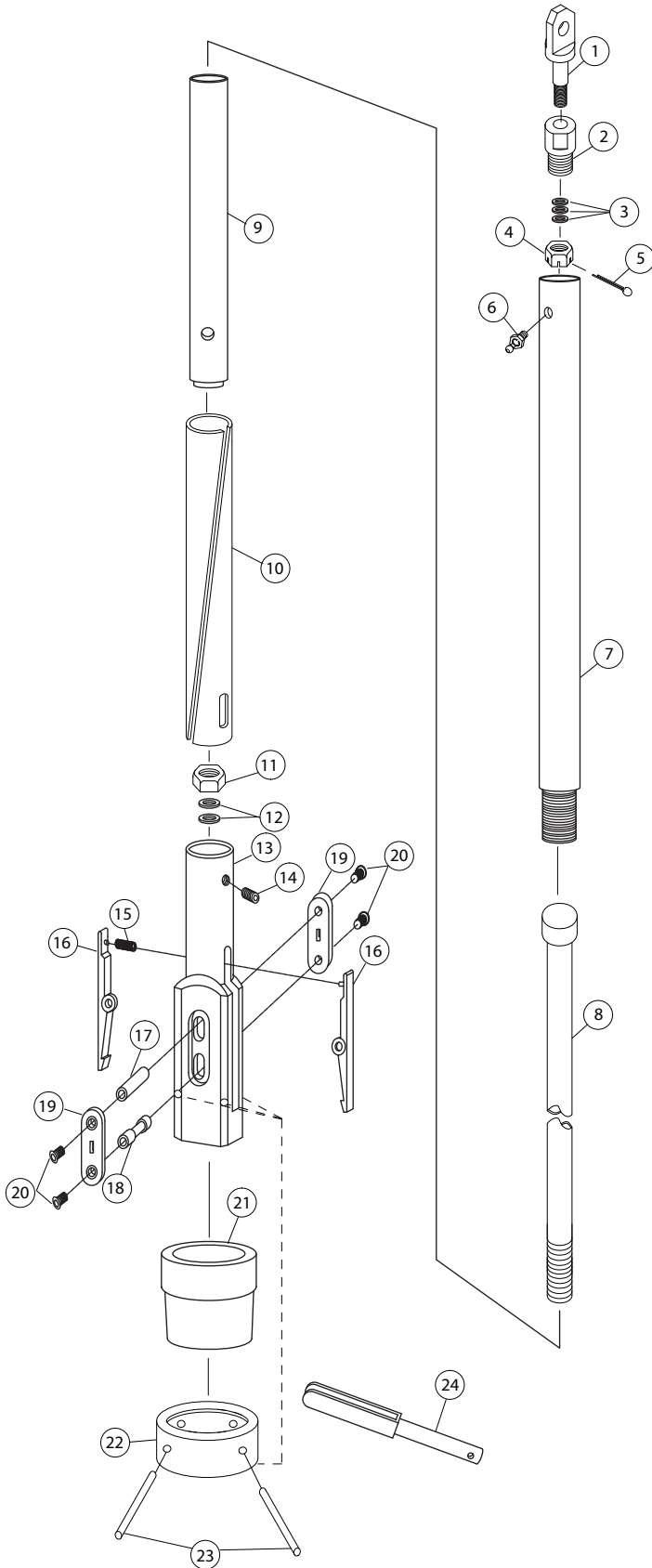
ITEM	PART #	DESCRIPTION
1-19	2000006	PWL OVERSHOT ASSEMBLY
1-5	2514110	CABLE SWIVEL ASSEMBLY

## PWL OVERSHOT

ITEM	PART #	DESCRIPTION
1	2514010	EYE BOLT
2	2514020	CABLE SWIVEL COLLAR
3	2514135	THRUST BEARING
4	2514030	CASTLE NUT
5	2514035	COTTER, PIN 3/32" X 3/4"
6	1950125	HYDRAULIC GREASE FITTING
7	2514045	OVERSHOT BODY
8	2514060	JAR STAFF
9	2514050	JAR TUBE WELDMENT
10	2514150	ADJUSTING HEX NUT
11	2516000	OVERSHOT HEAD
12	2514130	LIFTING DOG COMPRESSION SPRING
13	1800290	LIFTING DOG
14	2000028	PIN, 1/2" X 3 1/4"
15	2516015	SPRING PIN, 1/4" X 2"
16	2514155	SET SCREW
17	2514065	LOCKING SLEEVE
18	2514160	HEAD PIN
19	2000019	SLEEVE



# PWL V-LOCK OVERSHOT



## COMPLETE PWL V-LOCK OVERSHOT ASSEMBLY

ITEM	PART #	DESCRIPTION
1-21	2000055	PWL OVERSHOT ASSEMBLY
1-5	2514110	CABLE SWIVEL ASSEMBLY

## PWL V-LOCK OVERSHOT

ITEM	PART #	DESCRIPTION
1	2514010	EYE BOLT
2	2514020	CABLE SWIVEL COLLAR
3	2514135	THRUST BEARING
4	2514030	CASTLE NUT
5	2514035	COTTER PIN, 3/32" X 3/4"
6	1950125	HYDRAULIC GREASE FITTING
7	2514045	OVERSHOT BODY
8	2514060	JAR STAFF
9	2514050	JAR TUBE WELDMENT
10	2514065	LOCKING SLEEVE
11	2514150	ADJUSTING HEX NUT
12	2514151	LOCK WASHER
13	2000057	OVERSHOT HEAD
14	2514155	SET SCREW
15	2514130	LIFTING DOG COMPRESSION SPRING
16	1800290	LIFTING DOG
17	2514072	PIVOT PIN
18	2514073	SPECIAL PIN, 3/16" x 1-3/8"
19	2514074	PIN LINKS
20	2514076	CAP SCREW
21	2000048	LOADING FUNNEL
22	2000046	SLEEVE
23	2000047	PIN SLEEVE
24	2514170	LOADING FORK TOOL

## CORING SYSTEM COMPONENTS



Hole Products offers a complete line of components to complement our coring systems, including core lifters, locking couplings, inner tube couplings, split tubes, shut-off valves and more.

Components listed in the catalog are representative of the most common industry sizes and styles. Custom components are available on request.

Optional chrome plating is available on many coring system components to provide increased durability.

Please contact your Hole Products representative for further details, and information regarding the availability of additional coring system components.

# CORING SYSTEM COMPONENTS

## CORE LIFTERS

Hole Products' core lifters are constructed of the highest quality materials to ensure optimum performance and longevity.

Diamond coated lifters offer superior wear resistance and can last up to 3x longer than standard lifters. Core lifters are offered in all standard industry sizes, multiple styles, and with optional diamond coating.

**FLUTED LIFTERS** - Also known as Broached Lifters, are ideal for use in broken formations. They can be used in other formations as well.



**FINGER/BASKET LIFTERS** - Recommended for sample recovery in fragile, unconsolidated formations; these core lifters are typically used in conjunction with face discharge bits.



**SLOTTED LIFTERS** - Also known as Brown Lifters, are ideal for use in competent formations. They can be used in other formations as well.



STANDARD CORE LIFTERS		
SIZE	PART #	DESCRIPTION
BWL	1700015	FLUTED
BWL	1700016	SLOTTED
NWL	1950005	FLUTED
NWL	1950018	SLOTTED
N2WL	1850040	FLUTED
N2WL	1850125	SLOTTED
N3WL	1900000	FLUTED
N3WL	1900150	SLOTTED
N3WL	1900165	FINGER/BASKET
HWL	1800015	FLUTED
HWL	1800013	SLOTTED
H3WL	1750020	FLUTED
H3WL	1750115	SLOTTED
H3WL	1800017	FINGER/BASKET
PWL	2000000	FLUTED
PWL	2000115	SLOTTED
P3WL	2000025	FLUTED
P3WL	2000220	SLOTTED
P3WL	2000240	FINGER/BASKET

DIAMOND COATED CORE LIFTERS		
SIZE	PART #	DESCRIPTION
BWL	1700280	FLUTED DIAMOND COATED
BWL	1700275	SLOTTED DIAMOND COATED
NWL	1950016	FLUTED DIAMOND COATED
NWL	1950335	SLOTTED DIAMOND COATED
N2WL	1850043	FLUTED DIAMOND COATED
N2WL	1850130	SLOTTED DIAMOND COATED
N3WL	1900160	FLUTED DIAMOND COATED
N3WL	1900155	SLOTTED DIAMOND COATED
HWL	1800014	FLUTED DIAMOND COATED
HWL	1800305	SLOTTED DIAMOND COATED
H3WL	1750130	FLUTED DIAMOND COATED
H3WL	1750125	SLOTTED DIAMOND COATED
PWL	2000230	FLUTED DIAMOND COATED
PWL	2000225	SLOTTED DIAMOND COATED
P3WL	2000235	FLUTED DIAMOND COATED
P3WL	2000285	SLOTTED DIAMOND COATED

# CORING SYSTEM COMPONENTS

## LOCKING COUPLINGS

Hole Products' locking couplings are made from the highest quality alloy steel, providing superior reliability and longevity.

Locking couplings are offered with or without tang. Tang is a tab of steel on the pin end of the coupling that ensures the core barrel assembly head rotates with the rod string.



FULL HOLE LOCKING COUPLINGS*		
SIZE	PART #	DESCRIPTION
BWL	1700295	FULL HOLE WITH TANG
	1700045	FULL HOLE WITHOUT TANG
NWL	1950285	FULL HOLE WITH TANG
	1950105	FULL HOLE WITHOUT TANG
HWL	1800365	FULL HOLE WITH TANG
	1800090	FULL HOLE WITHOUT TANG
PWL	2000090	FULL HOLE WITH TANG (W/ HWT BOX)
	2000081	FULL HOLE WITHOUT TANG (W/ HWT BOX)

*\*Recommended for use in competent formations. Full hole locking couplings improve stabilization, thus minimizing hole deviation.*

## INNER TUBE COUPLINGS

Inner tube couplings can be used to extend core barrels in increments of 5' / 1.5M or 10' / 3M.

To extend a core barrel, combine the appropriate size inner-tube coupling with the inner tube, and extend the outer tube by adding an additional outer tube and inner tube stabilizer.

**Example:** To convert a 10' (3M) core barrel to 20' (6M) assembly.

- Order:**
- 1 - inner tube coupling
  - 1 - 10' (3M) inner tube
  - 1 - 10' (3M) outer tube
  - 1 - inner tube stabilizer

STANDARD LOCKING COUPLINGS*		
SIZE	PART #	DESCRIPTION
BWL	1700290	PAD STYLE WITH TANG
	1700285	PAD STYLE WITHOUT TANG
NWL	1950345	PAD STYLE WITH TANG
	1950340	PAD STYLE WITHOUT TANG
HWL	1800315	PAD STYLE WITH TANG
	1800310	PAD STYLE WITHOUT TANG
PWL	2000250	PAD STYLE WITH TANG
	2000245	PAD STYLE WITHOUT TANG

*\*Standard locking couplings can be used in all formations.*

INNER TUBE COUPLINGS		
SIZE	PART #	DESCRIPTION
BWL	1700075	INNER TUBE COUPLING
NWL	1950360	INNER TUBE COUPLING
HWL	1800345	INNER TUBE COUPLING
PWL	2000270	INNER TUBE COUPLING

## CORING SYSTEM COMPONENTS

### CHROME PLATED INNER TUBES

Hole Products offers optional chrome plated inner tubes. Chrome plating increases durability and overall product life.

CHROME PLATED INNER TUBES		
SIZE	PART #	DESCRIPTION
BWL	1700066	INNER TUBE 5' CHROME PLATED
BWL	1700071	INNER TUBE 10' CHROME PLATED
N2WL	1850101	INNER TUBE 5' CHROME PLATED
N2WL	1850107	INNER TUBE 10' CHROME PLATED

### N2 EXTENDA INNER TUBES

Used to convert our standard N2 core barrels from 5' (1.5M) to 15' (4.5M) and 10' (3M) to 20' (6M).

To extend the core barrel, combine the extenda tube with a 10' outer tube and additional inner tube stabilizer.

**Example:** To convert a 10' (3M) core barrel to 20' (6M) assembly.

**Order:** 1 - N2WL extenda inner tube  
 1 - 10' (3M) outer tube  
 1 - inner tube stabilizer

EXTENDA INNER TUBES		
SIZE	PART #	DESCRIPTION
N2WL	1850106	CHROME PLATED 11' PIN X BOX
N2WL	1850108	NON-PLATED 11' PIN X BOX

### SPLIT INNER TUBES

Hole Products offers split inner tubes in select sizes. Split tubes are designed to assist core recovery in broken formations.

SPLIT INNER TUBES		
SIZE	PART #	DESCRIPTION
NWL	1950370	INNER TUBE 5' SPLIT
NWL	1950026	INNER TUBE 10' SPLIT
N2WL	18501036	INNER TUBE 5' COFFIN TYPE SPLIT

### SHUT-OFF VALVES

Optional soft and steel shut-off valves are available for use with our wireline and conventional head assemblies.

SHUT-OFF VALVES*		
SIZE	PART #	DESCRIPTION
BWL	1700085	SHUT-OFF VALVE, SOFT
BWL	1700090	SHUT-OFF VALVE, STEEL
NWL/NV	1950067	SHUT-OFF VALVE, SOFT
NWL/NV	1950066	SHUT-OFF VALVE, STEEL
HWL/HV	1800070	SHUT-OFF VALVE, SOFT
HWL/HV	1800355	SHUT-OFF VALVE, STEEL
PWL/PV	2000275	SHUT-OFF VALVE, SOFT
PWL	2000280	SHUT-OFF VALVE, STEEL

\* Shut-off valves also work with thin kerf and triple tube assemblies.

## CORING WRENCHES

Coring wrenches, also known as full circle grip wrenches, are designed specifically for the assembly and disassembly of outer tube and inner tube components. The coring wrenches are designed to grip the tubes around the full circumference, therefore minimizing pressure points that can deform the tubes, drill bits, reaming shells, or accessories.

Additional wrench sizes and styles are available. Please contact your Hole Products representative for details.



CORING WRENCHES		
PART #	SIZE	DESCRIPTION
2050129	BWL	INNER TUBE WRENCH
2050128	BWL	OUTER TUBE WRENCH
2050065	NWL	INNER TUBE WRENCH
2050060	NWL	OUTER TUBE WRENCH
2050156	NWL	HEAVY DUTY ROD SPRING WRENCH
2050130	N2WL	INNER TUBE WRENCH
2050060	HWL	INNER TUBE WRENCH
2050135	HWL	OUTER TUBE WRENCH
2050158	HWL	HEAVY DUTY ROD SPRING WRENCH
2050140	PWL	INNER TUBE WRENCH
2050141	PWL	OUTER TUBE WRENCH
2050147	PWL/HWT	HEAVY DUTY ROD SPRING WRENCH

# WIRELINING CASING ADVANCERS



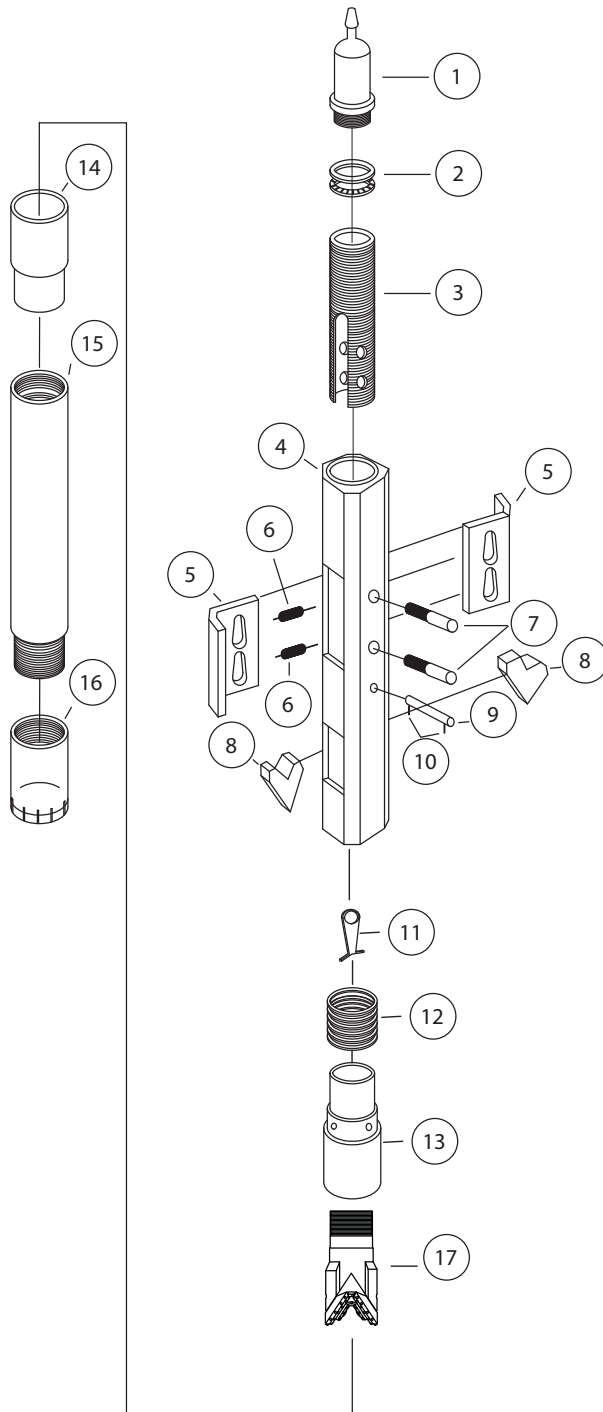
Hole Products offers a complete line of wireline casing advancers, in all standard industry sizes.

Wireline casing advancers are typically used for the following applications:

- Soil sampling and overburden coring in conjunction with casing advancement
- Casing through difficult overburden and caving bedrock formations
- Casing off the water environment from rivers and lakes while drilling from barges or platforms
- Over drilling lost or stuck tooling
- Piezometer or well installations with minimal cuttings
- Well abandonment

Please contact your Hole Products representative for additional details.

# BW/NWL CASING ADVANCER



## COMPLETE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-15	2110036	BW WIRESLINE CASING ADVANCER
1-15	2110410	NWL WIRESLINE CASING ADVANCER
1-13	2110029	BW/NWL CASING INNER ASSEMBLY

## WIRESLINE CASING ADVANCER

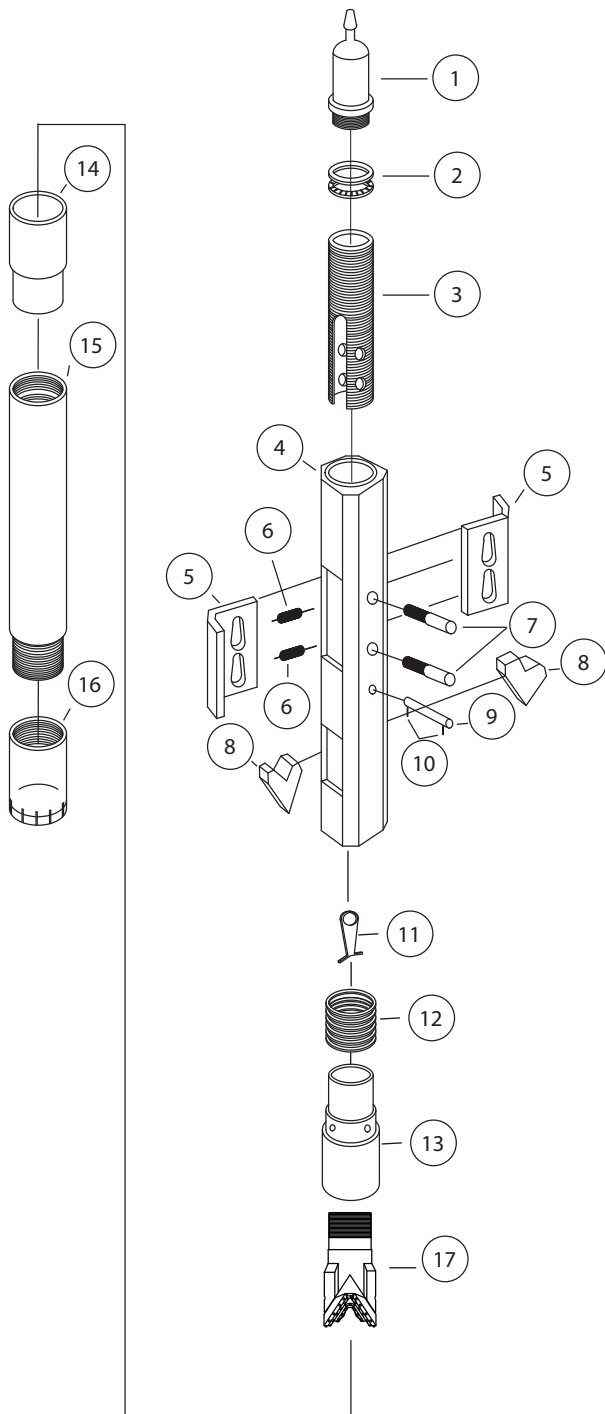
ITEM	PART #	DESCRIPTION
1	2110085	SPEARHEAD
2	2110090	DISK LOCK WASHER
3	2110095	RELEASE SHAFT
4	2110100	LATCH BODY
5	2110105	LATCH SHOE
6	2110110	LATCH SHOE SPRING
7	2110115	LOCATING PIN
8	2110120	STOP LATCH
9	2110125	STOP LATCH PIN
10	2110130	COTTER PIN
11	2110135	STOP LATCH SPRING
12	2110140	SPACER SET
13	2110145	BIT SUB
14	2110038	BW LOADING SLEEVE
	2110415	NWL LOADING SLEEVE
15	2110037	BW DRIVER
	2110420	NWL DRIVER
16	-----	OVERSIZED CASING SHOE*
17	-----	BICONE ROLLER BIT, 2 1/4"***

\*Oversized casing shoes are not included in this section. Refer to Bits, Shoes and Reaming Shells Section for additional details.

\*\*Bi-cone roller bits are not included in this section. Refer to the Drill Bit Catalog for additional details.



# NW/HWL CASING ADVANCER



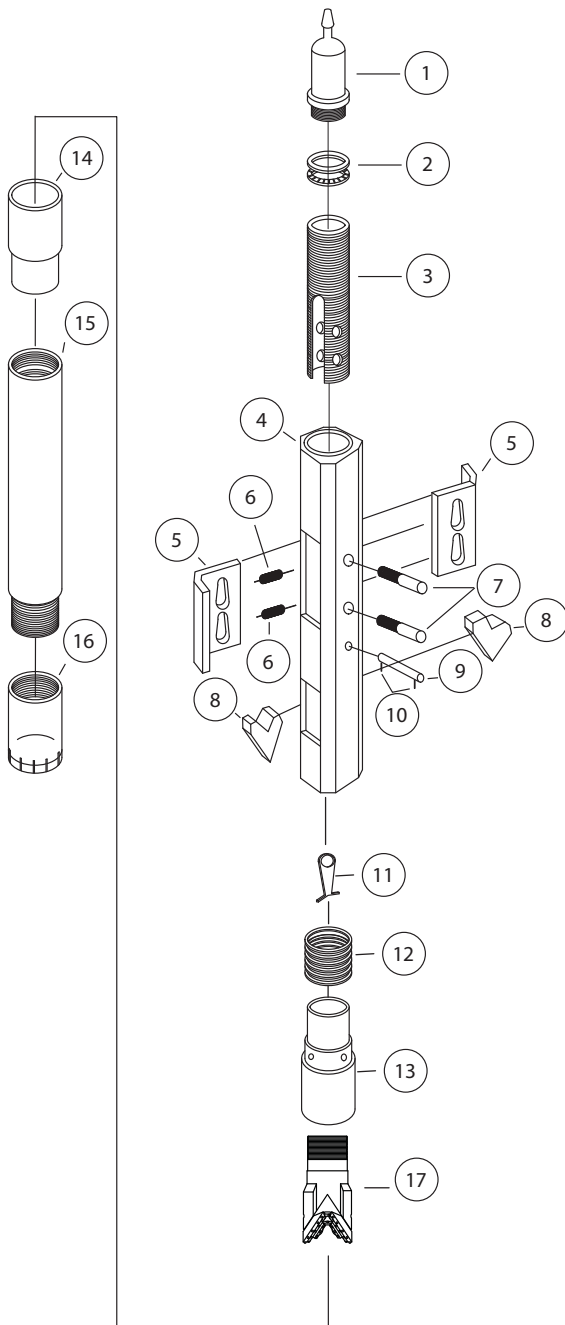
COMPLETE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-15	2110007	NW WIRELINE CASING ADVANCER
1-15	2110425	HWL WIRELINE CASING ADVANCER
1-13	2110025	NW/HWL CASING INNER ASSEMBLY

WIRELINE CASING ADVANCER		
ITEM	PART #	DESCRIPTION
1	2110150	SPEARHEAD
2	2110155	DISK LOCK WASHER
3	2110160	RELEASE SHAFT
4	2110165	LATCH BODY
5	2110170	LATCH SHOE
6	2110175	LATCH SHOE SPRING
7	2110180	LOCATING PIN
8	2110185	STOP LATCH
9	2110190	STOP LATCH PIN
10	2110195	COTTER PIN
11	2110200	STOP LATCH SPRING
12	2110205	SPACER SET
13	2110210	BIT SUB
14	2110000	NW LOADING SLEEVE
	2100430	HWL LOADING SLEEVE
15	2110005	NW DRIVER
	2110039	HWL DRIVER
16	-----	OVERSIZED CASING SHOE*
17	-----	TRICONE ROLLER BIT, 2 15/16"***

\*Oversized casing shoes are not included in this section. Refer to Bits, Shoes and Reaming Shells Section for additional details.

\*\*Tri-cone roller bits are not included in this section. Refer to the Drill Bit Catalog for additional details.

# HW/HWT CASING ADVANCER



### COMPLETE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-15	2110006	HW WIRESLINE CASING ADVANCER
1-15	2110035	HWT WIRESLINE CASING ADVANCER
1-13	2110003	HW/HWT CASING INNER ASSEMBLY

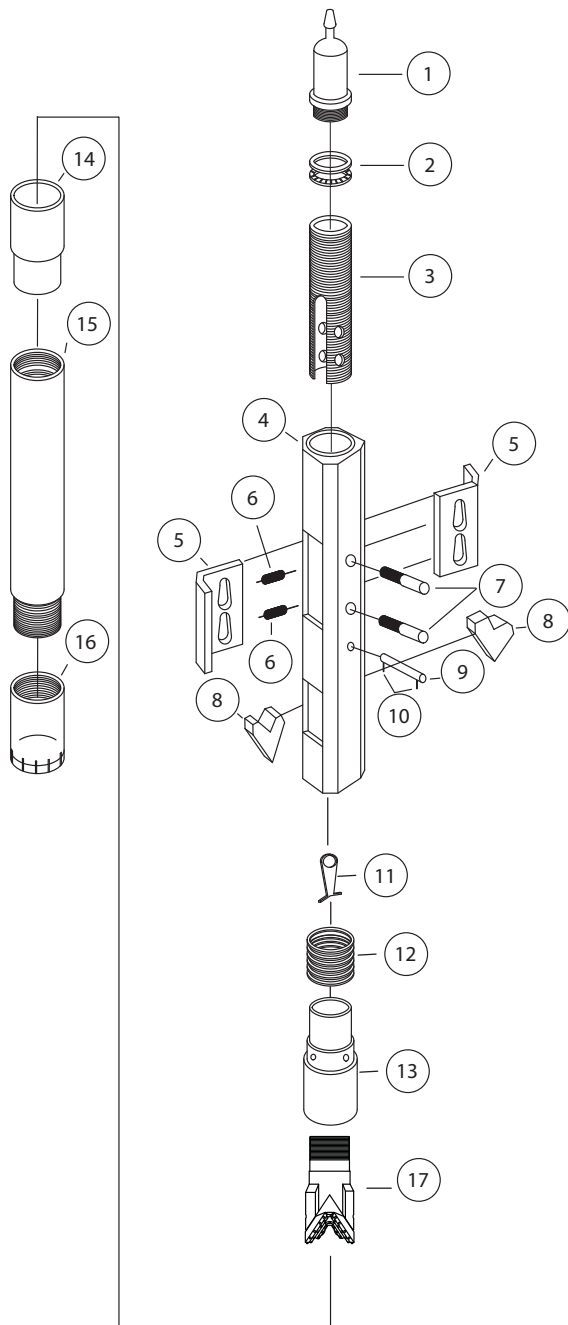
### WIRESLINE CASING ADVANCER

ITEM	PART #	DESCRIPTION
1	2110215	SPEARHEAD
2	2110220	DISK LOCK WASHER
3	2110225	RELEASE SHAFT
4	2110230	LATCH BODY
5	2110235	LATCH SHOE
6	2110240	LATCH SHOE SPRING
7	2110245	LOCATING PIN
8	2110250	STOP LATCH
9	2110255	STOP LATCH PIN
10	2110260	COTTER PIN
11	2110265	STOP LATCH SPRING
12	2110270	SPACER SET
13	2110275	BIT SUB
14	2110042	HW LOADING SLEEVE
	2110051	HWT LOADING SLEEVE
15	2110004	HW DRIVER
	2110040	HWT DRIVER
16	-----	OVERSIZED CASING SHOE*
17	-----	TRICONE ROLLER BIT, 3 7/8***

\*Oversized casing shoes are not included in this section. Refer to Bits, Shoes and Reaming Shells Section for additional details.

\*\*Tri-cone roller bits are not included in this section. Refer to the Drill Bit for additional details.

# PW/PWT CASING ADVANCER



## COMPLETE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-15	2110030	PW WIRELINE CASING ADVANCER
1-15	2110430	PWT WIRELINE CASING ADVANCER
1-13	2110032	PW/PWT CASING INNER ASSEMBLY

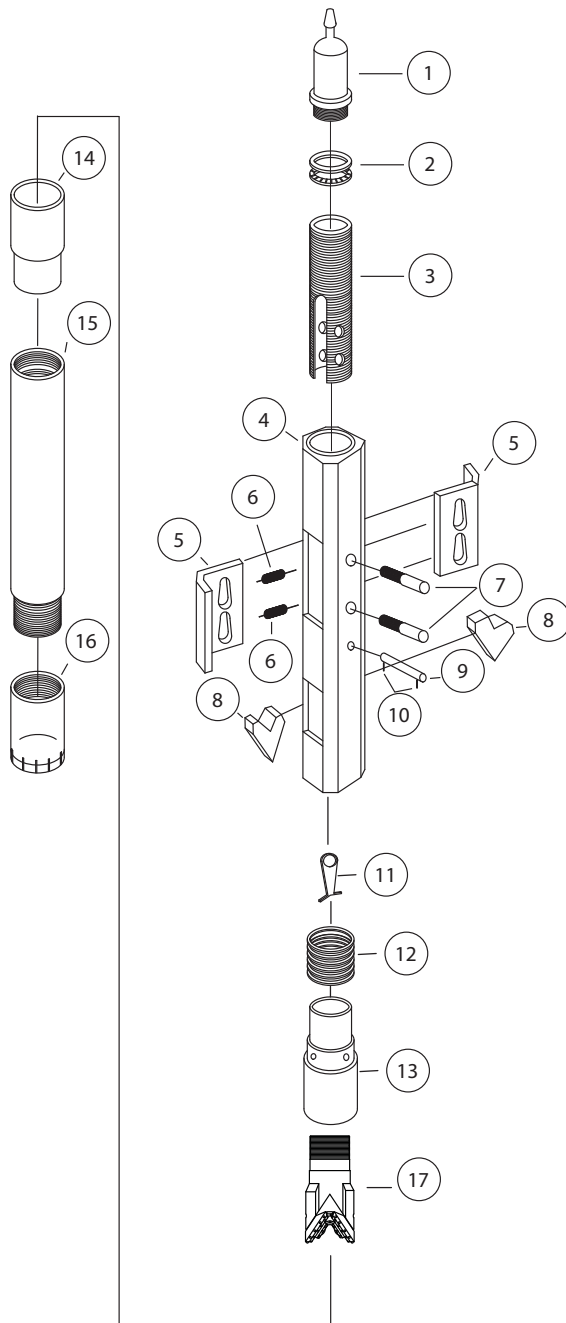
## WIRELINE CASING ADVANCER

ITEM	PART #	DESCRIPTION
1	2110280	SPEARHEAD
2	2110285	DISK LOCK WASHER
3	2110290	RELEASE SHAFT
4	2110295	LATCH BODY
5	2110300	LATCH SHOE
6	2110305	LATCH SHOE SPRING
7	2110310	LOCATING PIN
8	2110315	STOP LATCH
9	2110320	STOP LATCH PIN
10	2110325	COTTER PIN
11	2110330	STOP LATCH SPRING
12	2110335	SPACER SET
13	2110340	BIT SUB
14	2110028	PW LOADING SLEEVE
	2110052	PWT LOADING SLEEVE
15	2110031	PW DRIVER
16	----	OVERSIZED CASING SHOE*
17	----	TRICONE ROLLER BIT, 4 3/4"***

\*Oversized casing shoes are not included in this section. Refer to Bits, Shoes and Reaming Shells Section for additional details.

\*\*Tri-cone roller bits are not included in this section. Refer to the Drill Bit Catalog for additional details.

# SW/SWT CASING ADVANCER



## COMPLETE ASSEMBLY

ITEM	PART #	DESCRIPTION
1-15	2110023	SW WIRELINE CASING ADVANCER
1-15	2110435	SWT WIRELINE CASING ADVANCER
1-13	2110033	SW/SWT CASING INNER ASSEMBLY

## WIRELINE CASING ADVANCER

ITEM	PART #	DESCRIPTION
1	2110345	SPEARHEAD
2	2110350	DISK LOCK WASHER
3	2110355	RELEASE SHAFT
4	2110360	LATCH BODY
5	2110365	LATCH SHOE
6	2110370	LATCH SHOE SPRING
7	2110375	LOCATING PIN
8	2110380	STOP LATCH
9	2110385	STOP LATCH PIN
10	2110390	COTTER PIN
11	2110049	STOP LATCH SPRING
12	2110400	SPACER SET
13	2110405	BIT SUB
14	2110017	SW LOADING SLEEVE
	2110440	SWT LOADING SLEEVE
15	2110024	SW DRIVER
16	-----	OVERSIZED CASING SHOE*
17	-----	TRICONE ROLLER BIT, 5 7/8"***

\*Oversized casing shoes are not included in this section. Refer to Bits, Shoes and Reaming Shells Section for additional details.

\*\*Tri-cone roller bits are not included in this section. Refer to the Drill Bit Catalog for additional details.

## RODS & CASING



Hole Products offers wireline and conventional drill rods and W and WT casing in all DCDMA sizes.

Rods and casing are manufactured using world class techniques and premium alloy steel tubing, ensuring strength, durability, and increased depth capacity.

All Hole Products' rods and casing are designed to be compatible with other rods and casing manufactured to DCDMA standards.

Please contact your Hole Products representative for additional details.

## WIRELIN DRILL ROD

Hole Products' WL drill rods are designed and manufactured to deliver excellent results and withstand the many different stresses placed on the drill string in coring operations.

All rods are compatible with other DCDMA standard rods and available in all standard industry sizes.

Please contact your Hole Products representative for additional details.



WIRELIN DRILL ROD SPECIFICATIONS							
SIZE	O.D.		I.D.		THREADS PER INCH	WEIGHT	
	INCHES	MM	INCHES	MM		LB/10 FT	KG/3M
BWL	2.188	55.6	1.813	46.0	3.0	42	18
NWL	2.750	69.9	2.375	60.3	3.0	52	23
HWL	3.500	88.9	3.063	77.8	3.0	77	34
HWT	4.500	114.3	4.000	101.6	2.5	117	52

WIRELIN DRILL ROD (Imperial Sizes)		
SIZE	PART #	LENGTH
BWL	2150051	1'
	2150052	2'
	2150055	5'
	2150050	10'
NWL	2150002	1'
	2150001	2'
	2150000	5'
	2150005	10'
HWL	2150008	1'
	2150009	2'
	2150010	5'
	2150015	10'
HWT*	2100008	1'
	2100007	2'
	2100011	5'
	2100034	10'

\* HWT made from 4130 grade material.

\* HWT casing is the recommended drill rod for PWL coring systems.

WIRELIN DRILL ROD (Metric Sizes)		
SIZE	PART #	LENGTH
BWL	2150060	1.5 M
	2150065	3 M
NWL	2150070	1.5 M
	2150016	3 M
HWL	2150018	1.5 M
	2150085	3 M
HWT*	2100145	1.5 M
	2100150	3 M

\* HWT made from 4130 grade material.

\* HWT casing is the recommended drill rod for PWL coring systems.

## CONVENTIONAL DRILL ROD

Hole Products' conventional drill rods are manufactured using high quality alloy tubing ensuring excellent performance and durability in even the most demanding drilling conditions. All rods are compatible with other rods manufactured to DCDMA standards, available in 1', 2', 5', 10', and 20' lengths, and offered with or without wrench flats.

AW, BW, and NW rods come standard with pin x pin couplings. All couplings are made of 4140 alloy steel and are heat treated.



Additional conventional drill rods, including custom and metric lengths, rods with break out flats, and lightweight designs are available on request.

Please contact your Hole Products representative for additional details.

CONVENTIONAL DRILL ROD SPECIFICATIONS							
SIZE	O.D.		MID BODY I.D.		THREADS PER INCH	WEIGHT	
	INCHES	MM	INCHES	MM		LBS/10 FT	KG/3M
AW	1.750	44.50	1.250	31.80	3.0	44.00	19.60
BW	2.125	54.00	1.750	44.50	3.0	40.00	18.20
NW	2.625	66.70	2.250	57.10	3.0	51.00	23.30
AWJ	1.750	44.50	1.374	34.90	5.0	33.00	14.70
BWJ	2.130	54.00	1.750	44.50	5.0	40.00	18.20
NWJ	2.625	66.70	2.250	57.10	4.0	55.00	24.60

WJ THREADED ROD		
SIZE	PART #	LENGTH
AWJ	3050035	1'
	3050040	2'
	3050042	3'
	3050000	5'
	3050005	10'
BWJ	3050115	1'
	3050120	2'
	3050125	3'
	3050130	5'
	3050019	10'
NWJ	3050021	1'
	3050030	2'
	3050022	3'
	3050020	5'
	3050025	10'

W THREADED ROD		
SIZE	PART #	LENGTH
AW*	3050011	1'
	3050009	2'
	3050135	3'
	3050010	5'
	3050015	10'
BW*	3050140	1'
	3050145	2'
	3050150	3'
	3050017	5'
	3050155	10'
NW*	3050050	1'
	3050045	2'
	3050046	3'
	2150020	5'
	2150025	10'

\*AW, BW, and NW come standard with pin x pin coupling.

## W AND WT CASING

Hole Products' W and WT coring casing is quality crafted from 4130 grade material, ensuring performance on even the most demanding coring operations.

W and WT casing is also offered in other grades for a more economical option when the job allows.

All Hole Products' casing is compatible with other DCDMA standard casing and is available in all standard industry sizes.

"W" AND "WT" FLUSH JOINT CASING SPECIFICATIONS							
SIZE	O.D.		I.D.		THREADS PER INCH	WEIGHT	
	INCHES	MM	INCHES	MM		LBS/10FT	KG/3M
BW	2.880	73.0	2.38	60.3	4.0	70.0	31.3
NW	3.500	88.9	3.00	76.2	4.0	86.0	38.4
HW	4.500	114.3	4.00	101.6	4.0	117.0	52.2
HWT	4.500	114.3	4.00	101.6	2.5	117.0	52.2
PW	5.500	139.7	5.00	127.0	3.0	144.0	64.3
PWT	5.500	139.7	5.00	127.0	2.5	144.0	64.3
SW	6.625	168.2	6.00	152.4	3.0	205.0	92.9
SWT	6.625	168.2	6.00	152.4	2.5	205.0	92.9



**W-CASING**



**WT-CASING**



## W - CASING

W casing is made with a lighter duty straight thread and is recommended for single use applications or when the casing will be left in the hole.

W - CASING (Imperial Sizes)		
SIZE	PART #	LENGTH
BW	2100027	1'
	2100028	2'
	2100080	3'
	2100029	5'
	2100035	10'
NW	2100002	1'
	2100001	2'
	2100006	3'
	2100000	5'
	2100005	10'
HW	2100003	1'
	2100004	2'
	2100085	3'
	2100010	5'
	2100015	10'
PW	2100024	1'
	2100026	2'
	2100030	3'
	2100020	5'
	2100051	10'
SW	2100018	1'
	2100017	2'
	2100090	3'
	2100016	5'
	2100038	10'

W - CASING (Metric Sizes)		
SIZE	PART #	LENGTH
BW	2100095	1.5 M
	2100100	3 M
NW	2100105	1.5 M
	2100110	3 M
HW	2100115	1.5 M
	2100120	3 M
PW	2100125	1.5 M
	2100130	3 M
SW	2100135	1.5 M
	2100140	3 M



## WT - CASING

WT casing is made with a heavy duty tapered thread, which provides increased strength and enables faster make-and-break connections. This casing is designed for repeated applications or when drilling in difficult formations.

WT - CASING (Imperial Sizes)		
SIZE	PART #	LENGTH
HWT	2100008	1'
	2100007	2'
	2100065	3'
	2100011	5'
	2100034	10'
PWT	2100052	1'
	2100053	2'
	2100054	3'
	2100025	5'
	2100055	10'
SWT	2100044	1'
	2100045	2'
	2100046	3'
	2100047	5'
	2100048	10'

WT - CASING (Metric Sizes)		
SIZE	PART #	LENGTH
HWT	2100145	1.5 M
	2100150	3 M
PWT	2100155	1.5 M
	2100160	3 M
SWT	2100165	1.5 M
	2100170	3 M





## BITS, SHOES & REAMING SHELLS



Hole Products offers a large selection of quality coring bits, shoes, and reaming shells.

Products in this section are specifically designed and manufactured to provide optimum performance and durability in specific ground formations. Selecting the appropriate product for your particular formation can help ensure maximum productivity. Please refer to the bit selection guides throughout this section as a starting point when selecting a bit, shoe, or reaming shell.

Additional bits, shoes, and reaming shells including custom sizes and styles are available on request.

Please contact your Hole Products representative for ordering assistance and information regarding the availability of additional bits, shoes, and reamers.

# BITS, SHOES & REAMING SHELLS



## DIAMOND IMPREGNATED BITS

Offered in Premium and GT, all standard industry sizes, multiple series, and with a number of custom design options. We offer the variations you need to ensure maximum performance and longevity in all rock formations.



## SURFACE SET DIAMOND BITS

Designed for use in softer formations, these bits are offered with various crown profiles, waterway configurations, diamond sizes, and diamond quality options to perform in a variety of formations.



## POLYCRYSTALLINE COMPACT DIAMOND (PCD) BITS

Designed for use in soft to medium sedimentary formations, these bits are offered with a number of custom design options to perform in a variety of drilling conditions.



## DIAMOND IMPREGNATED SHOES

Tough, heavy duty, and shoes, available in multiple matrices for use in various formations. Hole Products' rod and casing shoes are offered in GT or premium and available in all standard industry sizes.



## CARBIDE CHIP BITS & SHOES

Commonly used in geotechnical applications, these bits are a cost effective means of drilling in softer formations. Hole Products offers various carbide options.



## STAGGER TOOTH BITS & SHOES

Manufactured with carbides set into a pattern similar to a saw blade to provide, maximum penetration in clays, shales, and similar soft formations.



## DRIVE SHOES

Commonly used in clay, sand, and other soft formations as a method of advancing casing. Drive shoes are generally recommended for use in the geotechnical industry.



## REAMING SHELLS

Designed to maintain consistent hole diameter and stabilize the drill string. Hole Products' reaming shells are produced with high quality diamonds to ensure optimum performance in a variety of conditions.

## DIAMOND IMPREGNATED BIT OPTIONS

Diamond impregnated bits are the most widely used bits in the core drilling industry. By adjusting the combination of metal powders and diamonds in the crown (or matrix), diamond impregnated bits can be manufactured to maximize penetration rates and bit life in a variety of rock formations. These variations are commonly identified by a series rating.

As drilling progresses, the crown is slowly worn away, exposing new diamonds on the cutting surface. When the wear rate between the matrix material and the diamonds is balanced, optimum penetration rates and bit life will be achieved.

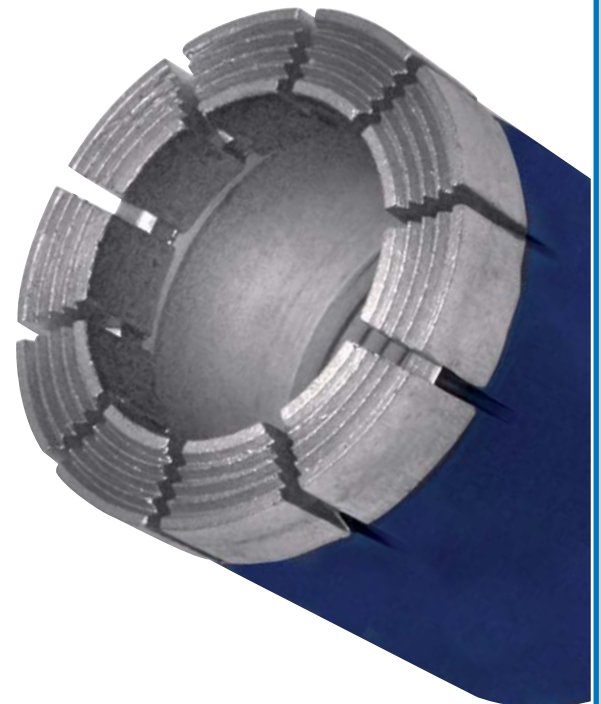
### GT DIAMOND IMPREGNATED BITS

Hole Products' GT bits are offered as a non-customizable design with a standard crown height and waterways. GT bits offer a great combination of quality and value.



### PREMIUM DIAMOND IMPREGNATED BITS

Hole Products' premium diamond impregnated bits are designed to optimize performance in any rock formation. Premium bits are fully customizable with multiple waterway options and numerous crown heights.



## DIAMOND IMPREGNATED BIT SERIES GUIDE

Diamond impregnated bits are typically designated by "Series". Each series is designed to work under specific conditions of ground hardness and abrasiveness. Please refer to the selection table to identify the appropriate series for your drilling conditions.

**Series 2:** For abrasive formations and/or most fractured formations. A general-purpose bit for use on all types of power drills.

**Series 4:** For abrasive and coarse grained competent formations. Recommended for low powered drills only. High loads (more than recommended) will seriously reduce bit life.

**Series 6:** For medium to hard, low abrasive, and partly fractured formations. This series bit is less susceptible to over-drilling at high loads than series 4.

**Series 7:** For hard, moderately abrasive, and fractured formations. A tough, relatively free cutting, fast penetrating bit.

**Series 8:** For hard, competent, and nonabrasive formations. This free cutting bit requires high rotational speeds and light bit loads for best performance.

**Series 9:** Very free cutting bit with good life in hard to very hard competent and nonabrasive formations. High rotational speeds and light bit loads.

**Series 10\*:** Recommended for ultra-hard, nonabrasive formations. Needs high rotation speeds and low thrust. Not for use in abrasive formations.

\* For ultra hard nonabrasive formations series 12 and 14 are available. Please contact your Hole Products representative for further assistance.

ROCK TYPE	APPROXIMATE HARDNESS	SERIES GUIDE						
		2	4	6	7	8	9	10+
Gypsum, Potash, Shale, Sandstone, Talc	Soft	↕						
Limestone, Weathered Granite, Marl, Peridotite, Sandstone, Serpentine, Hard Shale, Siltstone	Medium	↕	↕					
Diabase, Dolomite, Pegmatite, Sandstone, Schist	Medium Hard		↕	↕				
Andesite, Basalt, Gabbro, Quartz	Hard			↕	↕			
Gneiss, Granite, Quartzite, Rhyolite, Diorite	Very Hard				↕	↕		
Chert, Ironstone, Jasperite, Glassy Quartzite, Tuff	Extremely Hard						↕	↕

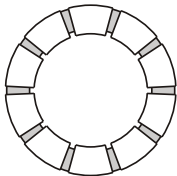
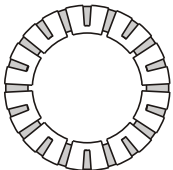
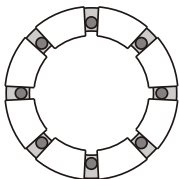
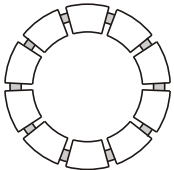
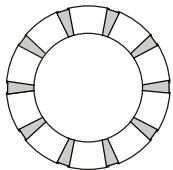

HOLE PRODUCTS' BIT SELECTION GUIDELINES			
ROCK TYPE	CHARACTERISTICS	DIAMOND IMPREGNATED BIT SERIES GUIDE	DIAMOND SURFACE SET STONES PER CARAT (SPC)
VERY SOFT Clay, Shale, Alluvium, Weathered Saprolite	Unconsolidated Very Abrasive Fine to Coarse Grained Highly Weathered	Not Recommended Use Surface Set Bits	10/15 SPC, 6/10 SPC
SOFT Gypsum, Potash, Shale, Sandstone, Talc	Abrasive Fine to Course Grained Fractured	2,4	15/25 SPC, 10/15 SPC, 6/10 SPC
MEDIUM Limestone, Weathered Granite, Marl, Peridotite, Sandstone, Serpentine, Hard Shale, Siltstone	Abrasive Medium to Coarse Grained Competent to Fractured	4	25/35 SPC, 15/25 SPC
MEDIUM HARD Diabase, Dolomite, Pegmatite, Sandstone, Schist	Moderately Abrasive Medium to Coarse Grained Competent to Fractured	6,7	45/55 SPC, 35/45 SPC
HARD Andesite, Basalt, Gabbro, Quartz	Slightly Abrasive Fine to Medium Grained Competent to Fractured	7,8	Not Recommended Use Impregnated Bit
VERY HARD Gneiss, Granite, Quartzite, Rhyolite, Diorite	Non-Abrasive Fine Grained Competent	8,9	Not Recommended Use Impregnated Bit
EXTREMELY HARD Chert, Ironstone, Jasperite, Glassy Quartzite, Tuff	Non-Abrasive Very Fine Grained Competent	10*	Not Recommended Use Impregnated Bit

\* For ultra hard non-abrasive formations series 12 and 14 are available.  
Please contact your Hole Products representative for further assistance.



## WATERWAY CONFIGURATIONS

Hole Products' diamond bits are offered with multiple custom waterway configurations. Waterway selection should be determined based on the drilling conditions and adjusted appropriately to cool the bit, flush away cuttings, and maximize penetration rates.

STANDARD	
	Standard waterways are recommended for most general purpose core jobs and offer great fluid circulation in a variety of conditions.
TURBO	
	Turbo waterways provide increased flushing ability and lessen the contact area of the bit to the rock, thus giving the bit more cutting ability with less pressure. Available in diamond impregnated bits only.
FACE DISCHARGE	
	Recommended for very soft and broken formations or when using triple-tube barrels. FD waterways increase flushing characteristics to prevent waterway blockage by ejecting fluid through ports molded into the face of the bit.
DEEP I.D. WATERWAYS	
	Designed to maximize the waterway depth on the I.D. of the bit, which reduces the jetting or washing away of the core. The extra clearance minimizes the vacuum effect caused by the water flow past the lifter case in a lost circulation application.
TAPERED WATERWAYS	
	Recommended for soft and broken formations when standard waterways may become blocked. The taper flushes cuttings to help keep the waterways clear.
SPIRAL	
	Recommended for drilling in broken formations. Specifically angled waterways allow for greater fluid ejection. Available in surface set bits only.

# DIAMOND IMPREGNATED BIT SPECIFICATIONS

DIAMOND IMPREGNATED BIT AND REAMING SHELL SPECIFICATIONS						
SIZE*	BIT O.D. - HOLE DIAMETER		BIT I.D. - CORE DIAMETER		REAMING SHELL O.D.	
	INCHES	MM	INCHES	MM	INCHES	MM
BWL						
RSG	2.360	60.0	1.433	36.4	2.360	60.0
STD GAUGE (DCDMA)	2.350	59.7	1.433	36.4	2.360	60.0
NWL						
RSG	2.980	75.7	1.875	47.6	2.980	75.7
STD GAUGE (DCDMA)	2.965	75.3	1.875	47.6	2.980	75.7
OVERSIZE	3.032	77.0	1.875	47.6	3.032	77.0
N2WL						
RSG	2.980	75.7	1.995	50.6	2.980	75.7
STD GAUGE (DCDMA)	2.965	75.3	1.995	50.6	2.980	75.7
OVERSIZE	3.032	77.0	1.995	50.6	3.032	77.0
N3WL						
RSG	2.980	75.7	1.775	45.0	2.980	75.7
STD GAUGE (DCDMA)	2.965	75.3	1.775	45.0	2.980	75.7
OVERSIZE	3.032	77.0	1.775	45.0	3.032	77.0
HWL						
RSG	3.782	96.0	2.500	63.5	3.782	96.0
STD GAUGE (DCDMA)	3.770	95.7	2.500	63.5	3.782	96.0
OVERSIZE	3.830	97.2	2.500	63.5	3.830	97.3
H3WL						
RSG	3.782	96.0	2.406	61.1	3.782	96.0
STD GAUGE (DCDMA)	3.770	95.7	2.406	61.1	3.782	96.0
OVERSIZE	3.830	97.3	2.406	61.1	3.830	97.3
PWL						
RSG	4.827	122.6	3.345	85.0	4.827	122.6
STD GAUGE (DCDMA)	4.810	122.2	3.345	85.0	4.827	122.6
OVERSIZE	4.950	125.7	3.345	85.0	4.950	125.7
P3WL						
RSG	4.827	122.6	3.270	83.0	4.827	122.6
STD GAUGE (DCDMA)	4.810	122.2	3.270	83.0	4.827	122.6
OVERSIZE	4.950	125.7	3.270	83.0	4.950	125.7

\*RSG = Reaming Shell Gauge

\*STD = Standard Gauge

## IMPREGNATED BIT ORDERING GUIDELINES

### ORDERING GT BITS

1. **Size** - Bits are available in all standard industry sizes.
2. **Series** - Select the series bit most appropriate for the formation.
3. **Gauge** - Standard and reaming shell shown in catalog. Oversized options available.

### ORDERING PREMIUM BITS

1. **Size** - Bits are available in all standard industry sizes.
2. **Series** - Select the series bit most appropriate for the formation.
3. **Gauge** - Standard and reaming shell shown in catalog. Oversized options available.
4. **Waterway Configuration** - Standard shown in catalog unless otherwise noted. Custom options available (see page 79).
5. **Waterway Width** - Standard .125" shown in catalog. Custom waterway widths available.
6. **No. of Waterways** - Standard for each size shown in catalog. Custom options available.
7. **Crown Height** - Hole Products' premium series bits come standard with 9.5 mm crown height. Custom crown heights available.



## BWL DIAMOND IMPREGNATED BITS

BWL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2300050	2	STANDARD (2.350")	6
2300055	2	REAMING SHELL (2.360")	6
2300060	4	STANDARD (2.350")	6
2300065	4	REAMING SHELL (2.360")	6
2300070	6	STANDARD (2.350")	6
2300075	6	REAMING SHELL (2.360")	6
2300080	7	STANDARD	8
2300085	7	REAMING SHELL (2.360")	8
2300090	8	STANDARD (2.350")	8
2300095	8	REAMING SHELL (2.360")	8
2300100	9	STANDARD (2.350")	8
2300105	9	REAMING SHELL (2.360")	8
2300110	10	STANDARD (2.350")	8
2300115	10	REAMING SHELL (2.360")	8

Custom oversized bits available upon request. See page 80 for common oversized O.D.

BWL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2300120	2	STANDARD (2.350")	4
2300125	2	REAMING SHELL (2.360")	4
2300130	4	STANDARD (2.350")	4
2300135	4	REAMING SHELL (2.360")	4
2300140	6	STANDARD (2.350")	4
2300005	6	REAMING SHELL (2.360")	4
2300145	7	STANDARD (2.350")	4
2300150	7	REAMING SHELL (2.360")	4
2300155	8	STANDARD (2.350")	4
2300015	8	REAMING SHELL (2.360")	4
2300160	9	STANDARD (2.350")	4
2300025	9	REAMING SHELL (2.360")	4
2300165	10	STANDARD (2.350")	4
2300035	10	REAMING SHELL (2.360")	4
2300170	12	STANDARD (2.350")	4
2300040	12	REAMING SHELL (2.360")	4

Custom oversized bits available upon request. See page 80 for common oversized O.D.

# NWL DIAMOND IMPREGNATED BITS

NWL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2400410	2	STANDARD (2.965")	8
2400150	2	REAMING SHELL (2.980")	8
2400420	4	STANDARD (2.965")	8
2400415	4	REAMING SHELL (2.980")	8
2400425	6	STANDARD (2.965")	8
2400155	6	REAMING SHELL (2.980")	8
2400435	7	STANDARD (2.965")	10
2400430	7	REAMING SHELL (2.980")	10
2400440	8	STANDARD (2.965")	10
2400160	8	REAMING SHELL (2.980")	10
2400445	9	STANDARD (2.965")	10
2400165	9	REAMING SHELL (2.980")	10
2400450	10	STANDARD (2.965")	10
2400170	10	REAMING SHELL (2.980")	10

Custom oversized bits available upon request. See page 80 for common oversized O.D.

NWL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2400455	2	STANDARD (2.965")	6
2400000	2	REAMING SHELL (2.980")	6
2400460	4	STANDARD (2.965")	6
2400465	4	REAMING SHELL (2.980")	6
2400470	6	STANDARD (2.965")	6
2400005	6	REAMING SHELL (2.980")	6
2400475	7	STANDARD (2.965")	6
2400006	7	REAMING SHELL (2.980")	6
2400480	8	STANDARD (2.965")	6
2400010	8	REAMING SHELL (2.980")	6
2400485	9	STANDARD (2.965")	6
2400011	9	REAMING SHELL (2.980")	6
2400490	10	STANDARD (2.965")	6
2400015	10	REAMING SHELL (2.980")	6
2400495	12	STANDARD (2.965")	6
2400050	12	REAMING SHELL (2.980")	6

Custom oversized bits available upon request. See page 80 for common oversized O.D.

## N2WL DIAMOND IMPREGNATED BITS

N2WL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2400500	2	STANDARD (2.965")	8
2400175	2	REAMING SHELL (2.980")	8
2400505	4	STANDARD (2.965")	8
2400510	4	REAMING SHELL (2.980")	8
2400515	6	STANDARD (2.965")	8
2400180	6	REAMING SHELL (2.980")	8
2400520	7	STANDARD (2.965")	10
2400525	7	REAMING SHELL (2.980")	10
2400530	8	STANDARD (2.965")	10
2400185	8	REAMING SHELL (2.980")	10
2400535	9	STANDARD (2.965")	10
2400190	9	REAMING SHELL (2.980")	10
2400540	10	STANDARD (2.965")	10
2400195	10	REAMING SHELL (2.980")	10

Custom oversized bits available upon request. See page 80 for common oversized O.D.

N2WL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2400545	2	STANDARD (2.965")	6
2400020	2	REAMING SHELL (2.980")	6
2400550	4	STANDARD (2.965")	6
2400555	4	REAMING SHELL (2.980")	6
2400560	6	STANDARD (2.965")	6
2400025	6	REAMING SHELL (2.980")	6
2400565	7	STANDARD (2.965")	6
2400570	7	REAMING SHELL (2.980")	6
2400575	8	STANDARD (2.965")	6
2400030	8	REAMING SHELL (2.980")	6
2400580	9	STANDARD (2.965")	6
2400191	9	REAMING SHELL (2.980")	6
2400585	10	STANDARD (2.965")	6
2400035	10	REAMING SHELL (2.980")	6
2400590	12	STANDARD (2.965")	6
2400085	12	REAMING SHELL (2.980")	6

Custom oversized bits available upon request. See page 80 for common oversized O.D.

# N3WL DIAMOND IMPREGNATED BITS

N3WL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2400595	2	STANDARD (2.965")	8
2400200	2	REAMING SHELL (2.980")	8
2400600	4	STANDARD (2.965")	8
2400605	4	REAMING SHELL (2.980")	8
2400610	6	STANDARD (2.965")	8
2400205	6	REAMING SHELL (2.980")	8
2400615	7	STANDARD (2.965")	10
2400620	7	REAMING SHELL (2.980")	10
2400625	8	STANDARD (2.965")	10
2400210	8	REAMING SHELL (2.980")	10
2400630	9	STANDARD (2.965")	10
2400215	9	REAMING SHELL (2.980")	10
2400635	10	STANDARD (2.965")	10
2400220	10	REAMING SHELL (2.980")	10

Custom oversized bits available upon request. See page 80 for common oversized O.D.

N3WL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2400640	2	STANDARD (2.965")	6
2400093	2	REAMING SHELL (2.980")	6
2400645	4	STANDARD (2.965")	6
2400650	4	REAMING SHELL (2.980")	6
2400655	6	STANDARD (2.965")	6
2400095	6	REAMING SHELL (2.980")	6
2400670	7	STANDARD (2.965")	6
2400660	7	REAMING SHELL (2.980")	6
2400665	8	STANDARD (2.965")	6
2400125	8	REAMING SHELL (2.980")	6
2400675	9	STANDARD (2.965")	6
2400680	9	REAMING SHELL (2.980")	6
2400685	10	STANDARD (2.965")	6
2400690	10	REAMING SHELL (2.980")	6
2400695	12	STANDARD (2.965")	6
2400700	12	REAMING SHELL (2.980")	6

Custom oversized bits available upon request. See page 80 for common oversized O.D.

## HWL DIAMOND IMPREGNATED BITS

HWL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2350265	2	STANDARD (3.770")	10
2350070	2	REAMING SHELL (3.782")	10
2350270	4	STANDARD (3.770")	10
2350275	4	REAMING SHELL (3.782")	10
2350280	6	STANDARD (3.770")	10
2350075	6	REAMING SHELL (3.782")	10
2350285	7	STANDARD (3.770")	12
2350290	7	REAMING SHELL (3.782")	12
2350300	8	STANDARD (3.770")	12
2350080	8	REAMING SHELL (3.782")	12
2350305	9	STANDARD (3.770")	12
2350085	9	REAMING SHELL (3.782")	12
2350310	10	STANDARD (3.770")	12
2350095	10	REAMING SHELL (3.782")	12

Custom oversized bits available upon request. See page 80 for common oversized O.D.

HWL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2350315	2	STANDARD	8
2350005	2	REAMING SHELL	8
2350320	4	STANDARD	8
2350325	4	REAMING SHELL	8
2350330	6	STANDARD	8
2350010	6	REAMING SHELL	8
2350335	7	STANDARD	8
2350340	7	REAMING SHELL	8
2350345	8	STANDARD	8
2350015	8	REAMING SHELL	8
2350350	9	STANDARD	8
2350016	9	REAMING SHELL	8
2350355	10	STANDARD	8
2350020	10	REAMING SHELL	8
2350360	12	STANDARD	8
2350050	12	REAMING SHELL	8

Custom oversized bits available upon request. See page 80 for common oversized O.D.



## H3WL DIAMOND IMPREGNATED BITS

H3WL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2350365	2	STANDARD (3.770")	10
2350100	2	REAMING SHELL (3.782")	10
2350370	4	STANDARD (3.770")	10
2350375	4	REAMING SHELL (3.782")	10
2350380	6	STANDARD (3.770")	10
2350105	6	REAMING SHELL (3.782")	10
2350385	7	STANDARD (3.770")	12
2350390	7	REAMING SHELL (3.782")	12
2350395	8	STANDARD (3.770")	12
2350110	8	REAMING SHELL (3.782")	12
2350400	9	STANDARD (3.770")	12
2350405	9	REAMING SHELL (3.782")	12
2350410	10	STANDARD (3.770")	12
2350415	10	REAMING SHELL (3.782")	12

Custom oversized bits available upon request. See page 80 for common oversized O.D.

H3WL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2350420	2	STANDARD (3.770")	8
2350023	2	REAMING SHELL (3.782")	8
2350425	4	STANDARD (3.770")	8
2350430	4	REAMING SHELL (3.782")	8
2350435	6	STANDARD (3.770")	8
2350025	6	REAMING SHELL (3.782")	8
2350440	7	STANDARD (3.770")	8
2350445	7	REAMING SHELL (3.782")	8
2350450	8	STANDARD (3.770")	8
2350030	8	REAMING SHELL (3.782")	8
2350455	9	STANDARD (3.770")	8
2350130	9	REAMING SHELL (3.782")	8
2350460	10	STANDARD (3.770")	8
2350465	10	REAMING SHELL (3.782")	8
2350470	12	STANDARD (3.770")	8
2350475	12	REAMING SHELL (3.782")	8

Custom oversized bits available upon request. See page 80 for common oversized O.D.

# PWL DIAMOND IMPREGNATED BITS

PWL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2450060	2	STANDARD (4.810")	12
2450065	2	REAMING SHELL (4.827")	12
2450070	4	STANDARD (4.810")	12
2450075	4	REAMING SHELL (4.827")	12
2450080	6	STANDARD (4.810")	12
2450085	6	REAMING SHELL (4.827")	12
2450090	7	STANDARD (4.810")	14
2450095	7	REAMING SHELL (4.827")	14
2450100	8	STANDARD (4.810")	14
2450105	8	REAMING SHELL (4.827")	14
2450110	9	STANDARD (4.810")	14
2450115	9	REAMING SHELL (4.827")	14
2450120	10	STANDARD (4.810")	14
2450125	10	REAMING SHELL (4.827")	14

Custom oversized bits available upon request. See page 80 for common oversized O.D.

PWL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2450130	2	STANDARD (4.810")	12
2450010	2	REAMING SHELL (4.827")	12
2450135	4	STANDARD (4.810")	12
2450140	4	REAMING SHELL (4.827")	12
2450145	6	STANDARD (4.810")	12
2450015	6	REAMING SHELL (4.827")	12
2450150	7	STANDARD (4.810")	12
2450155	7	REAMING SHELL (4.827")	12
2450160	8	STANDARD (4.810")	12
2450020	8	REAMING SHELL (4.827")	12
2450165	9	STANDARD (4.810")	12
2450170	9	REAMING SHELL (4.827")	12
2450175	10	STANDARD (4.810")	12
2450180	10	REAMING SHELL (4.827")	12
2450185	12	STANDARD (4.810")	12
2450190	12	REAMING SHELL (4.827")	12

Custom oversized bits available upon request. See page 80 for common oversized O.D.

## P3WL DIAMOND IMPREGNATED BITS

P3WL GT BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2450195	2	STANDARD (4.810")	12
2450200	2	REAMING SHELL (4.827")	12
2450205	4	STANDARD (4.810")	12
2450210	4	REAMING SHELL (4.827")	12
2450215	6	STANDARD (4.810")	12
2450220	6	REAMING SHELL (4.827")	12
2450225	7	STANDARD (4.810")	14
2450230	7	REAMING SHELL (4.827")	14
2450235	8	STANDARD (4.810")	14
2450240	8	REAMING SHELL (4.827")	14
2450245	9	STANDARD (4.810")	14
2450250	9	REAMING SHELL (4.827")	14
2450255	10	STANDARD (4.810")	14
2450260	10	REAMING SHELL (4.827")	14

Custom oversized bits available upon request. See page 80 for common oversized O.D.

P3WL PREMIUM BITS			
PART #	SERIES	GAUGE	NUMBER OF WATERWAYS
2450265	2	STANDARD (4.810")	12
2450270	2	REAMING SHELL (4.827")	12
2450275	4	STANDARD (4.810")	12
2450280	4	REAMING SHELL (4.827")	12
2450285	6	STANDARD (4.810")	12
2450027	6	REAMING SHELL	12
2450290	7	STANDARD (4.810")	12
2450012	7	REAMING SHELL (4.827")	12
2450295	8	STANDARD (4.810")	12
2450025	8	REAMING SHELL (4.827")	12
2450300	9	STANDARD (4.810")	12
2450011	9	REAMING SHELL (4.827")	12
2450305	10	STANDARD (4.810")	12
2450310	10	REAMING SHELL (4.827")	12
2450315	12	STANDARD (4.810")	12
2450320	12	REAMING SHELL (4.827")	12

Custom oversized bits available upon request. See page 80 for common oversized O.D.

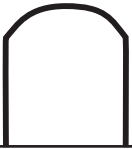
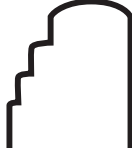
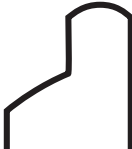
## SURFACE SET DIAMOND BITS

Surface set diamond bits are primarily recommended for use in drilling relatively soft, abrasive, unconsolidated formations. They can also be useful when drilling harder formations where the available rotational speeds and bit loads preclude the use of diamond impregnated bits.

Hole Products offers a number of design options for surface set bits. Options include multiple waterway options, diamond sizes, diamond grades, and crown profiles.

### CROWN PROFILE OPTIONS

Crown profile selection can affect core recovery and penetration rates in varying formations. Hole Products' surface set bits are available with semi-round, step-type, and pilot. Other crown profiles are available upon request. Please contact your Hole Products representative for further assistance.

SEMI-ROUND	
	A good all purpose bit, generally performs best in broken conditions.
STEP-TYPE	
	Performs best in soft, unconsolidated formations.
PILOT	
	Most commonly used in general purpose drilling.

### SURFACE SET BIT SELECTION GUIDE

ROCK TYPE	APPROXIMATE HARDNESS	SPC RANGE GUIDE					
		6/10	10/15	15/25	25/35	35/45	45/55
Coal, Clay, Alluvium	Very Soft	↕					
Gypsum, Potash, Shale, Sandstone, Talc	Soft		↕				
Limestone, Weathered Granite, Marl, Peridotite, Sandstone, Serpentine, Hard Shale, Siltstone	Medium			↕	↕		
Diabase, Dolomite, Pegmatite, Sandstone, Schist	Medium Hard					↕	↕

## SURFACE SET BIT ORDERING GUIDELINES

Surface set diamond bits are available in all standard industry sizes and with a variety of design options.

Options include multiple waterway options, diamond sizes, diamond grades, and crown profiles.

Please refer to the options below when selecting a diamond surface set bit.

1. **Size** - Surface set diamond bits are available in all standard industry sizes.
2. **Gauge** - Standard, reaming shell and oversized options available.
3. **Crown profile** - SR = semi round, PC = pilot crown, and STP = step crown.
4. **Waterway Configuration** - See page 79 for available options.
5. **Waterways Options** - Custom waterway widths and number of waterways available.
6. **Stones Per Carat (SPC)** - Standard available spc ranges include 10/15, 15/25, 25/35, 35/45 and 45/55 (custom options available). Smaller diamonds are recommended for use in harder formations and larger diamonds in softer formations (see chart on page 78).
7. **Diamond Grade** - Hole Products' surface set bits are offered with PG (standard), AA, or AAA grade diamonds. As a general rule, higher grade diamonds are recommended for better performance.



## PCD BITS



Polycrystalline compact diamond (PCD) bits are constructed with a single layer of cutters mounted on the face of the bit in a predetermined pattern. These bits have a tough, wear resistant matrix body, and natural diamond gauge protection. The cutters can be rotated or replaced to maximize performance and extend the life of the bit.

PCD bits are recommended for drilling in soft to medium, sedimentary formations that are not effectively drilled with surface set diamond bits. The cutters are designed to shear the formation being drilled. Increased cutter exposure allows for high penetration rates in softer formations when compared to surface set bits.

PCD bits are offered with a number of custom design options to optimize performance in a variety of drilling conditions, and are available in all industry standard sizes.

Please contact your Hole Products representative for additional details and ordering assistance.

## PCD ORDERING GUIDELINES

### ORDERING PCD BITS

1. **Size** - Bits are available in all standard industry sizes.
2. **Gauge** - Available in standard (S) equal to reaming shell (RSG) and oversized (OS) gauges.
3. **PCD Cutter Size** - Available with 8mm or 13mm PCD cutters. Custom sizes available.
4. **No. of PCD Cutters** - Available with any number of PCD cutters for drilling in specific formations.
5. **Waterway Configurations** - Bits are available with Double Angle (DA), Deep ID (DID), and Face Discharge (FD) waterway configurations. Custom options available.



## DIAMOND IMPREGNATED SHOES

Diamond impregnated shoes are used to advance the outer drill string or flush joint casing through the overburden and to assist seating the drill string into the bedrock, thus providing a tight seal for circulating drilling fluids back to the surface. Hole Products' diamond impregnated shoes are designed and manufactured to work under a wide range of drilling conditions. They are tough, heavy duty shoes, built to withstand the rigors of even the most difficult formations.

Diamond impregnated shoes are offered with custom design options and in multiple matrices to maximize performance in various ground types.

### GT CASING SHOES

Standard casing shoes are designed for the driller seeking quality with built-in value. Standard casing shoes come with lower crown heights and fewer waterways. Available in multiple matrices and all standard industry sizes.



### PREMIUM CASING SHOES

Premium casing shoes are the preferred choice for difficult drilling conditions. Offered with higher crown heights and custom waterway options, premium casing shoes provide top performance in the most demanding formations. Available in multiple matrices and all standard industry sizes.



### ROD SHOES

Hole Products' rod shoes are designed to offer performance and longevity in a variety of drilling conditions. Rod shoes are offered in multiple matrices and all standard industry sizes.





# IMPREGNATED SHOE ORDERING GUIDELINES

## ORDERING GT CASING/ROD SHOES

1. **Size** - Shoes are available in all standard industry sizes.
2. **Series** - Select the series shoe most appropriate for the formation.

## ORDERING PREMIUM CASING/ROD SHOES

1. **Size** - Shoes are available in all standard industry sizes.
2. **Series** - Select the series shoe most appropriate for the formation.
3. **Waterway Widths** - Standard .125" are shown in catalog. Custom waterway widths available.
4. **No. Of Waterways** - Custom number of waterways available.
5. **Crown Height** - Hole Products' premium casing shoes come standard with a 6.35 mm crown height. Custom options available.

CASING SHOE SPECIFICATIONS				
SIZE	O.D.		I.D.	
	INCHES	MM	INCHES	MM
BW	2.985	75.82	2.370	60.20
NW	3.620	91.95	2.992	76.00
HW	4.632	117.65	3.980	101.09
HWT	4.632	117.65	3.970	100.84
PW	5.650	143.51	4.852	123.24
PWT	5.660	143.76	4.845	123.06
SW	6.790	172.47	5.937	150.80
SWT	6.800	172.72	5.933	150.70

ROD SHOE SPECIFICATIONS				
SIZE	O.D.		I.D.	
	INCHES	MM	INCHES	MM
BWL	2.365	60.07	1.80	45.72
NWL	2.990	75.95	2.37	60.20
HWL	3.780	96.01	3.05	77.47



## DIAMOND IMPREGNATED CASING SHOES

BW CASING SHOES		
PART #	SERIES	STYLE
2200100	2	GT
2200026	2	PREMIUM
2200120	2	GT OS (3.032")
2200125	2	PREMIUM OS (3.032")
2200130	6	GT
2200135	6	PREMIUM
2200140	6	GT OS (3.032)
2200145	6	PREMIUM OS (3.032")
2200150	8	GT
2200155	8	PREMIUM
2200160	8	GT OS (3.032")
2200165	8	PREMIUM OS (3.032")
NW CASING SHOES		
PART #	SERIES	STYLE
2400260	2	GT
2200000	2	PREMIUM
2200045	2	GT OS (3.75")
2200040	2	PREMIUM OS (3.75")
2200170	6	GT
2200003	6	PREMIUM
2200175	6	GT OS (3.75")
2200047	6	PREMIUM OS (3.75")
2200180	8	GT
2200009	8	PREMIUM
2200185	8	GT OS (3.75")
2200190	8	PREMIUM OS (3.75")
HW CASING SHOES		
PART #	SERIES	STYLE
2350140	2	GT
2200005	2	PREMIUM
2200195	2	GT OS (4.75")
2200041	2	PREMIUM OS (4.75")
2200200	6	GT
2200006	6	PREMIUM
2200205	6	GT OS (4.75")
2200210	6	PREMIUM OS (4.75")
2200215	8	GT
2200220	8	PREMIUM
2200225	8	GT OS (4.75")
2200230	8	PREMIUM OS (4.75")

Custom oversized shoes available. Please contact your Hole Products representative for details.

# DIAMOND IMPREGNATED CASING SHOES

HWT CASING SHOES		
PART #	SERIES	STYLE
2350145	2	GT
2200235	2	PREMIUM
2350240	2	GT OS (4.75")
2350156	2	PREMIUM OS (4.75")
2200245	6	GT
2200250	6	PREMIUM
2200255	6	GT OS (4.75")
2200260	6	PREMIUM OS (4.75")
2200265	8	GT
2200270	8	PREMIUM
2200275	8	GT OS (4.75")
2200280	8	PREMIUM OS (4.75")
PW CASING SHOES		
PART #	SERIES	STYLE
2450000	2	GT
2200285	2	PREMIUM
2200290	2	GT OS (5.875")
2200295	2	PREMIUM OS (5.875")
2200300	6	GT
2200020	6	PREMIUM
2200305	6	GT OS (5.875")
2200310	6	PREMIUM OS (5.875")
2200315	8	GT
2200320	8	PREMIUM
2200325	8	GT OS (5.875")
2200330	8	PREMIUM OS (5.875")
PWT CASING SHOES		
PART #	SERIES	STYLE
2200535	2	GT
2200540	2	PREMIUM
2200545	2	GT OS (5.875")
2200550	2	PREMIUM OS (5.875")
2200555	6	GT
2200560	6	PREMIUM
2200565	6	GT OS (5.875")
2200570	6	PREMIUM OS (5.875")
2200575	8	GT
2200580	8	PREMIUM
2200585	8	GT OS (5.875")
2200590	8	PREMIUM OS (5.875")

Custom oversized shoes available. Please contact your Hole Products representative for details.

## DIAMOND IMPREGNATED CASING SHOES

SW CASING SHOES		
PART #	SERIES	STYLE
2200335	2	GT
2200021	2	PREMIUM
2200340	2	GT OS (6.875")
2110021	2	PREMIUM OS (6.875")
2200345	6	GT
2200350	6	PREMIUM
2200355	6	GT OS (6.875")
2200360	6	PREMIUM OS (6.875")
2200365	8	GT
2200370	8	PREMIUM
2200375	8	GT OS (6.875")
2200380	8	PREMIUM OS (6.875")
SWT CASING SHOES		
PART #	SERIES	STYLE
2200595	2	GT
2200600	2	PREMIUM
2200605	2	GT OS (6.875")
2200610	2	PREMIUM OS (6.875")
2200615	6	GT
2200620	6	PREMIUM
2200625	6	GT OS (6.875")
2200630	6	PREMIUM OS (6.875")
2200635	8	GT
2200640	8	PREMIUM
2200645	8	GT OS (6.875")
2200650	8	PREMIUM OS (6.875")

*Custom oversized shoes available. Please contact your Hole Products representative for details.*

## DIAMOND IMPREGNATED ROD SHOES

BWL ROD SHOES		
PART #	SERIES	STYLE
2200385	2	GT
2200390	2	PREMIUM
2200395	2	GT OS (2.55")
2200400	2	PREMIUM OS (2.55")
2200405	6	GT
2200410	6	PREMIUM
2200415	6	GT OS (2.55")
2200420	6	PREMIUM OS (2.55")
NWL ROD SHOES		
PART #	SERIES	STYLE
2200425	2	GT
2200056	2	PREMIUM
2200430	2	GT OS (3.032")
2200435	2	PREMIUM OS (3.032")
2200440	6	GT
2200051	6	PREMIUM
2200445	6	GT OS (3.032")
2200450	6	PREMIUM OS (3.032")
HWL ROD SHOES		
PART #	SERIES	STYLE
2200455	2	GT
2200460	2	PREMIUM
2200465	2	GT OS (3.750")
2200470	2	PREMIUM OS (3.750")
2200475	6	GT
2200480	6	PREMIUM
2200485	6	GT OS (3.750")
2200490	6	PREMIUM OS (3.750")
PWL ROD SHOES		
PART #	SERIES	STYLE
2200495	2	GT
2200500	2	PREMIUM
2200505	2	GT OS (4.75")
2200510	2	PREMIUM OS
2200515	6	GT
2200520	6	PREMIUM
2200525	6	GT OS (4.75")
2200530	6	PREMIUM OS (4.75")

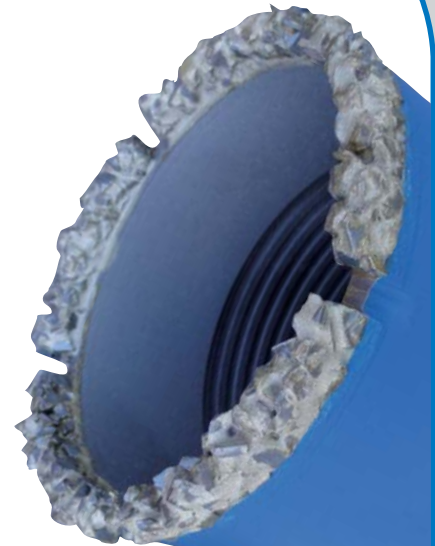
Custom oversized shoes available. Please contact your Hole Products representative for details.

## CARBIDE CHIP BITS & SHOES

Hole Products' carbide chip bits and shoes are a high performance, cost effective solution for drilling in overburden and soft to medium rock formations.

The aggressive design and premium tungsten carbides ensure maximum performance in a variety of drilling conditions.

Custom oversized casing shoes are available. Please contact your Hole Products representative for additional details.



CARBIDE CHIP BITS		
SIZE	PART #	GAUGE
BWL	2300175	RSG
BWL	2300180	OS (2.55")
NWL	2400705	RSG
NWL	2400710	OS (3.032")
HWL	2350065	RSG
HWL	2200039	OS (3.75")
PWL	2450325	RSG
PWL	2450330	OS (4.75")

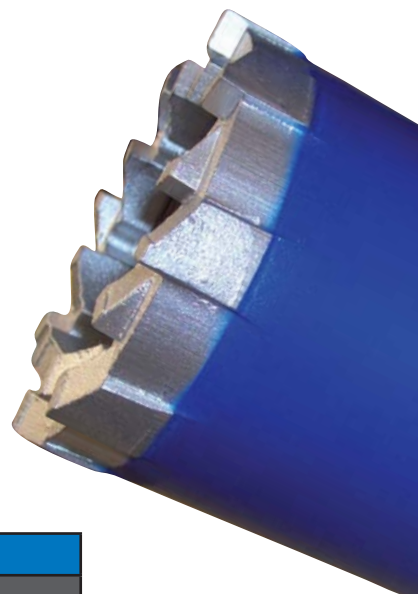
CARBIDE CHIP CASING SHOES		
SIZE	PART #	GAUGE
BW	2200027	RSG
BW	2200105	OS (3.032")
NW	2200093	RSG
NW	2200030	OS (3.75")
HW	2200015	RSG
HW	2200033	OS (4.75")
HWT	2350146	RSG
HWT	2350190	OS (4.75")
PW	2200058	RSG
PW	2200110	OS (5.875")
SW	2200060	RSG
SW	2200115	OS (6.875")

## STAGGER TOOTH BITS & SHOES

Hole Products' Stagger tooth bits and shoes are manufactured with an aggressive pattern similar to a saw blade to provide, maximum penetration in clays, shales, and similar soft formations. Specially designed waterways provide optimum cutting discharge and fluid circulation in variable formations.

Stagger tooth bits are available in reaming shell gauge or oversized.

Please contact your Hole Products representative for additional details.



STAGGER TOOTH BITS		
SIZE	PART #	GAUGE
BWL	2350198	RSG
BWL	2350199	OS (2.56")
NWL	2400151	RSG
NWL	2400152	OS (3.032")
N2WL	2400350	RSG
N2WL	2400360	OS (3.032")
HWL	2350200	RSG
HWL	2350210	OS (3.83")
H3WL	2350205	RSG
H3WL	2350215	OS (3.83")
PWL	2350220	RSG
PWL	2350225	OS (4.95")

STAGGER TOOTH CASING SHOES		
SIZE	PART #	GAUGE
BW	2200061	RSG
BW	2200062	OS (3.032")
NW	2200063	RSG
NW	2200053	OS (3.75")
HW	2200064	RSG
HW	2200044	OS (4.75")
HWT	2200066	RSG
HWT	2200070	OS (4.75")
PW	2200071	RSG
PW	2200072	OS (5.875")
SW	2200073	RSG
SW	2200074	OS (6.875")

*Custom oversized shoes available. Please contact your Hole Products representative for details.*

## CASING DRIVE SHOES

Drive shoes are made with heat treated, high grade steel. Drive shoes are designed for advancing casing in soft formations, including clays and sands as a method of advancing casing

They are generally recommended for use in the geotechnical industry.

CASING DRIVE SHOES	
SIZE	PART #
BW	2200049
EW	2200050
NW	2200025
HW	2200010
HWT	2350147
PW	2200055
SW	2200011
ZW	2200080



## REAMING SHELLS

Hole Products complete line of reaming shells are produced with premium diamonds to ensure great wear resistance while providing consistent hole diameter and helping to maintain drill string stability.

Reaming shells are available in GT and Premium models with a variety of custom options.

Please refer to the options below when selecting a reaming shell.

**GT** - A quality reamer with built-in value. GT reaming shells work well in most common coring conditions.

**PREMIUM** – Designed to withstand even the toughest core drilling conditions, these reamers offer outstanding performance in a variety of drilling conditions.

### ORDERING GUIDELINES FOR REAMING SHELLS

1. **Size** - Reaming shells are offered in all standard industry sizes.
2. **Style** - GT or Premium
3. **Gauge** - Available in equal to reaming shell and oversized options.
4. **Type** - Spiral type shown in catalog. Other types available on request.



REAMING SHELLS				
SIZE	PART #	TYPE	STYLE	GAUGE
BWL	2500030	SPIRAL	GT	RSG
	2500009	SPIRAL	PREMIUM	RSG
NWL	2400265	SPIRAL	GT	RSG
	2500000	SPIRAL	PREMIUM	RSG
NWD4	2500035	SPIRAL	GT	RSG
	2500015	SPIRAL	PREMIUM	RSG
HWL	2350150	SPIRAL	GT	RSG
	2500005	SPIRAL	PREMIUM	RSG
PWL	2500040	SPIRAL	GT	RSG
	2450055	SPIRAL	PREMIUM	RSG



## IMPREGNATED BIT RUNNING PARAMETERS

IMPREGNATED BIT RUNNING PARAMETERS			
BIT	ROTATION SPEED (rpm)	FLUID FLOW (gpm)	BIT WEIGHT RANGE (lbs)
BWL	1,000 - 1,700	6 - 8	2,000 - 5,000
NWL	800 - 1,350	8 - 10	3,000 - 6,000
N2WL	800 - 1,350	8 - 10	3,000 - 6,000
N3WL	800 - 1,350	8 - 10	3,000 - 6,000
HWL	600 - 1,000	10 - 14	4,000 - 8,000
H3WL	600 - 1,000	10 - 14	4,000 - 8,000
PWL	500 - 800	18 - 23	5,000 - 10,000
P3WL	500 - 800	18 - 23	5,000 - 10,000

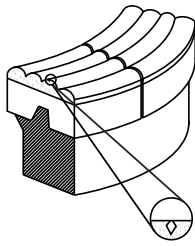
## SURFACE SET BIT RUNNING PARAMETERS

SURFACE SET BIT RUNNING PARAMETERS			
BIT	ROTATION SPEED (rpm)	FLUID FLOW (gpm)	BIT WEIGHT RANGE (lbs)
BWL	600 - 1,000	4 - 5	Maximum Bit Weight (lbs) = Carat Weight x Avg. SPC x 7
NWL	500 - 800	5 - 7	
HWL	400 - 600	6 - 11	Maximum Bit Weight (kg) = Carat Weight x Avg. SPC x 3.2
PWL	350 - 500	10 - 15	

Recommended running parameters are intended to be used simply as a guideline. Bit selection and running parameter adjustments may be necessary to maximize bit performance.



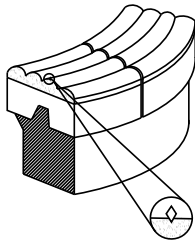
# IMPREGNATED BIT WEAR PATTERN GUIDE



**Face Glazed**

**Causes:** Bit series is too low.

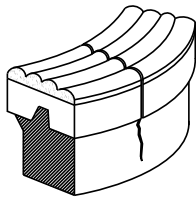
**Recommendation:** Change to a higher series bit.



**Excessive Diamond Exposure**

**Causes:** Overfeeding.

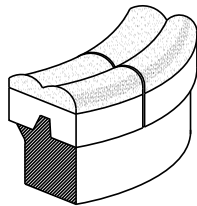
**Recommendation:** Increase RPI (RPC); Change to a lower series bit.



**Cracked Waterways**

**Causes:** Excessive WOB; Dropped rods; Inner tube free fall in a dry hole.

**Recommendation:** Replace bit.



**Burnt**

**Causes:** Lack of water/fluid; Excessive WOB

**Recommendation:** Check for pump and rod string leaks; Increase pump output; Reduce WOB.

RPM - Revolutions Per Minute

WOB - Weight On Bit

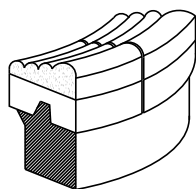
ROP - Rate Of Penetration

RPI - Rotations Per Inch

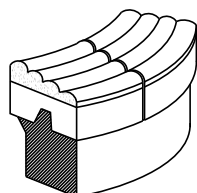
RPC - Rotations Per Centimeter



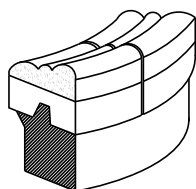
# IMPREGNATED BIT WEAR PATTERN GUIDE



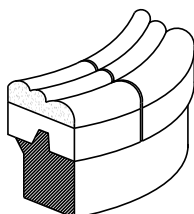
**Concave Face Wear**  
**Causes:** RPI (RPC) too low; Over drilling.  
**Recommendation:** Reduce RPM or ROP.



**Convex Face Wear**  
**Causes:** Lack of water/fluids.  
**Recommendation:** Check for pump and rod string leaks; Increase pump output.



**I.D. Gauge Loss**  
**Causes:** Lack of water/fluids; Overfeeding.  
**Recommendation:** Increase RPI (RPC); Check for pump and rod string leaks; Increase pump output.



**O.D. Gauge Loss**  
**Causes:** Lack of circulation; Bit vibration.  
**Recommendation:** Check for pump and rod string leaks; Increase pump output; Adjust RPM.

RPM - Revolutions Per Minute  
 WOB - Weight On Bit  
 ROP - Rate Of Penetration

RPI - Rotations Per Inch  
 RPC - Rotations Per Centimeter

## WATER SWIVELS



Designed to provide a watertight rotating joint to connect the pump and drill string with a high pressure hose, water swivels help pump water or other drilling fluids to the bottom of the bore hole.

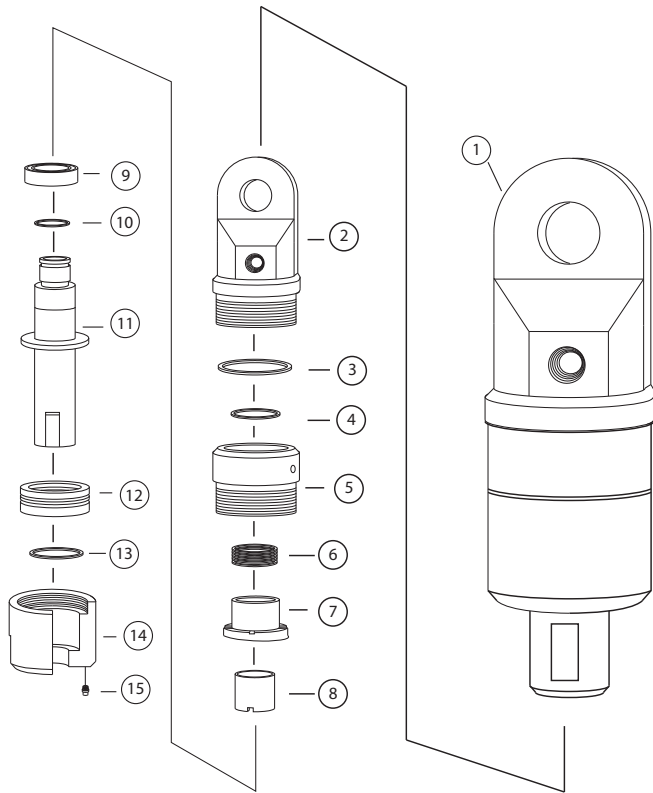
In addition, we offer a complete line of replacement parts for quick and easy field repairs. Hole Products offers quality Universal and Compact Plus water swivels and a full selection of adapter subs for use with all industry standard sized rods and casing.

All water swivels are suitable for use with water, mud, and/or other drilling fluids.

Water swivels shown are representative of the most common industry sizes and styles.

Please refer to the Swivels and Spares section of this catalog, or contact our Hole Products representative for additional product availability.

# COMPACT PLUS WATER SWIVELS



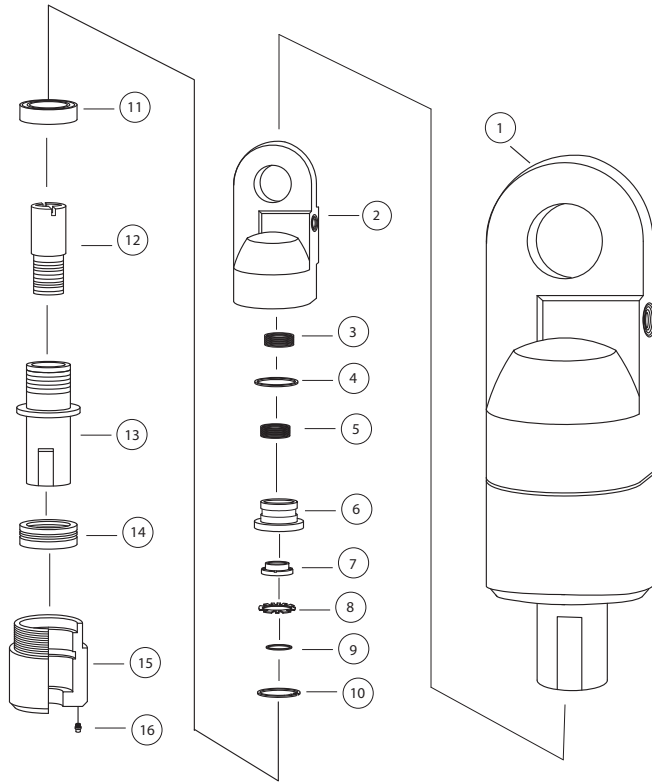
COMPACT PLUS CAPACITY	
ROTATING CAPACITY	10,000 LBS / 4,536 kg
STATIC CAPACITY	20,000 LBS / 9,072 kg

COMPACT PLUS ASSEMBLY		
ITEM	PART #	DESCRIPTION
1	7700008	COMPACT PLUS WATER SWIVEL ASSY AW ROD BOX CONNECTION (ITEMS: 2-14)
----	7700009	REPAIR KIT COMPACT*
2	7700045	SWIVEL CAP (1" NPT)
3	7700050	O-RING
4	7700055	WAVE SPRING WASHER
5	7700060	UPPER BODY
6	7700018	PACKING SET
7	7700070	PACKAGING CAGE
8	7700019	WEAR SLEEVE
9	7700080	ANGULAR CONTACT BALL BEARING
10	7700085	O-RING
11	7651013	SPINDLE AW ROD BOX CONNECTION
12	7700095	BALL THRUST BEARING
13	7700100	FELT SEAL
14	7700105	LOWER SWIVEL BODY
15	7700110	GREASE FITTING

- \* REPAIR KIT -COMPACT PLUS  
INCLUDES:  
 "O"Ring - 2 sizes (3 of each size)  
 Spring Washer (2)  
 "V" Packing Set (2)  
 Wear Sleeve (2)  
 Ball Bearing (1)  
 Felt Seal (2)  
 Ball Thrust Bearing (1)

ADAPTERS	
PART #	DESCRIPTION
3300375	AW ROD PIN TO AWL PIN
3302125	AW ROD PIN TO BWL PIN
3302116	AW ROD PIN TO NWL PIN
3300262	AW ROD PIN TO HWL PIN
3301123	AW ROD PIN TO HWT PIN
3302140	AW ROD PIN TO BW CASING PIN
3302145	AW ROD PIN TO NW CASING PIN
3302150	AW ROD PIN TO HW CASING PIN

# UNIVERSAL WATER SWIVELS



UNIVERSAL CAPACITY	
ROTATING CAPACITY	11,000 LBS / 5,000 kg
STATIC CAPACITY	25,000 LBS / 11,400 kg

UNIVERSAL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1	7700115	UNIVERSAL WATER SWIVEL ASSY BW ROD BOX CONNECTION (ITEMS: 2-16)
2	7700120	HOISTING CAP (1-1/4" NPT)
3	7700125	COMPRESSION SPRING
4	4750024	O-RING
5	7700130	PACKING SET
6	7700135	PACKING HOUSING
7	7700140	SPINDLE NUT
8	7700145	LOCKING WASHER
9	7700150	SPACER
10	7700155	RETAINING RING
11	7700160	ANGULAR CONTACT BALL BEARING
12	7700165	SPINDLE EXTENSION
13	7700170	SPINDLE BW ROD BOX CONNECTION
14	7700175	BALL THRUST BEARING
15	7700180	SWIVEL BODY
16	7700185	GREASE FITTING

ADAPTERS	
PART #	DESCRIPTION
3300265	BW ROD PIN TO AWL PIN
3301227	BW ROD PIN TO BWL PIN
3301087	BW ROD PIN TO NWL PIN
3300256	BW ROD PIN TO HWL PIN
3302155	BW ROD PIN TO HWT PIN
3300290	BW ROD PIN TO PWL PIN
3302160	BW ROD PIN TO BW CASING PIN
3302165	BW ROD PIN TO NW CASING PIN
3302170	BW ROD PIN TO HW CASING PIN
3302175	BW ROD PIN TO PW CASING PIN

# HOISTING PLUGS



Hoisting Plugs are used for safely and efficiently raising and lowering drill rods and casing.

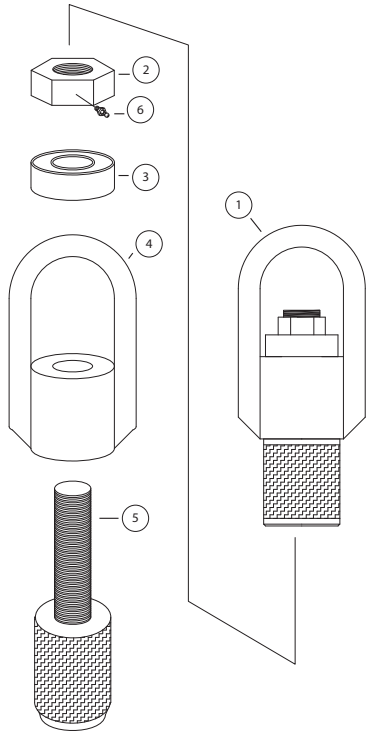
Hole Products offers a wide range of hoisting plugs for use on wireline and conventional coring operations. All hoisting plugs are constructed with premium quality components, ensuring excellent performance and durability.

Hoisting plugs in this section are representative of the most common sizes and styles used in the coring industry.

Please refer to the Pipe Handling and Hoisting section of this catalog, or contact our Hole Products representative for additional product availability.

# HOISTING PLUGS

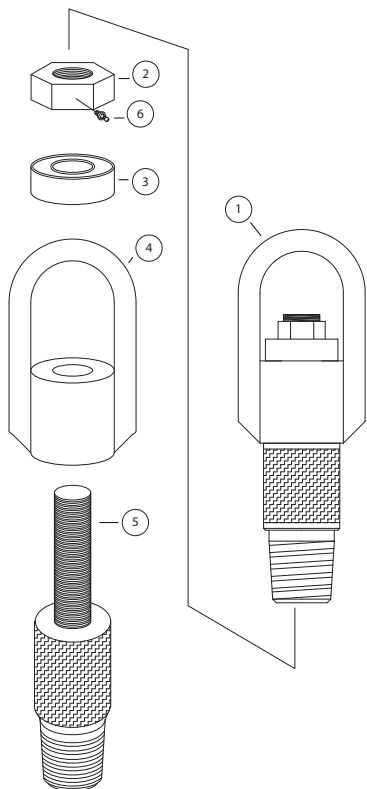
## NW ROD BOX



NW BOX HOISTING BOX PLUG CAPACITY		
SIZE	ROTATING	STATIC
NW	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

NW BOX HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050007	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050105	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

## NWJ PIN



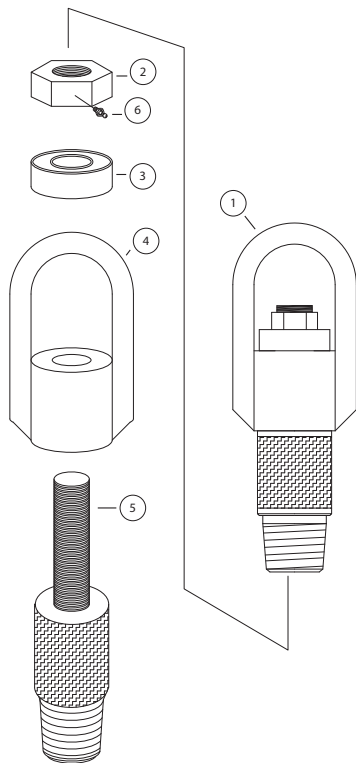
NWJ PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NWJ	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

NWJ PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050001	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050085	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW



# HOISTING PLUGS

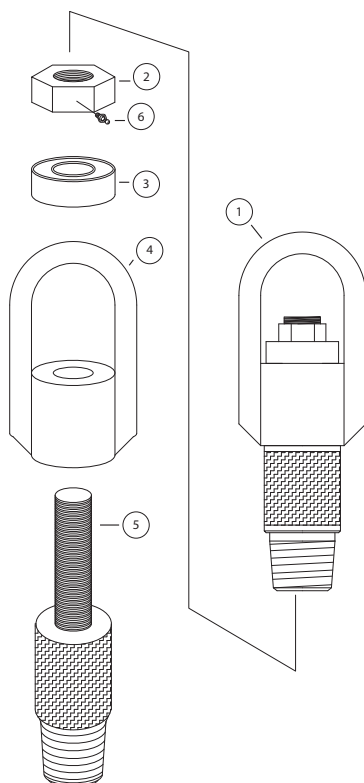
## BWL PIN



BWL PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
BWL	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

BWL PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050022	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050190	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

## NWL PIN

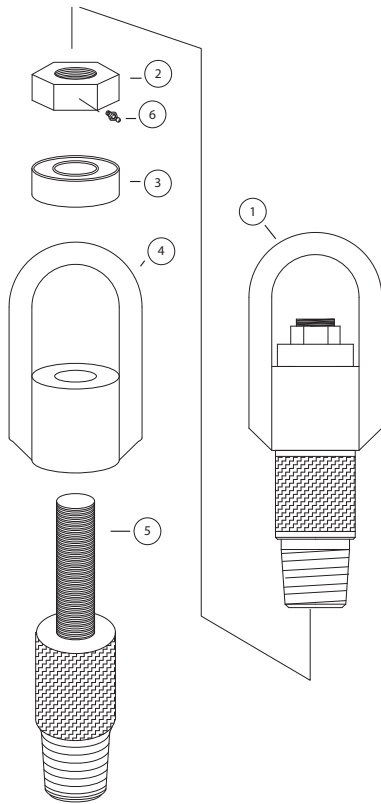


NWL PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NWL	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

NWL PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050008	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050170	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

# HOISTING PLUGS

## HWL PIN

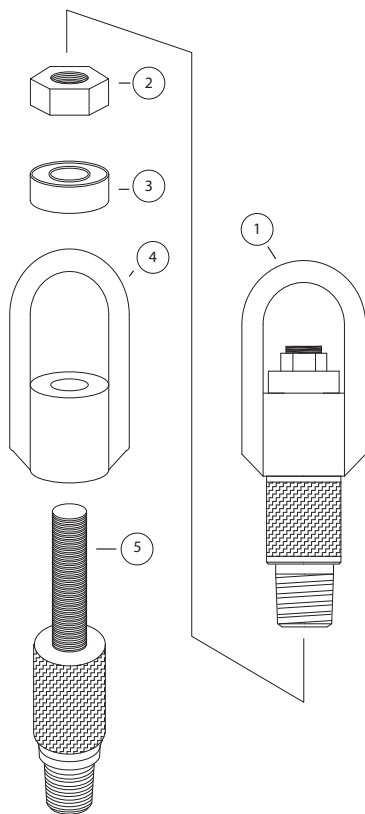


HWL PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
HWL	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

HWL PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050019	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050175	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

# HOISTING PLUGS

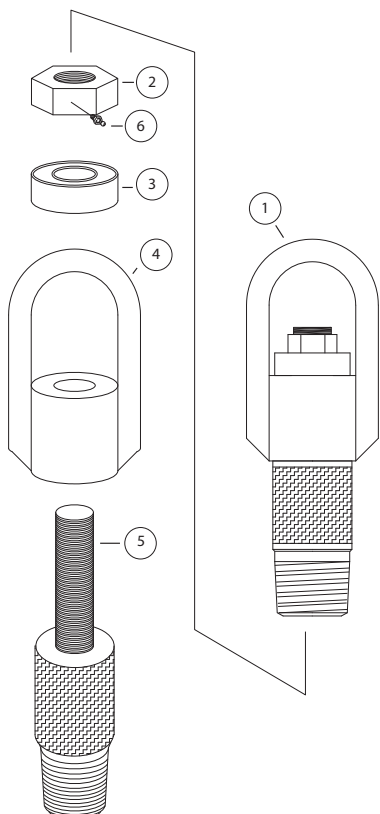
## NW CASING PIN



NW CASING HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NW	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

NW CASING HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050024	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050104	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

## HW CASING PIN



HWL CASING HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
HW	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

HWL CASING HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050018	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050195	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

## ADAPTER SUBS



It isn't easy matching tooling from multiple sizes and maintaining accessories that will work on all your jobs.

To make sure you get the perfect fit every time, Hole Products offers a complete line of quality adapter subs.

Adapter subs shown are representative of the most common sizes and styles used in the core drilling industry.

Please refer to the Drill Rod section of this catalog, or contact our Hole Products representative for additional product availability.

# ADAPTER SUBS

AW ROD BOX X PIN		
PART #	ROD BOX	PIN
3300058	AW	BWL ROD
3300300	AW	BW CASING
3301070	AW	NWL ROD
3301192	AW	NXB 3 TPI
3301080	AW	NW CASING
3301031	AW	HWL ROD
3301068	AW	HW CASING

AWJ ROD BOX X PIN		
PART #	ROD BOX	PIN
3300305	AWJ	BWL ROD
3301172	AWJ	BW CASING
3301065	AWJ	NWL ROD
3300311	AWJ	NXB 3 TPI
3301085	AWJ	NW CASING
3301170	AWJ	HWL ROD
3301097	AWJ	HW CASING
3301094	AWJ	HWT CASING
3301102	AWJ	PW CASING

BW ROD BOX X PIN		
PART #	ROD BOX	PIN
3301104	BW	NWL ROD
3301106	BW	NW CASING



## ADAPTER SUBS

NWJ ROD BOX X PIN		
PART #	ROD BOX	PIN
3300320	NWJ	BWL ROD
3300325	NWJ	BW CASING
3301116	NWJ	NWL ROD
3301204	NWJ	NXB 3 TPI
3301115	NWJ	NW CASING
3301027	NWJ	HWL ROD
3300330	NWJ	HWL ROD W/ O-RING
3301117	NWJ	HW CASING
3301028	NWJ	HWT CASING
3300335	NWJ	HWT W/ O-RING
3301119	NWJ	PWL ROD
3300153	NWJ	CPWL ROD
3300150	NWJ	PW CASING
3300151	NWJ	PWT ROD
3301118	NWJ	SW CASING
3301220	NWJ	ZW CASING

NW ROD BOX X PIN		
PART #	ROD BOX	PIN
3300345	NW	BWL ROD
3300350	NW	BW CASING
3301074	NW	NWL ROD
3300087	NW	NWL ROD W/ O-RING
3301079	NW	NW CASING
3301081	NW	HWL ROD
3300088	NW	HWL ROD W/ O-RING
3301114	NW	HW CASING
3301207	NW	HWT CASING
3300089	NW	HWT W/ O-RING
3301082	NW	PW CASING
3302098	NW	PWT ROD

BWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3302053	BWL	NWL ROD
3302180	BWL	BW CASING



## ADAPTER SUBS

NWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3301143	NWL	EW CASING
3300008	NWL	AW ROD
3301187	NWL	AW CASING
3300118	NWL	BWL ROD
3300355	NWL	BW CASING
3300017	NWL	NW ROD
3300108	NWL	NWJ ROD
3300104	NWL	NWL ROD
3301195	NWL	NXB 3 TPI ROD
3301217	NWL	NXE 4 TPI ROD
3300016	NWL	NW CASING
3300006	NWL	HWL ROD
3300113	NWL	HW CASING
3300038	NWL	HWT CASING

NXB 3 TPI BOX X PIN		
PART #	BOX	PIN
3300031	NXB 3 TPI	NWJ ROD
3302003	NXB 3 TPI	NWL ROD

NW CASING BOX X PIN		
PART #	CASING BOX	PIN
3301088	NW	HWL ROD



## ADAPTER SUBS

HWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3302004	HWL	AW ROD
3300009	HWL	NWJ ROD
3300360	HWL	NWL ROD
3300073	HWL	NW CASING
3300365	HWL	HWL ROD
3300007	HWL	HW CASING
3300011	HWL	HWT CASING

HW CASING BOX X PIN		
PART #	CASING BOX	PIN
3302134	HW	HWL ROD
3300109	HW	HWT CASING / ROD
3301133	HW	CPWL ROD

HWT ROD BOX X PIN		
PART #	ROD BOX	PIN
3300255	HWT	HWL ROD
3301133	HWT	CPWL ROD
3300014	HWT	HW CASING
3300370	HWT	HWT
3300261	HWT	PW CASING
3302095	HWT	PWT ROD
3301071	HWT	SWT ROD

CPWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3300152	CPWL	HWT CASING / ROD

PWT CASING BOX X PIN		
PART #	CASING BOX	PIN
3302097	PWT	PW CASING





## ADAPTER SUBS

PIN X PIN		
PART #	PIN	PIN
3302125	AW ROD	BWL ROD
3302116	AW ROD	NWL ROD
3301169	AW ROD	NXB 3TPI ROD
3302126	AW ROD	NW CASING
3300262	AW ROD	HWL ROD
3301123	AW ROD	HWT ROD
3301227	BW ROD	BWL ROD
3301087	BW ROD	NWL ROD
3300256	BW ROD	HWL ROD
3302160	BW ROD	BW CASING
3302165	BW ROD	NW CASING
3302170	BW ROD	HW CASING
3302155	BW ROD	HWT CASING
3301141	NW ROD	EW CASING
3300059	NW ROD	BWL ROD
3301086	NW ROD	NWL ROD
3301144	NW ROD	NRWL ROD
3302124	NW ROD	NW CASING
3302127	NW ROD	HWL ROD
3302128	NW ROD	HW CASING
3302156	NW ROD	HWT CASING
3301196	NWJ ROD	NWL ROD
3302135	HW CASING	4" NPT ROD



## ADAPTER SUBS

BOX X BOX		
PART #	BOX	BOX
3302056	N 4THD	BWL ROD
3301048	N 4THD	NWL ROD
3301211	NW	NWL ROD
3301203	NWL	2" NPT ROD
3302011	NWL	2 3/8" API REG
3300028	NWL	2 7/8" API REG
3300079	HWL	2 7/8" API REG
3302093	HWT	3 1/2" API REG
3300057	HWT	2 7/8" API REG

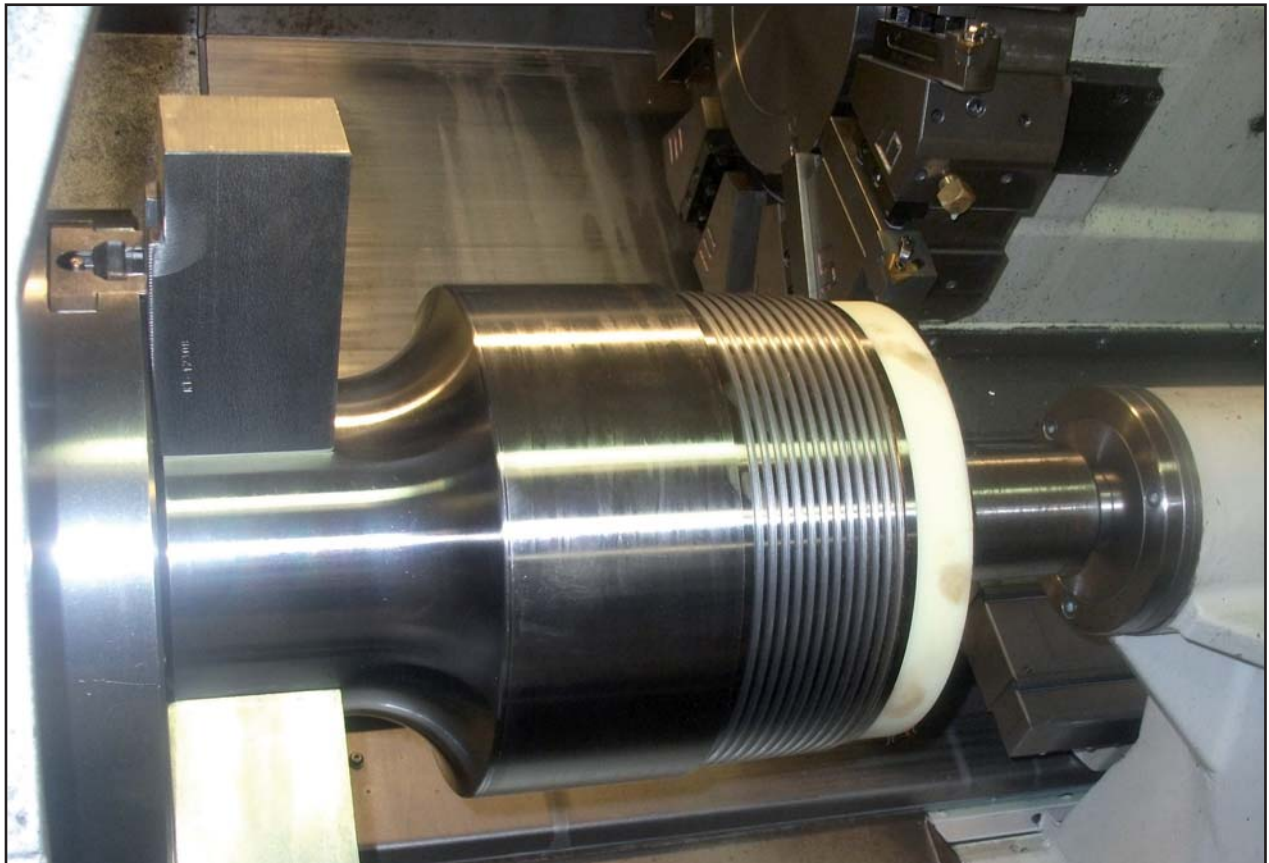


## CUSTOM SUBS

Didn't find the sub you were looking for?

Hole Products offers custom manufactured subs to meet any specific project requirement.

Please contact your Hole Products representative for additional information and ordering details.



## RECOVERY TOOLS



Hole Products offers the recovery tools you need to retrieve stuck, damaged or lost tooling, or other objects from the borehole.

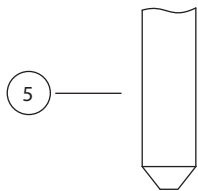
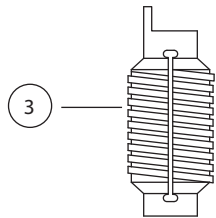
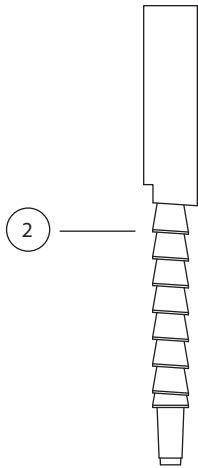
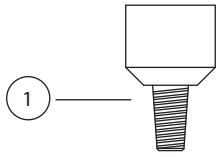
Available in all standard industry sizes, our recovery taps, spears, and magnets are made from premium quality materials, ensuring performance and longevity.

Recovery tools shown in this section are representative of the most common industry sizes and styles.

Please refer to the Fishing Tools section of this catalog, or contact our Hole Products representative for additional product availability.

# BOWEN® RELEASING SPEARS

Bowen® Itco-type releasing spears are an internal catch fishing tool designed for retrieving tubular tooling from the borehole. The simple design ensures easy releasing and re-engaging if necessary.



BWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	3305085	SUB 1 1/4" API PIN X BWL BOX
2	3850180	FLUSH MANDREL W/ 1 1/4" API BOX
3	3850185	BWL SPEAR GRAPPLE
4	3850190	BWL/NWL RELEASE RING
5	3850195	BWL/NWL BULL NOSE NUT

NWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	3305060	SUB 1 1/4" API PIN X NWL BOX
2	3850050	NWL/HWL FLUSH MANDREL W/ 1 1/4" API BOX
3	3850064	NWL SPEAR GRAPPLE (NOM. SIZE 2.328")
	3850065	NWL SPEAR GRAPPLE (NOM. SIZE 2.399")
4	3850055	NWL/HWL RELEASE RING
5	3850060	NWL/HWL BULL NOSE NUT

HWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	3305060	SUB 1 1/4" API PIN X HWL BOX
2	3850050	NWL/HWL FLUSH MANDREL W/ 1 1/4" API BOX
3	3850070	HWL SPEAR GRAPPLE (NOM. SIZE 3.078")
	3850069	HWL SPEAR GRAPPLE (NOM. SIZE 3.032")
4	3850055	NWL/HWL RELEASE RING
5	3850060	NWL/HWL BULL NOSE NUT

PWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	-----	SUB*
2	3850075	PWL FLUSH MANDREL W/ 2 3/8" API BOX
3	3850090	PWL SPEAR GRAPPLE (NOM. SIZE 4.010")
4	3850080	PWL RELEASE RING
5	3850085	PWL BULL NOSE NUT

*\*Various subs are available for PWL releasing spears. Please contact your Hole Products representative for additional details.*

## CORING TAPER TAPS

A complete line of quality taps designed specifically for wireline coring operations. Refer to rotary taps section for conventional coring taps.



*Designs may vary from photo.*

WIRELINE ROD TAPER TAPS			
PART #	DESCRIPTION	CONNECTION	FISHING USE
3850150	BWL ROD TAP	BWL BOX	BWL ROD
3850001	NWL ROD TAP	NWL BOX	NWL ROD
3850096	HWL ROD TAP	HWL BOX	HWL ROD
3850095	HWL ROD TAP	NWJ BOX	HWL ROD
3850132	HWT ROD TAP*	NWJ BOX	HWT ROD

\* HWT casing is the recommended drill rod for PWL coring systems.

CASING TAPER TAPS			
PART #	DESCRIPTION	CONNECTION	FISHING USE
3850155	AW CASING TAP	AW CASING BOX	AW CASING
3850160	BW CASING TAP	BW CASING BOX	BW CASING
1250061	NW CASING TAP	NW CASING BOX	NW CASING
3850012	HW CASING TAP	HW CASING BOX	HW CASING
3850165	PW CASING TAP	PW CASING BOX	PW CASING
3850170	SW CASING TAP	SW CASING BOX	SW CASING
3850175	ZW CASING TAP	ZW CASING BOX	ZW CASING

## MAGNETS

Magnets are great for retrieving tooling that has been broken into pieces or has an irregular shape.



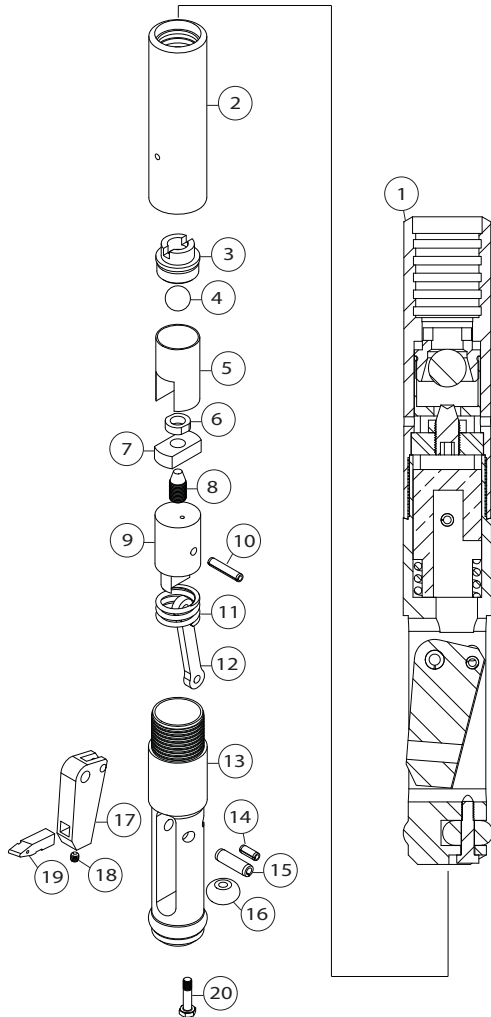
MAGNETS	
PART #	DESCRIPTION
3850015	3 1/2" OD
3850020	4 1/2" OD
3850025	5 1/2" OD

# SINGLE BLADE CASING CUTTERS

When the entire drill string cannot be recovered, Hole Products' casing cutters are the perfect tool to minimize loss.

Single blade "Bradley Style" casing cutters are available in all standard industry sizes.

Please contact your Hole Products representative to order replacement parts.



## SINGLE BLADE CASING CUTTER BREAKDOWN

ITEM #	DESCRIPTION
1	COMPLETE CASING CUTTER
2	VALVE BODY
3	CHECK VALVE BODY
4	STEEL BALL
5	VALVE
6	STOPPER LOCK NUT
7	STOPPER BASE
8	STOPPER SCREW
9	PISTON
10	SLOTTED SPRING PIN
11	COMPRESSION SPRING
12	PISTON ROD
13	CUTTER BODY
14	SLOTTED SPRING
15	SLOTTED SPRING PIN
16	ROLLER STABILIZER
17	HOLDER TOOL BIT
18	CUTTER KNIFE
19	SOCKET HEAD SCREW
20	ROLLER SCREW

### COMPLETE CASING CUTTER SINGLE BLADE

PART #	DESCRIPTION
2050930	CASING CUTTER BW CASING/NWL ROD
2050935	CASING CUTTER NW CASING/HWL ROD
2050940	CASING CUTTER HW CASING/HWT ROD

### REPLACEMENT CUTTER SINGLE BLADE

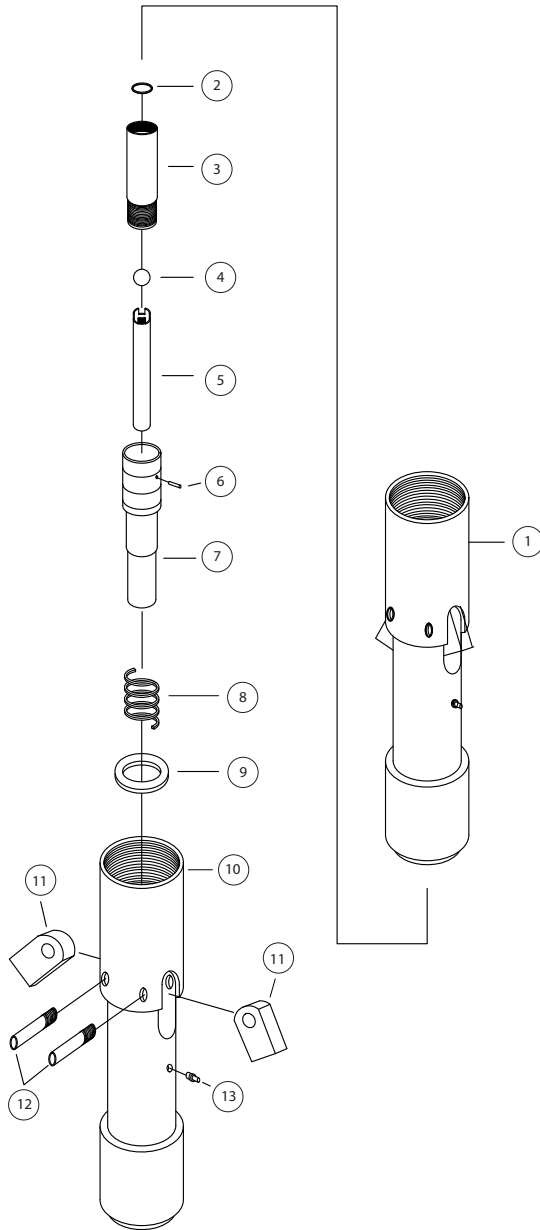
PART #	DESCRIPTION
2050945	REPLACEMENT CUTTER BW CASING/NWL ROD
2050950	REPLACEMENT CUTTER NW CASING/HWL ROD
2050955	REPLACEMENT CUTTER HW CASING/HWT ROD

# DUAL BLADE CASING CUTTERS

When the entire drill string cannot be recovered, Hole Products' casing cutters are the perfect tool to minimize loss.

Dual Blade casing cutters are available in all standard industry sizes.

Please contact your Hole Products representative to order replacement parts.



DUAL BLADE CASING CUTTER BREAKDOWN	
ITEM #	DESCRIPTION
1	COMPLETE CASING CUTTER
2	RETAINER RING
3	PLUNGER CASE
4	STAINLESS STEEL BALL
5	WATER TUBE
6	PIN
7	PLUNGER
8	SPRING
9	SPRING REST
10	BODY
11	CASING LUGS
12	SPRING PINS
13	SET SCREW

COMPLETE CASING CUTTER DUAL BLADE	
PART #	DESCRIPTION
2050151	CASING CUTTER BW CASING/NWL ROD
2050152	CASING CUTTER NW CASING/HWL ROD
2050580	CASING CUTTER HW CASING/HWT ROD

REPLACEMENT CUTTER DUAL BLADE	
PART #	DESCRIPTION
2050585	REPLACEMENT CUTTER BW CASING/NWL ROD
2050157	REPLACEMENT CUTTER NW CASING/HWL ROD
2050155	REPLACEMENT CUTTER HW CASING/HWT ROD

## WIRELINE PACKERS



Hole Products offers a complete range of inflatable wireline packers and accessories for standard core barrel sizes N, H, and P.

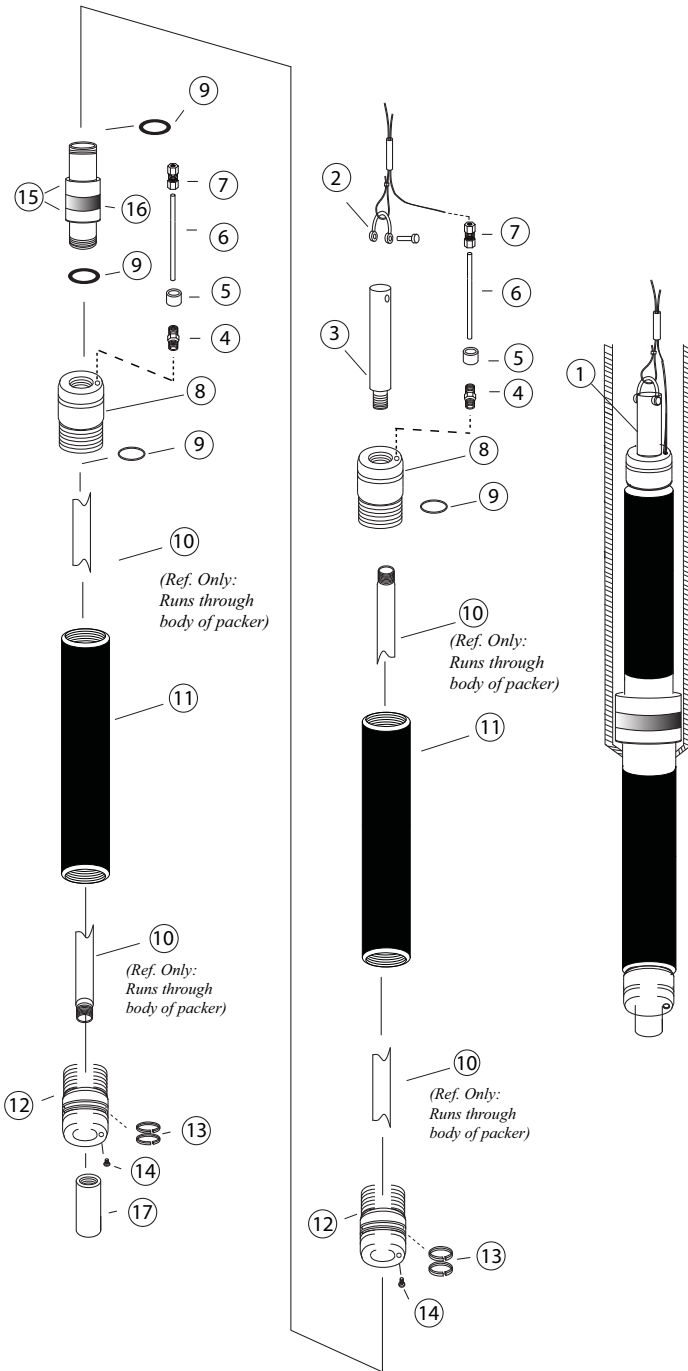
Wireline packers are a time saving method of conducting permeability testing during core drilling. The test is conducted with the drill string in place, reducing the time required to test in open or unstable formations.

For testing specific zones, a zone packer can be easily attached to the lower end of the wireline. The wireline packer is inverted, and the zone packer is connected by using a perforated tube the length of the required test zone. An inflation tube connects the wireline packer and zone packer for simultaneous inflation.

Standard packers and accessories are available upon request. Please contact your Hole Products representative for additional details.



# NWL WIRELINE PACKERS

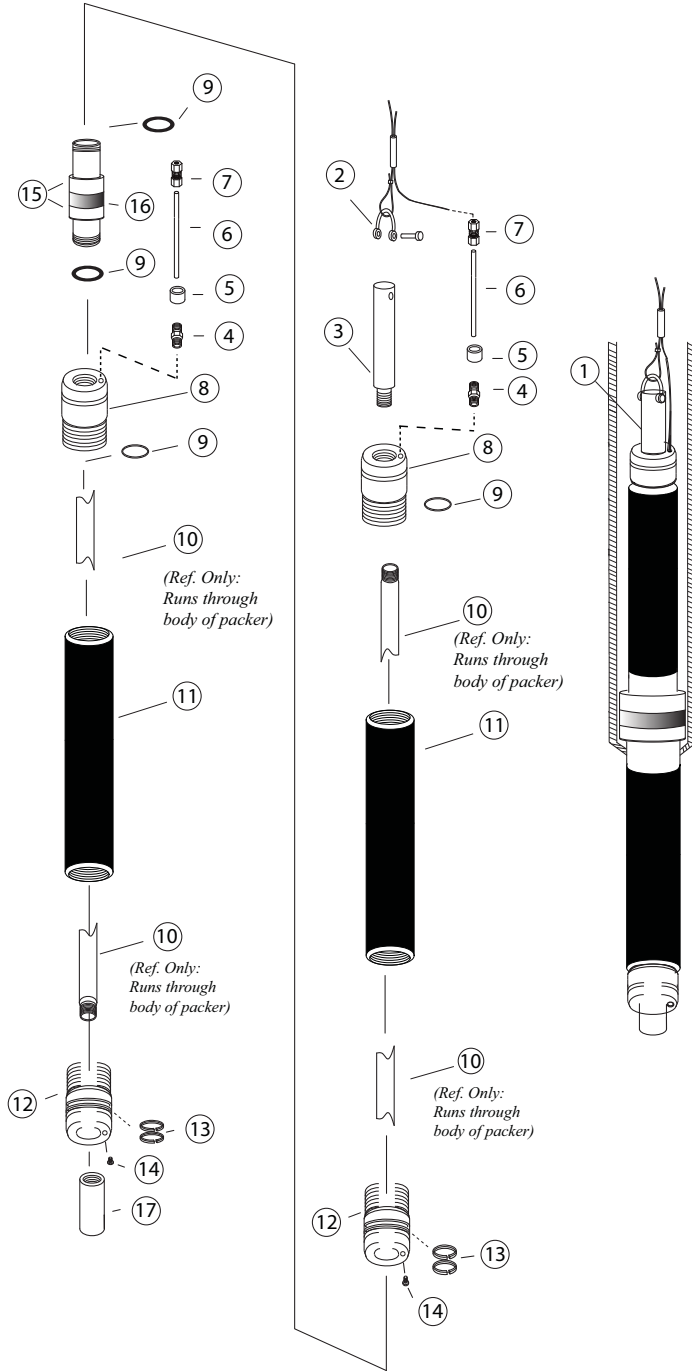


NWL WIRELINE PACKER		
ITEM	PART #	DESCRIPTION
1	2050045	NWL PACKER ASSEMBLY (ITEMS: 2-17)
2	2050595	SHACKLE
3	2050600	RISER TUBE
4	2050042	ADAPTER - NWL
5	2050865	EXTERNAL FERRULE
6	2050850	INFLATION TUBE
7	2050870	UNION
8	2050605	FIXED HEAD
9	2050107	O-RING (4 REQ)
10	2050615	CENTER TUBE
11	2050610	GLAND ELEMENT (2 REQ)
12	2050625	SLIDING HEAD
13	2050108	SEALS (2 REQ)
14	2050043	PLUG
15	2050620	UNION RING (2 REQ)
16	2050875	GLAND UNION
17	2050630	CONNECTOR

NWL ZONE KIT 5'		
ITEM	PART #	DESCRIPTION
1-3	2050047	NWL ZONE KIT 5'
1	2050078	PERFORATED TUBE, 3/8" X 43"
2	2050090	COILED TUBING
3	2050046	2" X 3" NWL STANDARD PACKER

NWL WIRELINE PACKER					
AT REST DIAMETER	MAXIMUM RECOMMENDED DIAMETER	CENTER TUBE INSIDE DIAMETER	THREADED CONNECTION	EXPOSED ELEMENT LENGTH	MAXIMUM PRESSURE UNCONFINED
1.66"	3.64"	.51"	3/8" NPT	25.5"	360 PSI

# HWL WIRELINE PACKERS

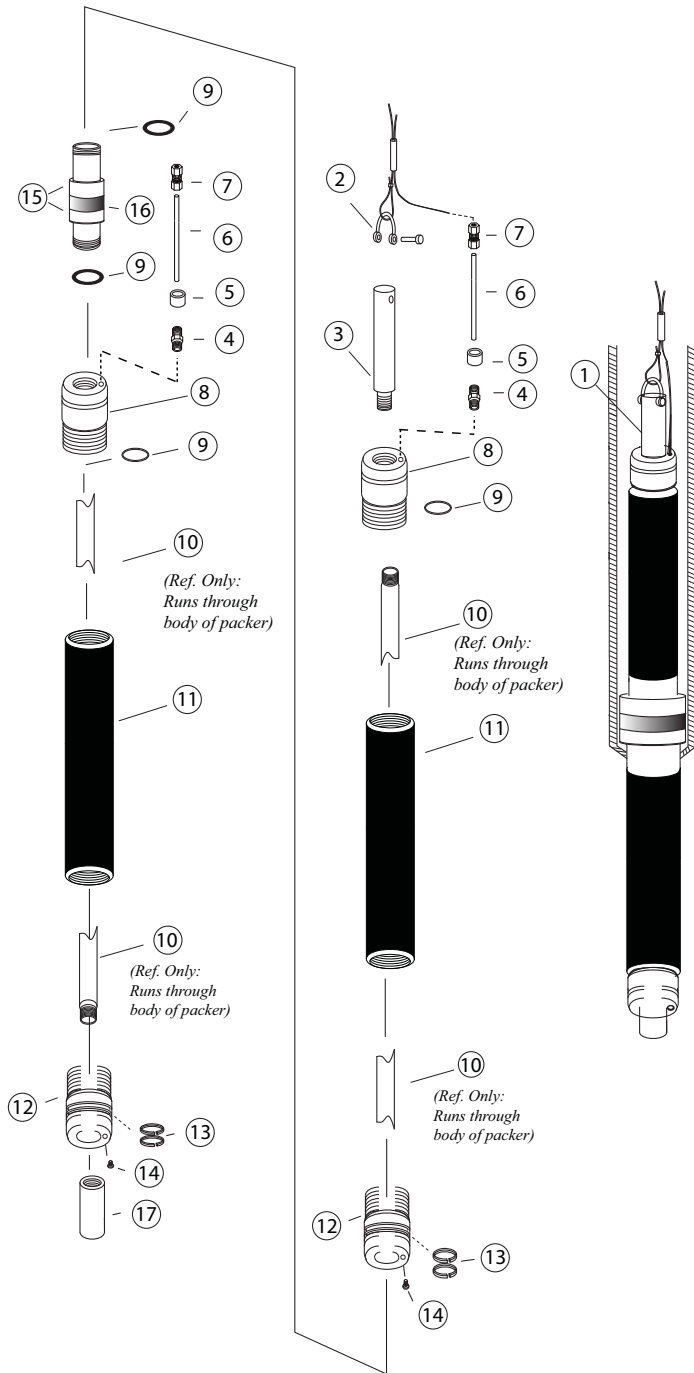


HWL WIRELINE PACKER		
ITEM	PART #	DESCRIPTION
1	2050070	HWL PACKER ASSEMBLY (ITEMS: 2-17)
2	2050595	SHACKLE
3	2050640	RISER TUBE
4	2050042	ADAPTER
5	2050880	EXTERNAL FERRULE
6	2050850	INFLATION TUBE
7	2050885	UNION
8	2050645	FIXED HEAD
9	2050650	O-RING (4 REQ)
10	2050660	CENTER TUBE
11	2050655	GLAND ELEMENT (2 REQ)
12	2050675	SLIDING HEAD
13	2050670	SEALS (2 REQ)
14	2050043	PLUG
15	2050665	UNION RING (2 REQ)
16	2050890	GLAND UNION
17	2050680	CONNECTOR

HWL ZONE KIT 5'		
ITEM	PART #	DESCRIPTION
1-3	2050067	HWL ZONE KIT 5'
1	2050071	PERFORATED TUBE, 1" X 43"
2	2050090	COILED TUBING
3	2050048	2 X 4 HWL STANDARD PACKER

HWL WIRELINE PACKER					
AT REST DIAMETER	MAXIMUM RECOMMENDED DIAMETER	CENTER TUBE INSIDE DIAMETER	THREADED CONNECTION	EXPOSED ELEMENT LENGTH	MAXIMUM PRESSURE UNCONFINED
2.13"	4.33"	1"	1" NPT	24.5"	185 PSI

# PWL WIRELINE PACKERS

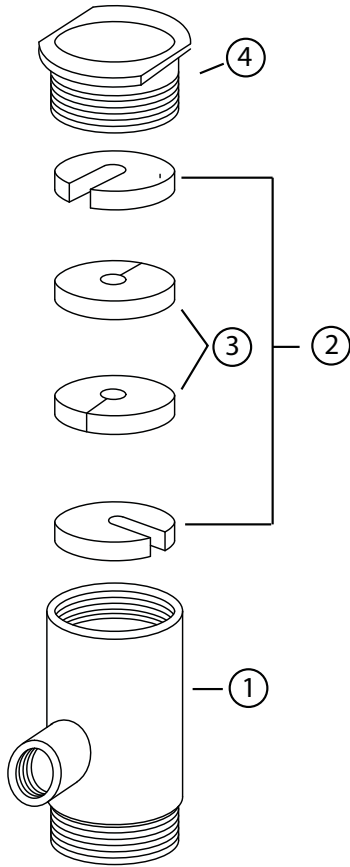


PWL WIRELINE PACKER		
ITEM	PART #	DESCRIPTION
1	2050685	PWL PACKER ASSEMBLY (ITEMS: 2-17)
2	2050595	SHACKLE
3	2050695	RISER TUBE
4	2050042	ADAPTER
5	2050895	EXTERNAL FERRULE
6	2050850	INFLATION TUBE
7	2050900	UNION
8	2050700	FIXED HEAD
9	2050705	O-RING (4 REQ)
10	2050715	CENTER TUBE
11	2050710	GLAND ELEMENT (2 REQ)
12	2050730	SLIDING HEAD
13	2050725	SEALS (2 REQ)
14	2050043	PLUG
15	2050720	UNION RING (2 REQ)
16	2050905	GLAND UNION
17	2050735	CONNECTOR

PWL ZONE KIT 5'		
ITEM	PART #	DESCRIPTION
1-3	2050069	PWL ZONE KIT 5'
1	2050074	PERFORATED TUBE, 1 1/4" X 43"
2	2050090	COILED TUBING
3	2050044	3" x 6" PWL STANDARD PACKER

PWL WIRELINE PACKER					
AT REST DIAMETER	MAXIMUM RECOMMENDED DIAMETER	CENTER TUBE INSIDE DIAMETER	THREADED CONNECTION	EXPOSED ELEMENT LENGTH	MAXIMUM PRESSURE UNCONFINED
3.35"	6.69"	1.25"	1-1/4" NPT	24.5"	145 PSI

# SEAL TEES

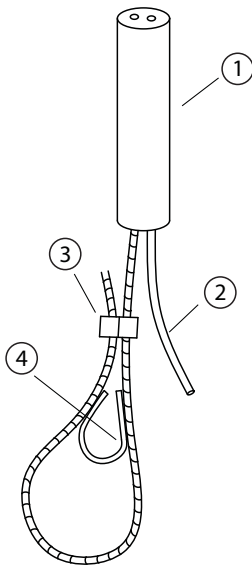


NWL SEAL TEE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-4	2050052	NWL SEAL TEES
1	2050740	BODY W/NWL PIN
2	2050745	WASHER
3	2050750	SEAL - RUBBER
4	2050755	CAP - COMPRESSION

HWL SEAL TEE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-4	2050761	HWL SEAL TEES
1	2050760	BODY W/HWL PIN
2	2050765	WASHER
3	2050770	SEAL - RUBBER
4	2050775	CAP - COMPRESSION

PWL SEAL TEE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-4	2050781	PWL SEAL TEES
1	2050780	BODY W/HWT PIN
2	2050785	WASHER
3	2050790	SEAL - RUBBER
4	2050795	CAP - COMPRESSION

# COMPOSITE CABLE ASSEMBLY



COMPOSITE CABLE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-4	2050800	COMPOSITE CABLE ASSEMBLY - 7/16" O.D
1	-----	COMPOSITE WIRELINE CABLE - 3/32" O.D.*
2	-----	COMPOSITE INFLATION TUBE - 3/16" O.D.*
3	2050182	SLEEVE - ALUMINIUM, 3/16"
4	2050810	THIMBLE

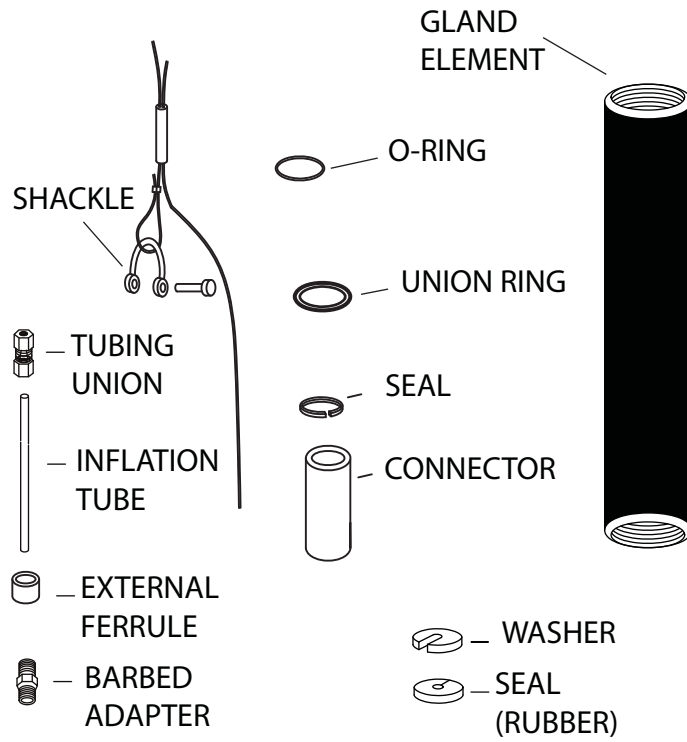
*\*Items can only be purchased as a kit and are not sold individually.*

# REGULATOR



REGULATOR W/ DISCONNECT FITTINGS	
PART #	DESCRIPTION
2050910	REGULATOR W/ DISCONNECT FITTINGS

# SPARE PARTS KIT



SPARES PARTS KIT			
DESCRIPTION	NWL	HWL	PWL
SPARE PARTS KIT	2050915	2050920	2050925
SHACKLE	2050595	2050595	2050595
O-RING	2050107	2050650	2050705
GLAND ELEMENT	2050610	2050655	2050710
UNION RING	2050620	2050665	2050720
SEAL	2050052	2050670	2050725
CONNECTOR	2050630	2050680	2050735
BARBED ADAPTER	2050042	2050042	2050042
INFLATION TUBE	2050850	2050850	2050850
TUBING UNION	2050870	2050885	2050900
EXTERNAL FERRULE	2050865	2050880	2050895
WASHER (SEAL TEE)	2050745	2050765	2050785
SEAL - RUBBER (SEAL TEE)	2050750	2050770	2050790

## PLUGS

Plugs are commonly used for cementing sections of holes and setting deflection wedges for situations such as branch holes. Hole Products offers multiple styles of high quality plugs in all standard industry sizes.

### VAN RUTH PLUGS



VAN RUTH PLUGS	
PART #	DESCRIPTION
2050375	BWL VAN RUTH PLUG
2050350	NWL VAN RUTH PLUG
2050169	HWL VAN RUTH PLUG
2050380	PWL VAN RUTH PLUG

### DISPLACEMENT PLUGS



DISPLACEMENT PLUGS	
PART #	DESCRIPTION
2050385	BWL RUBBER DISPLACEMENT PLUG
2050390	NWL RUBBER DISPLACEMENT PLUG
2050011	HWL RUBBER DISPLACEMENT PLUG
2050395	PWL RUBBER DISPLACEMENT PLUG

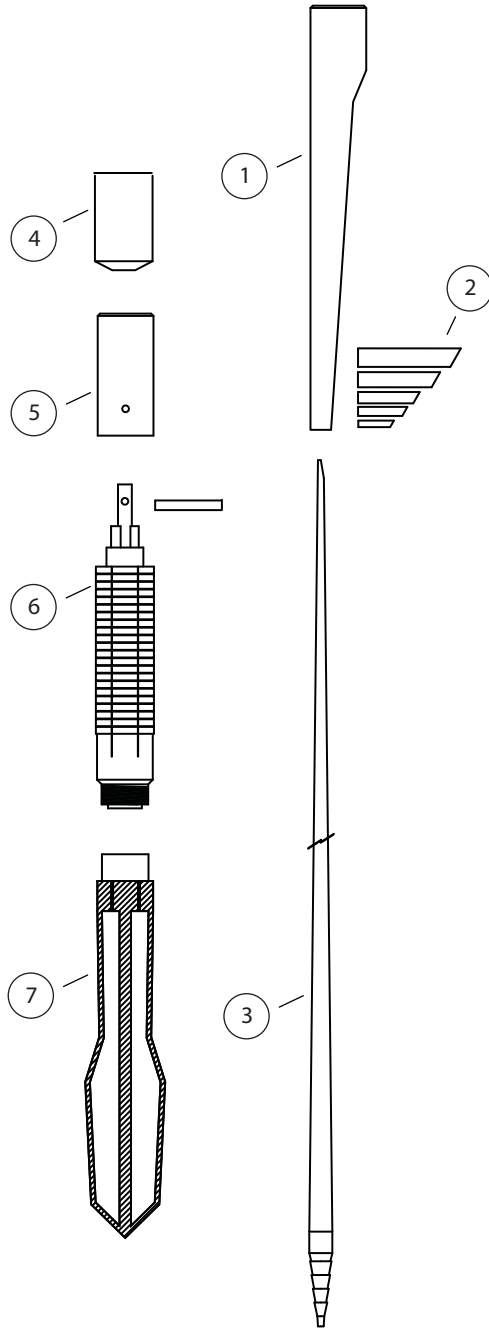
### SAFETY BRIDGE PLUGS



SAFETY BRIDGE PLUGS	
PART #	DESCRIPTION
2050400	BWL SAFETY BRIDGE PLUG
2050310	NWL SAFETY BRIDGE PLUG
2050311	HWL SAFETY BRIDGE PLUG
2050405	PWL SAFETY BRIDGE PLUG

## DEFLECTION WEDGES

Deflection wedges are used to alter the course of a drill hole. Hole Products offers deflection wedges in sizes B, N and H.



BWL DEFLECTION WEDGES		
ITEM	PART #	DESCRIPTION
1	2050420	WEDGE DROPPER W/ BW ROD BOX CONNECTION
2	2050425	COPPER RIVETS
3	2050410	BYPASS WEDGE
4	2050415	WOODEN PLUG
5	2050440	R/B TO WEDGE PLUG ADAPTER
6	2050435	WEDGE PLUG W/ PIN
7	2050430	STEEL PLUG BASKET

NWL DEFLECTION WEDGES		
ITEM	PART #	DESCRIPTION
1	2050455	WEDGE DROPPER W/NW ROD BOX CONNECTION
2	2050460	COPPER RIVETS
3	2050450	BYPASS WEDGE
4	2050017	WOODEN PLUG
5	2050475	R/B TO WEDGE PLUG ADAPTER
6	2050470	WEDGE PLUG W/ PIN
7	2050465	STEEL PLUG BASKET

HWL DEFLECTION WEDGES		
ITEM	PART #	DESCRIPTION
1	2050495	WEDGE DROPPER W/ NW ROD BOX CONNECTION
2	2050500	COPPER RIVETS
3	2050485	BYPASS WEDGE
4	2050490	WOODEN PLUG
5	2050515	R/B TO WEDGE PLUG ADAPTER
6	2050510	WEDGE PLUG W/ PIN
7	2050505	STEEL PLUG BASKET



## WIRELINE CABLE

To ensure core recovery, quality wireline cable is a must. Hole Products offers galvanized and swaged cable in standard 3/16" and 1/4" size.



WIRELINE CABLE	
PART #	DESCRIPTION
2050530	SWAGED, 3/16"
2050535	GALVANIZED, 3/16"
2050540	GALVANIZED, 1/4"

## OVAL SLEEVES

Oval Sleeves are available in aluminium and brass. Oval sleeves provide a simple yet efficient way to terminate a wireline cable connection.



WIRELINE CABLE OVAL SLEEVES	
PART #	DESCRIPTION
2050182	ALUMINIUM, 3/16"
2050185	BRASS, 3/16"
2050545	ALUMINIUM, 1/4"
2050550	BRASS, 1/4"

## CRIMPING TOOLS

Crimping Tools are used to crimp oval sleeves to wireline cable. Hole Products offer multiple options, ensuring you get the exact tool you are looking.



CRIMPING TOOLS	
PART #	DESCRIPTION
2050180	CRIMPING TOOL, 3/16" COPPER SLEEVE W/ 18" HANDLE
2050181	CRIMPING TOOL, 3/16" SINGLE DIAMETER
2050555	CRIMPING TOOL, 1/4" COPPER SLEEVE W/ 18" HANDLE
2050560	CRIMPING TOOL, 1/4" SINGLE DIAMETER
2050565	CRIMPING MULTI - TOOL

## WIRELINE CABLE CLAMP

Cable clamps are used to fasten two cables together or to make an eye loop. Available in standard 3/16" and 1/4" sizes.



WIRELINE CABLE CLAMP	
PART #	DESCRIPTION
1950006	CABLE CLAMP, 3/16"
2050570	CABLE CLAMP, 1/4"

## STRAIGHT PIPE WRENCHES

Hole Products offers RIDGID® pipe wrenches and replacement parts in all standard sizes.

Additional wrenches are available. Please contact your Hole Products representative for details.



### Features

- Professional strength in lightweight aluminium.
- Offers the same durability and ease-of-use found in all RIDGID® heavy-duty wrenches.

### ALUMINIUM STRAIGHT PIPE WRENCHES

PART #	NOMINAL SIZE	PIPE CAPACITY	WEIGHT (LB)
5150004	10"	1 1/2"	1
5150005	12"	2"	2 1/2
5150010	14"	2"	2 1/2
5150015	18"	2 1/2"	3 3/4
5150025	24"	3"	6
5150020	36"	5"	11
5150036	48"	6"	18 1/2



### Features

- Sturdy, cast-iron housing and I-beam handle with full floating forged hook jaw, featuring self-cleaning threads with replaceable hook and heel jaws.
- Heavy-duty pipe wrenches comply with federal specifications GGG-W651E, Type II, Class A.

### STEEL STRAIGHT PIPE WRENCHES

PART #	NOMINAL SIZE	PIPE CAPACITY	WEIGHT (LB)
5150003	10"	1 1/2"	1 3/4
5150042	12"	2"	2 3/4
5150240	14"	2"	3 1/2
5150016	18"	2 1/2"	5 3/4
5150045	24"	3"	9 3/4
5150040	36"	5"	19
5150035	48"	6"	34 1/4
5150030	60"	8"	51 1/4

# PIPE WRENCH REPLACEMENT PARTS

Hole Products offers a full line of genuine RIDGID® replacement parts, including: nuts, pins, heel jaw and pin assemblies, coil and flat spring assemblies, and jaw hooks.

STRAIGHT PIPE REPLACEMENT PARTS					
NOMINAL SIZE	HEEL JAW AND PIN	JAW HOOK	JAW PIN	NUT	COIL AND FLAT SPRING ASSEMBLY
10"	5150062	5150088	5150063	5150119	5150270
12"	5150064	5150089	5150245	5150122	5150275
14"	5150064	5150090	5150250	5150121	5150280
18"	5150065	5150095	5150255	5150126	5150058
24"	5150070	5150100	5150260	5150120	5150285
36"	5150075	5150105	5150265	5150124	5150290
48"	5150080	5150110	5150082	5150125	5150076
60"	5150085	5150115	5150086	5150130	5150001

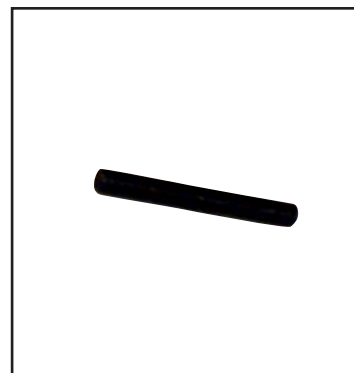
HEEL JAW AND PIN



JAW HOOK



JAW PIN



NUT



COIL AND FLAT SPRING ASSEMBLY

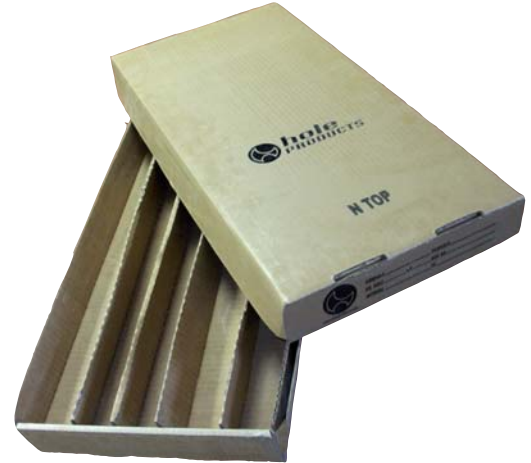


# CORE BOXES

Hole Products offers three core box options, available in all standard industry sizes. Custom core box configurations available upon request.

**WAXED CARDBOARD CORE BOXES** – The economical choice. Easy to handle and easy to transport.

WAXED CARDBOARD CORE BOXES		
PART #	SIZE	DESCRIPTION
2050326	B	WAXED CARDBOARD CORE BOX (1 PIECE)
2050315	B	WAXED CARDBOARD CORE BOX TOP
2050320	B	WAXED CARDBOARD CORE BOX BOTTOM
2050325	B	WAXED CARDBOARD CORE BOX DIVIDER
2050256	N	WAXED CARDBOARD CORE BOX (1 PIECE)
2050010	N	WAXED CARDBOARD CORE BOX TOP
2050015	N	WAXED CARDBOARD CORE BOX BOTTOM
2050020	N	WAXED CARDBOARD CORE BOX DIVIDER
2050037	H	WAXED CARDBOARD CORE BOX (1 PIECE)
2050025	H	WAXED CARDBOARD CORE BOX TOP
2050030	H	WAXED CARDBOARD CORE BOX BOTTOM
2050035	H	WAXED CARDBOARD CORE BOX DIVIDER
2050061	P	WAXED CARDBOARD CORE BOX (1 PIECE)
2050036	4"	WAXED CARDBOARD CORE BOX COMPLETE



**WOOD CORE BOXES** – The industry standard. Wood core boxes are durable, re-usable, and stackable.

WOODEN CORE BOXES		
PART #	SIZE	DESCRIPTION
2050026	B	WOOD CORE BOX 5' X 4 ROWS SLIDE TOP
2050055	N	WOOD CORE BOX 4' X 4 ROWS
2050054	N	WOOD CORE BOX 5' X 4 ROWS
2050057	H	WOOD CORE BOX 4' X 3 ROWS
2050059	H	WOOD CORE BOX 5' X 1 ROW
2050056	H	WOOD CORE BOX 5' X 3 ROWS
2050063	P	WOOD CORE BOX 2.5' X 2 ROWS HINGED LID
2050062	P	WOOD CORE BOX 5' X 2 ROWS
2050058	4"	WOOD CORE BOX 2' x 2 ROWS
2050064	4"	WOOD CORE BOX 5' X 2 ROWS
2050077	4"	WOOD CORE BOX 5' X 2 USACE
2050087	4"	WOOD CORE USACE PT 61"ID X 2 ROW
2050012	6"	WOOD CORE BOX 2.5' X 2 ROWS



**PLASTIC CORE BOXES** – The top of the line core box. Lightweight, re-usable, and resistant to rot, decay, and damage from heat exposure.

PLASTIC CORE BOXES		
PART #	SIZE	DESCRIPTION
2050575	N	PLASTIC CORE BOX COMPLETE
2050260	H	PLASTIC CORE BOX COMPLETE
2050261	P	PLASTIC CORE BOX COMPLETE



## COMPOUNDS, LUBRICANTS & GREASE

Hole Products offers a variety of high quality thread compounds, lubricants, and rod grease, from the industry's leading manufacturers. Products are available to meet any criteria from environmental concerns, high or low temperature, extreme exposure to the elements, high pressure, and more.

Please contact your Hole Products representative for additional information and assistance selecting the product(s) best suited for your drilling application.



THREAD COMPOUNDS			
PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
3100040	1 GAL.	BULLSEYE®	BULLSEYE® provides protection against galling, seizing, and thread damage while maintaining well integrity.
3100005	1 GAL.	COPR PLUS	COPR PLUS is an environmentally friendly non-lead non-zinc thread compound, which provides protection against galling and seizing protection.
3100010	2 GAL.		
3100011	5 GAL.		
3100013	5 GAL.	JET-LUBE® 21®	JET LUBE® 21® is formulated to prevent excessive circumferential make-up of tool joints and protect against galling and high stress.
3100050	1 GAL.	KOPR-KOTE®	KOPR-KOTE® is formulated to help prevent downhole joint make-up. It has a very high static friction factor that helps prevent downhole joint make-up when excessive drilling torques are encountered.
3100055	2 GAL.		
3100070	1 GAL.	KOPR-KOTE® ARCTIC	KOPR-KOTE® ARCTIC is designed for extreme cold weather environments where fluid film strength is important and grease consistency remains the same.
3100071	2 GAL.		
3100059	2.5 GAL.	KOV'R-KOTE®	KOV'R-KOTE® is a metal-free formula and is ideal for mineral exploration tooling string. It has additives for rust corrosion and oxidation protection.
3100030	1 GAL.	ORANGE AID	ORANGE AID is a hydrocarbon free tool joint compound, which contains no metals, lead / copper and protects and lubricates drill pipe threads.
3100060	1 GAL.	WELL-GUARD®	WELL-GUARD® is designed for critical monitor well and other environmentally sensitive drilling applications requiring the use of a petroleum hydrocarbon-free product.
LUBRICANTS			
3451012	8 OZ	CORE-LUBE™	CORE-LUBE™ is a natural, linseed-based soft soap which is used as an inner tube lubricant and minimizes core blockage caused by fractured/broken formations.
ROD GREASE			
3100036	5 GAL.	IDP-214	IDP-214 rod grease is a high quality, easily applied formulation designed to help dampen high frequency vibration created in continuous wireline coring operations.

## DOPE BRUSHES

DOPE BRUSHES			
PART #	DESCRIPTION	TRIM LENGTH	OVERALL LENGTH
6100020	STRAIGHT W/ GUARD	2 1/2"	16"
3100025	BEVELED W/ GUARD	2 1/2"	16"



# GEOTHERMAL PRODUCTS

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## GEOTHERMAL PRODUCTS



The earth provides the thermal energy required for geothermal heating and cooling.

Hole Products provides the tooling, supplies, and expertise required to harness that energy.

At Hole Products we provide top quality geothermal products with exceptional service and support. We are a proud member of the International Ground Source Heat Pump Association (IGSHPA) and employ IGSHPA certified staff to perform fusion welding.

We offer a complete line of quality geothermal products for both small and large projects, including HDPE loops, pipe, fittings and accessories, fusion equipment, custom manifolds, flow centers, flush carts, heat transfer fluids, grouts and sand, drill bits, mud pumps, and much more.

Hole Products is one of the only drilling suppliers who can provide quality products and solutions for both Geothermal installations and Geothermal drilling.

With Hole Products you get more than just a geothermal supplier. You get a partner whose goal is clear; to help our clients complete their projects on time and under budget.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*



# HDPE PIPE



HDPE (high-density polyethylene) pipe is the preferred choice for geothermal heating and cooling systems. HDPE pipe is economical, durable, light weight, flexible, and weather resistant. In addition when properly fused, joints become as strong as or stronger than the pipe itself.

Hole Products offers a complete line of 3408/3608/4710 - ASTM D3035 HDPE pipe in psi rated SDR 9, SDR 11, and SDR 15.5.

Our HDPE pipe offering includes the following:

**Loops:** 3/4" – 1 1/4" nominal size, in numerous lengths.  
Reverse wound loops are available.

**Coils:** 3/4" – 2" nominal size, in numerous lengths.  
Custom lengths including bulk coil on steel reels are available.

**Straight Pipe:** 3/4" – 12" nominal size, in lengths of 20' and 40'.  
Custom lengths are available on request.

All HDPE products carry a minimum 50 year manufacturer's warranty.

Please contact your Hole Products representative for additional details.

# 3608/3408 IPS HDPE PIPE SIZES

PRESSURE RATING	NOMINAL SIZE	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
	ACTUAL O.D.	1.050"	1.315"	1.660"	1.900"	2.375"	3.500"	4.500"	6.625"	8.625"	10.750"	12.750"
SDR 7 (267 PSI)	MIN. WALL	0.150"	0.188"	0.237"	0.271"	0.339"	0.500"	N/A	N/A	N/A	N/A	N/A
	NOMINAL I.D.	0.750"	0.939"	1.189"	1.358"	1.697"	2.5"	N/A	N/A	N/A	N/A	N/A
	WEIGHT/FT	0.181	0.285	0.453	0.593	0.928	2.016	N/A	N/A	N/A	N/A	N/A
SDR 9 (200 PSI)	MIN. WALL	0.117"	0.146"	0.184"	0.211"	0.264"	0.389"	0.500"	0.736"	0.958"	1.194"	1.417"
	NOMINAL I.D.	0.818"	1.023"	1.292"	1.478"	1.847"	2.722"	3.500"	5.064"	N/A	N/A	N/A
	WEIGHT/FT	0.146	0.229	0.365	0.479	0.749	1.626	2.688	5.93	10.05	15.61	21.97
SDR 11 (160 PSI)	MIN. WALL	0.095"	0.120"	0.151"	0.173"	0.216"	0.318"	0.409"	0.602"	0.784"	0.977"	1.159"
	NOMINAL I.D.	0.860"	1.077"	1.358"	1.554"	1.943"	2.864"	3.692"	5.421"	N/A	N/A	N/A
	WEIGHT/FT	0.122	0.191	0.306	0.402	0.627	1.36	2.249	4.873	8.42	13.08	18.41
SDR 13.5 (128 PSI)	MIN. WALL	0.078"	0.097"	0.123"	0.141"	0.259"	0.259"	0.333"	0.491"	0.639"	0.796"	0.944"
	NOMINAL I.D.	0.894"	1.121"	1.414"	1.618"	2.023"	2.982"	3.834"	5.643"	N/A	N/A	N/A
	WEIGHT/FT	0.102	0.159	0.254	0.333	0.520	1.128	1.865	4.048	7.00	10.87	15.29
SDR 15.55 (110 PSI)	MIN. WALL	N/A	N/A	0.107"	0.123"	0.153"	0.226"	0.290"	0.427"	N/A	N/A	N/A
	NOMINAL I.D.	N/A	N/A	1.446"	1.654"	2.069"	3.048"	3.920"	5.771"	N/A	N/A	N/A
	WEIGHT/FT	N/A	N/A	.223	.294	.457	.994	1.641	3.560	N/A	N/A	N/A
SDR 17 (100 PSI)	MIN. WALL	0.062"	0.077"	0.098"	0.112"	0.140"	0.206"	0.265"	0.390"	0.507"	0.632"	0.750"
	NOMINAL I.D.	0.926"	1.161"	1.464"	1.676"	2.095"	3.088"	3.970"	N/A	N/A	N/A	N/A
	WEIGHT/FT	0.082	0.128	0.206	0.269	0.421	0.912	1.508	3.34	5.65	8.78	12.36

- Pressures are based on using water at 23°C (73.4°F) and are determined per ASTM D3035 or F714.
- Service factors should be utilized to compensate for the effect of substances other than water and for higher temperatures.
- Nominal inside diameter calculated using nominal O.D. and minimum wall plus 6% to estimate fluid flow. Actual I.D. will vary.
- Metric sizes are available as well as other pipe sizes and SDRs on request.

# 4710 IPS HDPE PIPE SIZES

PRESSURE RATING	NOMINAL SIZE	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
	ACTUAL O.D.	1.315	1.60"	1.900"	2.375"	3.500"	4.500"	6.625"	8.625"	10.750"	12.750"
SDR 7 (267 PSI)	MIN. WALL	0.188"	0.237"	0.271"	0.339"	0.500"	0.643"	0.946"	1.232"	1.536"	1.821"
	NOMINAL I.D.	0.917"	1.157"	1.325"	1.656"	2.440"	3.137"	4.619"	6.013"	7.494"	8.889"
	WEIGHT/FT	0.288	0.459	0.600	0.939	2.040	3.732	7.305	12.385	19.245	27.062
SDR 9 (200 PSI)	MIN. WALL	0.146"	0.184"	0.211"	0.264"	0.389"	0.500"	0.736"	0.958"	1.194"	1.417"
	NOMINAL I.D.	1.005"	1.269"	1.452"	1.816"	2.676"	3.440"	5.064"	6.593"	8.218"	9.747"
	WEIGHT/FT	0.232	0.369	0.485	0.758	1.646	2.720	5.894	9.988	15.61	21.837
SDR 11 (160 PSI)	MIN. WALL	0.120"	0.151"	0.173"	0.216"	0.318"	0.409"	0.602"	0.784"	0.977"	1.159"
	NOMINAL I.D.	1.062"	1.340"	1.534"	1.917"	2.825"	3.633"	5.348"	6.963"	8.678"	10.293"
	WEIGHT/FT	0.195	0.310	0.406	0.634	1.376	2.275	4.930	8.359	12.983	18.267
SDR 13.5 (128 PSI)	MIN. WALL	N/A	N/A	N/A	0.176"	0.259"	0.333"	0.491"	0.639"	0.796"	0.944"
	NOMINAL I.D.	N/A	N/A	N/A	2.002"	2.950"	3.793"	5.585"	7.271"	9.062"	10.748"
	WEIGHT/FT	N/A	N/A	N/A	0.526	1.141	1.887	4.095	6.939	10.774	15.155
SDR 15.55 (110 PSI)	MIN. WALL	N/A	N/A	N/A	0.153"	0.226"	0.290"	0.427"	0.556"	0.694"	0.823"
	NOMINAL I.D.	N/A	N/A	N/A	2.050"	3.021"	3.885"	5.719"	7.445"	9.280"	11.006"
	WEIGHT/FT	N/A	N/A	N/A	0.462	1.006	1.660	3.599	6.100"	9.490"	13.348"
SDR 17 (100 PSI)	MIN. WALL	N/A	N/A	N/A	0.140"	0.169"	0.265"	0.390"	0.507"	0.632"	0.750"
	NOMINAL I.D.	N/A	N/A	N/A	2.079"	2.516"	3.939"	5.799"	7.549"	9.409"	11.160"
	WEIGHT/FT	N/A	N/A	N/A	0.425	0.622	1.526	3.307	5.597	8.695	12.238

- Pressures are based on using water at 23°C (73.4°F) and are determined per ASTM D3035 or F714.
- Service factors should be utilized to compensate for the effect of substances other than water and for higher temperatures.
- Nominal inside diameter calculated using nominal O.D. and minimum wall plus 6% to estimate fluid flow. Actual I.D. will vary.
- Metric sizes available as well as other pipe sizes and SDRs on request.

## HDPE LOOPS

Hole Products offers a full line of HDPE loops. Loops are offered with multiple pressure ratings and in a wide variety of lengths and sizes. Custom lengths and reverse wound loops for HDD applications are available on request.

Please contact your Hole Products representative for additional details.

SDR 9* 3608 HDPE LOOPS			
LOOP LENGTH	NOMINAL SIZE		
	3/4"	1"	1-1/4"
310'	4221500	4221540	4221570
410'	4220915	4221545	4221575
510'	4221510	4221550	4221580
610'	4221515	4220310	4221585
710'	4221520	4220659	4220656
810'	4221525	4221555	4220080
910'	4221530	4221560	4221590
1010'	4221535	4221565	4220911

\*Standard pressure rating is 200 psi

SDR 9* 4710 HDPE LOOPS			
LOOP LENGTH	NOMINAL SIZE		
	3/4"	1"	1-1/4"
310'	4222100	4222135	4222175
410'	4221505	4222140	4222180
510'	4222105	422145	4222185
610'	4222110	4222150	4222190
710'	4222115	4222155	4222195
810'	4222120	4222160	4220910
910'	4222125	4222165	4222195
1010'	4222130	4222170	4221595

\*Standard pressure rating is 250 psi

SDR 11* 3608 HDPE LOOPS			
LOOP LENGTH	NOMINAL SIZE		
	3/4"	1"	1-1/4"
310'	4220010	4220020	4220023
410'	4220015	4220021	4220024
510'	4220018	4220019	4221635
610'	4220045	4220022	4220966
710'	4221600	4220605	4221645
810'	4221605	4221620	4220601
910'	4221610	4221625	4221650
1010'	4221615	4221630	4220958

\*Standard pressure rating is 160 psi

SDR 11* 4710 HDPE LOOPS			
LOOP LENGTH	NOMINAL SIZE		
	3/4"	1"	1-1/4"
310'	4222200	4222240	4222260
410'	4222205	4222245	4221655
510'	4222210	4221000	4221640
610'	4222215	4221005	4221015
710'	4222220	4221010	4221020
810'	4222225	4222245	4221025
910'	4222230	4222250	4221030
1010'	4222235	4222255	4221035

\*Standard pressure rating is 200 psi

## HDPE COIL

Hole Products offers a full line of HDPE coil. Coil is offered in a wide range of sizes and multiple lengths. Coils are available with various pressure ratings to meet your project requirements. Custom coil lengths including bulk coil on steel reels are available on request.

Please contact your Hole Products representative for product details and availability of other sizes and SDRs.

SDR 9* 3608 HDPE COIL					
COIL LENGTH	NOMINAL SIZE				
	3/4"	1"	1 1/4"	1 1/2"	2"
100'	4220510	4220585	4220720	4220625	4221160
150'	4220515	4220590	4220725	4221090	4221165
200'	4220520	4220595	4220730	4221095	4221170
250'	4220525	4220665	4220735	7221100	4221175
300'	4220530	4220670	4220084	4221105	4221180
350'	4220535	4220675	4220740	4221110	4221185
400'	4220540	4220680	4220745	4221115	4221190
450'	4220545	4220685	4220775	4221120	4221195
500'	4220550	4220309	4220031	4221125	4221200
550'	4220555	4220690	4220805	4221130	4221205
600'	4220560	4220695	4221065	4221135	4221210
650'	4220565	4220700	4221070	4221140	4221215
700'	4220570	4220705	4221075	4221145	4221220
750'	4220575	4220710	4221080	4221150	4221225
800'	4220580	4220715	4221085	4221155	4221230

\*Standard pressure rating is 200 psi

SDR 9* 4710 HDPE COIL					
COIL LENGTH	NOMINAL SIZE				
	3/4"	1"	1 1/4"	1 1/2"	2"
100'	4222545	4222620	4222700	4222775	4222850
150'	4222550	4222625	4222705	4222780	4222855
200'	4222555	4222630	4222710	4222785	4222860
250'	4222560	4222635	4222715	4222790	4222865
300'	4222565	4222640	4222720	4222795	4222870
350'	4222570	4222645	4222725	4222800	4222875
400'	4222575	4222650	4222730	4222805	4222880
450'	4222580	4222655	4222735	4222810	4222885
500'	4222585	4222660	4222740	4222815	4222890
550'	4222590	4222665	4222745	4222820	4222895
600'	4222595	4222670	4222750	4222825	4222900
650'	4222600	4222675	4222755	4222830	4222905
700'	4222605	4222680	4222760	4222835	4222910
750'	4222610	4222685	4222765	4222840	4222915
800'	4222615	4222690	4222770	4222845	4222920

\*Standard pressure rating is 250 psi

SDR 11* 3608 HDPE COIL					
COIL LENGTH	NOMINAL SIZE				
	3/4"	1"	1 1/4"	1 1/2"	2"
100'	4220042	4220043	4220026	4220044	4221460
150'	4221235	4220939	4221340	4221400	4220607
200'	4221240	4220308	4220946	4220307	4220048
250'	4221245	4221295	4220940	4221405	4220793
300'	4221250	4220904	4220027	4220306	4220788
350'	4221255	4221300	4221355	4221410	4220794
400'	4220034	4220627	4221360	4221415	4221465
450'	4221260	4221305	4221365	4221420	4220796
500'	4220955	4220029	4220030	4221425	4220797
550'	4221270	4221310	4221370	4221430	4221470
600'	4220033	4221315	4221375	4221435	4221475
650'	4221275	4221320	4221380	4221440	4221480
700'	4220967	4221325	4221385	4221445	4221485
750'	4221285	4221330	4221390	4221450	4221490
800'	4220032	4221335	4221395	4221455	4221495

\*Standard pressure rating is 160 psi

SDR 11* 4710 HDPE COIL					
COIL LENGTH	NOMINAL SIZE				
	3/4"	1"	1 1/4"	1 1/2"	2"
100'	4222925	4222990	4223065	4223130	4223205
150'	4222930	4222995	4223070	4223135	4223210
200'	4222935	4223000	4221345	4223140	4223215
250'	4222940	4223005	4221350	4223145	4223220
300'	4222945	4223010	4223075	4223150	4223225
350'	4222950	4223015	4223080	4223155	4223230
400'	4222955	4223020	4223085	4223160	4223235
450'	4222960	4223025	4223090	4223165	4223240
500'	4221265	4223030	4223095	4223170	4223245
550'	4222965	4223035	4223100	4223175	4223250
600'	4222970	4223040	4223105	4223180	4223255
650'	4222975	4223045	4223110	4223185	4223260
700'	4221280	4223050	4223115	4223190	4223265
750'	4222980	4223055	4223120	4223195	4223270
800'	4222985	4223060	4223125	4223200	4223275

\*Standard pressure rating is 200 psi

## HDPE STRAIGHT PIPE

Hole Products offer a complete line of HDPE straight pipe in 3/4" - 12" nominal sizes and lengths of 20' and 40'.

Please contact your Hole Products representative for product details and availability of additional sizes and SDRs.

SDR 9* 3608 HDPE STRAIGHT PIPE											
PIPE LENGTH	NOMINAL SIZE										
	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
20'	4220810	4220815	4220820	4220825	4220620	4220938	4220835	4220840	4220845	4220850	4220855
40'	4220920	4220919	4220918	4220921	4220917	4220916	4220890	4220895	4221050	4221055	4221060

\*Standard pressure rating is 200 psi

SDR 9* 4710 HDPE STRAIGHT PIPE											
PIPE LENGTH	NOMINAL SIZE										
	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
20'	4222265	4222270	4222275	4222280	4222285	4222290	4222295	4222300	4222305	4222310	4222315
40'	4220860	4220865	4222320	4222325	4222330	4222335	4222440	4222445	4222450	4222455	4222460

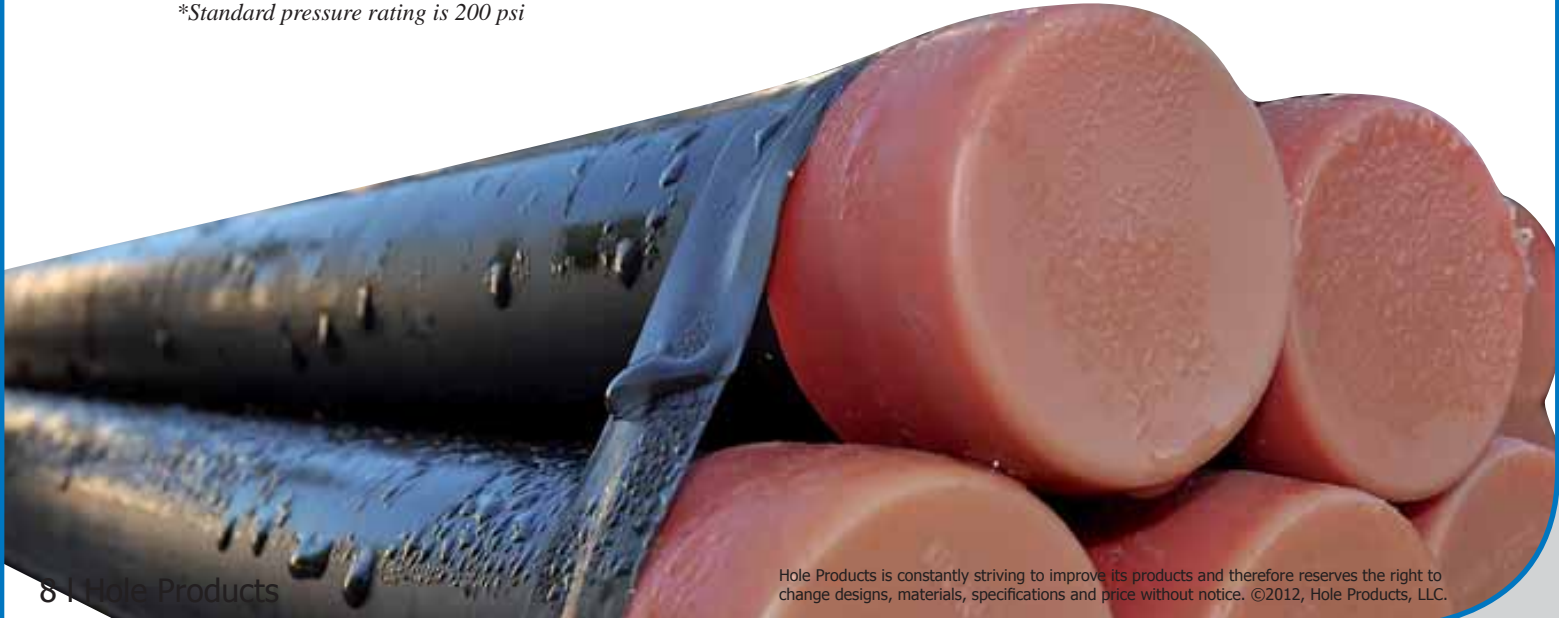
\*Standard pressure rating is 250 psi

SDR 11* 3608 HDPE STRAIGHT PIPE											
PIPE LENGTH	NOMINAL SIZE										
	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
20'	4220125	4220107	4220108	4220109	4220110	4221660	4221665	4221670	4221675	4221680	4221685
40'	4221690	4220780	4221695	4220468	4220764	4220606	4220931	4220964	4220779	4221715	4221720

\*Standard pressure rating is 160 psi

SDR 11* 4710 HDPE STRAIGHT PIPE											
PIPE LENGTH	NOMINAL SIZE										
	3/4"	1"	1 1/4"	1 1/2"	2"	3"	4"	6"	8"	10"	12"
20'	4222465	4222470	4222475	4222480	4222485	4222490	4222495	4222500	4222505	4222510	4222515
40'	4222520	4222525	4220870	4222530	4220880	4220885	4221700	4221705	4221710	4222535	4222540

\*Standard pressure rating is 200 psi



## HDPE SOCKET & BUTT FITTINGS



Hole Products offers a large selection of HDPE socket and butt fittings including elbows, tees, couplings, caps, saddles, flange adapters, and more.

Fittings are offered in a variety of sizes and styles to meet all your specific project needs. Stab fittings are available on request.

Line drawings of common fittings and information regarding Hole Products standard product offering are outlined on the following pages.

Due to the vast number of HDPE fitting options available, part numbers are not listed in this section.

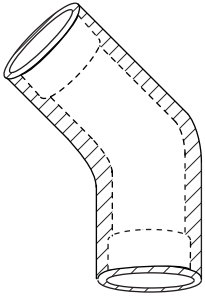
Please contact your Hole Products representative for product specifications and assistance selecting the fittings properly designed for your specific project application.

## HDPE SOCKET & BUTT ELBOWS

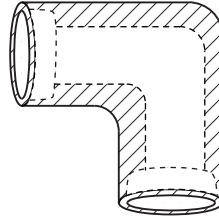
### SOCKET FUSION ELBOW FITTINGS

Available from 3/4" to 2" nominal size.

#### 45° ELBOWS



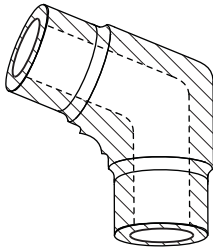
#### 90° ELBOWS



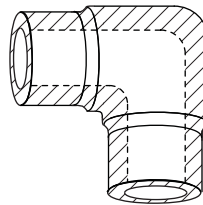
### BUTT FUSION ELBOW FITTINGS

Available from 3/4" to 12" nominal size.

#### 45° ELBOWS



#### 90° ELBOWS

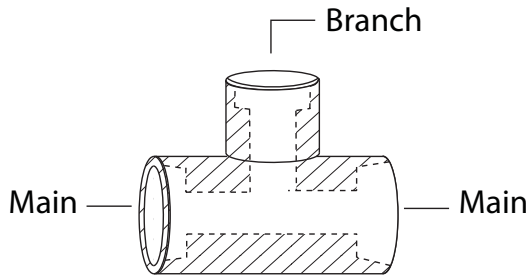




# HDPE SOCKET & BUTT TEES

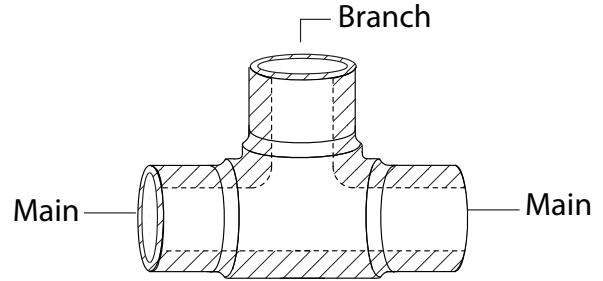
## SOCKET FUSION TEES

Available from 3/4" to 2" nominal size.



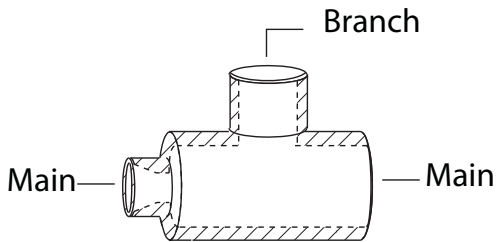
## BUTT FUSION MOLDED TEES

Available from 3/4" to 12" nominal size.



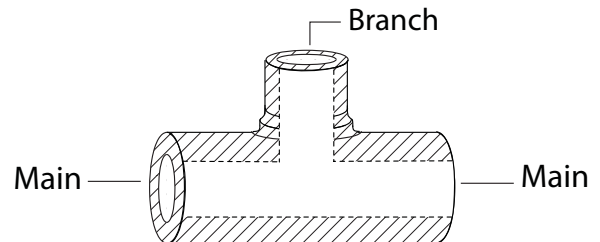
## SOCKET FUSION REDUCING TEES

Available from 1" x 1" x 3/4" to 2" x 2" x 1 1/2" nominal size.



## BUTT FUSION REDUCING TEES

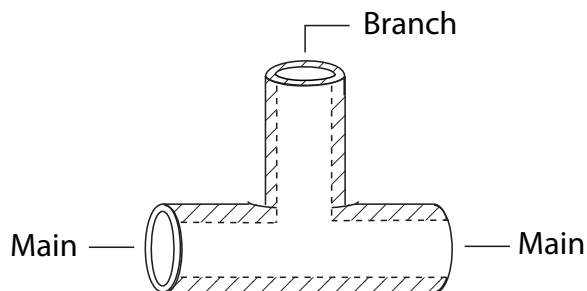
Available from 3" x 2" to 20" x 8" nominal size.



## BUTT FUSION FABRICATED TEES - Two and three segment available

Butt x Butt x Butt available from 3" x 3" x 3/4" to 8" x 8" x 4" nominal size.

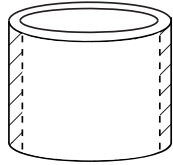
Butt x Butt x Socket available from 3" x 3" x 3/4" to 8" x 8" x 1 1/4" nominal size.



# HDPE SOCKET COUPLINGS

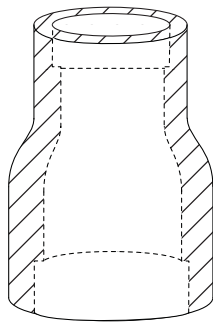
## SOCKET FUSION COUPLING

Available from 3/4" to 2" nominal size.



## SOCKET FUSION REDUCING COUPLING

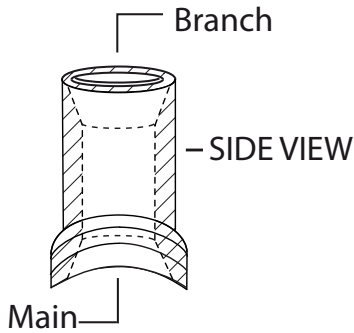
Available from 1" x 3/4" to 2" x 1 1/2" nominal size.



## HDPE SOCKET & BUTT SADDLES

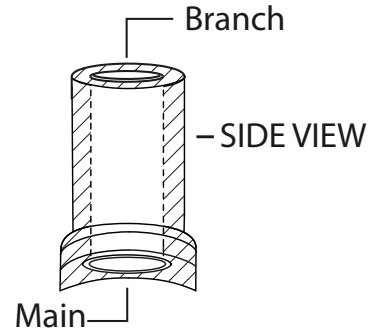
### SOCKET FUSION BRANCH SADDLE

Available from 1 1/4" x 3/4" to 8" x 1" nominal size.



### BUTT FUSION BRANCH SADDLE

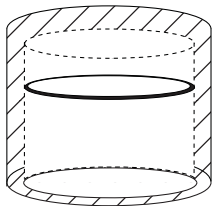
Available from 3" x 2" to 10" x 4" nominal size.



## END CAPS

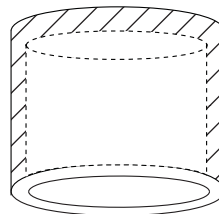
### SOCKET FUSION END CAPS

Available from 3/4" to 2" nominal size.



### BUTT FUSION END CAPS

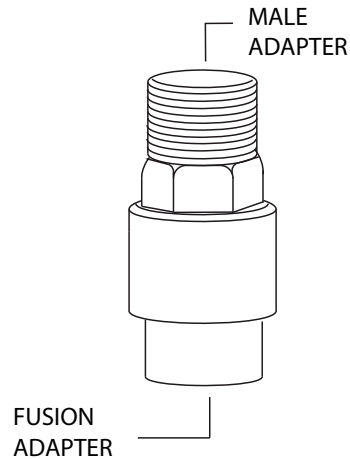
Available from 3/4" to 12" nominal size.



## ADAPTERS

Hole Products offers a wide variety of adapters and transition fittings for butt and socket fusion.

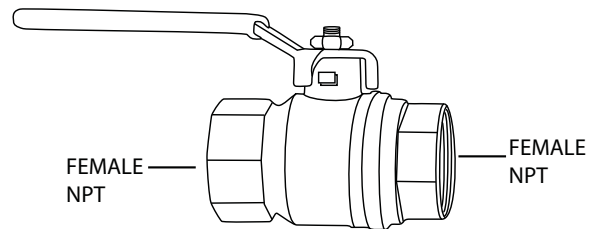
Please call for additional details and ordering assistance.



## BALL VALVES

Ball valves are used with manifolds to isolate geothermal loop circuits for purging and filling. If a circuit becomes unusable for any reason, it can be shut off and isolated from the rest of the system.

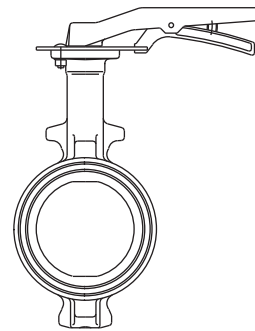
Please call for additional details and ordering assistance.



## BUTTERFLY VALVES

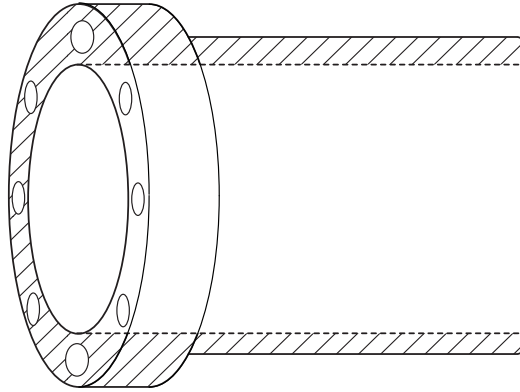
Butterfly valves can be used for isolating or regulating circulation of water. The butterfly valve is composed of two semicircular plates which are hinged on a common spindle, used to permit flow in one direction or the other.

Please call for additional details and ordering assistance.



## FLANGE ADAPTERS

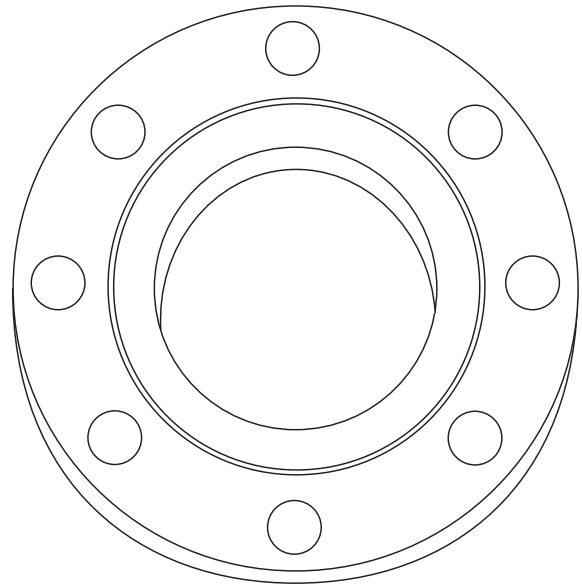
Available from 1 1/4" to 18" nominal size.



## BACK UP RINGS

For use with flange adapters.

Available from 2" to 18" nominal size.



## STANDARD MANIFOLDS & U-BENDS

Hole Products offers standard manifolds to fit the specifications of any project. Standard manifolds are fully customizable to ensure they meet the requirements of geothermal projects.



## EZ FLOW FUSION MANIFOLDS

Hole Products' EZ Flow manifolds allow for multiple branches from one common source, while reducing reverse return issues and maximizing an even balance and flow. EZ Flow manifolds are available in multiple configurations including 3, 4, 5, and 6 zone.



## HDPE U-BENDS

U-bends are designed to be fused with HDPE pipe to create loops used in vertical geothermal systems.

HDPE U-BENDS	
PART #	DESCRIPTION
4220111	ASSEMBLY 3/4"
4220072	ASSEMBLY 1"
4221755	ASSEMBLY 1 1/4 "



## HDPE ELECTROFUSION FITTINGS



Electrofusion fittings incorporate an electrical heating wire. When activated for a specified period of time by an electrofusion processor, the surface of the pipe and the fitting melt together, thus creating one homogeneous pipe.

Electrofusion is a rapid and simple process that can save time and money when making joints in areas with limited access.

Hole Products offers a large selection of electrofusion fittings, including elbows, tees, couplings, caps, saddles, and more.

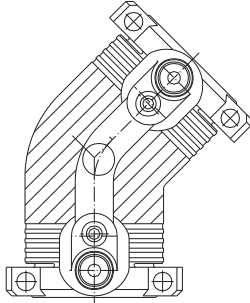
Due to the vast number of HDPE fitting options available, part numbers are not listed in this section.

Please contact your Hole Products representative for product specifications and assistance selecting the fittings properly designed for your specific project application.

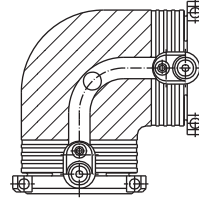
## ELECTROFUSION ELBOWS

Available in 1" to 4" nominal size.

### 45° ELBOWS

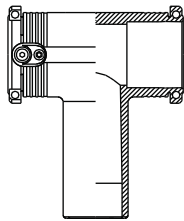


### 90° ELBOWS



## ELECTROFUSION EQUAL TEES

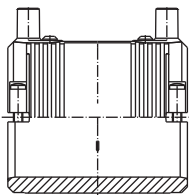
Available in 3/4" to 4" nominal size.



## ELECTROFUSION COUPLINGS

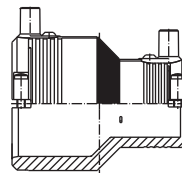
### COUPLING

Available in 1" to 12" nominal size.  
14" to 24" special order.



### REDUCER COUPLING

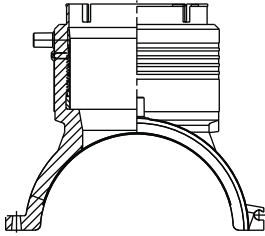
Available in 3/4" to 3" nominal size.





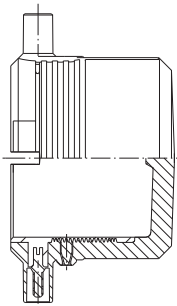
## ELECTROFUSION SADDLES

Available in 2" to 12" nominal size.



## ELECTROFUSION END CAPS

Available in 1" to 6" nominal size.



## FUSION TOOLS & ACCESSORIES



Hole Products offers a complete line of fusion equipment, accessories, and speciality tooling. All fusion equipment is available to purchase or rent.

### Overview:

Heat fusion is the process used to join two pieces of thermoplastic pipe. The process involves heating both pieces simultaneously to a specified temperature. When the proper temperature has been reached, the pipes are fused by pressing them together and applying constant and specific pressure. As the two pieces cool under pressure, they bond to form one indistinguishable pipe. When done properly, the fusion joints are as strong as or stronger than the original pipes.

Please contact your Hole Products representative for additional details, product availability, and assistance ordering the fusion equipment designed for your specific application.

*NOTE: To ensure quality and safety, only persons properly trained should attempt the heat fusion process.*

## FUSION TOOLS & ACCESSORIES



Ritmo fusion welders feature an aluminium heating plate and a practical, heat insulated plastic handle.



The Pipe Fuser welder allows for edgewise use of the iron in four locations on the narrow side, also enabling the user to perform saddle fusion there, independent from socket fusion on the face.



McElroy® Socket Tooling will fuse 1/2" CTS to 4" IPS (16mm to 125mm) pipe and is perfect for installing fittings. Select the heater, heater adapter, depth gauge/chamfer tool, and a cold ring tool for your specific application.



McElroy® Sidewinder™ Fusion Machines give you the ability to saddle fuse 4" IPS and smaller branch saddles, tapping tees, and service saddle fittings onto 1 1/4" IPS and larger main sizes. The Sidewinder™ comes in two configurations: the Jaw Clamp and Chain Clamp. Jaw Clamp Sidewinder is used for fusing branch saddles, tapping tees and service saddle fittings onto 1 1/4" to 4" IPS main sizes. The Chain Clamp Sidewinder gives you the ability to fuse onto main sizes larger than 4" IPS. Both Sidewinders™ are DataLogger® compatible.

## FUSION TOOLS & ACCESSORIES



The 2LC will butt fuse 1/2" CTS to 2" IPS (16mm to 60mm) pipe. It employs a semi-automatic locking cam (LC) system to maintain force during the cooling cycle. The 2LC incorporates McElroy's patented Centerline Guidance System and is designed to butt fuse tees, ells, and other fittings.



The McElroy® Pit Bull® 14 fuses 1" IPS to 4" DIPS (32mm to 110mm) pipe. It is a compact, lightweight, highly reliable, and rugged machine. The machine incorporates McElroy's patented Centerline Guidance System and is designed to butt fuse tees, ells, and other fittings with consistent, high-quality results. The machine's semi-automatic locking cam system maintains force during the cooling cycle.

## FLUSH CARTS

Flush carts are designed for flushing and removing air from closed loop geothermal systems.

Hole Products' flush carts are available to purchase or as daily or weekly rentals.

Please contact your Hole Products representative for additional details and rental availability.



## FLOW CENTERS

Hole Products offers a variety of flow centers for geothermal heating and cooling systems. Flow centers are unique for their canister that holds a large volume of water (or anti-freeze mixture) and the suction side of the circulating pump(s). This system allows for the force of gravity to maintain a flooded volute, assuring reliable pump operation. The use of one, two, or even three pumps in series can be utilized to achieve the required level of flow and overcome the frictional loss of the system.

Please contact your Hole Products representative for additional detail.



## HEAT TRANSFER FLUIDS

Hole Products offers a full range of glycol, methanol, and ethanol heat transfer fluids. Heat transfer fluids are available as concentrate liquids or premixed solutions with de-ionized water to help prevent corrosion. Whether you require 5 gallons or a complete tanker, we can deliver.

Please contact your Hole Products representative for additional details.

GLYCOL	
PART #	PRODUCT
4220101	GLYCOL PROPYLENE H/T W/ INH 5 GAL
4220100	GLYCOL PROPYLENE H/T W/ INH 55 GAL
4220901	GLYCOL PROPYLENE H/T W/ INH 55 GAL 25% PREMIX
4220900	GLYCOL PROPYLENE H/T W/ INH 55 GAL 30% PREMIX
4221725	GLYCOL PROPYLENE H/T W/ INH 275 GAL
4221730	GLYCOL PROPYLENE H/T W/ INH 275 GAL 25% PREMIX
4221735	GLYCOL PROPYLENE H/T W/ INH 275 GAL 30% PREMIX
4221740	GLYCOL PROPYLENE H/T W/ INH 330 GAL
4221745	GLYCOL PROPYLENE H/T W/ INH 330 GAL 25% PREMIX
4221750	GLYCOL PROPYLENE H/T W/ INH 330 GAL 30% PREMIX




*Note: Tanker deliveries for large projects are available. Please contact your Hole Products representative for further assistance.*



METHANOL	
PART #	PRODUCT
4220106	METHANOL 5 GAL
4220105	METHANOL 55 GAL




ETHANOL	
PART #	PRODUCT
4220083	ETHANOL W/INH 55 GAL GBIP (APPROVED FOR VERTICAL APPLICATIONS)

## THERMALLY ENHANCED GROUTS

Hole Products offers a complete line of thermally enhanced grouts with various thermal conductivity values from industry leading manufacturers including Baroid, Cetco, GeoPro, and more. Additional thermally enhanced grouts and additives are available to meet specific engineering requirements.

BAROID® THERMALLY ENHANCED GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400140	50 lbs.	BAROTHERM® GOLD	BAROTHERM® GOLD a bentonite material designed for use in grouting boreholes containing ground source heat loops. When combined with silica sand at various concentrations yields grout w/thermal conductivity values ranging between 0.4 and 1.2 BTU/hr • ft • °F (0.69-2.08 watts/m - °C).
	3400142	50 lbs.	BAROTHERM® GOLD 550 1.0	BAROTHERM® GOLD 1.0 a preblended mixture of sodium bentonite and high-purity silica sand designed for grouting boreholes containing ground source heat loops. Thermal conductivity of 1.0 BTU/hr • ft • (1.73 watts/m - °C).
	3400143	50 lbs.	BAROTHERM® GOLD 523 1.2	BAROTHERM® GOLD 1.2 is designed for use in grouting boreholes containing ground source heat loops. Thermal conductivity of 1.2 BTU/hr • ft • (2.08 watts/m - °C).

CETCO® THERMALLY ENHANCED GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400122	50 lbs.	GEO THERMAL GROUT™	GEO THERMAL GROUT is an easy pumping grout that has been carefully developed to efficiently suspend solids (silica sand) for enhanced thermal conductivity. When combined with silica sand at various concentrations yields grout w/thermal conductivity values ranging between 0.4 and 1.00 BTU/hr • ft • °F (0.68-1.69 watts/m - °C).
	3400240	50 lbs.	HIGH TC GEO THERMAL GROUT™	HIGH TC GEO THERMAL GROUT is an easy pumping grout that has been developed to efficiently suspend solids (silica sand) for enhanced thermal conductivity. When combined with silica sand at various concentrations yields grout w/thermal conductivity values ranging between 0.4 and 1.21 BTU/hr • ft • °F (0.68-2.05 watts/m - °C).

GEOPRO THERMALLY ENHANCED GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400090	50 lbs.	BH 20 GROUT	BH 20 GROUT mixed as a 20% - 25% solids grout, BH20 sets into a semi-rigid plug well suited for sealing well casings, decommissioning abandoned wells, and for geothermal heating and cooling systems. Thermal conductivity of 0.40 - 0.42 BTU/hr • ft.
	3400095	50 lbs.	THERMAL GROUT LITE	THERMAL GROUT LITE is designed to optimize the performance of ground heat exchangers for the geothermal heating and cooling industry. Thermal conductivity of 0.45 - 1.00 BTU/hr • ft.
	3400100	50 lbs.	THERMAL GROUT SELECT	THERMAL GROUT SELECT is designed to optimize the performance of ground heat exchangers for the geothermal heating and cooling industry. Thermal conductivity of 0.45 - 1.20 BTU/hr • ft.



# SILICA SAND

Hole Products offers a full line of premium quality silica sands available in 50 lb. or 100 lb. bags and 3,000 lb. super sacks. Silica sand is combined with geothermal grout at various concentrations to help yield a specific thermal conductivity rating.

Bulk dump loads and additional sand sizes are available on request.

SILICA SAND		
PART #	UNIT SIZE	PRODUCT
3500043	50 lbs.	4030 SILICA SAND
3500135	100 lbs.	4030 SILICA SAND
3500046	3,000 lb. SUPER SACK	4030 SILICA SAND
3500140	50 lbs.	4070 SILICA SAND
3500145	100 lbs.	4070 SILICA SAND
3500150	3,000 lb. SUPER SACK	4070 SILICA SAND
3500003	50 lbs.	5010 SILICA SAND
3500155	100 lbs.	5010 SILICA SAND
3500097	3,000 lb. SUPER SACK	5010 SILICA SAND
3500044	50 lbs.	5020 SILICA SAND
3500160	100 lbs.	5020 SILICA SAND
3500165	3,000 lb. SUPER SACK	5020 SILICA SAND
3500040	50 lbs.	5030 SILICA SAND
3500170	100 lbs.	5030 SILICA SAND
3500045	3,000 lb. SUPER SACK	5030 SILICA SAND
3500175	50 lbs.	5040 SILICA SAND
3500039	100 lbs.	5040 SILICA SAND
3500180	3,000 lb. SUPER SACK	5040 SILICA SAND



## ACCESSORIES



Hole Products offers a complete line of premium quality geothermal accessories including GeoClips® , pipe cutters, underground detectable tape, tracer wire, loop conditioner, test caps, and much more, backed by our unparalleled service and support.

Accessories listed in the catalog are representative of the most common industry sizes and styles. If your project requires geothermal accessories not shown, we can get them.

Please contact your Hole Products representative for additional details.

## GEOCLIPS®

GeoClips® are used to space piping in a manner that maximizes the effectiveness of heat transfer rate.

GEOCLIPS®	
PART #	DESCRIPTION
4221760	3/4"
4221765	1"
4221770	1 1/4"



## RATCHET CUTTERS

Ratchet cutters reduce the amount of hand force required to cut through hard plastic material, providing a clean square cut.

RATCHET CUTTER		
PART #	DESCRIPTION	CAPACITY
4220013	RATCHET ACTION PLASTIC PIPE & TUBING CUTTER - RC 1625	1/2" - 1 5/8"
4220014	RATCHET CUTTER REPLACEMENT BLADE - RC 1625	-----
5151029	RATCHET ACTION PIPE & TUBING CUTTER - RC 2375	1/2" - 2 3/8"
4221775	RATCHET CUTTER REPLACEMENT BLADE - RC 2375	-----



## SINKER BARS

Sinker bars are used to assist installers in lowering geothermal loops to the bottom of the borehole. Sinker bars are often necessary to lower loops through highly viscous drilling fluids or difficult ground conditions.

SINKER BARS		
PART #	NOMINAL SIZE	WEIGHT
4220500	1" X 10'	30 lbs.
4220501	1" X 25'	72 lbs.



## UNDERGROUND DETECTABLE TAPE

Detectable tape is magnetic and is used for detecting and identifying buried geothermal lines. The tape is installed over the geothermal lines and bears a printed label identifying geothermal lines.

UNDERGROUND DETECTABLE TAPE	
PART #	NOMINAL SIZE
4221780	2" X 1,000'
4221785	3" X 1,000'
4221790	6" X 1,000'



## TRACER WIRE

Tracer wire is used to detect, and locate geothermal lines in the event they need to be found.

Hole Products offers tracer wire with a variety of jacket colors, tensile strengths, and multiple lengths.

TRACER WIRE			
PART #	JACKET COLOR	TENSILE STRENGTH	LENGTH
2810163	BLUE	1,150 lbs.	500'
2810162	BLUE	1,150 lbs.	2,500'
2810161	GREEN	1,150 lbs.	500'
2810160	GREEN	1,150 lbs.	2,500'



## LOOP CONDITIONER

Geothermal loop conditioner can be used to effectively seal leaks in the system or as preventative maintenance. Loop conditioner coats the surfaces it comes in contact with, thus reducing the formation of rust and corrosion.

LOOP CONDITIONER	
PART #	DESCRIPTION
4220755	8 OZ BOTTLE
4221795	1 CASE (12 - 8OZ BOTTLES)

## TEST CAPS

Pressure testing of every thermo-loop and header is an important part of any geothermal job. Hole Products can supply you with a full line of test sizes from 3/4" to 3" IPS. Caps are constructed of corrosion resistant material, reusable, and designed for fast and easy air pressure testing.

ALUMINIUM TEST CAP			
PIPE SIZE	COMPLETE UNIT	O-RING	LANYARD ASSY
3/4"	4220062	4221810	4221835
1"	4220073	4221815	4221840
1 1/4"	4220060	4221820	4221845
1 1/2"	4221800	4221825	4221850
2"	4221805	4221830	4221855
3"	4221900	4221905	4221910



GEOPLASTIC TEST CAP		
PIPE SIZE	COMPLETE UNIT	O-RING
3/4"	4220502	4221860
1"	4220503	4221865
1 1/4"	4220504	4221870
1 1/2"	4220505	4221875
2"	4220506	4221880
3"	4220507	4221885





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## HORIZONTAL DIRECTIONAL DRILLING



Horizontal directional drilling, commonly referred to as HDD, is a steerable, trenchless drilling method most commonly used for installation of underground utilities. HDD makes drilling under roads, lakes, or difficult terrain possible and reduces the impact on the environment and infrastructure.

To service the horizontal and directional drilling market, we provide a full line of Ditch Witch® and Vermeer® compatible HDD drilling tools and accessories, backed by second to none service and support.

Our comprehensive line of HDD tooling includes transmitter housings, tail pieces, drive chucks, saver subs, bits and blades, reamers, quick disconnects, rods, swivels, pipe and cable pullers, tracer wire, drilling fluids and much more.

Please contact your Hole Products representative for additional product details and ordering assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*



# SIDE-LOAD, BOLT-ON TRANSMITTER HOUSINGS

## FOR DITCH WITCH® SUBSITE® BEACONS

Side-Load, bolt-on transmitter housings are available for use on all Ditch Witch® drill rig models.

The side load feature provides quick and easy field installation and removal of transmitter sonde and batteries. All sizes feature:

- Replaceable tailpieces to increase the longevity of the housing.
- Heat treated replaceable nozzles for maximum durability and steering.
- Compatible with all styles of OEM type bolt-on pilot bits (paddle bits).

Please contact your Hole products representative for additional details.



DITCH WITCH® COMPATIBLE TRANSMITTER HOUSING				
PART #	DRILL RIG MODEL USE	HOLE PATTERN	O.D.	CONNECTION
2815076	JT920, JT920L, JT921, JT922, JT1220, JT1720, JT1720 MACH1, JT2020	5 HOLE	2.750"	86B 2" IF BOX
2815080	JT2020, JT2720	5 HOLE	3.250"	86B 2 3/8" API REG BOX
2815081	JT2720, JT2720 MACH1, JT3020, JT4020, JT4020 MACH1	6 HOLE	3.250"	86B 2 3/8" API REG BOX

## TAIL PIECES

Tail pieces or housing adapters are expandable subs designed to extend the life of the transmitter housing and allow for the use of multiple threads on a single housing.

All tailpieces are manufactured from premium alloy steel for maximum durability.



DITCH WITCH® COMPATIBLE TAIL PIECES		
PART #	DRILL RIG MODEL	CONNECTION
2815085	DW 920, 920L, 921, 922	EZ-2 BOX x 2" IF PIN
2815090	DW 1220 MACH 1	EZ-3 x 2" IF PIN
2815095	DW 1720, 1720 MACH 1, 2020 MACH 1	EZ-2 BOX x 2" IF PIN
2815100	DW 2720	EZ-2 BOX x 2 3/8" API REG PIN
2815105	DW 2720 MACH 1	EZ-2 BOX x 2 3/8" API REG PIN
2815110	DW 3020 MACH 1	EZ-3 BOX x 2 3/8" API REG PIN
2815115	DW 4020 MACH 1	EZ-2 BOX x 2 3/8" API REG PIN

# SIDE-LOAD, BOLT-ON TRANSMITTER HOUSINGS

## FOR VERMEER® DIGITRAK® TRANSMITTERS

Side-Load bolt-on transmitter housings are available for use on all Vermeer® drill rig models.

The side load feature provides quick and easy field installation and removal of transmitter sonde and batteries. All sizes feature:

- Replaceable tailpieces to increase the longevity of the housing.
- Heat treated replaceable nozzles for maximum durability and steering.
- Compatible with all styles of OEM type bolt-on pilot bits (paddle bits).

Please contact your Hole products representative for additional details.



VERMEER® DIGITRAK® COMPATIBLE TRANSMITTER HOUSING				
PART #	DRILL RIG MODEL	HOLE PATTERN	O.D.	CONNECTION
2810234	D7 x 11, D9 x 13, D10 x 15	6 HOLE	2.625"	2" IF BOX
2810232	D16 x 20, D18 x 22, D20 x 22, D24 x 26	6 HOLE	2.750"	2" IF BOX
2810122	D24 x 40, D33 x 44, D36 x 50	6 HOLE	3.250"	2 3/8" API REG BOX

## TAIL PIECES

Tail pieces or housing adapters are expandable subs designed to extend the life of the transmitter housing and allow for the use of multiple threads on a single housing.



VERMEER® DIGITRAK® COMPATIBLE TAIL PIECES		
PART #	DRILL RIG MODEL	CONNECTION
2810207	D7 x 11, D9 x 13, D10 x 15	1.625" LP HEX PIN X 2" API IF PIN
2810208	D16 x 20, D24 x 26	2.125" LP HEX PIN X 2" API IF PIN
2810154	D24 x 40, D40 x 40	2.125" LP HEX PIN X 2 3/8" API REG PIN
2810245	D24 x 40, D40 x 40	#350* - API H90S* PIN X 2 3/8" API REG PIN
2810209	D16 x 20, D24 x 26	#350* - API H90S* PIN X 2" API IF PIN

\*#350-API H90S thread is compatible with Vermeer #350 Hawkeye thread.

## WATER NOZZLES

Hole Products offers replacement water nozzles to fit all sonde housings. Water nozzles are manufactured from heat-treated alloy for maximum durability and feature three entry holes to minimize clogging.



## REPLACEMENT BOLTS AND COVERS

Hole Products offers a complete line of replacement bolts and covers to fit all sonde housings.



## LEAD RODS/TRANSITION RODS

Lead rods are manufactured from heat treated 4350 alloy steel (unless otherwise noted). This makes them a significantly stronger lead rod, which is designed specifically for use under the stresses of horizontal directional drilling projects.

DITCH WITCH® TRANSITION RODS*			
PART #	DRILL RIG MODEL	CONNECTION	NET WT.
2810320	JT920	JT920 COMPATIBLE PIN x EZ-2 TRAN. ROD	12.0 lbs.
2810315	JT1220 MACH 1	JT1220 MACH 1 COMPATIBLE PIN x EZ-3 TRAN. ROD	24.0 lbs.
2810310	JT1720	JT1720 COMPATIBLE PIN x EZ-2 TRAN. ROD	30.0 lbs.
2810325	JT2020 MACH 1	JT2020 MACH1 COMPATIBLE PIN x EZ-2 TRAN. ROD	32.0 lbs.
2810305	JT2720	JT2720 COMPATIBLE PIN x EZ-2 TRAN. ROD	36.0 lbs.
2810330	JT3020 MACH 1	JT3020 MACH 1 COMPATIBLE PIN x EZ-2 TRAN. ROD	43.0 lbs.
2810335	JT4020 MACH 1	JT4020 MACH 1 COMPATIBLE PIN x EZ-2 TRAN. ROD	61.0 lbs.

\*Ditch Witch transition rods are manufactured from 4140 steel.



VERMEER® STARTER RODS (Standard) (Chrome - Moly steel - 152,000 PSI tensile strength)				
PART #	DRILL RIG MODEL	DRILL ROD	O.D.	NET WT.
2810275	24 x 40, 40 x 40	FST 1	2.375"	23.0 lbs.
2810280	16 x 20, 18 x 22, 20 x 22	FST 1	2.060"	22.0 lbs.
2810285	16 x 20, 18 x 22, 20 x 22	FST 1	1.900"	18.0 lbs.
2810290	7 x 11, 10 x 15	FST 1	1.660"	13.0 lbs.
2810295	24 x 40, 40 x 40	FST 1 - 350 API H90S*	2.375"	23.0 lbs.
2810300	16 x 20, 18 x 22, 20 x 22	FST 1 - 350 API H90S*	2.060"	22.0 lbs.

\*#350-API H90S thread is compatible with Vermeer® #350 HAWKEYE thread.



VERMEER® STARTER RODS (High Strength) (Nickel chrome - Moly steel - 182,000 PSI tensile strength)				
PART #	DRILL RIG MODEL	DRILL ROD	O.D.	NET WT.
2810190	24 x 40, 40 x 40	FST 1	2.375"	23.0 lbs.
2810260	16 x 20, 18 x 22, 20 x 22	FST 1	2.060"	22.0 lbs.
2810265	16 x 20, 18 x 22, 20 x 22	FST 1	1.900"	18.0 lbs.
2810270	7 x 11, 10 x 15	FST 1	1.660"	13.0 lbs.

## DRIVE COLLARS

Hole Products offers a variety of drive collars to fit over the flats on starter rods, limiting over torquing of the threads.



## DRIVE CHUCKS

Hole Products offers various Ditch Witch® and Vermeer® compatible drive chucks to fit all rig models. Drive chucks are machined from a solid billet of heat treated chrome-moly steel for maximum strength and performance.



## CROSS OVER & SAVER SUBS

Hole Products offers a wide range of cross over and saver subs. All subs are machined to exacting standards and composed of high strength alloy steel.



## DRILL ROD

Hole Products offers a complete line of HDD drill rod for use with all Ditch Witch® and Vermeer® rig models. Rods are manufactured using premium quality materials and the most advanced manufacturing techniques, thus providing maximum strength and durability.



DITCH WITCH® - COMPATIBLE ROD SPECIFICATIONS				
RIG MODEL	MID BODY O.D. (in)	TOOL JOINT (O.D.) (in)	WALL THICKNESS (in)	WEIGHT (lbs)
JT520	1.125	1.750	0.179	17
JT820, JT920	1.660	2.000	0.240	29
JT920L	1.600	2.0000	0.240	39
JT1220	1.900	2.375	0.240	56
JT1720, JT1720V	2.063	2.500	0.270	59
JT2020	2.063	2.625	0.270	59
JT2720, JT2720V	2.375	2.750	0.280	78
JT2720M1	2.375	3.000	0.280	85
JT4020	2.875	3.250	0.362	175
JT4020M1	2.875	3.500	0.362	185
JT7020, JT8020, JT100	3.500	4.000	0.368	238

VERMEER® - COMPATIBLE ROD SPECIFICATIONS				
RIG MODEL	MID BODY O.D. (in)	TOOL JOINT O.D. (in)	WALL THICKNESS (in)	WEIGHT (lbs)
D6/D7X11	1.660	1.880	0.240	21
D10X15	1.660	1.880	0.240	35
D16X20, D18X22	1.900	2.125	0.240	49
D24X26, D24a	2.063	2.125	0.240	56
D24X40F	2.375	2.625	0.280	78
D24x40IW	2.375	2.625	0.280	78
D33X44, D40X40	2.375	2.625	0.280	100
D50X100	2.875	3.250	0.362	156
D80X100	3.500	3.625	0.368	232
D100X120	3.500	4.125	0.368	289

# PADDLE BITS



Hole Products offers a wide range of HDD paddle bits for use on all Ditch Witch® and Vermeer® drill rigs. Bits are available in a wide range of styles for use in a variety of formations.

All bits are manufactured using premium materials and many are hardfaced using a tungsten carbide embedding process, thus ensuring maximum wear life.

Please contact your Hole Products representative for specific recommendations regarding soil conditions and bit selection.

## SOIL TYPE DEFINITIONS\*:

**SANDY:** Loose sand or any soil that is predominately comprised of sand

**LIGHT:** Clay, silt, soft to medium soils that contain moisture

**MEDIUM:** Consolidated clays, semi-compacted soils

**HARD:** Compacted soils

**ROCKY:** Chunk rock, gravel, any non-consistent type of rock

**SOFT ROCK:** Slate, soft limestone, sandstone, and shales

**MEDIUM ROCK:** Limestone, sandstone, dolomite, shales

**HARD ROCK:** Hard limestone, granite, schist, trap rock, and quartzite

*\*Soil conditions often vary throughout a pilot bore which may affect the actual performance of the bit.*

## RADIUS BUTTON BIT

For Rocky & Abrasive Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810340	DITCH WITCH, 5 HOLE	12 MM	3.5"	3/4"	6.0 lbs.
2810345	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	7.0 lbs.
2810350	DITCH WITCH, 5 HOLE	12 MM	4.5"	3/4"	7.5 lbs.
2815021	DITCH WITCH, 5 HOLE	12 MM	5.0"	3/4"	8.5 lbs.
2810355	DITCH WITCH, 6 HOLE	16 MM	4.0"	3/4"	8.0 lbs.
2815025	DITCH WITCH, 6 HOLE	16 MM	4.5"	3/4"	9.0 lbs.
2810240	DITCH WITCH, 6 HOLE	16 MM	5.0"	3/4"	9.5 lbs.
2810360	DITCH WITCH, 6 HOLE	16 MM	6.0"	3/4"	10.5 lbs.
2810365	DITCH WITCH, 6 HOLE	16 MM	5.0"	1.0"	12.5 lbs.
2810370	VERMEER, 7 HOLE	1/2" - 13	3.5"	3/4"	7.5 lbs.
2810158	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	8.0 lbs.
2815023	VERMEER, 7 HOLE	1/2" - 13	4.5"	3/4"	9.0 lbs.
2810375	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	10.5 lbs.
3810380	VERMEER, 6 HOLE	1/2" - 13	5.0"	1.0"	12.5 lbs.



## BUTTON TAPER BIT

For Hard, Rocky Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810385	DITCH WITCH, 5 HOLE	12 MM	3.5"	3/4"	7.0 lbs.
2810390	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	8.0 lbs.
2810395	DITCH WITCH, 5 HOLE	12 MM	4.5"	3/4"	9.0 lbs.
2810400	DITCH WITCH, 5 HOLE	12 MM	5.0"	3/4"	10.0 lbs.
2810405	DITCH WITCH, 6 HOLE	16 MM	4.0"	3/4"	9.0 lbs.
2810410	DITCH WITCH, 6 HOLE	16 MM	4.5"	3/4"	10.0 lbs.
2810415	DITCH WITCH, 6 HOLE	16 MM	5.0"	3/4"	7.0 lbs.
2810750	VERMEER, 7 HOLE	1/2" - 13	3.5"	3/4"	7.0 lbs.
2810013	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	8.0 lbs.
2815024	VERMEER, 7 HOLE	1/2" - 13	4.5"	3/4"	10.0 lbs.
2810017	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	11.0 lbs.





## HARD FACED CHISEL BIT\*

For Sand & Sandy Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810515	DITCH WITCH, 5 HOLE	12 MM	3.8"	3/4"	7.0 lbs.
2810040	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	8.0 lbs.
2810520	DITCH WITCH, 5 HOLE	12 MM	4.5"	3/4"	9.0 lbs.
2810525	DITCH WITCH, 5 HOLE	12 MM	5.0"	3/4"	10.0 lbs.
2810530	DITCH WITCH, 6 HOLE	16 MM	4.0"	3/4"	9.0 lbs.
2810535	DITCH WITCH, 6 HOLE	16 MM	4.5"	3/4"	10.0 lbs.
2810540	DITCH WITCH, 6 HOLE	16 MM	5.0"	3/4"	11.0 lbs.
2810545	DITCH WITCH, 6 HOLE	20 MM	5.0"	1.0"	12.0 lbs.
2810550	DITCH WITCH, 6 HOLE	20 MM	6.0"	1.0"	12.5 lbs.
2810555	VERMEER, 7 HOLE	1/2" - 13	3.5"	3/4"	7.0 lbs.
2810041	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	8.0 lbs.
2810043	VERMEER, 7 HOLE	1/2" - 13	4.5"	3/4"	10.0 lbs.
2810042	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	11.0 lbs.
2810560	VERMEER, 7 HOLE	1/2" - 13	4.0"	1.0"	11.0 lbs.
2810565	VERMEER, 7 HOLE	1/2" - 13	4.5"	1.0"	12.0 lbs.
2810570	VERMEER, 7 HOLE	1/2" - 13	5.0"	1.0"	13.0 lbs.

\*Includes tungsten carbide embedded hard facing.



## ANGLED RIPPER BIT\*

For Hardpan, Dry Clay & Compacted Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810600	DITCH WITCH, 5 HOLE	12 MM	3.5"	3/4"	7.0 lbs.
2810605	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	7.5 lbs.
2810014	DITCH WITCH, 5 HOLE	12 MM	4.5"	3/4"	8.5 lbs.
2810610	DITCH WITCH, 5 HOLE	12 MM	5.0"	3/4"	10.0 lbs.
2810615	DITCH WITCH, 6 HOLE	16 MM	4.0"	3/4"	9.5 lbs.
2810620	DITCH WITCH, 6 HOLE	16 MM	4.5"	3/4"	10.5 lbs.
2810241	DITCH WITCH, 6 HOLE	16 MM	5.0"	3/4"	12.0 lbs.
2810625	DITCH WITCH, 6 HOLE	20 MM	5.0"	1.0"	12.5 lbs.
2810630	DITCH WITCH, 6 HOLE	20 MM	5.0"	1.0"	13.0 lbs.
2810635	VERMEER, 7 HOLE	1/2" - 13	3.5"	3/4"	8.5 lbs.
2810640	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	9.5 lbs.
2810645	VERMEER, 7 HOLE	1/2" - 13	4.5"	3/4"	10.5 lbs.
2810650	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	12.0 lbs.
2810655	VERMEER, 7 HOLE	1/2" - 13	4.0"	1.0"	13.0 lbs.
2810660	VERMEER, 7 HOLE	1/2" - 13	5.0"	1.0"	14.0 lbs.
2810665	VERMEER, 7 HOLE	1/2" - 13	6.0"	1.0"	15.0 lbs.

\*Includes tungsten carbide embedded hard facing.



## ANGLED CONICAL CLAW BIT\*

For Hardpan, Dry Clay & Compacted Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810450	DITCH WITCH, 5 HOLE	12 MM	3.5"	3/4"	7.0 lbs.
2810015	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	7.5 lbs.
2810455	DITCH WITCH, 5 HOLE	12 MM	5.0"	3/4"	8.5 lbs.
2810460	DITCH WITCH, 6 HOLE	16 MM	4.0"	3/4"	9.5 lbs.
2810465	DITCH WITCH, 6 HOLE	16 MM	5.0"	3/4"	13.0 lbs.
2810470	DITCH WITCH, 6 HOLE	16 MM	4.0"	1.0"	16.0 lbs.
2810035	DITCH WITCH, 6 HOLE	16 MM	5.0"	1.0"	16.0 lbs.
2810475	DITCH WITCH, 6 HOLE	20 MM	5.0"	1.0"	16.0 lbs.
2810480	DITCH WITCH, 6 HOLE	20 MM	6.0"	1.0"	18.0 lbs.
2810485	VERMEER, 7 HOLE	1/2" - 13	3.5"	1.0"	8.5 lbs.
2810159	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	9.5 lbs.
2810197	VERMEER, 7 HOLE	1/2" - 13	4.5"	3/4"	10.5 lbs.
2810027	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	12.0 lbs.
2810028	VERMEER, 7 HOLE	1/2" - 13	6.0"	3/4"	14.0 lbs.
2810490	VERMEER, 7 HOLE	1/2" - 13	4.0"	1.0"	13.0 lbs.
2810495	VERMEER, 7 HOLE	1/2" - 13	4.5"	1.0"	14.5 lbs.
2810500	VERMEER, 7 HOLE	1/2" - 13	5.0"	1.0"	16.0 lbs.
2815033	VERMEER, 7 HOLE	1/2" - 13	6.0"	1.0"	18.0 lbs.
2810505	VERMEER, 7 HOLE	5/8" - 11	5.0"	1.0"	16.0 lbs.
2810510	VERMEER, 7 HOLE	5/8" - 11	6.0"	1.0"	18.0 lbs.



\*Includes tungsten carbide embedded hard facing.

## STEEP TAPER RIPPER BIT\*

For Hardpan, Dry Clay & Compacted Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810575	DITCH WITCH, 5 HOLE	12 MM	3.5"	3/4"	7.0 lbs.
2810580	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	7.5 lbs.
2810585	DITCH WITCH, 5 HOLE	12 MM	4.5"	3/4"	8.5 lbs.
2810590	VERMEER, 7 HOLE	1/2" - 13	3.5"	3/4"	8.0 lbs.
2810595	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	9.0 lbs.
2815026	VERMEER, 7 HOLE	1/2" - 13	4.5"	3/4"	10.0 lbs.
2815027	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	12.0 lbs.



\*Includes tungsten carbide embedded hard facing.

## "ROUGHNECK" RIPPER BIT\*

For Sedimentary Rock, Hardpan, Dry Clay & Compacted Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810006	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	7.5 lbs.
2810007	DITCH WITCH, 5 HOLE	12 MM	5.0"	3/4"	10.0 lbs.
2810420	DITCH WITCH, 6 HOLE	16 MM	4.0"	3/4"	9.5 lbs.
2810030	DITCH WITCH, 6 HOLE	16 MM	5.0"	3/4"	12.0 lbs.
2810425	DITCH WITCH, 6 HOLE	20 MM	5.0"	1.0"	12.5 lbs.
2810008	DITCH WITCH, 6 HOLE	20 MM	6.0"	1.0"	13.0 lbs.
2810031	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	9.5 lbs.
2810025	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	12.0 lbs.
2810430	VERMEER, 7 HOLE	1/2" - 13	4.0"	1.0"	13.0 lbs.
2810435	VERMEER, 7 HOLE	1/2" - 13	5.0"	1.0"	14.0 lbs.
2810029	VERMEER, 7 HOLE	1/2" - 13	6.0"	1.0"	15.0 lbs.



\*Includes tungsten carbide embedded hard facing.

## "ROUGHNECK" STEEP TAPER RIPPER BIT\*

For Sedimentary, Rock, Hardpan, Dry Clay & Compacted Soil					
PART #	BOLT PATTERN	BOLT SIZE	WIDTH	THICK	NET WT.
2810440	DITCH WITCH, 5 HOLE	12 MM	3.5"	3/4"	7.0 lbs.
2810210	DITCH WITCH, 5 HOLE	12 MM	4.0"	3/4"	7.5 lbs.
2810445	DITCH WITCH, 6 HOLE	16 MM	4.0"	3/4"	9.5 lbs.
2810235	DITCH WITCH, 6 HOLE	16 MM	5.0"	3/4"	12.0 lbs.
2815015	VERMEER, 7 HOLE	1/2" - 13	4.0"	3/4"	9.5 lbs.
2812017	VERMEER, 7 HOLE	1/2" - 13	4.5"	3/4"	9.5 lbs.
2815017	VERMEER, 7 HOLE	1/2" - 13	5.0"	3/4"	12.0 lbs.
2815018	VERMEER, 7 HOLE	1/2" - 13	6.0"	3/4"	12.0 lbs.



\*Includes tungsten carbide embedded hard facing.

## PADDLE BIT REPLACEMENT BOLTS

PADDLE BIT REPLACEMENT BOLTS		
PART #	DESCRIPTION	QTY
2810251	DITCH WITCH, 12MM X 20MM X 1.75MM	5 PACK
2810670	DITCH WITCH, 16MM X 35MM X 2.00MM	6 PACK
2810250	VERMEER, 5/8" X 1" X 11 THD.	6 PACK
28100675	VERMEER, 1/2" X 1" X 13 THD.	6 PACK



# BACKREAMERS

Hole Products offers a full line of HDD backreamers in a wide range of sizes and styles for maximum productivity in a variety of ground conditions.

Please contact your Hole Products representative for specific recommendations regarding soil conditions and backreamer selection.



SOLID BODY FLUTED



STACKED PLATE SPIRAL FLUTED



CLAY REAMER



TAPERED WING FLY CUTTER



WINGED BACKREAMER

BACKREAMER APPLICATION CHART									
	SOIL TYPE	SANDY	LIGHT	MEDIUM	HARD	ROCKY	SOFT ROCK	MEDIUM ROCK	HARD ROCK
BACKREAMER STYLE	FLUTED	5	5	4	3	2	1	2	3
	STACKED PLATE SPIRAL	5	5	4	3	2	1	2	3
	CLAY REAMER	4	4	3	2	1	3	5	5
	TAPERED WING FLY CUTTER	5	5	4	3	2	2	1	1
	WINGED BACKREAMER	2	2	1	2	5	4	5	5

1 = Best      2 = Good      3 = Fair      4 = Less Recommended      5 = Not Recommended

### SOIL TYPE DEFINITIONS\*:

**SANDY:** Loose sand or any soil that is predominately comprised of sand

**LIGHT:** Clay, silt, soft to medium soils that contain moisture

**MEDIUM:** Consolidated clays, semi-compacted soils

**HARD:** Compacted soils

**ROCKY:** Chunk rock, gravel, any non-consistent type of rock

**SOFT ROCK:** Slate, soft limestone, sandstone, and shales

**MEDIUM ROCK:** Limestone, sandstone, dolomite, shales

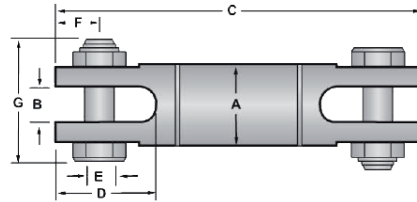
**HARD ROCK:** Hard limestone, granite, schist, trap rock, and quartzite

*\*Soil conditions often vary throughout a pilot bore which may affect the actual performance of the backreamer.*

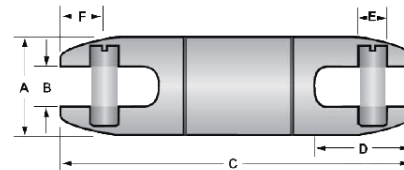
# DIRECTIONAL DRILLING SWIVELS

Hole Products offers a complete line of HDD swivels. D.Drill® Swivels prevent boring equipment' rotational torque from interfering with the product being pulled. These swivels are greasable and double sealed to keep contaminants out. It is recommended to flush swivels with grease after each use to purge any contaminants that may have penetrated past the seals into the swivel while boring.

Swivels are available with varying tension ratings for all of your HDD applications.



819 D.DRILL® DIRECTIONAL DRILLING SWIVEL									
PART #	TENSION (lbs.)	COMPRESSION (lbs.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)	G (in.)
2810211	8,500	2,800	1 1/8	.63	6.85	1.59	.56	.78	2.36
2810212	10,000	3,300	2	.75	7.83	1.81	.63	.75	2.89
2810226	20,000	6,600	2 1/2	1.00	10.93	2.84	.88	1.25	3.67
2810213	30,000	10,000	3	1.31	12.75	3.56	1.13	1.37	4.50
2810214	45,000	15,000	4	1.63	15.25	4.00	1.25	1.84	5.58
2810215	60,000	20,000	4 5/8	1.75	17.48	4.62	1.50	2.13	6.31
2810227	90,000	30,000	6	2.00	18.27	4.50	1.75	2.18	6.59
2810228	120,000	40,000	8	2.25	21.71	5.25	2.00	2.50	8.25

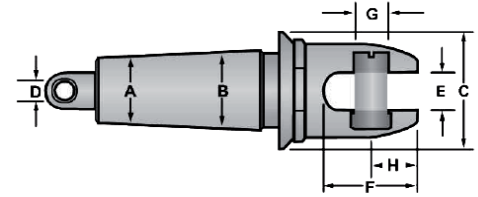


400 D.DRILL® DIRECTIONAL DRILLING SWIVEL								
PART #	TENSION (lbs.)	COMPRESSION (lbs.)	A (in.)	B (in.)	C (in.)	D (in.)	E (in.)	F (in.)
2810219	1,800	595	7/8	.38	4.83	1.03	.31	.53
2810221	4,000	1,300	1 1/4	.56	6.57	1.34	.37	.59
2810222	8,500	2,800	1 5/8	.63	7.22	1.59	.56	.78
2810223	10,000	3,300	2	.75	8.29	1.77	.63	.71
2810224	20,000	6,600	2 1/2	1.00	11.44	2.79	.88	1.23
2810225	30,000	10,000	3	1.31	13.27	3.56	1.13	1.37

# INNERDUCT PULLING EYES

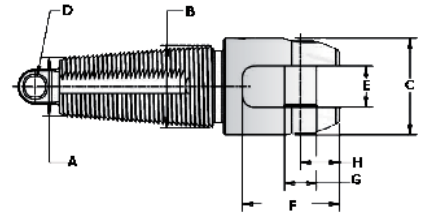
Hole Products offers innerduct pulling eyes for use with various pipe types and sizes.

**Swivel Head Innerduct Pulling Eyes** reduce twisting and binding of the innerduct as it is installed. The use of an innerduct pulling eye also eliminates the need for a separate swivel on each pulling eye when installing single innerducts into individual conduits or multiple innerducts into a single conduit.



SWIVEL HEAD INNERDUCT PULLING EYES							
NOMINAL SIZE	INNERDUCTS I.D. RANGE (A-B)	MAX O.D. (C)	HOLE DIAMETER (D)	SLOT WIDTH (E)	SLOT DEPTH (F)	PIN DIAMETER (G)	PIN CENTER (H)
1" - 1 1/4"	1.06"-1.43"	1.75"	.44"	.56"	1.31"	.44"	.56"
1 1/2"	1.37"-1.68"	2.00"	.44"	.56"	1.31"	.44"	.56"
2"	1.93"-2.12"	2.44"	.44"	.56"	1.31"	.44"	.56"

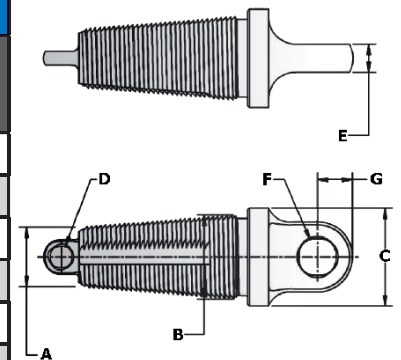
**Clevis Head Innerduct Pulling Eyes** provide the same tapered threads as Swivel Head Innerducts. Clevis Head Innerduct Pulling eyes feature a slotted head with clevis pin to permit direct attachment to multiple pulling harness leg ends



CLEVIS HEAD INNERDUCT PULLING EYES							
NOMINAL SIZE	INNERDUCTS I.D. RANGE (A-B)	MAX O.D. (C)	HOLE DIAMETER (D)	SLOT WIDTH (E)	SLOT DEPTH (F)	PIN DIAMETER (G)	PIN CENTER (H)
3/4"	.71"-.87"	1.25"	.25"	.56"	1.34"	.38"	.59"
1"	.93"-1.06"	1.38"	.25"	.56"	1.34"	.44"	.56"
1"	1.06"-1.43"	1.75"	.38"	.75"	1.78"	.63"	.81"
1 1/2"	1.37"-1.68"	2.00"	.38"	.75"	1.78"	.63"	.72"
1 3/4"	1.68"-1.81"	2.25"	.38"	.75"	1.78"	.63"	.72"
2"	1.93"-2.12"	2.50"	.38"	.75"	2.50"	.88"	1.23"

**Fixed Head Innerduct Pulling Eyes** connect directly to a swivel.

FIXED HEAD INNERDUCT PULLING EYES						
NOMINAL SIZE	INNERDUCTS I.D. RANGE (A-B)	MAX O.D. (C)	HOLE DIA. (D)	TANG THK. (E)	TANG HOLE DIA. (F)	TANG HOLE LOCATION (G)
3/4"	.71"-.87"	1.25"	.25"	.38"	.50"	.56"
1"	.93"-1.06"	1.38"	.25"	.38"	.50"	.56"
1"	1.06"-1.43"	1.75"	.38"	.50"	.66"	.63"
1 1/2"	1.37"-1.68"	2.00"	.38"	.50"	.66"	.63"
1 3/4"	1.68"-1.81"	2.25"	.38"	.50"	.66"	.75"
2"	1.93"-2.12"	2.50"	.38"	.50"	.81"	.75"



## PULLING EYES

Hole Products offers a variety of pulling eyes in sleeved and non-sleeved, which provide optimum gripping power with a watertight design.

Contact your Hole Products representative to find out about other available sizes.



SLEEVED PE & PVC PULLING EYES				
PART #	SIZE (in.)	LENGTH (in.)	CONDUIT I.D. (in.)	LEAD CONE (in.)
2811000	1 1/4	6.23	1.25	1.76
2815016	1 1/2	6.23	1.50	2.01
2811002	2	8.18	1.88	2.45
2815053	2 1/2	8.80	2.31	3.01
2815051	3	11.89	2.69	3.63
2810173	4	14.11	3.50	4.63
2815022	8	21.53	7.63	9.25

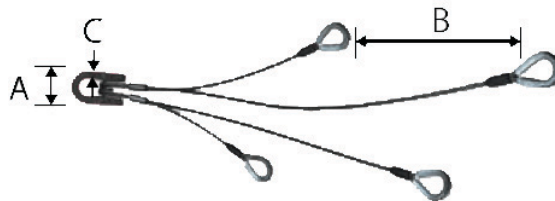
## PULLING SLINGS

Hole Products offers 2, 3, 4, and 6 way pulling slings with multiple cable sizes, designed for use with different working loads.

Pulling slings are an inexpensive way to hook up and pull multiple ducts at a time.

Due to the vast number of custom options, please contact your Hole Products representative to assist with choosing the right sling for your requirements.

A= Max. Width  
 B= Separation Between Legs  
 C=Lead Ring Diameter



## SHACKLES

Shackles are available in a number of sizes to connect pulling grips and pullers to the swivel.

SHACKLE, SCREW PIN	
BODY SIZE	WORKING LOAD LIMIT (lbs)
5/16"	1,500
3/8"	2,000
7/16"	3,000
1/2"	4,000
5/8"	6,500
3/4"	9,500
7/8"	13,000
1.0	17,000



## PULLING GRIPS

Hole Products offers pulling grips made of high quality galvanized steel strand to assure long life. Fiber optic pulling grips feature a special weave that provides positive holding power while allowing the grip to remain flexible, ensuring cable protection.

Please see the selection guide below, or contact a Hole Products representative for additional details.



### SELECTING THE CORRECT GRIP:

1. Determine your cable O.D.
2. Find the grip size that encompasses your cable O.D.
3. Whenever possible, use a closed mesh that assembles over the cable end. If the cable end is not available, use a split mesh.
4. Where available, select an eye style that suits your needs.
5. Estimate the tension to be put on the grip, establish the working load you require and compare this to the listed approx. breaking strength of the grip to ensure that the grip will be strong enough.

**Note: This item is made to order.**

### CALCULATING GRIP SIZE FOR MULTIPLE CABLE OF THE SAME DIAMETER

NUMBER OF CABLE/ BUNDLES	2	3	4	5	6 & 7	8	9	GRIP DIAMETER RANGE (in)
INDIVIDUAL CABLE DIAMETER RANGE	.30-.38	.25-.31	.22-.27	.19-.24	.17-.22	.15-.19	.14-.18	.50-.61
	.38-.44	.31-.36	.27-.31	.24-.29	.22-.26	.19-.23	.18-.21	.62-.74
	.44-.59	.36-.49	.31-.42	.29-.38	.26-.34	.23-.31	.21-.28	.75-.99
	.59-.75	.49-.63	.42-.54	.38-.48	.34-.43	.31-.39	.28-.35	1.00-1.24
	.75-.90	.63-.76	.54-.65	.48-.58	.43-.52	.39-.46	.35-.42	1.25-1.49
	.90-1.07	.76-.89	.65-.77	.58-.67	.52-.60	.46-.54	.42-.49	1.50-1.74
	1.07-1.22	.89-1.02	.77-.88	.67-.77	.60-.69	.54-.62	.49-.56	1.75-1.99
	1.22-1.53	1.02-1.28	.88-1.10	.77-.96	.69-.86	.62-.77	.56-.71	2.00-2.49
	1.53-1.83	1.28-1.53	1.10-1.32	.96-1.16	.86-1.03	.77-.93	.71-.85	2.50-2.99
	1.83-2.14	1.53-1.79	1.32-1.54	1.16-1.35	1.03-1.20	.93-1.08	.85-.99	3.00-3.49
	2.14-2.44	1.79-2.05	1.54-1.76	1.35-1.54	1.20-1.37	1.08-1.24	.99-1.13	3.50-3.99
	2.44-2.75	2.05-2.30	1.76-1.98	1.54-1.74	1.37-1.55	1.24-1.39	1.13-1.27	4.00-4.49
2.75-3.06	2.30-2.56	1.98-2.20	1.74-1.93	1.55-1.72	1.39-1.55	1.27-1.41	4.50-4.99	



## MINCON® HDD DRILLING SYSTEMS



Hole Products offers a complete range of Mincon® hardrock drilling tools for use in horizontal directional drilling industry. These tools are specifically designed for use in medium to hard rock drilling conditions where conventional directional drilling systems cannot perform when hardrock is encountered. All Mincon® drilling systems provide the necessary equipment to convert any HDD drill from a mud drilling machine to a pneumatic drilling machine.

### PILOT BORE SYSTEMS:

**HDD40** – The Mincon® HDD40 Hard Rock Horizontal Directional Drilling system is the ideal tool for drilling 4 1/4" (108mm) pilot bores in hard rock formations.

**HDD50** – The Mincon® HDD50 Hard Rock Horizontal Directional Drilling system is the ideal tool for drilling 5 1/4" (133mm) pilot bores in hard rock formations.

**HDD60** – The Mincon® HDD60 Hard Rock Horizontal Directional Drilling system is the ideal tool for drilling 6 1/4" (159mm) pilot bores in hard rock formations.

### PULL REAMER:

**HDD80** – The Mincon® HDD80 Hard Rock Horizontal Directional Pull Reamer is the ideal tool for hammer reaming a 5 1/4" (133mm) pilot bore out to 10-12" (254-305mm) and 6 1/4" pilot bore out to 14" (356mm) in hard rock formations. The HDD80 Pull Reamer hammer can be used in conjunction with the equipment of the HDD hard rock pilot bore systems to convert HDD drills from mud drilling to pneumatic drilling machines.

# MINCON® HDD DRILLING SYSTEMS

MINCON® HDD DRILLING SYSTEMS						
DRILLING SYSTEM	HDD40		HDD50		HDD60	
PART #	2815002		2815000		2810680	
SPECIFICATIONS	Imperial	Metric	Imperial	Metric	Imperial	Metric
HAMMER O.D.	3.35"	85 mm	4.06"	103 mm	4.88"	124 mm
PILOT BIT SIZE	4.25"	108 mm	5.25"	133 mm	6.25"	159 mm
HAMMER LENGTH	73.5"	1867 mm	79.0"	2007 mm	81.0"	2057 mm
HAMMER WEIGHT	109 lbs.	49.4 kgs.	180 lbs.	81.8 kgs.	302 lbs.	137 kgs.
PISTON WEIGHT	8 lbs.	3.6 kgs.	16.3 lbs.	7.4 Kgs	33.6 lbs.	15 kgs.
BIT SHANK TYPE	HDD40		HDD50		HDD60	
BACKHEAD THREAD	2 3/8" API Reg Pin		2 3/8" API Reg Pin		3 1/2" API Reg Pin	
DRIVE CHUCK*	2814905		2814934		2815012	

## SYSTEM FEATURES

- Dual steering point design incorporating slanted drill bit and 2° bent sub provides more responsive steering capabilities while transitioning in and out of rock formations.
- High frequency hammer cycle transmits less vibration that can be detrimental to sensitive electronics. Rock formations fracture into smaller pieces which are easier to flush out of the bore hole. Less stress transmitted to drill pipe and tool joints. Provides the most effective steering in any pneumatically powered HDD system.
- High pressure/high volume compressed air powers drilling operations and requires minimal torque and feed pressure loads on drill machine increasing overall life of drill.
- Shorter body design compared to competitive models allows for easier steering in the bore hole and less rotational stresses on hammer body.
- Existing locating electronics (DCI, Sub SITE, or WIRELINE) can be used.
- Support Station delivers compressed air mixed with a water/polymer (3-5 gal/min) and rock drill oil (2-4 pints/hr) to operate the drilling cycle resulting in minimal, environmentally friendly clean up. Can be used on environmentally sensitive locations using biodegradable rock drill oils.

## SYSTEM COMPONENTS

- Complete Hammer
- Sonde Carriage
- 4 - Safety Whip Checks
- 20' High Pressure Air Hose (1,000 psi.)
- 30' High Pressure Air Hose (1,000 psi.)
- 40' Clear Water Supply Hose
- Support Station
- TriLite Valve Controller W/ Connectors
- Slant Drill Bit
- Sonde Alignment Tool
- Sonde Torque Wrench
- 4 - Air Couplers

# MINCON® HDD PULL REAMER

MINCON® PULL REAMER		
HDD80		
PART #	2815001	
SPECIFICATIONS	US	Metric
HAMMER OUTSIDE DIAMETER	9.055"	230 mm
PILOT BIT SIZE	5.25" - 6.25"	133 - 159 mm
HAMMER LENGTH	61.0"	1550 mm
HAMMER WEIGHT	406 lbs.	184.5 kgs.
PISTON WEIGHT	58.1 lbs.	26.4 kgs.
BIT SHANK TYPE	HDD80	
BACKHEAD THREAD	3 1/2" API Reg Pin	



MINCON® HDD PULL REAMER

## SYSTEM FEATURES

- Patented reverse air flow hammer cycle allows for pull reaming of pilot bore of 5 1/4" (133mm) out to 10-12" (254-305mm) and 6 1/4" out to 14" (356mm).
- High frequency hammer cycle transmits less vibration to drill pipe and tool joints. Rock formations fracture into smaller pieces which are easier to flush out of the bore hole. Less stress transmits to pipe joints and gearbox assembly reducing maintenance requirements to drill. Provides the most effective steering in any pneumatically powered HDD system.
- High pressure/high volume compressed air powers drilling operations and requires minimal torque and feed pressure loads on drill machine increasing overall life of drill.
- A range of bits are offered with different grades of standard carbide and diamond enhanced carbide to maximize bit life in every drilling condition.
- Attachments can be used to pull utilities as the hole is reamed.
- Support station delivers compressed air mixed with a water/polymer (3-5 gal/min) and rock drill oil (2-4 pints/hr) to operate the drilling cycle resulting in minimal, environmentally friendly clean up. Can be used on environmentally sensitive locations using biodegradable rock drill oils.

## RAILHEAD® UNDERGROUND PRODUCTS



Hole Products offers a complete line of Railhead® HDD drilling tools. Railhead® products are built tough and designed to fit all major brands of HDD machines.

The Railhead® product line includes: Incredibit® rock bits and housings, direct bore bits and housings, and a wide range of backreamers.

In addition, Railhead® offers a complete line of drive collars, lead rods, paddle bits, housings, housing savers, and much more.

Please contact your Hole Products representative for additional information regarding Railhead® Underground products.

## INCREDIBIT®

Railhead's INCREDIBIT® drill head is named for its ability to bore and steer through tough, rocky conditions. Its patented technology allows contractors to accomplish bores in ground that cannot be drilled with conventional bits. It also allows smaller machines to drill through some conditions that would otherwise require a mud motor. It is truly a multi-purpose bit that steers through soft conditions as well as rock and cobble.

The INCREDIBIT® comes in two configurations for different rock formations. The standard INCREDIBIT® is designed for soft to medium rock formations. The aggressive INCREDIBIT® is for boring harder rock formations.

INCREDIBIT® ROCK BITS		
PART #	DESCRIPTION	AVERAGE HOLE DIAMETER
2810710	2 3/4" STANDARD	4"
2810715	3" STANDARD	5"
2810720	3" AGGRESSIVE	5"
2810112	3 1/2" STANDARD	6"
2810113	3 1/2" AGGRESSIVE	6"
2810110	4 1/8" STANDARD	9"
2810111	4 1/8" AGGRESSIVE	9"
2810177	5" STANDARD	10-12"



INCREDIBIT® SONDE HOUSING	
PART #	DESCRIPTION
2810685	2 3/4" "NON-SUBSITE" INCREDIBIT SONDE HOUSING
2810695	2 3/4" "SUBSITE 86B/BH SPECIFIC" INCREDIBIT SONDE HOUSING
2810690	3" INCREDIBIT SONDE HOUSING
2810115	3 1/2" INCREDIBIT SONDE HOUSING
2810114	4 1/8" INCREDIBIT SONDE HOUSING
2810705	5" INCREDIBIT SONDE HOUSING



## ENDURANCE™ HOUSINGS & BITS

The Endurance™ product line consists of a series of conventional bits and sonde housings that are designed for contractors who do not drill in the kind of conditions that require an INCREDIBIT®.

RAILHEAD ENDURANCE HOUSINGS*	
PART #	DESCRIPTION
2810700	3" ENDURANCE SONDE HOUSING
2810725	3 1/2" ENDURANCE SONDE HOUSING



Railhead Endurance Housing

RAM ENDURANCE HOUSING - VERMEER®			
PART #	RIG	HOLE PATTERN	DESCRIPTION
2810730	VERMEER	7	2 3/4" SONDE HOUSING
2810120	VERMEER	7	3" SONDE HOUSING
2810735	VERMEER	7	3 1/2" SONDE HOUSING



Ram Endurance Housing Vermeer®

RAM ENDURANCE HOUSING - DITCH WITCH®			
PART #	RIG	HOLE PATTERN	DESCRIPTION
2810740	DITCH WITCH	5	2 3/4" SONDE HOUSING
2810121	DITCH WITCH	5	3" SONDE HOUSING
2810123	DITCH WITCH	6	3 1/2" SONDE HOUSING



Ram Endurance Housing Ditch Witch®

## PADDLE BITS - RAILHEAD

Railhead paddle bits are desired for use with endurance housings and are available in sizes from 3 1/2" to 6". They are offered in a number of styles including sharp shooter, iron claw, and button bit, for use in a variety of formations.

Paddle bits are also available for use with Ditch Witch® and Vermeer® housings.



Button Bit



Iron Claw



Sharp Shooter

## DIRECT BORE BITS

Direct Bore rock bits are designed to provide great steering and control in all soil, loose rock, and rock formations. Direct Bore bits are available in sizes from 3 1/2" to 13".

DIRECT BORE BITS	
PART #	DESCRIPTION
2810745	4" W/ 2" IF PIN
2815120	4 1/4" W/ 2 3/8" API PIN
2815125	4 1/4 W/ 2 3/8" API PIN (AGGRESSIVE)
2815130	5" W/ 2 7/8" API PIN
2815135	9" W/ 4 1/2" API PIN
2815140	13" W/ 4 1/2" API PIN



## DIRECT BORE HOUSINGS

Direct Bore housings are designed for tough bore conditions. They feature a box end connection, stronger door, and compatibility with a variety of bits.

DIRECT BORE HOUSING		
PART #	DESCRIPTION	CONNECTION
2815145	3 1/8" DIRECT BORE HOUSING	2" IF BOX X ROTOLOCK PIN
2815150	3 5/8" DIRECT BORE HOUSING	2 3/8" API BOX X ROTOLOCK PIN
2815155	4" DIRECT BORE HOUSING	2 7/8" API BOX X ROTOLOCK PIN



## RAILHEAD® EXTReam™ REAMERS

The EXTReam™ is a true rock reamer designed for hard rock and rocky conditions. They feature no moving parts and field replaceable rock teeth. EXTReam™ reamers are available in 5 sizes from 6" to 16" for use on 7,000 lb. to 140,000 lb. drills.



## RAILHEAD® IncrediPull PULLERS

The IncrediPull pullers attach quickly and easily to Railhead IncrediBit® rock bits. This puller is a perfect fit for FTTP projects.





## TRACER WIRE

Tracer wire is used to detect, locate, and identify buried gas, water, sewer, telecommunication, and electrical utility lines.

Hole Products offers tracer wire with a variety of jacket colors, tensile strengths and in multiple lengths.

Please contact your Hole Products representative for additional details.

TRACER WIRE			
PART #	JACKET COLOR	TENSILE STRENGTH	LENGTH
2810163	BLUE	1,150 LBS	500'
2810162	BLUE	1,150 LBS	2,500'
2810161	GREEN	1,150 LBS	500'
2810160	GREEN	1,150 LBS	2,500'



## ROD WIPERS

Hole Products provides high quality rod and casing wipers to remove soil, mud, and water from drill rods.

Rods are drawn through the wipers allowing them to act as a squeegee while removing tooling from the hole.

Rod wipers are available in multiple sizes. Please contact your Hole Products representative for additional details.



# COMPOUNDS & GREASES

Hole Products offers a variety of high quality thread compounds, locking compounds, and rod grease from the industry's leading manufacturers. Products are available to meet any criteria from environmental concerns, high or low temperature, extreme exposure to the elements, high pressure, and more.

Please contact your Hole Products representative for additional information and product selection assistance.



THREAD COMPOUNDS			
PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
3100040	1 GAL.	BULLSEYE®	BULLSEYE® provides protection against galling, seizing, and thread damage while maintaining well integrity.
3100005	1 GAL.	COPR PLUS	COPR PLUS is an environmentally friendly non-lead non-zinc thread compound, which provides protection against galling and seizing protection.
3100010	2 GAL.		
3100011	5 GAL.		
3100013	5 GAL.	JET-LUBE® 21®	JET LUBE® 21 is formulated to prevent excessive circumferential make-up of tool joints and protect against galling and high stress.
3100050	1 GAL.	KOPR-KOTE®	KOPR-KOTE® is formulated to help prevent downhole joint make-up. It has a very high static friction factor that helps prevent downhole joint make-up when excessive drilling torques are encountered.
3100055	2 GAL.		
3100070	1 GAL.	KOPR-KOTE® ARCTIC	KOPR-KOTE® ARCTIC is designed for extreme cold weather environments where fluid film strength is important and grease consistency remains the same.
3100071	2 GAL.		
3100059	2.5 GAL.	KOV'R-KOTE®	KOV'R-KOTE® is a metal-free formula and is ideal for mineral exploration tooling string. It has additives for rust corrosion and oxidation protection.
3100030	1 GAL.	ORANGE AID	ORANGE AID is a hydrocarbon free tool joint compound, which contains no metals, lead / copper and protects and lubricates drill pipe threads.
3100060	1 GAL.	WELL-GUARD®	WELL-GUARD® is designed for critical monitor well and other environmentally sensitive drilling applications requiring the use of a petroleum hydrocarbon-free product.
LOCKING COMPOUND			
3100085	8 OZ	BAKERLOK THREAD COMPOUND KIT	BAKERLOK is a thread locking compound, commonly used for casing, tubing, and drilling joints to prevent accidental detaching of string components during drilling.
ROD GREASE			
3100036	5 GAL.	IDP-214	IDP-214 rod grease is a high quality, easily applied formulation designed to help dampen high frequency vibration created in continuous wireline coring operations.

## DOPE BRUSHES

DOPE BRUSHES			
PART #	DESCRIPTION	TRIM LENGTH	OVERALL LENGTH
6100020	STRAIGHT W/ GUARD	2 1/2"	16"
3100025	BEVELED W/ GUARD	2 1/2"	16"

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## SONIC TOOLS



At Hole Products, we have the knowledge and experience necessary to provide the solutions successful sonic drilling companies require. We are actively developing innovative products to make sonic drilling easier, safer, and more productive for our valued clients.

Sonic drilling is a specialized industry, and contractors need a supplier who understands the market, equipment, and drilling conditions. We understand sonic, and manufacture our tooling specifically to withstand the rigors unique to sonic drilling.

Utilizing the most advanced manufacturing techniques we can build sonic tooling with any thread configuration to be compatible with all other tools available in the market.

We stock a complete line of sonic tools for both mini and large sonic drills, including drill rods, casings, core barrels, bits, crossover subs, driver subs, flange adapters, water sampling equipment, fishing tools, hoisting plugs, sample bags, and much more.

Please contact your Hole Products representative for additional product details and ordering assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*



## **SONIX**

Sonix is the most cutting edge sonic tooling available today. Designed specifically to withstand the rigors unique to sonic drilling, Sonix tools utilize the most advanced and innovative manufacturing techniques, delivering quality, performance, and durability.

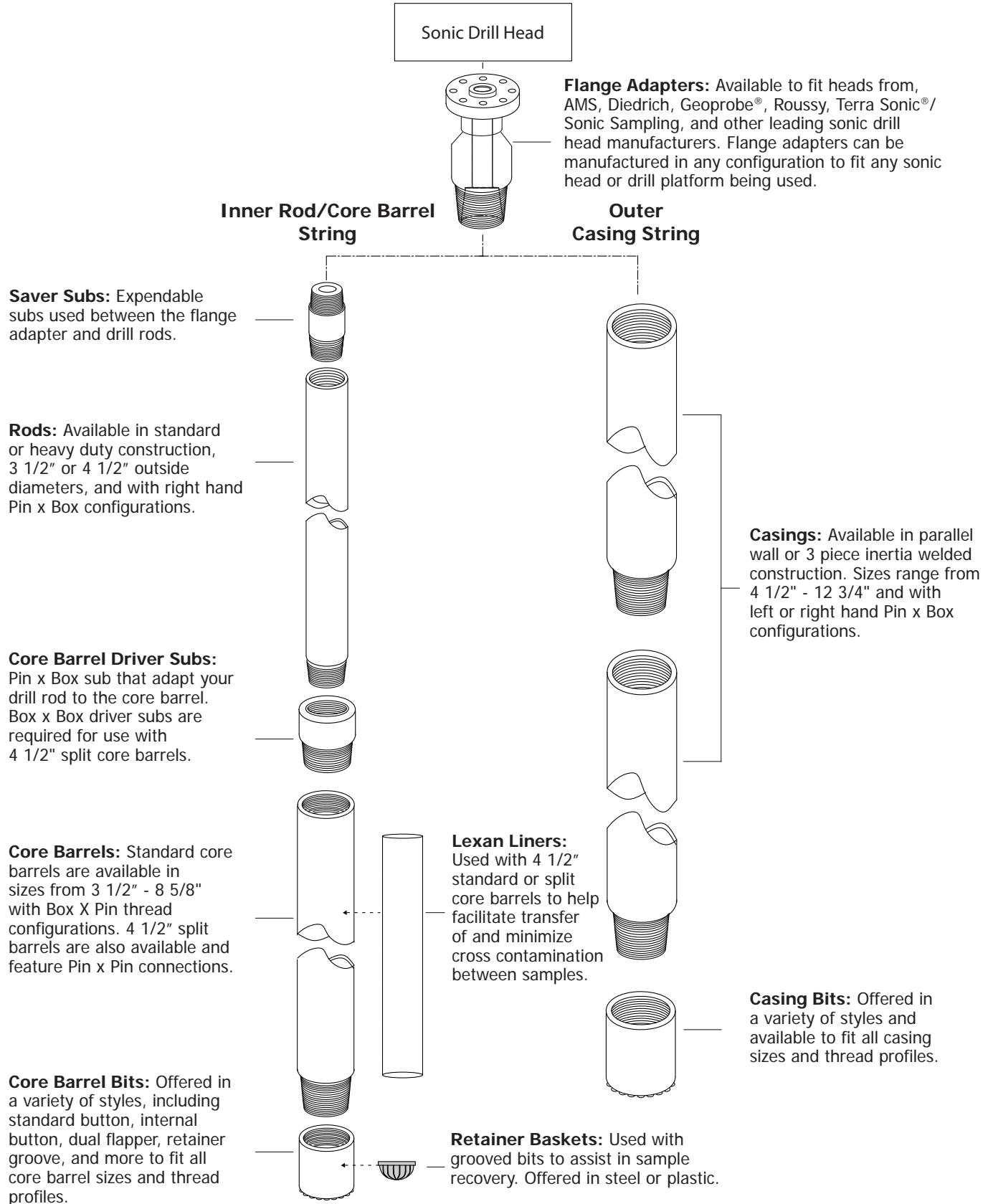
As part of the development of Sonix, Hole Products introduces the HP90 thread. HP90 is an improved version of the traditional H90 sonic thread. HP90 provides 100% quality, 100% consistency, 100% accuracy, and 100% compatibility.

The Sonix line of tooling includes rods, casing, core barrel, bits, subs, flange adapters, custom sampling equipment, and more.

Worried about compatibility? Don't be. All Sonix tooling is 100% customizable and available with any thread configuration.

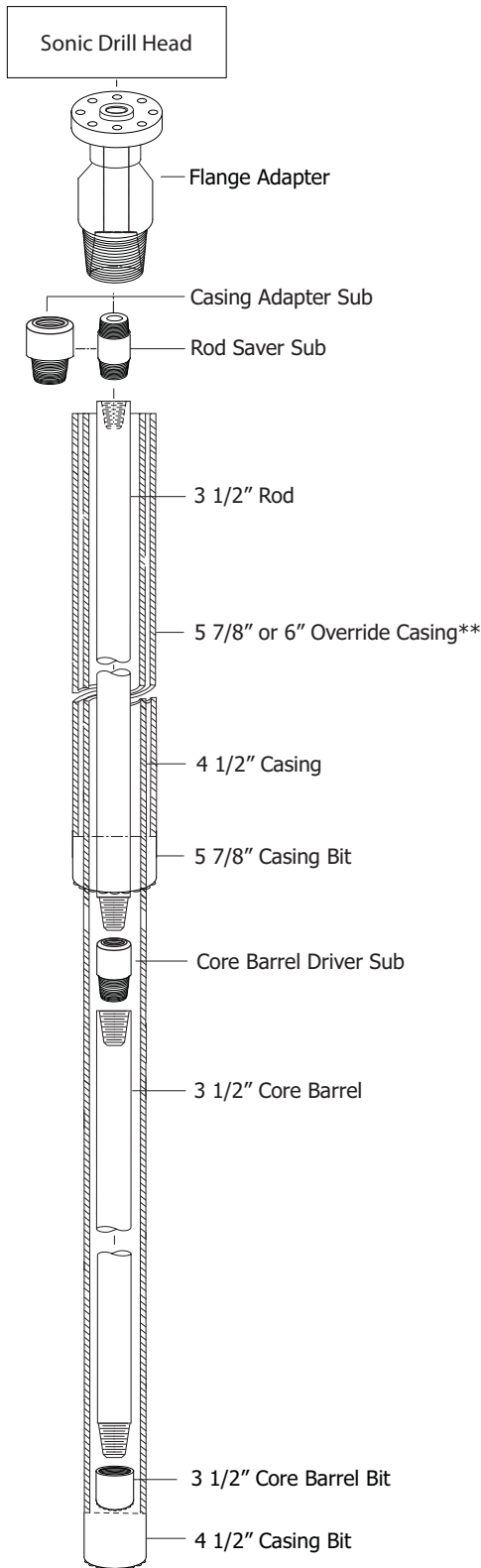
Please contact your Hole Products representative for additional Sonix details.

# SONIC TOOLING SYSTEMS

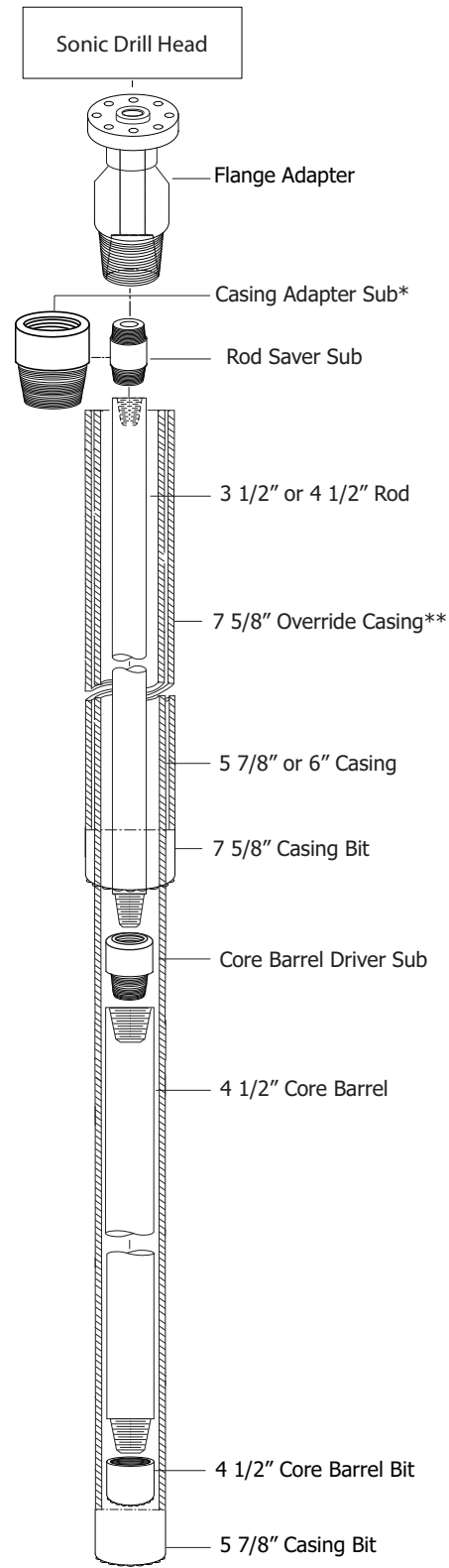


# SONIC TOOLING SYSTEMS

3" X 4" Sonic Drilling System



4" X 6" Sonic Drilling System

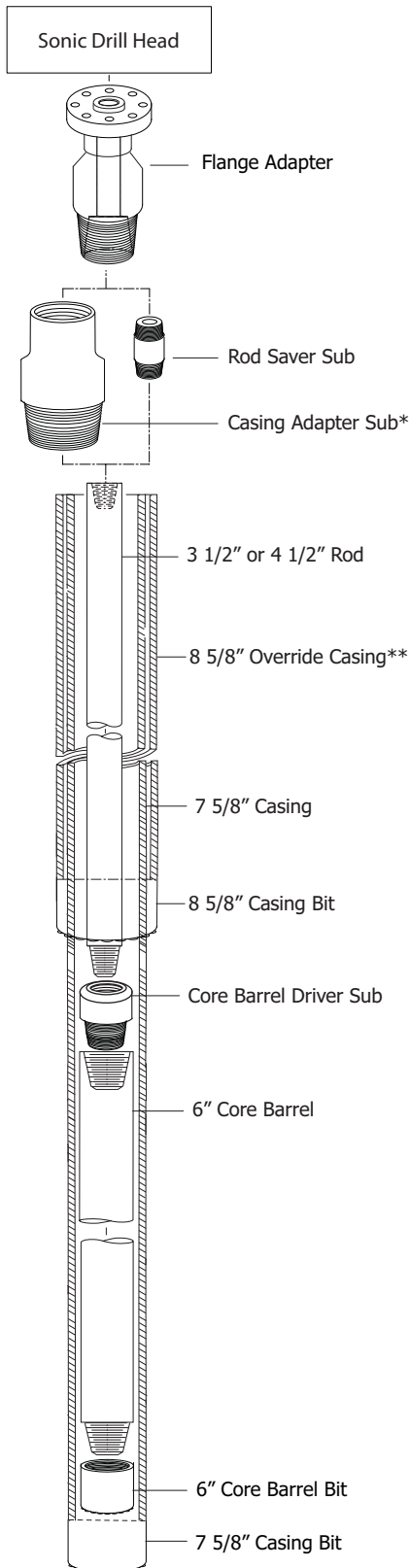


\*Casing adapter required when using 7 5/8" override casing.

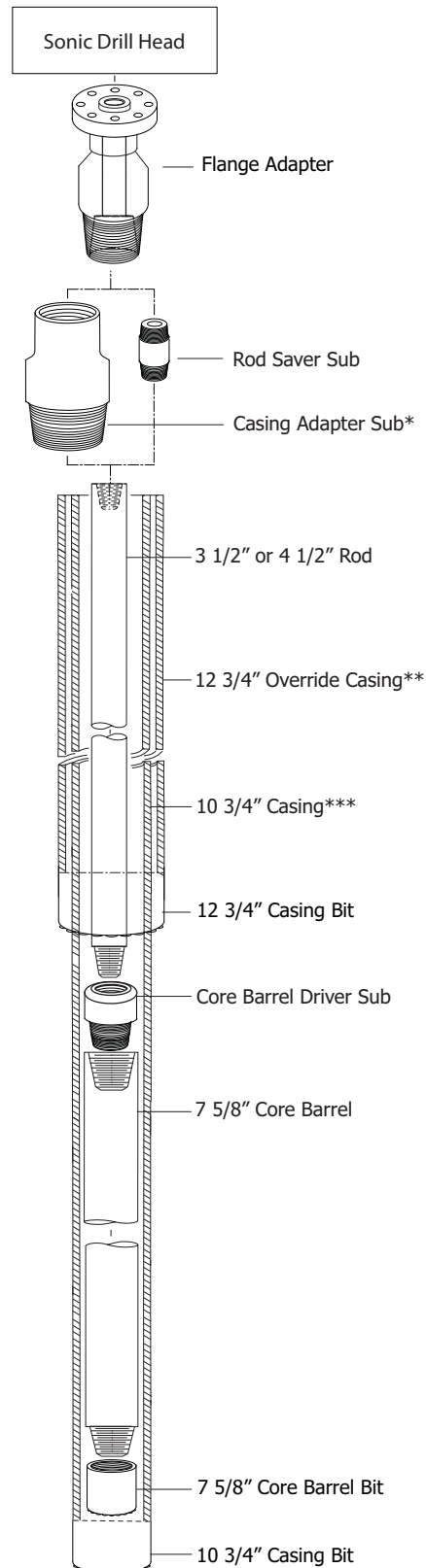
\*\*Optional override casing is used when greater depths are required, to seal off surface formations, or for setting nested wells.

# SONIC TOOLING SYSTEMS

6" X 8" Sonic Drilling System



8" X 10" Sonic Drilling System



\*Additional sub required to adapt from flange adapter to override casing.

\*\*Optional override casing is used when greater depths are required, to seal off surface formations, or for setting nested wells.

\*\*\*8 5/8" casing can be used in place of 10 3/4". The 10 3/4" can then be used as override casing.



## SONIC DRILL ROD & CASING



Hole Products offers a complete range of Heavy Duty (HD) and Standard Duty (SD) sonic rods and Parallel Wall or Three Piece inertia welded casing.

Rods are available in 3 1/2" and 4 1/2" O.D.'s, lengths from 1' through 20', and with HP90, API, or Roussy threads. Custom manufactured rods are available in any size and thread configuration.

Casings are available in sizes from 4 1/2" through 12 3/4", lengths from 1' through 20', and with left or right hand threads. Custom manufactured casings are available in any size and thread configurations.

Rods and casing are constructed using world class manufacturing techniques and premium alloy steel tubing, ensuring excellent strength and unmatched durability.

Please refer to the rod and casing sections for product specific details, or contact your Hole Products representative for ordering assistance.

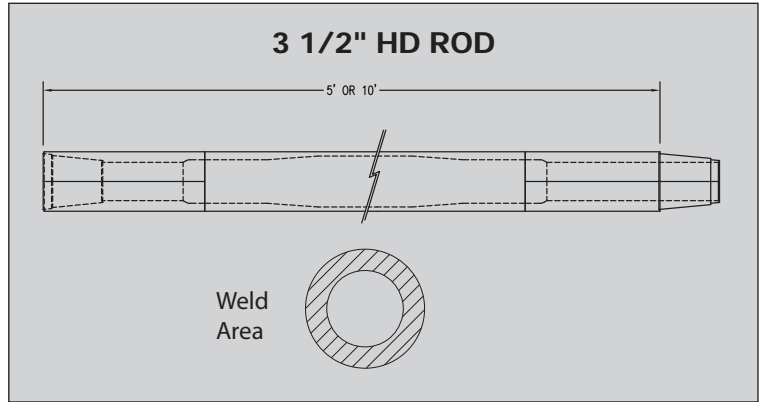
# DRILL ROD

## HEAVY DUTY RODS (HD)

Hole Products' HD sonic rods offer the most up-to-date state of the art rods available today. They are specifically designed for sonic drilling and manufactured using only the most advanced techniques and premium materials.

**Features:**

- 5.65" sq. inch weld area
- Internally upset midbody - increasing the weld area.
- 4140 QT tool joints
- Inertia welded - increased strength due to full face surface welds.
- Internal flash removed - reducing the potential for stress fractures under the stress of sonic drilling.
- Heat treated - weld zone to further optimize the mechanical and physical properties of the rod.

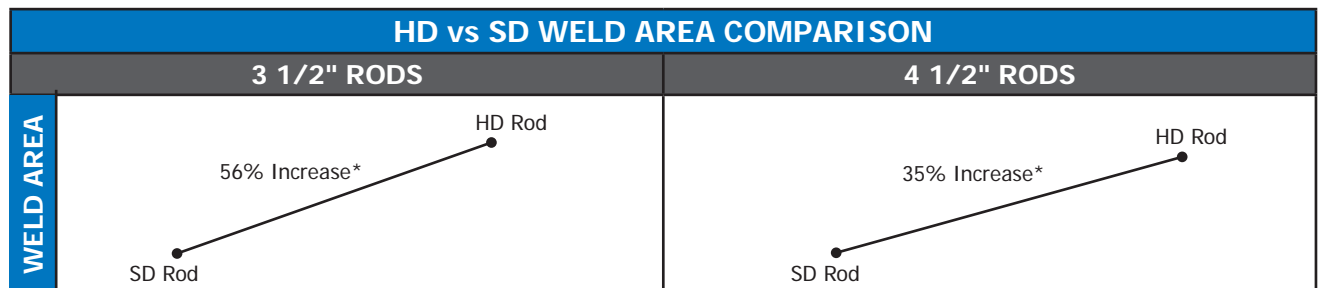
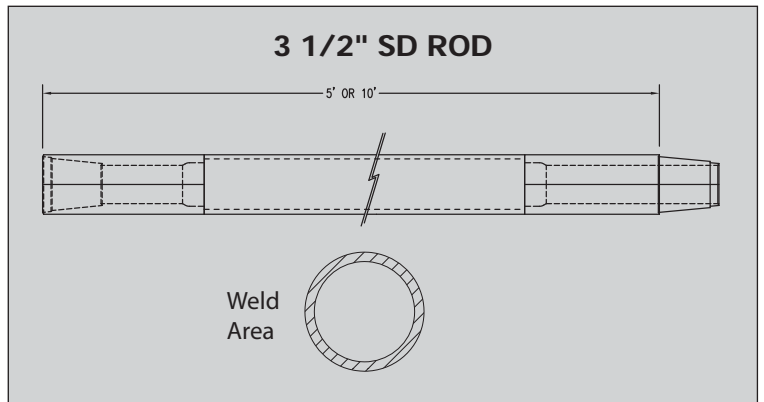


## STANDARD DUTY RODS (SD)

Hole Products' SD sonic rods are the equivalent to most other sonic rods available in the marketplace. They are a quality rod, but not manufactured specifically for sonic drilling applications.

**Features:**

- 3.65" sq. inch weld area
- Plain end mid-body
- 4140 QT tool joints
- Inertia welded - increased strength due to full face surface welds.
- Heat treated - weld zone to further optimize the mechanical and physical properties of the rod.



\*Based on .368 wall SD midbody.

\*Based on .337 wall SD midbody.

# DRILL ROD

HD DRILL ROD				
PART #	O.D.	I.D.*	LENGTH	THREAD
6360093	3 1/2"	2 1/4"	1'	HP90
6360063	3 1/2"	2 1/4"	2'	HP90
6360069	3 1/2"	2 1/4"	5'	HP90
6360096	3 1/2"	2 1/4"	10'	HP90
6360211	3 1/2"	2 1/4"	20'	HP90
6360212	3 1/2"	1 3/4"	1'	2 3/8" IF
6360213	3 1/2"	1 3/4"	2'	2 3/8" IF
6360070	3 1/2"	1 3/4"	5'	2 3/8" IF
6360040	3 1/2"	1 3/4"	10'	2 3/8" IF
6360214	3 1/2"	1 3/4"	20'	2 3/8" IF
6360215	4 1/2"	3 1/4"	1'	HP90
6360216	4 1/2"	3 1/4"	2'	HP90
6360217	4 1/2"	3 1/4"	5'	HP90
6360218	4 1/2"	3 1/4"	10'	HP90
6360219	4 1/2"	3 1/4"	20'	HP90
6360220	4 1/2"	2 1/8"	1'	2 7/8" IF
6360221	4 1/2"	2 1/8"	2'	2 7/8" IF
6360222	4 1/2"	2 1/8"	5'	2 7/8" IF
6360223	4 1/2"	2 1/8"	10'	2 7/8" IF
6360224	4 1/2"	2 1/8"	20'	2 7/8" IF
6360225	4 1/2"	3"	1'	ROUSSY
6360226	4 1/2"	3"	2'	ROUSSY
6360227	4 1/2"	3"	5'	ROUSSY
6360228	4 1/2"	3"	10'	ROUSSY
6360229	4 1/2"	3"	20'	ROUSSY

\*I.D. is measured at the tool joint.

SD DRILL ROD				
PART #	O.D.	I.D.*	LENGTH	THREAD
6360230	3 1/2"	2 1/4"	1'	HP90
6360231	3 1/2"	2 1/4"	2'	HP90
6360232	3 1/2"	2 1/4"	5'	HP90
6360233	3 1/2"	2 1/4"	10'	HP90
6360234	3 1/2"	2 1/4"	20'	HP90
6360235	3 1/2"	1 3/4"	1'	2 3/8" IF
6360236	3 1/2"	1 3/4"	2'	2 3/8" IF
6360238	3 1/2"	1 3/4"	5'	2 3/8" IF
6360239	3 1/2"	1 3/4"	10'	2 3/8" IF
6360240	3 1/2"	1 3/4"	20'	2 3/8" IF
6360241	4 1/2"	3 1/4"	1'	HP90
6360242	4 1/2"	3 1/4"	2'	HP90
6360243	4 1/2"	3 1/4"	5'	HP90
6360244	4 1/2"	3 1/4"	10'	HP90
6360245	4 1/2"	3 1/4"	20'	HP90
6360246	4 1/2"	2 1/8"	1'	2 7/8" IF
6360247	4 1/2"	2 1/8"	2'	2 7/8" IF
6360248	4 1/2"	2 1/8"	5'	2 7/8" IF
6360249	4 1/2"	2 1/8"	10'	2 7/8" IF
6360250	4 1/2"	2 1/8"	20'	2 7/8" IF
6360251	4 1/2"	3"	1'	ROUSSY
6360252	4 1/2"	3"	2'	ROUSSY
6360253	4 1/2"	3"	5'	ROUSSY
6360254	4 1/2"	3"	10'	ROUSSY
6360255	4 1/2"	3"	20'	ROUSSY

\*I.D. is measured at the tool joint.



# CASING

Hole Products offers a complete range of parallel wall and three piece inertia welded sonic casing in sizes from 4 1/2" to 12 3/4".

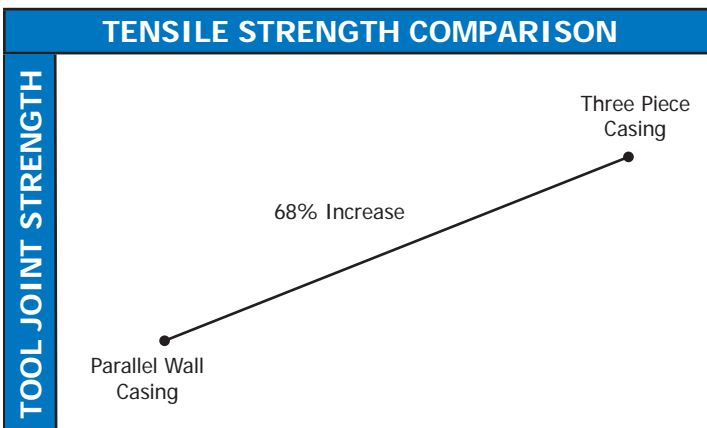
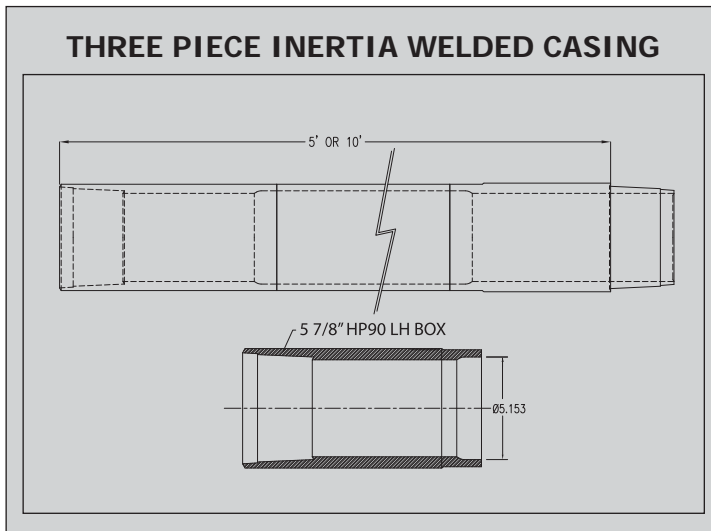
Custom sonic casing sizes and thread profiles are available on request.

## PARALLEL WALL CASING

Hole Products' Parallel Wall casing is manufactured using 1 piece alloy tubing yielding a high tensile strength. A great combination of durability and value.

## THREE PIECE CASING

Hole Products' Three Piece casing is manufactured using 4140 tool joints inertia welded to a parallel wall mid body. More robust tool joints, a heat treated weld zone, and removal of the internal flash, ensures a tough casing able to withstand even the most demanding sonic drilling applications.



# CASING

HEAVY DUTY THREE PIECE SONIC CASING**					
PART #	O.D.	I.D.	LENGTH	THREAD*	WEIGHT
6360256	4 1/2"	3 3/4"	2'	4 1/2" HP90 RH PIN X BOX	31.0 lbs.
6360190	4 1/2"	3 3/4"	5'	4 1/2" HP90 RH PIN X BOX	83.0 lbs.
6360257	4 1/2"	3 3/4"	10'	4 1/2" HP90 RH PIN X BOX	163.0 lbs.
6360258	6"	4 7/8"	2'	5 7/8" HP90 LH PIN X BOX	43.5 lbs.
6360046	6"	4 7/8"	5'	5 7/8" HP90 LH PIN X BOX	130.0 lbs.
6360110	6"	4 7/8"	10'	5 7/8" HP90 LH PIN X BOX	260.0 lbs.
6360259	6 5/8"	5"	2'	6 5/8" ROUSSY CASING	85.0 lbs.
6360260	6 5/8"	5"	5'	6 5/8" ROUSSY CASING	155.0 lbs.
6360125	6 5/8"	5"	10'	6 5/8" ROUSSY CASING	285.0 lbs.

\*HP90 is compatible with H90 thread.

\*\*Lengths less than 2' are not three piece inertia welded.

STANDARD PARALLEL WALL SONIC CASING					
PART #	O.D.	I.D.	LENGTH	THREAD*	WEIGHT
6360261	5"	4 1/4"	1'	5" HP90 LH PIN X BOX	18.0 lbs.
6360262	5"	4 1/4"	2'	5" HP90 LH PIN X BOX	36.0 lbs.
6360263	5"	4 1/4"	5'	5" HP90 LH PIN X BOX	90.0 lbs.
6360264	5"	4 1/4"	10'	5" HP90 LH PIN X BOX	180.0 lbs.
6360265	5 1/2"	4 3/4"	1'	5 1/2" HP90 LH PIN X BOX	20.0 lbs.
6360111	5 1/2"	4 3/4"	2'	5 1/2" HP90 LH PIN X BOX	40.0 lbs.
6360100	5 1/2"	4 3/4"	5'	5 1/2" HP90 LH PIN X BOX	100.0 lbs.
6360099	5 1/2"	4 3/4"	10'	5 1/2" HP90 LH PIN X BOX	200.0 lbs.
6360073	5 7/8"	5 1/8"	1'	5 7/8" HP90 LH PIN X BOX	21.5 lbs.
6360052	5 7/8"	5 1/8"	2'	5 7/8" HP90 LH PIN X BOX	43.5 lbs.
6360053	5 7/8"	5 1/8"	5'	5 7/8" HP90 LH PIN X BOX	110.0 lbs.
6360000	5 7/8"	5 1/8"	10'	5 7/8" HP90 LH PIN X BOX	220.0 lbs.
6360092	7 5/8"	6 7/8"	1'	7 5/8" HP90 LH PIN X BOX	30.0 lbs.
6360054	7 5/8"	6 7/8"	2'	7 5/8" HP90 LH PIN X BOX	62.0 lbs.
6360055	7 5/8"	6 7/8"	5'	7 5/8" HP90 LH PIN X BOX	154.0 lbs.
6360056	7 5/8"	6 7/8"	10'	7 5/8" HP90 LH PIN X BOX	308.0 lbs.
6360072	8 5/8"	7 7/8"	1'	8 5/8" HP90 LH PIN X BOX	31.5 lbs.
6360057	8 5/8"	7 7/8"	2'	8 5/8" HP90 LH PIN X BOX	63.0 lbs.
6360058	8 5/8"	7 7/8"	5'	8 5/8" HP90 LH PIN X BOX	157.5 lbs.
6360059	8 5/8"	7 7/8"	10'	8 5/8" HP90 LH PIN X BOX	315.0 lbs.
6360104	9 5/8"	8 7/8"	1'	9 5/8" HP90 LH PIN X BOX	37.1 lbs.
6360103	9 5/8"	8 7/8"	2'	9 5/8" HP90 LH PIN X BOX	74.2 lbs.
6360102	9 5/8"	8 7/8"	5'	9 5/8" HP90 LH PIN X BOX	185.4 lbs.
6360107	9 5/8"	8 7/8"	10'	9 5/8" HP90 LH PIN X BOX	371.0 lbs.
6360171	10 3/4"	9 7/8"	1'	10 3/4" HP90 LH PIN X BOX	54.0 lbs.
6360172	10 3/4"	9 7/8"	2'	10 3/4" HP90 LH PIN X BOX	108.0 lbs.
6360170	10 3/4"	9 7/8"	5'	10 3/4" HP90 LH PIN X BOX	270.0 lbs.
6360183	12 3/4"	11 3/4"	1'	12 3/4" HP90 LH PIN X BOX	62.0 lbs.
6360182	12 3/4"	11 3/4"	2'	12 3/4" HP90 LH PIN X BOX	124.0 lbs.
6360180	12 3/4"	11 3/4"	5'	12 3/4" HP90 LH PIN X BOX	310.0 lbs.

\*HP90 is compatible with H90 thread.

## ROD & CASING WIPERS

Hole Products provides high quality rod and casing wipers to remove soil, mud, and water from drill rods or casing.

Rods and casing are drawn through the wipers allowing them to act as a squeegee while removing tooling from the hole.

Additional rod and casing wiper sizes and styles are available on request.

Please refer to the Drill Rod section of this catalog, or contact our Hole Products representative for details.



## ROD WIPERS

ROD WIPER NO STEEL * - FLAT PROFILE				
PART #	O.D.	I.D.	THICKNESS	RECOMMENDED ROD O.D.
3150021	12"	3 1/4"	3/4"	3 1/2"
3150026	12"	4 1/4"	3/4"	4 1/2"

*\*A more flexible wiper, less ridged than a wiper w/steel.*



## CASING WIPERS

CASING WIPERS NO STEEL * - FLAT PROFILE				
PART #	O.D.	I.D.	THICKNESS	RECOMMENDED CASING O.D.
3150026	12"	4 1/4"	3/4"	4 1/2"
3150031	12"	5"	3/4"	5 7/8"
3150036	12"	5 1/2"	3/4"	6"
3151032	12"	6 1/4"	3/4"	6 5/8"
3150041	12"	7"	3/4"	7 5/8"
3150032	14"	8"	3/4"	8 5/8"
3150037	14"	9"	3/4"	9 5/8"
3150042	17"	10"	3/4"	10 3/4"
3150043	17"	12"	3/4"	12 3/4"

*\*A more flexible wiper, less ridged than a wiper w/steel.*



# CORE BARRELS & ACCESSORIES



Hole Products' sonic core barrels are specifically designed and manufactured to provide excellent strength and durability in a variety of drilling conditions. Advanced manufacturing techniques, premium alloy tubing and proven field results ensure optimum performance and longevity.

### **Standard Core Barrels:**

Standard core barrels are available in sizes from 3 1/2" - 8 5/8" with right hand Box X Pin thread configurations.

### **Split Core Barrels:**

Split core barrels are available with a 4 1/2" O.D. and right hand Pin X Pin thread configurations. 3 3/4" lexan liners are available for use with 4 1/2" O.D. standard split core barrels.

Custom core barrel sizes, lengths, and threads profiles are available on request.

Please contact your Hole Products representative for additional details.

## CORE BARRELS

Standard core barrels are used for most common sonic sampling applications.

CORE BARRELS SPECIFICATIONS					
PART #	O.D.	I.D.	LENGTH	THREAD	WEIGHT
6360240	3 1/2"	2 3/4"	1'	HP90 RH PIN X BOX	15 lbs.
6360245	3 1/2"	2 3/4"	2'	HP90 RH PIN X BOX	26 lbs.
6340166	3 1/2"	2 3/4"	5'	HP90 RH PIN X BOX	64 lbs.
6340157	3 1/2"	2 3/4"	10'	HP90 RH PIN X BOX	128 lbs.
6340045	4 1/2"	3 3/4"	1'	HP90 RH PIN X BOX	16 lbs.
6340099	4 1/2"	3 3/4"	2'	HP90 RH PIN X BOX	31 lbs.
6340046	4 1/2"	3 3/4"	5'	HP90 RH PIN X BOX	83 lbs.
6340047	4 1/2"	3 3/4"	10'	HP90 RH PIN X BOX	163 lbs.
6340058	6"	5 1/4"	1'	HP90 RH PIN X BOX	23 lbs.
6340190	6"	5 1/4"	2'	HP90 RH PIN X BOX	45 lbs.
6340057	6"	5 1/4"	5'	HP90 RH PIN X BOX	110 lbs.
6340079	6"	5 1/4"	10'	HP90 RH PIN X BOX	219 lbs.
6360250	7 5/8"	6 7/8"	1'	HP90 RH PIN X BOX	30.0 lbs.
6360255	7 5/8"	6 7/8"	2'	HP90 RH PIN X BOX	62.0 lbs.
6360260	7 5/8"	6 7/8"	5'	HP90 RH PIN X BOX	154.0 lbs.
6360265	7 5/8"	6 7/8"	10'	HP90 RH PIN X BOX	308.0 lbs.
6360270	8 5/8"	7 7/8"	1'	HP90 RH PIN X BOX	37 lbs.
6360275	8 5/8"	7 7/8"	2'	HP90 RH PIN X BOX	74 lbs.
6360280	8 5/8"	7 7/8"	5'	HP90 RH PIN X BOX	185 lbs.
6360285	8 5/8"	7 7/8"	10'	HP90 RH PIN X BOX	381 lbs.





## SPLIT CORE BARRELS

Split barrels enable easy access to samples and are commonly used in conjunction with lexan liners.

SPLIT CORE BARREL & DRIVER SUB						
DESCRIPTION	PART #	O.D.	I.D.	LENGTH	THREAD	WEIGHT
CORE BARREL	6340002	4 1/2"	3 3/4"	5'	HP90 RH PIN X PIN	91.5 lbs.
DRIVER SUB	6340155	4 1/2"	3 1/2"	-----	HP90 RH BOX X BOX	-----



## LEXAN LINERS & CAPS

Lexan liners are used in conjunction with 4 1/2" split core barrels to minimize cross contamination and to facilitate transfer of samples. Standard 4 1/2" bits can be used with liners. Caps sold separately.

LEXAN LINERS & CAPS				
PART #	DESCRIPTION	I.D.	O.D.	LENGTH
6350018	POLYCARBONITE LINER	3 1/2"	3 3/4"	60"
4020051	POLYCARBONITE CAP	3 3/4"	----	----



## BITS & ACCESSORIES



Hole Products offers a complete line of quality sonic bits and accessories for use in a wide range of sonic drilling applications.

Core barrel bits are available to fit core barrels from 3 1/2" - 8 5/8" with HP90 threads and in a variety of styles for use in all formations. Custom core barrels bits are available in any size and thread configuration.

Casing bits are offered to fit casings from 4 1/2" - 12 3/4" with HP90 threads and a standard button bit design. Custom designs are available on request.

All sonic bits are manufactured from premium quality materials and field tested under a variety of conditions to ensure excellent performance and resistance to wear.

Custom bit designs, specialty sizes, and additional thread profiles are available on request.

Please contact your Hole Products representative for additional details and bit selection assistance.

# CORE BARREL BITS

Hole Products' sonic core barrel bits are offered in multiple sizes and styles to provide great performance and help achieve complete sample recovery in a variety of formations.

STANDARD BITS - all purpose bit for use in a variety of formations.				
PART #	O.D.	I.D.	THREAD	COMPATIBLE WITH
6340185	3.65"	2.70"	3 1/2" HP90 RH BOX	3 1/2" CORE BARRELS
6340160	4.65"	3.75"	4 1/2" HP90 RH BOX	4 1/2" CORE BARRELS
6340048	4.65"	3.43"	4 1/2" HP90 RH BOX	4 1/2" CORE BARRELS
6340059	6.25"	5.10"	6" HP90 RH BOX	6" CORE BARRELS
6360320	7.625"	6.875"	7 5/8" HP90 RH BOX	7 5/8" CORE BARRELS
6360325	8.625"	7.875"	8 5/8" HP90 RH BOX	8 5/8" CORE BARRELS

INTERIOR BUTTON BITS - often used in harder formations to help retain core.				
PART #	O.D.	I.D.	THREAD	COMPATIBLE WITH
6340158	3.65"	2.70"	3 1/2" HP90 RH BOX	3 1/2" CORE BARRELS
6340063	4.65"	3.43"	4 1/2" HP90 RH BOX	4 1/2" CORE BARRELS
6340064	6.25"	5.10"	6" HP90 RH BOX	6" CORE BARRELS
6360330	7.625"	6.875"	7 5/8" HP90 RH BOX	7 5/8" CORE BARRELS
6360335	8.625"	7.875"	8 5/8" HP90 RH BOX	8 5/8" CORE BARRELS

RETAINER BASKET BITS* - used with retainer baskets, to improve sample recovery in loose formations.				
PART #	O.D.	I.D.	THREAD	COMPATIBLE WITH
6340233	3.65"	2.70"	3 1/2" HP90 RH BOX	3 1/2" CORE BARRELS
6340062	4.65"	3.43"	4 1/2" HP90 RH BOX	4 1/2" CORE BARRELS
6340060	6.25"	5.10"	6" HP90 RH BOX	6" CORE BARRELS

DUAL FLAPPER BUTTON BITS** - used to improve sample recovery in loose sand.				
PART #	O.D.	I.D.	THREAD	COMPATIBLE WITH
6340164	4.65"	3.43"	4 1/2" HP90 RH BOX	4 1/2" CORE BARRELS
6340165	6.25"	5.10"	6" HP90 RH BOX	6" CORE BARRELS

FULL FACE BUTTON BITS - used to speed hole advancement when sampling is not required.				
PART #	O.D.	I.D.	THREAD	COMPATIBLE WITH
6340230	3.65"	2.70"	3 1/2" HP90 RH BOX	3 1/2" CORE BARRELS
6340162	4.65"	3.43"	4 1/2" HP90 RH BOX	4 1/2" CORE BARRELS
6340154	6.25"	5.10"	6" HP90 RH BOX	6" CORE BARRELS



\*Retainer basket is pinched between the core barrel and bit to help keep it in place.

\*\* Rotation is not recommended w/ dual flapper bits.

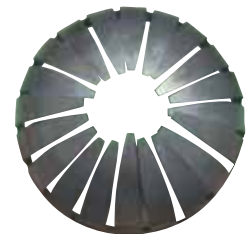
## RETAINER BASKETS

Used in conjunction with retainer basket bits, retainer baskets can be used to improve sample recovery in loose formations.

RETAINER BASKETS		
PART #	DESCRIPTION	USE WITH CORE BARREL BIT
1250071	4 1/2" PLASTIC	4 1/2" RETAINER BIT - #6340062
1250073	6" PLASTIC	6" RETAINER BIT - #6340060
6340249	3 1/2" STEEL	3 1/2" RETAINER BIT - #6340233
6340250	4 1/2" STEEL	4 1/2" RETAINER BIT - #6340062
6340251	6" STEEL	6" RETAINER BIT - #6340060

Plastic

Steel



## CASING BITS

Designed to provide performance and longevity in a variety of formations, our sonic casing bits offer a great combination of quality and value. Casing bits are available in multiple sizes and styles, and with right or left hand threads.

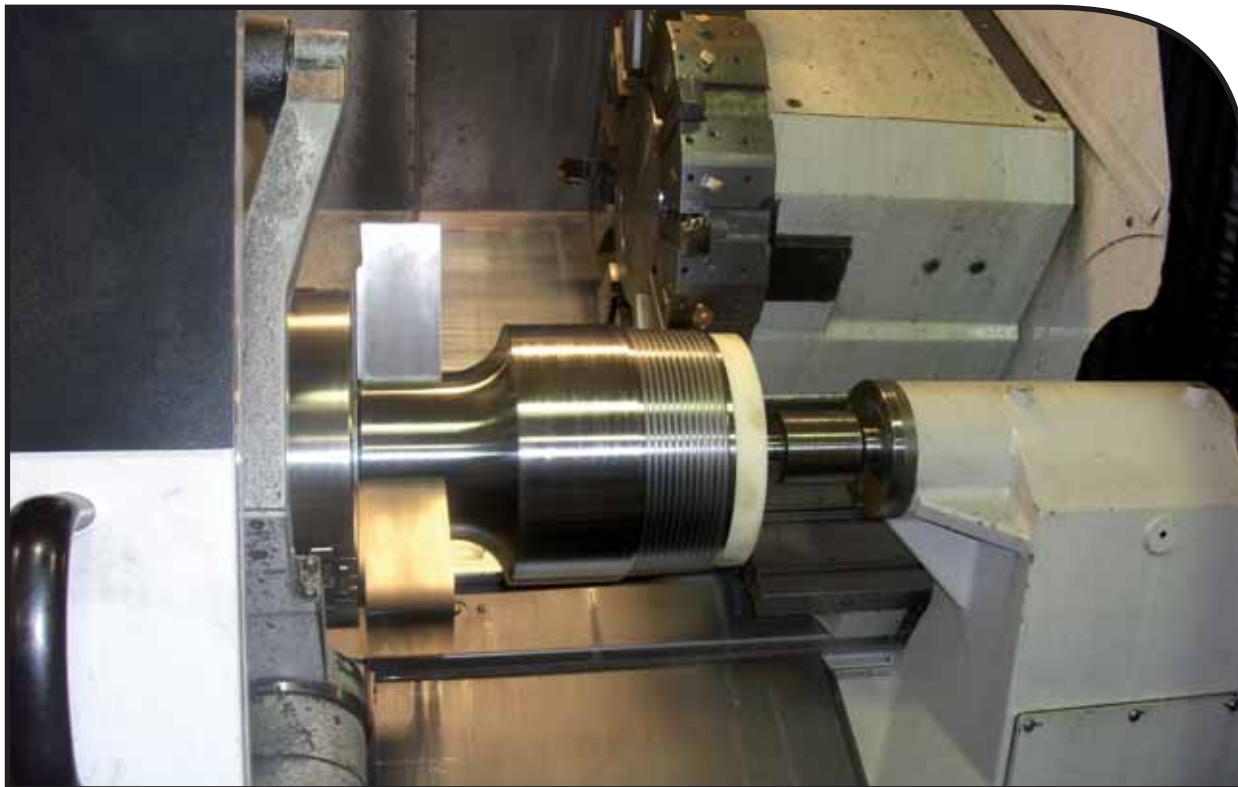
Additional bit sizes and styles (including custom designs) are available on request.

Please contact your Hole Products representative for details.

STANDARD BITS - all purpose bit for use in a variety of formations.				
PART #	BIT FACE O.D.	I.D.	THREAD	COMPATIBLE WITH
6340160	4.800"	3.750"	4 1/2" HP90 RH BOX	4 1/2" CASING
6360145	6.000"	4.875"	5 7/8" HP90 LH BOX	5 7/8" CASING
6360060	6.125"	4.875"	5 7/8" HP90 LH BOX	5 7/8" CASING
6360075	6.500"	4.875"	5 7/8" HP90 LH BOX	5 7/8" CASING
6360061	7.850"	6.700"	7 5/8" HP90 LH BOX	7 5/8" CASING
6360062	9.100"	7.900"	8 5/8" HP90 LH BOX	8 5/8" CASING
6360105	10.00"	8.750"	9 5/8" HP90 LH BOX	9 5/8" CASING
6360245	11.00"	9.500"	10 3/4" HP90 LH BOX	10 3/4" CASING
6360250	13.00"	11.500"	12 3/4" HP90 LH BOX	12 3/4" CASING



## SONIC ACCESSORIES



Hole Products offers a complete line of sonic accessories including flange adapters, subs, fishing tools, hoisting plugs, water samplers, sample bags, environmental thread compounds and much more.

All sonic accessories are made from the finest quality materials and field tested to provide excellent performance and durability in a variety of conditions.

Don't see the sonic accessories you're looking for? We offer custom tooling design and development to help our customers stay on the leading edge.

Please contact your Hole Products representative for additional details.

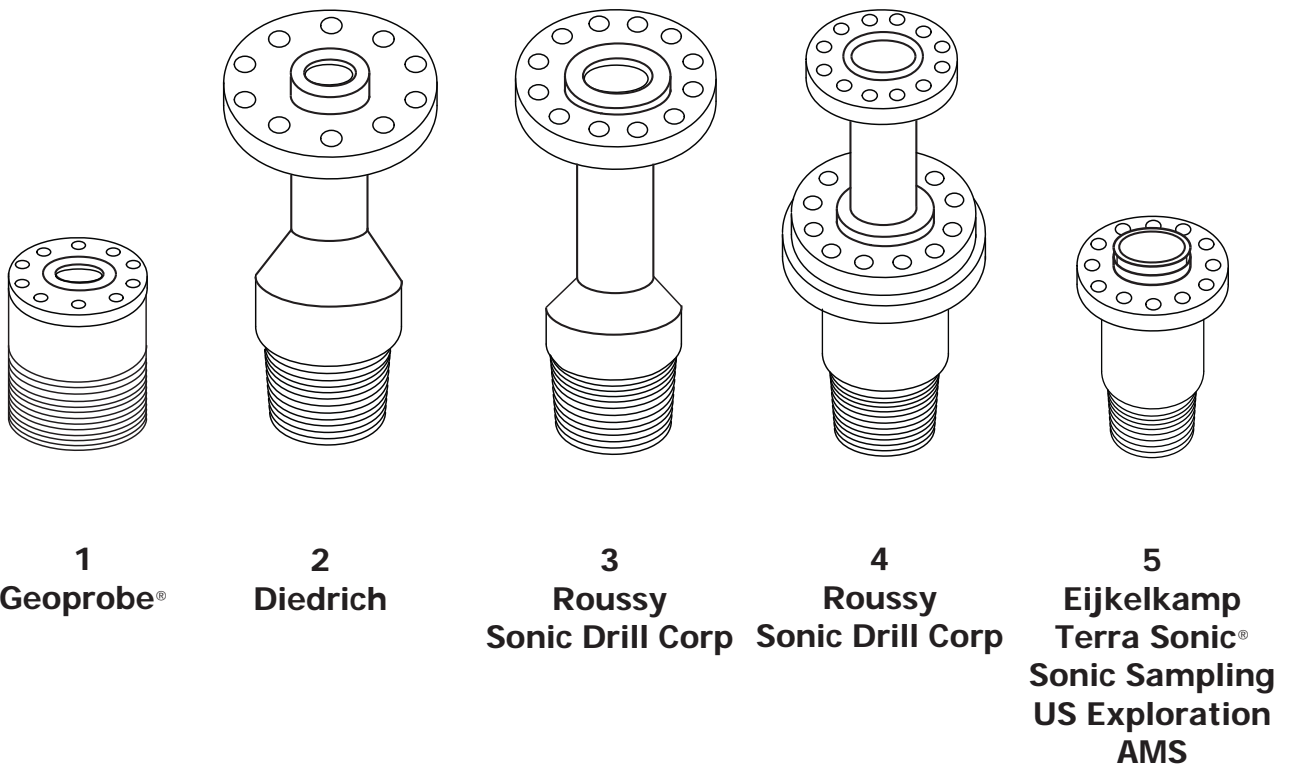
## FLANGE ADAPTERS

Flange adapters provide the connection between the sonic head and down hole tooling and help maintain the efficient transfer of energy from the head to the bit. All Hole Products' flange adapters are quality crafted from 4140 alloy steel to ensure excellent durability.

Flange adapters are available to fit heads from Geoprobe®, Diedrich, Roussy, Eijkelkamp, and other leading sonic drill rig manufacturers. Custom configurations are available to fit any sonic head or drill platform design.

FLANGE ADAPTERS*				
ITEM	PART #	OUTER THREAD	INNER THREAD	SONIC HEAD
1	6340042	5 7/8" HP90 LH PIN	3 1/2" HP90 RH BOX	GEOPROBE
2	6340041	5 7/8" HP90 LH PIN	3 1/2" HP90 RH BOX	DIEDRICH
3	6340040	5 7/8" HP90 LH PIN	3 1/2" HP90 RH BOX	ROUSSY
4	6340028	4 1/2" HP90 LH PIN	3 1/2" HP90 RH BOX	ROUSSY
5	6350120	4 1/2" HP90 RH PIN	3 1/2" HP90 RH BOX	EIJKELKAMP

\* Flange adapters can be ordered with any outer and inner thread configuration and manufactured to fit any sonic head.



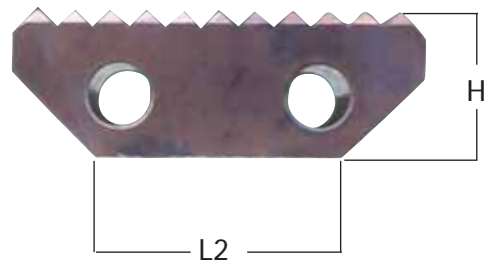
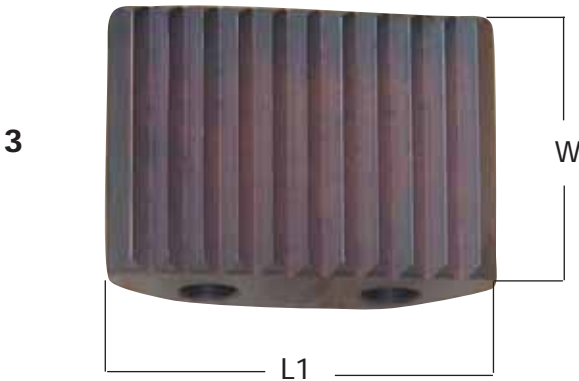
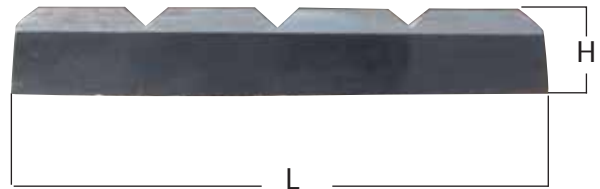
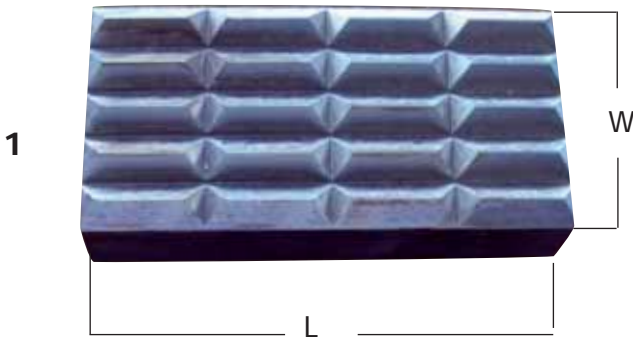
# BREAKOUT JAWS

Breakout jaws fit into the wrenches of sonic rigs to make and break rod and casing joints.

Hole Products' jaws are machine faced from special grade tool steel and heat treated to the optimal level, making them extremely hard but not brittle. In field tests our jaws consistently outperform others in both gripping ability and jaw life.



BREAKOUT JAWS							
ITEM	PART #	DESCRIPTION	LENGTH (L)		WIDTH (W)	HEIGHT (H)	
1	6340139	GEOPROBE JAW H/T	3 15/16"		2 3/16"	11/16"	
2	6340140	GUS PECH JAW H/T	3 1/2"		2"	H1 - 1 7/15"	H2 - 1 3/32"
3	6340143	ROUSSY JAW	L1 - 2 7/8"	L2 - 2 15/16"	2"	1"	



## SUBS

Hole Products offers subs in a variety of sizes and styles for adapting between multiple tooling sizes and thread profiles. All subs are manufactured from the highest quality materials using the industries most advanced manufacturing techniques.

Custom sizes, breakout profiles, and thread gauges are available.

Due to the vast number of subs options, we have listed only a sample of our standard offering in the table below.

Please contact your Hole Products representative for additional details.



BOX X BOX		
PART #	BOX	BOX
6340049	3 1/2" HP90 RH BOX	2 3/8" API REG BOX
6340075	3 1/2" HP90 RH BOX	2 7/8" API REG BOX
6340080	3 1/2" HP90 RH BOX	3 1/2" API REG BOX
6340096	3 1/2" HP90 RH BOX	3 1/2" HP90 RH BOX
6340081	4 1/2" HP90 RH BOX	3 1/2" API REG BOX

BOX X PIN		
PART #	BOX	PIN
6340095	3 1/2" HP90 RH BOX	2 3/8" API PIN
3300053	3 1/2" HP90 RH BOX	3" NPT PIN
6340082	AWJ BOX	3 1/2" HP90 RH PIN
6340092	2 3/8" IF BOX	3 1/2" HP90 RH PIN
6340033	5 7/8" HP90 LH BOX	7 5/8" HP90 LH PIN
6340034	5 7/8" HP90 LH BOX	8 5/8" HP90 LH PIN

## SAVER SUBS

Saver subs provide the connection between the flange adapter and inner drill string. They are designed to suffer the most wear when making and breaking rod connections and represent a small investment as compared to the flange adapter.

PIN X PIN (Saver Subs)		
PART #	PIN	PIN
6340091	3 1/2" HP90 RH PIN	2 3/8" IF PIN
6340031	3 1/2" HP90 RH PIN	3 1/2" HP90 PIN
6360260	3 1/2" HP90 RH PIN	4 1/2" HP90 PIN
6360265	3 1/2" HP90 RH PIN	4 1/2" ROUSSY PIN



## CORE BARREL DRIVER SUBS

Core barrel driver subs are designed for attaching drill rods to the core barrel.

Hole Products offers core barrel driver subs in a variety of sizes and styles. All subs are manufactured from the highest quality materials using the industries most advanced manufacturing techniques.

Custom sizes, breakout profiles, and thread gauges are available on request.

Please contact your Hole Products representative for additional details.



BOX X PIN		
PART #	BOX	PIN
6340159	2 3/8" MHJR	3 1/2" HP90
6360400	2 3/8" IF	3 1/2" HP90
6340163	2 3/8" IF	4 1/2" HP90
6360420	2 3/8" IF	6" HP90
6360405	2 3/8" IF	7 5/8" HP90
6360410	2 3/8" IF	8 5/8" HP90
6340032	3 1/2" HP90	4 1/2" HP90
6340061	3 1/2" HP90	6" HP90
6360415	3 1/2" HP90	7 5/8" HP90
6360290	3 1/2" HP90	8 5/8" HP90
6360300	4 1/2" ROUSSY	4 1/2" HP90
6360305	4 1/2" ROUSSY	6" HP90
6360425	4 1/2" ROUSSY	7 5/8" HP90
6360310	4 1/2" ROUSSY	8 5/8" HP90

BOX X BOX (Split Barrel Subs)		
PART #	BOX	BOX
6340161	2 3/8" IF	4 1/2" HP90
6340155	3 1/2" HP90	4 1/2" HP90
6340156	4 1/2" ROUSSY	4 1/2" HP90

## THREAD PROTECTORS

Hole Products offers quality thread protectors to fit multiple rod and casing sizes and a variety of thread options.

Custom thread protectors are available on request.

Please contact your Hole Products representative for details.



THREAD PROTECTORS		
PART #	SIZE	THREAD
6340235	2 3/8"	IF RH
6340130	3 1/2"	HP90 RH
6340240	4 1/2"	HP90 RH
6360270	4 1/2"	ROUSSY RH
6350025	5"	HP90 LH
6360275	5 1/2"	HP90 LH
6350027	5 7/8"	HP90 LH
6340245	6"	HP90 LH
6360280	6 5/8"	ROUSSY LH
6340260	7 5/8"	HP90 LH
6340265	8 5/8"	HP90 LH
6340270	9 5/8"	HP90 LH
6360285	10 3/4"	HP90 LH
6360290	12 3/4"	HP90 LH

## HOISTING PLUGS

Hole Products offers quality hoisting plugs in a variety of sizes and thread profiles.

Additional hoisting plugs are available.

Please refer to the Pipe Handling and Hoisting section of this catalog, or contact our Hole Products representative for details.



HOISTING PLUGS	
PART #	DESCRIPTION
6340275	2 3/8" IF PIN - FIXED BAIL
6340109	3 1/2" HP90 RH PIN - FIXED BAIL
6360295	4 1/2" HP90 LH PIN - FIXED BAIL
6360300	4 1/2" ROUSSY LH PIN - FIXED BAIL
6360305	5" HP90 LH PIN - FIXED BAIL
6360310	5 1/2" HP90 LH PIN - FIXED BAIL
6340110	5 7/8" HP90 LH PIN - FIXED BAIL
6360315	6 5/8" ROUSSY LH PIN - FIXED BAIL
6340101	7 5/8" HP90 LH PIN - FIXED BAIL
6340103	8 5/8" HP90 LH PIN - FIXED BAIL
6340106	9 5/8" HP90 LH PIN - FIXED BAIL
6360320	10 3/4" HP90 LH PIN - FIXED BAIL
6360325	12 3/4" HP90 LH PIN - FIXED BAIL
5050001	NWJ PIN - SWIVEL

## PLUGS

Plugs are designed for plugging the top of the drill string while overriding casing. Hole Products offers a variety of rod and casing plugs in multiple sizes and thread profiles.

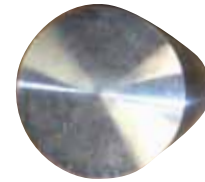
Plugs with top box connections are available to assist retrieval when advancement of the drill string is experienced during casing wash over.

Custom plugs are available on request.

Please contact your Hole Products representative for details.



PLUGS W/ TOP PLATE		
PART #	BOTTOM CONNECTION	TOP CONNECTION
6340363	2 3/8" IF PIN	PLATE
6340037	3 1/2" HP90 PIN	PLATE
6340038	5 7/8" HP90 PIN	PLATE
6340039	7 5/8" HP90 PIN	PLATE



PLUGS W/ TOP BOX CONNECTION		
PART #	BOTTOM CONNECTION	TOP CONNECTION
6360240	2 3/8" IF	2 3/8" IF
6340066	3 1/2" HP90 RH BOX	3 1/2" HP90 RH PIN
6340067	5 7/8" HP90 LH BOX	3 1/2" HP90 RH PIN
6340068	7 5/8" HP90 LH BOX	3 1/2" HP90 RH PIN

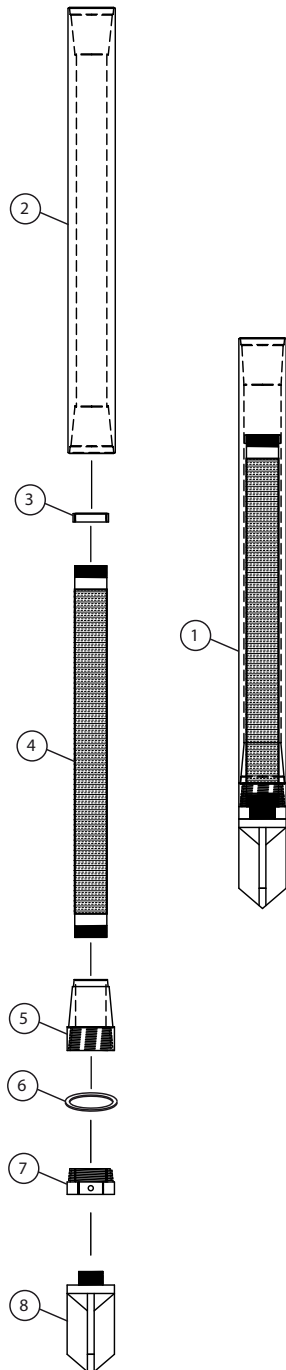
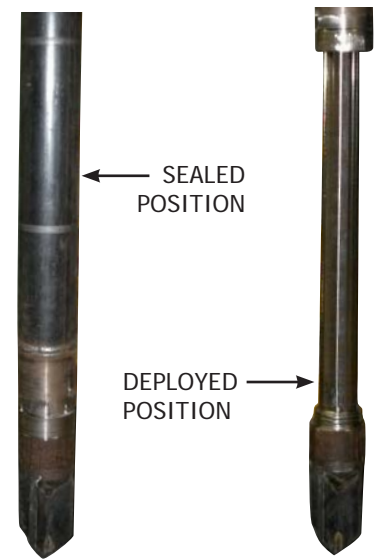


## SONIC WATER SAMPLER

Hole Products' sonic water sampler is an excellent tool for collecting reliable, isolated zone water samples on sonic drilling operations.

The unique design ensures the rod string remains sealed, preventing water from inside the rods or other sources from entering the screen until the sampling depth is reached and the screen is exposed. This feature eliminates the need to remove volumes of water from the drill string prior to extracting a water sample.

Please contact your Hole Products representative for additional details.



### WATER SAMPLER

ITEM	PART #	DESCRIPTION
1	6350090	COMPLETE WATER SAMPLER
2	6350050	MAIN BODY HOUSING (HP90 BOX)
3	6350051	SCREEN RETAINER RING
4	6350056	SCREEN (2" X 24", .010 SLOT)
5	6350053	LOWER LH RELEASING SUB
6	6350048	O-RING
7	6350052	UPPER LH RELEASING SUB
8	6350054	DART POINT

### Operation:

- Lower the water sampler through the sonic casing until the sampler reaches the bottom of the cased hole.
- Upon reaching the bottom of the cased hole, advance the water sampler into the formation to the desired sampling zone.
- When the water sampler has reached the desired sampling zone, stop applying downward pressure.
- Turn the drill string 1 1/2 turns to the right which unthreads the left hand thread allowing the screen to be exposed.
- Retract the drill string by an amount equal to the length of the screen, thus exposing the screen. At this time, the undisturbed water sample can be collected.

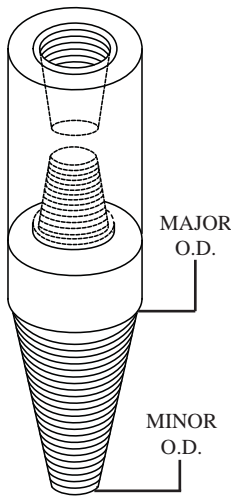
## FISHING TOOLS

Hole Products offers a complete line of quality fishing tools to retrieve stuck, damaged, or lost tooling from the borehole. Available in multiple sizes, styles, and thread connections, all fishing tools are manufactured using premium quality alloy and are heat treated.

Custom manufactured fishing tools are available on request. Please contact your Hole Products representative for additional details.

## SONIC TAPER TAPS

Custom manufactured taps are designed specially for sonic drilling operations. All sonic taps are carbonized to provide additional wear and fatigue resistance. Sonic taper taps are sold in two pieces (tap and coupling). Taps come standard with a wicker x pin connection. Couplings come standard with box x box connection.



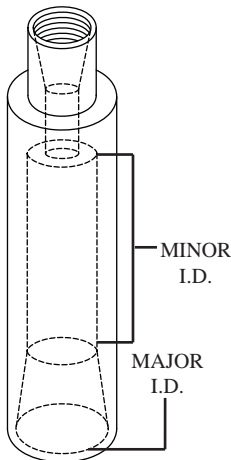
Sonic taper tap w/ a Box x Box coupler shown.

SONIC TAPER TAPS*				
PART #	MAJOR O.D.	MINOR O.D.	CONNECTION	FISHING USE
3850105	3.25"	1.50"	3 1/2" HP90 RH PIN W/ COUPLING	3 1/2" RODS
3850110	4.25"	3.13"	4 1/2" HP90 RH PIN W/ COUPLING	4 1/2" CORE BARRELS
3850138	5.25"	3.13"	5 1/2" HP90 LH PIN W/ COUPLING	5 1/2" CASINGS
3850120	5.63"	3.50"	5 7/8" HP90 LH PIN W/ COUPLING	5 7/8" CASINGS
3850115	5.75"	3.63"	6" HP90 RH PIN W/ COUPLING	6" CORE BARRELS
3850125	7.38"	6.00"	7 5/8" HP90 LH PIN W/ COUPLING	7 5/8" CASINGS
3850131	8.38"	7.00"	8 5/8" HP90 LH PIN W/ COUPLING	8 5/8" CASINGS

\*All sonic taper taps come standard w/ a Box x Box coupling.

## OVERSHOTS (RECOVERY BELLS)

Overshots are attached to drill pipe or tubing and lowered over the outside of pipe lost or stuck in the borehole. Hardened, self-cutting threads inside the overshots firmly grasp the pipe, allowing the fish to be pulled from the hole.



OVERSHOTS				
PART #	MAJOR I.D.	MINOR I.D.	CONNECTION	FISHING USE
3850137	3.00"	1.00"	1 1/4" NPT BOX	1 1/4" - 2 1/2" RODS
3850135	4.00"	3.00"	2 3/8" IF BOX W/ FLATS	3 1/2" RODS
3850136	4.13"	2.63"	2 3/8" IF PIN	3 1/2" RODS
3850100	4.10"	3.00"	3 1/2" HP90 RH BOX	3 1/2" SONIC RODS
3850010	4.63"	3.13"	3 1/2" API PIN	4 1/2" RODS
1250113	-----	-----	AWJ BOX	AWJ ROD
3850014	-----	-----	NWJ BOX	NWJ ROD

## SONIC CORE BOXES

Hole Products offers a variety of sonic core boxes for storing and transferring samples. Our premium core boxes are made from corrugated plastic, making them lightweight, re-usable, and resistant to rot, decay, and damage from heat exposure.

Additional sizes and styles are available on request. Please contact your Hole Products representative for additional details.



SONIC CORE BOXES			
PART #	NUMBER OF ROWS	ROW WIDTH	LENGTH
6350105	2	3 1/4"	61"
6350200	2	4 1/4"	61"
6350110	2	5 3/4"	61"

## SONIC SAMPLE BAGS

Hole Products offers multiple sizes and lengths of .006 mil. sample bags for collecting sonic core samples. Sample bags are available in solid rolls or pre-perforated lengths.

Additional sizes and styles are available on request. Please contact your Hole Products representative for additional details.



SAMPLE BAGS	
PART #	DESCRIPTION
6350005	NON-PERFORATED 8" X 500'
6350015	NON-PERFORATED 8 1/8" X 500'
6350017	NON-PERFORATED 8 1/8" X 1,000'
6350010	NON-PERFORATED 11" X 500'
6350115	NON-PERFORATED 11" X 1,000'
6350006	PRE-PERFORATED 8" X 84" (142 / ROLL)
6350007	PRE-PERFORATED 11" X 84" (142 / ROLL)

## THREAD COMPOUNDS

Hole Products offers a complete line of high performance thread compounds for use on a wide range of applications.

Additional thread compounds and greases are available. Please refer to the Drill Rod section of this catalog, or contact our Hole Products representative for details.



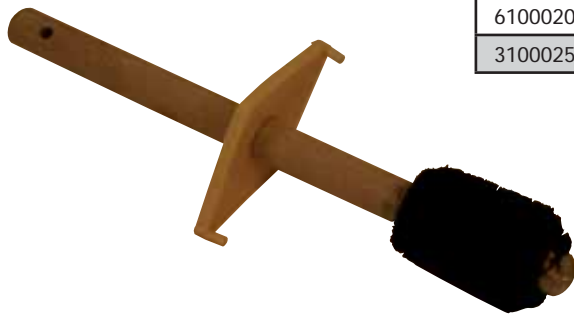
THREAD COMPOUNDS			
PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
3100040	1 GAL.	BULLSEYE™	BULLSEYE™ provides protection against galling, seizing, and thread damage while maintaining well integrity.
3100080	2.5 GAL.	KING STUFF	KING STUFF is a hydrocarbon free thread protection compound for environmental monitoring well drilling, which contains no lead and is fortified with Teflon®.
3100050*	1 GAL.	KOPR-KOTE®	KOPR-KOTE® is formulated to help prevent downhole joint make-up. It has a very high static friction factor that helps prevent downhole joint make-up when excessive drilling torques are encountered.
3100055*	2 GAL.		
3100060	1 GAL.	WELL-GUARD®	WELL-GUARD® is designed for critical monitor well and other environmentally sensitive drilling applications requiring the use of a petroleum hydrocarbon-free product.

\* Not designed for environmental applications.

## DOPE BRUSHES

Efficiently apply thread grease to your drill string with Hole Products' dope brushes. Brushes include a guard to keep the brush from falling into the bucket and prevent thread grease from getting on user's hands.

DOPE BRUSHES			
PART #	DESCRIPTION	TRIM LENGTH	OVERALL LENGTH
6100020	TAPERED W/ GUARD	2 1/2"	16"
3100025	BEVELED W/ GUARD	2 1/2"	16"



## THREAD COMPOUNDS

Hole Products offers a complete line of high performance thread compounds for use on a wide range of applications.

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THREAD COMPOUNDS			
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## DOPE BRUSHES

Efficiently apply thread grease to your drill string with Hole Products' dope brushes. Brushes include a guard to keep the brush from falling into the bucket and prevent thread grease from getting on user's hands.

DOPE BRUSHES			
PART #	DESCRIPTION	TRIM LENGTH	OVERALL LENGTH
6100020	STRAIGHT W/ GUARD	2 1/2"	16"
3100025	BEVELED W/ GUARD	2 1/2"	16"





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## DRILL RODS & SUBS



Hole Products offers a complete line of quality rotary, conventional (W, WJ, & N), sonic, wireline and reverse circulation drill rods, and a vast range of subs. In addition, we offer a variety of components and accessories including stabilizers, float valves, rod wipers, rod grease, and more.

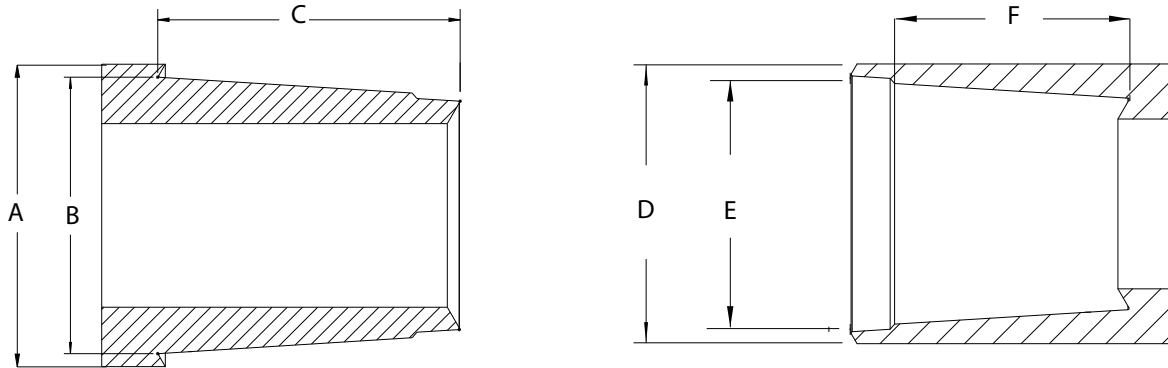
All products are quality manufactured using premium materials and advanced manufacturing techniques reliability, ensuring superior performance, and longevity in even the most demanding drilling conditions.

Drill rods and subs listed in the catalog are representative of the drilling industry's most common sizes and styles. If you do not see the product you are looking for, give us a call. Custom rods and subs are available on request.

Please contact your Hole Products representative for additional details.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

# API THREAD GUIDE



THREAD	O.D. (A)	MAJOR THREAD DIAMETER PIN (B)	LENGTH OF PIN (C)	O.D. (D)	MAJOR THREAD DIAMETER BOX (E)	LENGTH OF BOX (F)
2 3/8" API Reg.	3 3/8"	2 1/2"	2 7/8"	3 3/8"	2 11/16"	3 1/8"
2 7/8" API Reg.	3 7/8"	2 7/8"	3 3/8"	3 7/8"	3 1/16"	3 5/8"
3 1/2" API Reg.	4 3/8"	3 3/8"	3 5/8"	4 3/8"	3 9/16"	3 7/8"
4 1/2" API Reg.	5 3/4"	4 1/2"	4 1/8"	5 3/4"	4 3/8"	4 11/26"
2 3/8" API IF	3 5/8"	2 3/4"	2 7/8"	3 5/8"	2 15/16"	3 1/8"
2 7/8" API IF	4 1/4"	3 1/4"	3 3/8"	4 1/4"	3 1/2"	3 5/8"
3 1/2" API IF	5"	3 7/8"	3 7/8"	5"	4 1/8"	4 1/8"
4 1/2" API IF	6 3/4"	5 1/8"	4 3/8"	6 3/4"	5 5/16"	4 5/8"
2 3/8" MHJR	2 3/4"	2 21/64"	2 1/4"	4"	2"	1 1/2"

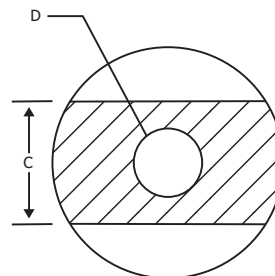
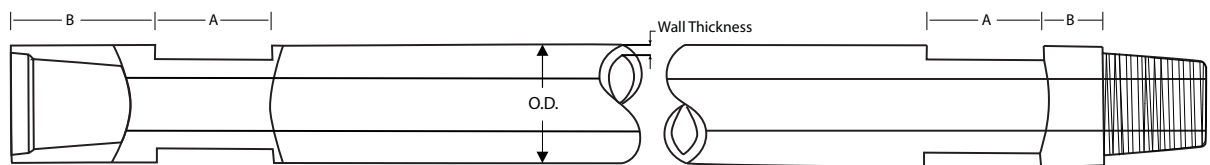
# ROTARY DRILL ROD ORDERING GUIDE

Hole Products offers a complete line of premium rotary drill rods for use on rigs from a variety of rig manufacturers including Atlas Copco, CP/Reichdrill, Driltech, Foremost, Ingersoll-Rand, Schramm, and more. All rotary rods are manufactured using high quality alloy materials ensuring excellent performance and durability.

Rotary rods are offered with a variety of custom options including multiple thread profiles, lengths, O.D.s, wall thicknesses, wrench flat options, and more.

Please contact your Hole Products representative for assistance ordering the rotary drill rods best suited for your specific drilling application.

ROTARY DRILL ROD ORDERING GUIDE		
O.D.:		
Wall Thickness:		
Length:		
Threads:		
Rod Style:		
Flats:	Box End	Pin End
A: (Long)		
B: (Up)		
C:		
D: (Tool Joint I.D.)		
Other Info:		



Cross Section of Flats

## ROTARY DRILL ROD

Hole Products offers a wide range of rotary drill rods. Rotary rods are available in any size, length, and wall thickness, and with all thread connections and any custom flat configurations.

Due to the vast number of rotary drill rod options, we have listed only a sample of our standard offering in the table below.

Please contact your Hole Products representative for additional details.

ROTARY DRILL ROD					
PART #	O.D.	WALL THICKNESS	LENGTH	THREAD	FLATS
3200091	2 3/8"	.254"	20'	2 3/8" IF	N/A
3200069	2 7/8"	.308"	5'	2 3/8" MAYHEW JR.	N/A
3201007	2 7/8"	.362"	5'	2 3/8" MAYHEW JR.	N/A
3200100	2 7/8"	.308"	10'	2 3/8" MAYHEW JR.	N/A
3201008	2 7/8"	.362"	10'	2 3/8" MAYHEW JR.	N/A
3200032	3 1/2"	.250"	20'	2 3/8" IF	FLATS ON BOX END
3200026	3 1/2"	.368"	20'	2 3/8" IF	SCHRAMM BOTTLENECK
3200029	3 1/2"	.368"	20'	2 3/8" IF	INGERSOLL-RAND CYCLONE
3201019	4 1/2"	.337"	5'	3 1/2" API	CP
3200105	4 1/2"	.337"	10'	3 1/2" API	CP
3200071	4 1/2"	.337"	20'	2 7/8" IF	DRILTECH
3200070	4 1/2"	.337"	20'	2 7/8" IF	INGERSOLL-RAND CYCLONE
3200009	4 1/2"	.337"	20'	2 7/8" IF	SCHRAMM BOTTLENECK
3200010	4 1/2"	.337"	20'	3 1/2" API	SCHRAMM BOTTLENECK
3200110	4 1/2"	.337"	20'	3 1/2" API	STANDARD SCHRAMM



## CONVENTIONAL DRILL RODS

Hole Products conventional drill rods are manufactured using high quality alloy tubing ensuring excellent performance and durability in even the most demanding drilling conditions. All rods are compatible with other rods manufactured to DCDMA standards, available in 1', 2', 5', 10', and 20' lengths, and offered with or without wrench flats.

AW, BW, NW, N3, and N4 rods come standard with pin x pin couplings. All couplings are made of 4140 alloy steel and heat treated.

Additional conventional drill rods including custom and metric lengths, rods with break out flats, and lightweight designs available on request.



CONVENTIONAL DRILL ROD SPECIFICATIONS							
SIZE	O.D.		MID BODY I.D.		THREADS PER INCH	WEIGHT	
	IN	MM	IN	MM		LBS/10 FT	KG/3M
AW	1.750"	44.50	1.250	31.80	3.0	44.00	19.60
BW	2.125"	54.00	1.750"	44.50	3.0	40.00	18.20
NW	2.625"	66.70	2.250"	57.10	3.0	51.00	23.30
AWJ	1.750"	44.50	1.374"	34.90	5.0	33.00	14.70
AWJ HD	1.750"	44.50	1.250"	31.75	5.0	42.00	18.75
BWJ	2.130"	54.50	1.750"	44.50	5.0	40.00	18.20
NWJ	2.625"	66.70	2.250"	57.10	4.0	55.00	24.60
N3	2.380"	60.45	1.130"	28.70	3.0	80.10	36.33
N4	2.130"	54.10	1.000"	25.40	4.0	80.10	36.33



W DRILL ROD



WJ DRILL ROD



N DRILL ROD

## CONVENTIONAL DRILL RODS

WJ THREADED ROD		
SIZE	PART #	LENGTH
AWJ	3050035	1'
	3050040	2'
	3050042	3'
	3050000	5'
	3050005	10'
AWJ HD*	3050100	1'
	3050105	2'
	3050110	3'
	3050060	5'
	3050065	10'
BWJ	3050115	1'
	3050120	2'
	3050125	3'
	3050130	5'
	3050019	10'
NWJ	3050021	1'
	3050030	2'
	3050022	3'
	3050020	5'
	3050025	10'

\*HD = .250 wall Heavy Duty.

W THREADED ROD		
SIZE	PART #	LENGTH
AW*	3050011	1'
	3050009	2'
	3050135	3'
	3050010	5'
	3050015	10'
BW*	3050140	1'
	3050145	2'
	3050150	3'
	3050017	5'
	3050155	10'
NW*	3050050	1'
	3050045	2'
	3050046	3'
	2150020	5'
	2150025	10'

\*AW, BW, and NW come standard with pin x pin coupling.



N THREADED ROD		
SIZE	PART #	LENGTH
N3*	3050160	1'
	2150024	2'
	3050165	3'
	2150021	5'
	2150023	10'
N4*	3050170	1'
	3050175	2'
	3050180	3'
	3050003	5'
	3050185	10'

\*N3 and N4 come standard with pin x pin coupling.

## COUPLINGS

PIN X PIN COUPLINGS		
SIZE	PART #	WEIGHT (LBS.)
AW	3301095	2
BW	3301395	3.65
NW	3301096	5.25
N3	3301400	4
N4	3301405	4

## SONIC DRILL RODS

Hole Products' sonic rods are specifically designed and manufactured to withstand the rigorous demands unique to sonic drilling. Rods are heat treated, inertia welded, and field tested under a variety of conditions, ensuring performance and durability in the most demanding applications.

In addition, Hole Products' sonic rods are internally upset. Internally upsetting rods lowers their weight while maintaining the outside diameter and the overall strength of the rods. A lighter rod means greater depth capabilities and less wear and tear on equipment and personnel.



HD DRILL ROD				
PART #	O.D.	I.D.*	LENGTH	THREAD
6360093	3 1/2"	2 1/4"	1'	HP90
6360063	3 1/2"	2 1/4"	2'	HP90
6360069	3 1/2"	2 1/4"	5'	HP90
6360096	3 1/2"	2 1/4"	10'	HP90
6360211	3 1/2"	2 1/4"	20'	HP90
6360212	3 1/2"	1 3/4"	1'	2 3/8" IF
6360213	3 1/2"	1 3/4"	2'	2 3/8" IF
6360070	3 1/2"	1 3/4"	5'	2 3/8" IF
6360040	3 1/2"	1 3/4"	10'	2 3/8" IF
6360214	3 1/2"	1 3/4"	20'	2 3/8" IF
6360215	4 1/2"	3 1/4"	1'	HP90
6360216	4 1/2"	3 1/4"	2'	HP90
6360217	4 1/2"	3 1/4"	5'	HP90
6360218	4 1/2"	3 1/4"	10'	HP90
6360219	4 1/2"	3 1/4"	20'	HP90
6360220	4 1/2"	2 1/8"	1'	2 7/8" IF
6360221	4 1/2"	2 1/8"	2'	2 7/8" IF
6360222	4 1/2"	2 1/8"	5'	2 7/8" IF
6360223	4 1/2"	2 1/8"	10'	2 7/8" IF
6360224	4 1/2"	2 1/8"	20'	2 7/8" IF
6360225	4 1/2"	3"	1'	ROUSSY
6360226	4 1/2"	3"	2'	ROUSSY
6360227	4 1/2"	3"	5'	ROUSSY
6360228	4 1/2"	3"	10'	ROUSSY
6360229	4 1/2"	3"	20'	ROUSSY

\*I.D. is measured at the tool joint.

SD DRILL ROD				
PART #	O.D.	I.D.*	LENGTH	THREAD
6360230	3 1/2"	2 1/4"	1'	HP90
6360231	3 1/2"	2 1/4"	2'	HP90
6360232	3 1/2"	2 1/4"	5'	HP90
6360233	3 1/2"	2 1/4"	10'	HP90
6360234	3 1/2"	2 1/4"	20'	HP90
6360235	3 1/2"	1 3/4"	1'	2 3/8" IF
6360236	3 1/2"	1 3/4"	2'	2 3/8" IF
6360238	3 1/2"	1 3/4"	5'	2 3/8" IF
6360239	3 1/2"	1 3/4"	10'	2 3/8" IF
6360240	3 1/2"	1 3/4"	20'	2 3/8" IF
6360241	4 1/2"	3 1/4"	1'	HP90
6360242	4 1/2"	3 1/4"	2'	HP90
6360243	4 1/2"	3 1/4"	5'	HP90
6360244	4 1/2"	3 1/4"	10'	HP90
6360245	4 1/2"	3 1/4"	20'	HP90
6360246	4 1/2"	2 1/8"	1'	2 7/8" IF
6360247	4 1/2"	2 1/8"	2'	2 7/8" IF
6360248	4 1/2"	2 1/8"	5'	2 7/8" IF
6360249	4 1/2"	2 1/8"	10'	2 7/8" IF
6360250	4 1/2"	2 1/8"	20'	2 7/8" IF
6360251	4 1/2"	3"	1'	ROUSSY
6360252	4 1/2"	3"	2'	ROUSSY
6360253	4 1/2"	3"	5'	ROUSSY
6360254	4 1/2"	3"	10'	ROUSSY
6360255	4 1/2"	3"	20'	ROUSSY

\*I.D. is measured at the tool joint.



## WIRELINE DRILL RODS

Hole Products wireline (WL) drill rods are designed and manufactured to deliver excellent results and withstand the many different stresses placed on the drill string in coring operations.

All rods are compatible with other DCDMA standard rods and available in all standard industry sizes.



WIRELINE DRILL ROD SPECIFICATIONS							
SIZE	O.D.		I.D.		THREADS PER INCH	WEIGHT	
	IN	MM	IN	MM		LB/10 FT	KG/3M
BWL	2.188"	55.6	1.813"	46.0	3.0	42	18
NWL	2.750"	69.9	2.375"	60.3	3.0	52	23
HWL	3.500"	88.9	3.063"	77.8	3.0	77	34
HWT	4.500"	114.3	4.000"	101.6	2.5	117	52

WIRELINE DRILL ROD (Imperial Sizes)		
SIZE	PART #	LENGTH
BWL	2150051	1'
	2150052	2'
	2150055	5'
	2150050	10'
NWL	2150002	1'
	2150001	2'
	2150000	5'
	2150005	10'
HWL	2150008	1'
	2150009	2'
	2150010	5'
	2150015	10'
HWT*	2100008	1'
	2100007	2'
	2100011	5'
	2100034	10'

\*HWT made from 4130 grade material.

\*HWT casing is the recommended drill rod for PWL coring systems.

WIRELINE DRILL ROD (Metric Sizes)		
SIZE	PART #	LENGTH
BWL	2150060	1.5 M
	2150065	3 M
NWL	2150070	1.5 M
	2150016	3 M
HWL	2150018	1.5 M
	2150017	3 M
HWT *	2100145	1.5 M
	2100150	3 M

\*HWT made from 4130 grade material.

\*HWT casing is the recommended drill rod for PWL coring systems.

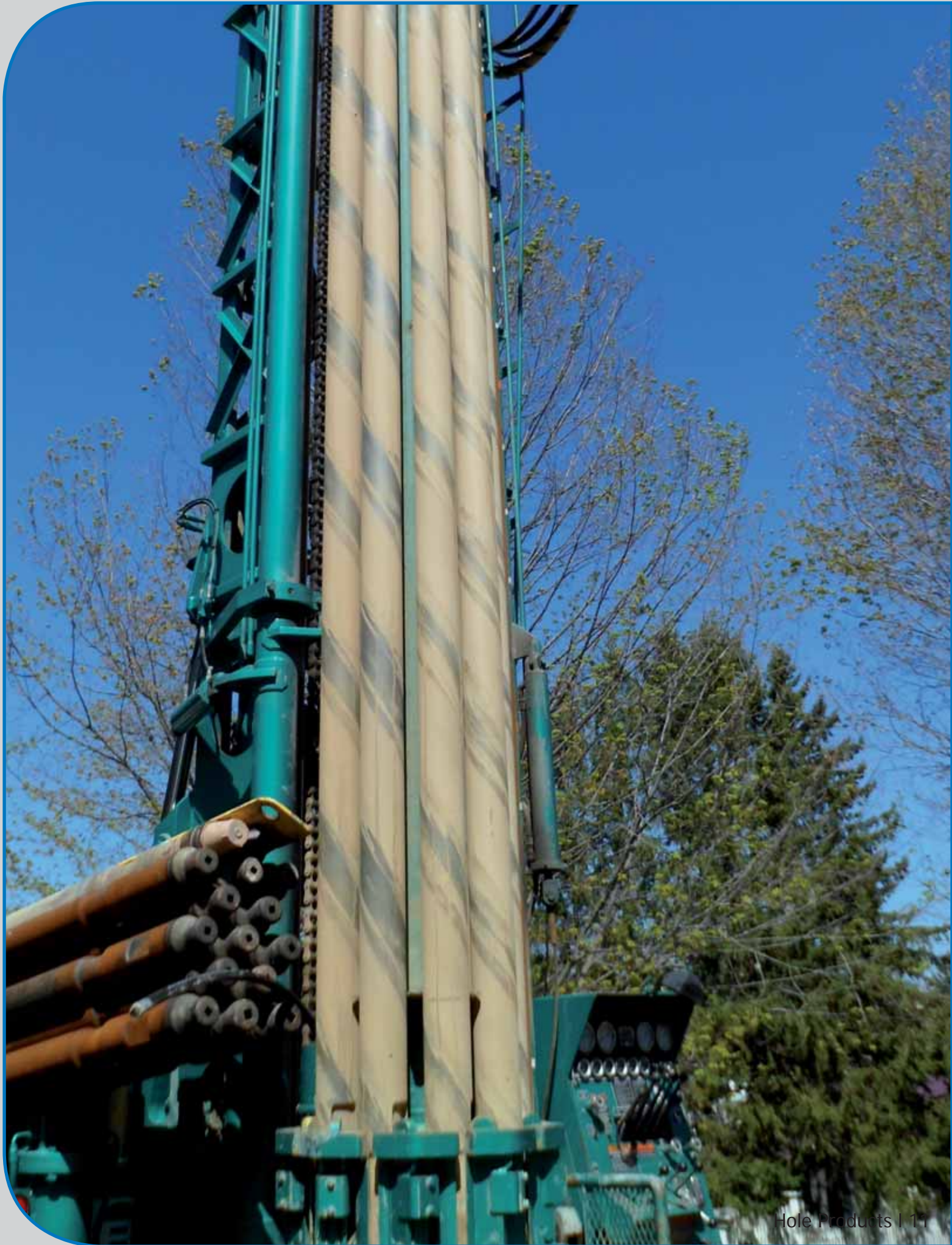
## REVERSE CIRCULATION DRILL RODS

Hole Products offers a complete line of premium quality reverse circulation, dual wall drill rods, in a wide range of sizes, and with a number of thread connections. All RC rods are manufactured using the most advanced technologies and specifically engineered to provide high strength, excellent wear resistance and long life.

Reverse Circulation, dual wall drill rods are manufactured with an outer drill rod and an inner tube located inside the rod. When the drill rods are threaded together, the inner tubes seal together to provide a continuous route for cuttings to travel from the bit face to the surface for collection.

Please contact your Hole Products representative for additional details and ordering assistance.

REVERSE CIRCULATION DRILL ROD SPECIFICATIONS							
Thread Type	Remet	Remet	Remet	Metzke	Metzke	Matrix	Matrix
Rod O.D.	3 1/2"	4"	4 1/2"	4"	4 1/2"	4"	4 1/2"
Outer tube O.D.	88.9mm	101.7mm	114.3mm	101.7mm	114.3mm	101.7mm	114.3mm
Outer tube I.D.	81.8mm	94.6mm	107.2mm	94.6mm	107.2mm	94.6mm	107.2mm
Outer tube WT	5.3mm	7.1mm	7.1mm	7.1mm	7.1mm	7.1mm	7.1mm
Inner tube O.D.	38.1mm	50.8mm	63.5mm	50.8mm	63.5mm	50.8mm	63.5mm
Inner tube I.D.	32.6mm	45.3mm	58mm	45.3mm	58mm	45.3mm	58mm
Inner tube WT	5.5mm	5.5mm	5.5mm	5.5mm	5.5mm	5.5mm	5.5mm
Spanner Flat	90mm	90mm	90mm	90mm	90mm	90mm	90mm
Weight 3.0 m	75 kg.	75 kg.	95 kg.	75 kg.	95 kg.	75 kg.	95 kg.
Weight 6.0 m	120 kg.	150 kg.	168 kg.	150 kg.	168 kg.	150 kg.	168 kg.



# ROD WIPERS

Hole Products provides high quality rod wipers to remove soil, mud, and water from drill rods.

Rods are drawn through the wipers allowing them to act as a squeegee while removing tooling from the hole.

Additional sizes and styles including rubber crown profile and dual split are available on request.

Please refer to the guidelines below when ordering wipers.



ROD WIPER ORDERING GUIDELINES	
I.D.:	*
O.D.:	
Rod Size:	
Steel or No Steel:	

*\*Recommended 1/4" smaller than rod O.D.*

ROD WIPER WITH STEEL* - FLAT PROFILE				
PART #	O.D.	I.D.	THICKNESS	RECOMMENDED ROD O.D.
3151041	9"	1 1/2"	3/4"	1 3/4"
3150045	9"	2"	3/4"	2 1/4"
3150012	9"	2 1/8"	3/4"	2 1/2"
3151042	9"	2 1/4"	3/4"	2 1/2"
3150165	8"	2 1/2"	1"	2 3/4"
3151024	9"	2 1/2"	3/4"	2 3/4"
3150170	8"	3 1/4"	1"	3 1/2"
3150010	9"	3 1/4"	3/4"	3 1/2"
3150020	12"	3 1/4"	3/4"	3 1/2"
3150175	8"	3 1/2"	1"	3 3/4"
3150180	8"	3 3/4"	1"	4"
3150185	5"	4 1/4"	3/4"	4 1/2"
3150190	6"	4 1/4"	3/4"	4 1/2"
3150195	8"	4 1/4"	1"	4 1/2"
3150015	9"	4 1/4"	3/4"	4 1/2"
3151001	11"	4 1/4"	3/4"	4 1/2"
3150025	12"	4 1/4"	3/4"	4 1/2"
3151039	14"	4 1/4"	3/4"	4 1/2"
3150028	19"	4 1/4"	3/4"	4 1/2"
3150200	8"	4 1/2"	1"	4 3/4"

*\*More rigid less flexible wiper.*

# ROD WIPERS

ROD WIPER NO STEEL * - FLAT PROFILE				
PART #	O.D.	I.D.	THICKNESS	RECOMMENDED ROD O.D.
3150035	9"	1 1/2"	3/4"	1 3/4"
3150040	9"	2"	3/4"	2 1/4"
3150133	9"	2 1/4"	3/4"	2 1/2"
3151008	8"	2 1/2"	1"	2 3/4"
3151025	9"	2 1/2"	3/4"	2 3/4"
3151012	8"	3 1/4"	1"	3 1/2"
3150011	9"	3 1/4"	3/4"	3 1/2"
3150021	12"	3 1/4"	3/4"	3 1/2"
3151013	8"	3 3/4"	1"	4"
3151009	8"	3 1/2"	1"	3 3/4"
3151031	5"	4 1/4"	3/4"	4 1/2"
3151030	6"	4 1/4"	3/4"	4 1/2"
3151011	8"	4 1/4"	1"	4 1/2"
3150016	9"	4 1/4"	3/4"	4 1/2"
3150135	11"	4 1/4"	3/4"	4 1/2"
3150140	14"	4 1/4"	3/4"	4 1/2"
3150145	19"	4 1/4"	3/4"	4 1/2"
3151010	8"	4 1/2"	1"	4 3/4"
3150031	12"	5"	3/4"	5 1/2"
3150041	12"	7"	3/4"	7 1/4"
3150029	12"	8 5/8"	3/4"	9"

\*A more flexible wiper.



## COMPOUNDS & GREASES

Hole Products offers a variety of high quality thread compounds, locking compounds, and rod grease, from the industry's leading manufacturers. Products are available to meet any criteria from environmental concerns, high or low temperatures, extreme exposure to the elements, high pressures and more.



Please contact your Hole Products representative for additional information and assistance selecting the product(s) best suited for your drilling application.

THREAD COMPOUNDS			
PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
3100040	1 GAL.	BULLSEYE®	BULLSEYE® provides protection against galling, seizing, and thread damage while maintaining well integrity.
3100005	1 GAL.	COPR PLUS	COPR PLUS is an environmentally friendly non-lead, non-zinc thread compound, which provides protection against galling and seizing.
3100010	2 GAL.		
3100011	5 GAL.		
3100013	5 GAL.	JET-LUBE® 21®	JET LUBE® 21® is formulated to reduce excessive circumferential make-up of tool joints and protect against galling and high stress.
3100050	1 GAL.	KOPR-KOTE®	KOPR-KOTE® is formulated to help reduce downhole joint make-up. It has a very high static friction factor that helps reduce downhole joint make-up when excessive drilling torques are encountered.
3100055	2 GAL.		
3100070	1 GAL.	KOPR-KOTE® ARCTIC	KOPR-KOTE® ARCTIC is designed for extreme cold weather environments where fluid film strength is important and grease consistency remains the same.
3100071	2 GAL.		
3100059	2.5 GAL.	KOV'R-KOTE®	KOV'R-KOTE® is a metal-free formula and is ideal for mineral exploration tooling string. It has additives for rust corrosion and oxidation protection.
3100030	1 GAL.	ORANGE AID	ORANGE AID is a hydrocarbon free tool joint compound, which contains no metals, lead / copper and protects and lubricates drill pipe threads.
3100060	1 GAL.	WELL-GUARD®	WELL-GUARD® is designed for critical monitor well and other environmentally sensitive drilling applications requiring the use of a petroleum hydrocarbon-free product.
LOCKING COMPOUND			
3100085	8 OZ	BAKERLOK THREAD COMPOUND KIT	BAKERLOK is a thread locking compound, commonly used for casing, tubing, and drilling joints to reduce accidental detaching of string components during drilling.
ROD GREASE			
3100036	5 GAL.	IDP-214	IDP-214 rod grease is a high quality, easily applied formulation designed to help dampen high frequency vibration created in continuous wireline coring operations.

## DOPE BRUSHES

DOPE BRUSHES			
PART #	DESCRIPTION	TRIM LENGTH	OVERALL LENGTH
6100020	STRAIGHT W/ GUARD	2 1/2"	16"
3100025	BEVELED W/ GUARD	2 1/2"	16"






# STABILIZERS

Hole Products' stabilizers are designed to reduce unintentional sidetracking and vibrations, thus keeping the drill string centered in the borehole. All stabilizers are manufactured from high strength steel and feature heat treated tool joints and hard faced wear surfaces.

Each style can be customized with a variety of options including O.D., length (body and neck), thread connection, flats, and more.

Additional stabilizers including replaceable sleeve and integral blade stabilizers are available on request.

Please refer to the guide below when ordering stabilizers.

STABILIZER STYLES	
	<b>SMOOTH BODY:</b> standard stabilizer with no blades.
	<b>STRAIGHT BLADE:</b> feature welded straight blades on the body.
	<b>SPIRAL BLADE:</b> spiral blades provide constant wall contact to assist in cutting removal.
	<b>STRAIGHT-SPIRAL BLADE:</b> designed to provide the benefits of the spiral blade stabilizer at a reduced cost.
	<b>FLOW THROUGH:</b> allows cuttings to pass between the inner and outer barrel.

STABILIZER ORDERING REFERENCE GUIDE									
STYLE:	SMOOTH		FLOW - THROUGH		STRAIGHT BLADE		SPIRAL BLADE		STRAIGHT-SPIRAL RIBBED
	SPECIFY # OF BLADES	---	SPECIFY # OF BLADES	---	SPECIFY # OF BLADES		SPECIFY # OF BLADES		SPECIFY # OF BLADES
BODY O.D.:									
BODY LENGTH:									
NECK LENGTH:									
TOP CONNECTION:									
BOTTOM CONNECTION:									
FLATS:									
OTHER INFO:									

## FLOAT VALVES

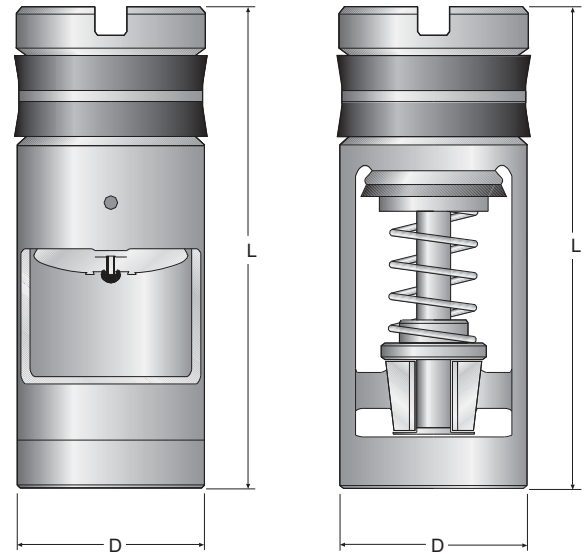
Float valves provide added blowout protection at the bottom of the drill string to reduce flow-back when making connections. They also keep cuttings out of the drill string which reduces bit plugging.

Hole Products offers a complete line of Model "F" plunger type and Model "G" flapper style float valves and repair kits to accommodate a wide range of drilling conditions.

Model "F" float valves offer positive and instant shut-off, economy, and durability.

Model "G" float valves are designed for highly abrasive drilling fluids. The cast flapper is designed to open quickly, providing unrestricted full flow through the valve.

Please contact your Hole Products representative for additional information and assistance selecting the float valve best suited for your drilling needs.

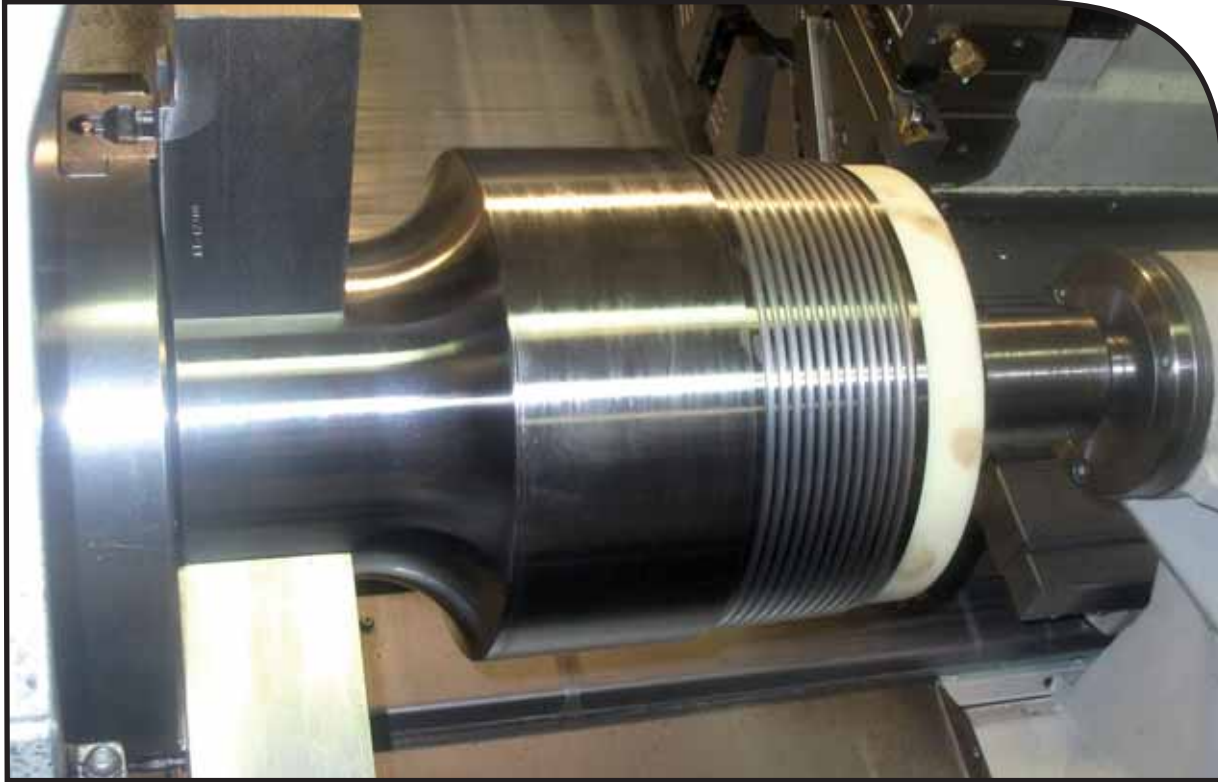


### FLOAT VALVE DIMENSIONAL DATA

VALVE SIZE	DIAMETER OF VALVE	DIAMETER OF RECESS FOR VALVE	LENGTH OF VALVE	I.D. OF VALVE	
				MODEL F	MODEL G
	(D) - IN	IN	(L) - IN	IN	IN
1R	1 21/32"	1 11/16"	5 7/8"	1"	N/A
1F-2R	1 29/32"	1 15/16"	6 1/4"	1 1/4"	1"
2F-3R	2 13/32"	2 7/16"	6 1/2"	1 9/16"	1 1/4"
3F	2 13/16"	2 27/32"	10"	1 7/8"	1 5/8"
3 1/2 IF	3 1/8"	3 5/32"	10"	1 7/8"	1 5/8"
4R	3 15/32"	3 1/2"	8 5/16"	2 15/16"	1 31/32"
4F	3 21/32"	3 11/16"	12"	2 1/2"	2 3/16"
5R	3 7/8"	3 29/32"	9 3/4"	2 3/4"	2 1/4"
5F-6R	4 25/32"	4 13/16"	11 3/4"	3 1/4"	2 7/8"
6F	5 11/16"	5 23/32"	14 5/8"	4 1/8"	N/A



# SUBS



SUBS

It isn't easy matching multiple tooling sizes and styles and maintaining inventory of accessories that will work on multiple jobs.

To make sure you get the perfect fit every time, Hole Products offers a complete line of quality adapter subs.

Looking for a specialty or hard to find sub? Hole Products can custom manufacture any sub, in any size, with any connection, and with a variety of custom options including: o-ring seals, check valves, breakout flats, and much more.

Adapter subs shown are representative of the most common industry sizes and styles.

Please contact your Hole Products representative for additional product availability or assistance ordering custom subs.

## DCDMA ADAPTER SUBS

AW ROD BOX X PIN		
PART #	ROD BOX	PIN
3300058	AW	BWL ROD
3300300	AW	BW CASING
3301070	AW	NWL ROD
3301192	AW	NXB 3 TPI
3301080	AW	NW CASING
3301031	AW	HWL ROD
3301068	AW	HW CASING

AWJ ROD BOX X PIN		
PART #	ROD BOX	PIN
3300305	AWJ	BWL ROD
3301172	AWJ	BW CASING
3301065	AWJ	NWL ROD
3300311	AWJ	NXB 3 TPI
3301085	AWJ	NW CASING
3301170	AWJ	HWL ROD
3301097	AWJ	HW CASING
3301094	AWJ	HWT CASING
3301102	AWJ	PW CASING

BW ROD BOX X PIN		
PART #	ROD BOX	PIN
3301104	BW	NWL ROD
3301106	BW	NW CASING



## DCDMA ADAPTER SUBS

NWJ ROD BOX X PIN		
PART #	ROD BOX	PIN
3301026	NWJ	AW
3301025	NWJ	AWJ
3301213	NWJ	BWJ
3300320	NWJ	BWL ROD
3300325	NWJ	BW CASING
3301129	NWJ	N3 ROD
3301124	NWJ	N4 ROD
3301128	NWJ	NW ROD
3301199	NWJ	NWJ
3301116	NWJ	NWL ROD
3301115	NWJ	NW CASING
3301204	NWJ	NXB 3 TPI
3301115	NWJ	NW CASING
3301027	NWJ	HWL ROD
3300330	NWJ	HWL ROD W/ O-RING
3301117	NWJ	HW CASING
3301028	NWJ	HWT CASING
3300335	NWJ	HWT W/ O-RING
3300150	NWJ	PW CASING
3301119	NWJ	PWL ROD
3300153	NWJ	CPWL ROD
3300150	NWJ	PW CASING
3300151	NWJ	PWT ROD
3301118	NWJ	SW CASING
3301220	NWJ	ZW CASING
3301200	NWJ	1 1/4" 7 TPI
3301009	NWJ	2 3/8" IF
3301018	NWJ	2 3/8" API
3301023	NWJ	2 7/8" API REG
3301024	NWJ	MHJR PIN
3305060	NWJ	1 1/4" API

BWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3302053	BWL	NWL ROD
3302180	BWL	BW CASING

NW ROD BOX X PIN		
PART #	ROD BOX	PIN
3300345	NW	BWL ROD
3300350	NW	BW CASING
3301074	NW	NWL ROD
3300087	NW	NWL ROD W/ O-RING
3301079	NW	NW CASING
3301081	NW	HWL ROD
3300088	NW	HWL ROD W/ O-RING
3301114	NW	HW CASING
3301207	NW	HWT CASING
3300089	NW	HWT W/ O-RING
3301082	NW	PW CASING
3302098	NW	PWT ROD



## DCDMA ADAPTER SUBS

NWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3301143	NWL	EW CASING
3300008	NWL	AW ROD
3301187	NWL	AW CASING
3300118	NWL	BWL ROD
3300355	NWL	BW CASING
3300017	NWL	NW ROD
3300108	NWL	NWJ ROD
3300104	NWL	NWL ROD
3301195	NWL	NXB 3 TPI ROD
3301217	NWL	NXE 4 TPI ROD
3300016	NWL	NW CASING
3300006	NWL	HWL ROD
3300113	NWL	HW CASING
3300038	NWL	HWT CASING

NXB 3 TPI BOX X PIN		
PART #	BOX	PIN
3300031	NXB 3 TPI	NWJ ROD
3302003	NXB 3 TPI	NWL ROD

NW CASING BOX X PIN		
PART #	CASING BOX	PIN
3301088	NW	HWL ROD



## DCDMA ADAPTER SUBS

HWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3302004	HWL	AW ROD
3300009	HWL	NWJ ROD
3300360	HWL	NWL ROD
3300073	HWL	NW CASING
3300365	HWL	HWL ROD
3300007	HWL	HW CASING
3300011	HWL	HWT CASING

HW CASING BOX X PIN		
PART #	CASING BOX	PIN
3302134	HW	HWL ROD
3300109	HW	HWT CASING / ROD
3301133	HW	CPWL ROD

HWT ROD BOX X PIN		
PART #	ROD BOX	PIN
3300255	HWT	HWL ROD
3301133	HWT	CPWL ROD
3300014	HWT	HW CASING
3300370	HWT	HWT
3300261	HWT	PW CASING
3302095	HWT	PWT ROD
3301071	HWT	SWT ROD

CPWL ROD BOX X PIN		
PART #	ROD BOX	PIN
3300152	CPWL	HWT CASING / ROD

PWT CASING BOX X PIN		
PART #	CASING BOX	PIN
3302097	PWT	PW CASING



## DCDMA ADAPTER SUBS

PIN X PIN		
PART #	PIN	PIN
3301130	AW ROD	AWJ ROD
3302125	AW ROD	BWL ROD
3302140	AW ROD	BW CASING
3301092	AW ROD	NWJ ROD
3302116	AW ROD	NWL ROD
3301169	AW ROD	NXB 3 TPI ROD
3302126	AW ROD	NW CASING
3300262	AW ROD	HWL ROD
3301123	AW ROD	HWT ROD
3301057	AWJ ROD	AWJ ROD
3301103	AWJ ROD	NW ROD
3301227	BW ROD	BWL ROD
3301087	BW ROD	NWL ROD
3300256	BW ROD	HWL ROD
3302160	BW ROD	BW CASING
3302165	BW ROD	NW CASING
3302170	BW ROD	HW CASING
3302155	BW ROD	HWT CASING
3301141	NW ROD	EW CASING
3300059	NW ROD	BWL ROD
3301086	NW ROD	NWL ROD
3301144	NW ROD	NRWL ROD
3301168	NW ROD	NW ROD
3301111	NW ROD	NWJ ROD
3302124	NW ROD	NW CASING
3302127	NW ROD	HWL ROD
3302128	NW ROD	HW CASING
3302156	NW ROD	HWT CASING
3301196	NWJ ROD	NWL ROD
3302135	HW CASING	4" NPT ROD



# DCDMA ADAPTER SUBS

BOX X BOX		
PART #	BOX	BOX
3301060	AW ROD	N 4THD
3301090	AW ROD	2 3/8" API REG
3301260	AW ROD	3 1/2" API REG
3301125	AWJ ROD	N 4THD
3301159	AWJ ROD	2 3/8" API REG
3301132	AWJ ROD	2 7/8" API REG
3302161	AWJ ROD	3 1/2" API REG
3302056	N 4THD	BWL ROD
3301048	N 4THD	NWL ROD
3301046	N 4THD	NW ROD
3301150	NW ROD	2 3/8" API REG
3301210	NW ROD	3 1/2" API REG
3301211	NW ROD	NWL ROD
3301008	NWJ ROD	N 4THD
3301076	NWJ ROD	2 3/8" API REG
3301062	NWJ ROD	2 7/8" API REG
3301140	NWJ ROD	3 1/2" API REG
3301019	NWJ ROD	4 1/2" API REG
3301247	NWJ ROD	6 5/8" API REG
3301203	NWL ROD	2" NPT
3302011	NWL ROD	2 3/8" API REG
3300028	NWL ROD	2 7/8" API REG
3301154	HWL ROD	2 3/8" API REG
3300079	HWL ROD	2 7/8" API REG
3300057	HWT CASING	2 7/8" API REG
3302093	HWT CASING	3 1/2" API REG



# API ADAPTER SUBS

API BOX X PIN		
PART #	BOX	PIN
3305050	1 1/4" NPT	AWJ
3301184	1 1/4" 7	AWJ
3301003	2 3/8" IF	2 3/8" REG
3301014	2 3/8" IF	3 1/2" REG
3301304	2 3/8" IF	NW ROD
3301016	2 3/8" IF	NWJ
3301013	2 3/8" IF	NWL
3302133	2 3/8" IF	HWL
3302075	2 3/8" IF	HWT CASING
3301151	2 3/8" REG	2 7/8" REG
3301152	2 3/8" REG	HWT CASING
3301189	2 3/8" MHJR	2 3/8" MHJR
3302026	2 3/8" MHJR	3 1/2" REG
3302040	2 3/8" MHJR	AWJ
3302047	2 3/8" MHJR	NWJ
3302015	2 3/8" MHJR	NWL
3301250	2 3/8" MHJR	HWL
3302016	2 3/8" MHJR	HW CASING
3302023	2 7/8" IF	2 3/8" IF
3305077	2 7/8" REG	2 3/8" REG
3300034	2 7/8" REG	NWJ
3301255	2 7/8" IF	HWL
3300111	3 1/2" REG	2 3/8" IF
3305062	3 1/2" REG	3 1/2" IF
3300036	4 1/2" REG	2 3/8" IF
3305068	4 1/2" REG	2 7/8" REG
3301041	7 5/8" REG	6 5/8" REG

API PIN X PIN		
PART #	BOX	PIN
3301164	2 3/8" IF	2 7/8" REG
3300120	2 3/8" REG	2 3/8" REG
3305079	2 3/8" MJR	NWJ
3302081	2 3/8" MHJR	2 3/8" MHJR
3301036	3 1/2" REG	3 1/2" REG





# API ADAPTER SUBS

API BOX X BOX		
PART #	BOX	BOX
3300101	1 1/4" 7	AW
3301120	2 3/8" IF	2 7/8" REG
3305061	2 3/8" IF	3 1/2" REG
3301171	2 3/8" REG	2 3/8" IF
3302025	2 3/8" REG	2 3/8" REG
3300115	2 3/8" REG	2 7/8" REG
3300155	2 3/8" REG	3 1/2" REG
3301156	2 3/8" REG	4 1/2" REG
3302030	2 3/8" REG	N4 ROD
3301153	2 3/8" REG	NWL
3301154	2 3/8" REG	HWL
3302207	2 3/8" REG	NW CASING
3301188	2 3/8" MHJR	2 3/8" REG
3301300	2 3/8" MHJR	3 1/2" REG
3302024	2 7/8" IF	3 1/2" REG
3300046	2 7/8" IF	4 1/2" REG
3301190	3 1/2" REG	3 1/2" REG
3300030	3 1/2" REG	4 1/2" REG
3300041	3 1/2" REG	6 5/8" REG
3300042	3 1/2" REG	7 5/8" REG
3302033	4 1/2" REG	NWJ



## SONIC ADAPTER SUBS

Subs are available for adapting between multiple tooling sizes and thread profiles. Hole Products offers subs in a variety of sizes and styles for adapting between multiple tooling sizes and thread profiles. All subs are manufactured from the highest quality materials using the industry's most advanced manufacturing techniques.

Custom sizes, breakout profiles, and thread gauges available. Please contact your Hole Products representative for further assistance.



### BOX X BOX

PART #	BOX	BOX
6340049	3 1/2" HP90 RH BOX	2 3/8" API REG BOX
6340075	3 1/2" HP90 RH BOX	2 7/8" API REG BOX
6340080	3 1/2" HP90 RH BOX	3 1/2" API REG BOX
6340096	3 1/2" HP90 RH BOX	3 1/2" HP90 RH BOX
6340081	4 1/2" HP90 RH BOX	3 1/2" API REG BOX

### BOX X PIN

PART #	BOX	PIN
6340095	3 1/2" HP90 RH BOX	2 3/8" API PIN
3300053	3 1/2" HP90 RH BOX	3" NPT PIN
6340082	AWJ BOX	3 1/2" HP90 RH PIN
6340092	2 3/8" IF BOX	3 1/2" HP90 RH PIN
6340033	5 7/8" HP90 LH BOX	7 5/8" HP90 LH PIN
6340034	5 7/8" HP90 LH BOX	8 5/8" HP90 LH PIN

## SONIC SAVER SUBS

Saver subs are screwed into the bottom of the flange adapter and onto the inner drill string. When rods are added to deepen the hole, the threads are unscrewed between the saver sub and the drill string. The connection between the flange adapter and saver sub is rarely used and suffers minimal wear; whereas the lower connection is commonly used and suffers the most wear. Saver subs are expendable and represent a small investment as compared to the flange adapter.

### PIN X PIN (Saver Subs)

PART #	PIN	PIN
6340091	3 1/2" HP90 RH PIN	2 3/8" IF PIN
6340031	3 1/2" HP90 RH PIN	3 1/2" HP90 PIN
6360260	3 1/2" HP90 RH PIN	4 1/2" HP90 PIN
6360265	3 1/2" HP90 RH PIN	4 1/2" ROUSSY PIN

## SONIC CORE BARREL DRIVER SUBS

Core barrel driver subs are designed for attaching drill rods to the core barrel.

Hole Products offers core barrel driver subs in a variety of sizes and styles. All subs are manufactured from the highest quality materials using the industries most advanced manufacturing techniques.

Custom sizes, breakout profiles, and thread gauges available.

Please contact your Hole Products representative for additional details.



BOX X PIN		
PART #	BOX	PIN
6340159	2 3/8" MHJR	3 1/2" HP90
6360400	2 3/8" IF	3 1/2" HP90
6340163	2 3/8" IF	4 1/2" HP90
6360420	2 3/8" IF	6" HP90
6360405	2 3/8" IF	7 5/8" HP90
6360410	2 3/8" IF	8 5/8" HP90
6340032	3 1/2" HP90	4 1/2" HP90
6340061	3 1/2" HP90	6" HP90
6360415	3 1/2" HP90	7 5/8" HP90
6360290	3 1/2" HP90	8 5/8" HP90
6360300	4 1/2" ROUSSY	4 1/2" HP90
6360305	4 1/2" ROUSSY	6" HP90
6360425	4 1/2" ROUSSY	7 5/8" HP90
6360310	4 1/2" ROUSSY	8 5/8" HP90

BOX X BOX (Split Barrel Subs)		
PART #	BOX	BOX
6340161	2 3/8" IF	4 1/2" HP90
6340155	3 1/2" HP90	4 1/2" HP90
6340156	4 1/2" ROUSSY	4 1/2" HP90

## AUGER ADAPTERS

Hole Products offers a large selection of quality auger adapters in hex sizes ranging from 13/16" through 2". Additional adapters including hex x round bar and custom designs are available on request.

HEX PIN X HEX BOX					
PIN		BOX			
IN	MM	13/16"	1 1/8"	1 5/8"	2"
1 1/8"	29	1250790	1250805	1250815	1250820
1 5/8"	41	1250795	1250075	1250076	1250027
2"	51	1250800	1250810	1250166	1250825

HEX BOX X HEX BOX					
BOX		BOX			
IN	MM	13/16"	1 1/8"	1 5/8"	2"
1 1/8"	29	1250830	1250840	1250855	1250870
1 5/8"	41	1250144	1250845	1250860	1251015
2"	51	1250835	1250850	1250865	1250875



HEX BOX X ROD BOX				
HEX BOX		ROD BOX		
IN	MM	N3	NW	NWJ
1 1/8"	29	3301047	3300044	3301410
1 5/8"	41	3301415	3300039	3301099
2"	51	3301420	3301425	3301430

HEX PIN X ROD PIN			
HEX PIN		ROD PIN	
IN	MM	AWJ	NWJ
1 1/8"	29	3301061	3301435
1 5/8"	41	3300141	3301134
2"	51	3301440	3301445



## REVERSE CIRCULATION SUBS

Hole Products offers a wide range of reverse circulation subs. All subs are manufactured using premium alloys and the most advanced manufacturing techniques, to maximize performance and durability. Reverse Circulation subs are available in a variety of sizes and with all industry standard thread connections. Our standard sub offering includes saver subs, adapter subs, cross-over subs, and bit subs. Custom subs are also available to meet all reverse circulation system requirements.

# DRILL BITS

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## DRILL BITS



Hole Products offers a large selection of tricone and bicone roller bits, polycrystalline diamond compact (PDC) bits, drag bits, claw bits, and accessories for use in a wide range of drilling industries including construction, environmental/geotechnical, geothermal, HDD, mineral exploration, rotary, and more.

Tricone and bicone bits are available in steel tooth and tungsten carbide insert, sizes from 1 7/8" to 36", open bearing, sealed bearing and journal sealed bearing, jet or regular circulation, and with a number of additional custom features.

PDC bits are offered with steel or matrix bodies, sizes from 2 15/16" to 17 1/2"+, blade counts from 3 to 8, and with a variety of custom PDC cutter options.

Drag bits are offered in Chevron and Step types, with 3 or 4 wings and in sizes from 1 7/8" to 26".

Claw bits are available in sizes from 3 1/2" to 24" and with a variety of cutter quantity options.

All bits are available with a number of custom manufacturing options and any thread connection, to fit a wide range of drilling requirements.

Please contact your Hole Products representative for detailed bit specifications and assistance selecting the correct bit for your specific drilling application.

*Products listed in the catalog are representative of the most common industry sizes and styles.  
Please contact your Hole Products representative for additional product offerings.*

# ROLLER CONE BITS



Roller cone bits have conical cutters or cones with steel teeth or tungsten carbide buttons around them. As the drill string is rotated, the bit cones roll along the bottom of the borehole in a circular motion. As they roll, new teeth come in contact with the bottom of the hole, chipping the formation below and around the bit tooth. Air or drilling fluid lift the crushed rock chips from the bottom of the hole and up the annulus. As rotation continues, another tooth makes contact with the bottom of the hole and creates new rock chips, thus, the process is continuous.

Hole Products offers a complete line of tricone and bicone bits. Tricone bits are available in new and used (re-tip and re-run) steel tooth and tungsten carbide insert, in sizes from 2 1/2" to 36", for use in all formations, with any bearing/seal type, and with a wide range of additional custom features.

Reverse Circulation tricones bits are available on request. Please refer to the Reverse Circulation section of this catalog or contact your Hole Products representative for details.

To make describing the type of tricone bit you are looking for easier, Hole Products follows the IADC bit classification system. The IADC Code describes a tricone bit; it tells you what the bit is, steel tooth or carbide insert, the formations the bit is meant for drilling, and the bearing/seal type. See the IADC Codes on page 4 for details.

Please contact your Hole Products representative for additional details and assistance selecting the tricone bit best suited for your specific drilling conditions.

## IADC CODE - TRICONE BITS

**First Digit** - 1, 2, and 3 designate steel tooth bits and the formation being drilled, with 1 for soft, 2 for medium, and 3 for hard formations. 4, 5, 6, 7, and 8 designate tungsten carbide insert bits and the formation being drilled, with 4 being the softest and 8 the hardest formation.

**Second Digit** - 1, 2, 3 and 4 are further broken down by the formation, with 1 being the softest and 4 the hardest.

**Third Digit** - Classifies the bit according to bearing/seal type and special gauge/wear protection.

1. **Open Bearing** - On these bits the cones will spin freely. The bit has a front row of ball bearings and a back row of roller bearings.
2. **Open Bearing, Air-Cooled** - Cones are similar to #1, but have air injection directly to the cones to cool the bearings. Air flows into the cone through the passage ways inside the pin. (Not for use in mud applications.)
3. **Open Bearing with Gauge Protection** - Carbide inserts in the heel of the cone.
4. **Sealed Roller Bearing** - These bits have an o-ring seal with a grease reservoir for bearing cooling. The seal acts as a barrier against mud and cuttings to protect the bearings.
5. **Sealed Roller Bearing with Gauge Protection** - Carbide inserts in the heel of the cone.
6. **Sealed Journal Roller Bearing** - These bits are strictly oil/grease cooled with nose bearings, o-ring seal and a race for maximum performance.
7. **Sealed Journal Rolling Bearing with gauge protection** - Carbide inserts in the heel of the cone.

**Fourth Digit** – used to indicate additional features.

- |                         |                           |                       |
|-------------------------|---------------------------|-----------------------|
| A. Air Application      | E. Extended Jet           | X. Chisel Insert      |
| C. Center Jet           | G. Extra Gauge Protection | Y. Conical Insert     |
| S. Standard Steel Tooth | J. Jet Deflection         | Z. Other Insert Shape |
| D. Deviation Control    | R. Reinforced Welds       |                       |

### Example 1:

IADC Code: 321

#### Bit Description:

- 3 = Steel Tooth, Hard Formations  
 2 = Semi-Abrasive and Abrasive Formations.  
 1 = Open Bearing

### Example 2:

IADC Code: 514

#### Bit Description:

- 5 = Tungsten Carbide Insert, Soft to Medium Formation  
 1 = Soft Formations  
 4 = Sealer Roller Bearing



## NEW TRICONE BITS

Hole Products offers new steel tooth and tungsten carbide insert (tci) tricone bits in sizes from 2 1/2" – 36", with open or sealed bearings, regular or jet circulation, and a wide range of additional custom features for ideal performance in any formation. Tricone bits can be customized to optimize penetration rates and bit life in particular formations and under specific operating weights and rotation speeds.

Steel teeth or carbide inserts come in a variety of shapes, sizes, and grades of tungsten carbides to address specific drilling conditions. TCI bits offer increased durability over steel tooth bits but also carry a higher cost.

Open bearing bits feature bearings without a seal that are open to outside debris. Open bearing bits are generally cheaper than sealed bearing bits, and recommended for shallower holes. Sealed bearing tricone bits are available for use in applications where, historically, bearing life has limited bit performance. Sealed roller bearing bits extend the bearing life, allowing for increased utilization of the cutting structure.

Refer to the IADC codes on page 4 for additional tricone bit ordering guidelines.

Please contact your Hole Products representative for additional details and assistance selecting the tricone bit designed to maximize performance and increase bit life under your specific drilling conditions.



Steel Tooth Tricones



Tungsten Carbide Insert Tricones

## TRICONE BITS - STANDARD CONNECTION SIZES

TRICONE BITS - STANDARD CONNECTION SIZES *	
SIZE	STANDARD PIN CONNECTION
2 1/2" to 2 3/4" inclusive	A - AW Rod
2 7/8" to 3 3/8" inclusive	N4 Rod
3 1/2" to 4 1/2" inclusive	2 3/8" API
4 5/8" to 5" inclusive	2 7/8" API
5 1/8" to 7 3/8" inclusive	3 1/2" API
7 1/2" to 9 3/8" inclusive	4 1/2" API
9 1/2" to 14 3/8" inclusive	6 5/8" API
14 1/2" to 18 1/2" inclusive	6 5/8" API or 7 5/8" API
18 5/8" to 26" inclusive	7 5/8" API or 8 5/8" API
27" and larger	8 5/8" API

\*Tricone bits are available with alternate connection sizes on request.

## RE-TIP STEEL TOOTH TRICONE BITS

Re-tip steel tooth tricone bits are gently used bits that usually come from the oil fields. They are refurbished for use in non-oilfield rotary applications, such as water wells, HDD, and construction type drilling. These bits offer significant cost savings over new bits.

Hole Products offers a wide range of premium, oil field quality re-tip steel tooth bits in sizes ranging from 2 1/2" to 36". Re-tip bits are available for use in soft, medium, and hard formations.

Contact your Hole Products representative for additional details and ordering assistance.



## RE-RUN CARBIDE INSERT TRICONE BITS

Re-run carbide insert bits are used bits that have been re-worked, cleaned, and often times painted. Re-runs offer significant cost savings over new carbide insert bits.

Hole Products offers a variety of re-run carbide bits in sizes ranging from 2 1/2" to 36". All re-runs are premium quality and available for use in soft, medium, and hard formations.

Contact your Hole Products representative for additional details and ordering assistance.



## BICONE BITS

Bicone bits are roller-cone type bits similar to tricones that have two cones mounted on bearings. Bicone bits are generally recommended for use in small diameter drill holes and soft formations when speed is more of a priority than hole accuracy.

Hole Products offers new and used (re-tip and re-run) steel tooth and tungsten carbide insert bicone bits in a wide range of sizes, with any thread connection and for use in a variety of formations.

Please contact your Hole Products representative for additional details and assistance ordering bicone bits.



## BICONE BITS - STANDARD CONNECTION SIZES

BICONE BITS - STANDARD CONNECTION SIZES*	
BIT SIZE	STANDARD PIN
1 7/8" to 2 3/8" inclusive	A - AW Rod
2 1/2" to 2 3/4" inclusive	A-AW Rod & N4 Rod
2 7/8" to 3 1/4" inclusive	N4 Rod
3 1/2" to 4 1/2" inclusive	2 3/8" API
4 5/8" to 4 7/8" inclusive	2 7/8" API

*\*Bicone bits are available with alternate connection sizes on request.*

## PDC BITS



Polycrystalline diamond compact (PDC) bits were first introduced into the oil industry in the mid 70's. Since then, numerous technological design changes have been implemented that have made them an extremely effective tool when drilling in certain formations, most typically homogenous sedimentary rock formations including sandstone, shale, dolomite, and limestone. PDC bits use a shearing or shaving action when encountering the formation. These bits are normally used at higher rotation speeds than typical rotary bits.

The hydraulics of PDC bits are designed to keep the hole clean and the bit cool, which in turn increases the ROP and longevity of the bit.

Hole Products offers a wide range of PDC bits in sizes up to 24". All PDC bits are fully customizable to meet specific drilling requirements, depending on the formation being drilled and the equipment being used. Refer to page 9 for PDC bit design options.

Reverse Circulation PDC bits are available on request. Please refer to the Reverse Circulation section of this catalog.

Please contact your Hole Products representative for additional PDC bit design details and assistance selecting the correct bit for your specific drilling application.

# PDC BIT OPTIONS

## Body:

**Steel body** PDC bits are a lower cost alternative, to matrix body bits. They are generally preferred in soft formations, such as sandstone.

**Matrix body** PDC bits provide excellent resistance to wear. They are commonly used in harder more abrasive formations such as limestone and dolomite.

## Number of Blades:

The number of blades on a PDC bit is largely determined by the formation being drilled. Generally higher blade and cutter counts are used for harder formations, whereas in softer formations fewer blades can be used to increase ROP.

Gauge protections is applied to all bit blades to insure longevity and to sustain a straighter hole which increases ROP.

## Cutter Characteristics (count and size):

Cutter count and size can be adjusted for drilling in specific formations. Small cutters and high cutter count are chosen for hard and abrasive rock formations, whereas large cutters and a reduced cutter count are preferred for soft to medium formations.

## Hydraulics:

PDC bits are available with flushing holes or open center and either fixed or adjustable nozzles. Options are available for all varieties of PDC bits and are designed specific to those PDC bits to maximize bit performance and longevity.



# *Ground Combat*

*Performance PDC bits.*



## *Ground Combat*

The Ground Combat line of PDC bits are designed for all aspects of PDC drilling. All Ground Combat bits are manufactured with premium, thermally stable PDC cutters. In addition, Ground Combat bits have force balanced PDC bits specifically designed to, reducing bit whirl, improve hole straightness, and increase penetration rates.

Ground Combat PDC bits are separated into three series for use in various formation types and under specific drilling parameters. Whether drilling in sandstone, limestone, or shale formations, and with fluid or air, the Ground Combat line of PDC bits has what you need. All bits are fully customizable to meet the requirements of even the most demanding jobs.

Please refer to pages 11 - 13 for additional details, or contact your Hole Products representative for assistance.

# Ground Combat

Performance PDC bits.



## GC1

These economical steel bodied bits are designed for sandstone and shale. These bits are specifically constructed to withstand higher impact force and are loaded with higher abrasion resistant cutters than competitors. GC1 bits can be designed with flushing holes or open center and include various blade and cutter size configuration options.

GC1 SERIES BITS					
BIT SIZE	BLADE COUNT	CUTTER SIZE	PIN SIZE	BODY	HYDRAULICS
3 3/4" - 3 7/8"	3	1304	2 3/8" REG	Steel	Flushing Holes/Open Center
4" - 4 1/2"	4	1304/1308	2 7/8" REG	Steel	Flushing Holes/Open Center
4 5/8" - 4 3/4"	4-5	1308	2 7/8" REG	Steel	Flushing Holes/Open Center
4 7/8" - 5"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Open Center
5 1/8" - 5 1/4"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Open Center
5 1/2"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Open Center
5 5/8"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Open Center
5 7/8"	4-5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Open Center
6"	4-5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Open Center
6 1/2"	4-5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Open Center
6 3/4"	5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Open Center
6 3/4"	6	1613	3 1/2" REG	Steel	Flushing Holes/Open Center
7"	5	1613	3 1/2" REG	Steel	Flushing Holes/Open Center
7"	6	1613	3 1/2" REG	Steel	Flushing Holes/Open Center
7 1/2"	5	1613	3 1/2" REG	Steel	Flushing Holes/Open Center
7 1/2"	6	1613	3 1/2" REG	Steel	Flushing Holes/Open Center
7 7/8"	5	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
7 7/8"	6	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
8 1/2"	5	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
8 1/2"	6	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
8 3/4"	5	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
8 3/4"	6	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
9 7/8"	5	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
9 7/8"	6	1613	4 1/2" REG	Steel	Flushing Holes/Open Center
11"	5	1613	6 5/8" REG	Steel	Flushing Holes/Open Center
12 1/4"	5	1613	6 5/8" REG	Steel	Flushing Holes/Open Center
12 1/2" - 17 1/2" +	Call for Details				

# Ground Combat

Performance PDC bits.



## GC2

These steel bodied bits have advanced hydraulics and forward advanced blades that significantly increase ROP. GC2 bits are specifically designed to increase productivity in sandstone and shale formations. They are customizable with flushing holes and fixed or adjustable nozzles, along with blade count and cutter size configuration options.

### GC2 SERIES BITS

BIT SIZE	BLADE COUNT	CUTTER SIZE	PIN SIZE	BODY	HYDRAULICS
3 3/4" - 3 7/8"	3	1304	2 3/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
4" - 4 1/2"	4	1304/1308	2 7/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
4 5/8" - 4 3/4"	4-5	1308	2 7/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
4 7/8" - 5"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
5 1/8" - 5 1/4"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
5 1/2"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
5 5/8"	4-5	1308/1613	2 7/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
5 7/8"	4-5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
6"	4-5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
6 1/2"	4-5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
6 3/4"	5	1308/1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
6 3/4"	6	1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
7"	5	1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
7"	6	1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
7 1/2"	5	1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
7 1/2"	6	1613	3 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
7 7/8"	5	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
7 7/8"	6	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
8 1/2"	5	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
8 1/2"	6	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
8 3/4"	5	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
8 3/4"	6	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
9 7/8"	5	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
9 7/8"	6	1613	4 1/2" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
11"	5	1613	6 5/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
12 1/4"	5	1613	6 5/8" REG	Steel	Flushing Holes/Fixed or Adjustable Nozzles
12 1/2" - 17 1/2" +	Call for Details				



# Ground Combat

Performance PDC bits.



## GC3

The GC3 bit is a matrix body bit, which provides a stronger wear resistance due to the matrix powder that is applied to the body. The matrix body style is able to withstand harder compositions, such as dolomite and limestone. Bits are fully customizable with flushing holes and fixed or adjustable nozzles, along with blade count and cutter size configuration options.

### GC3 SERIES BITS

BIT SIZE	BLADE COUNT	CUTTER SIZE	PIN SIZE	BODY	HYDRAULICS
3 3/4" - 3 7/8"	3	1304	2 3/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
4" - 4 1/2"	4	1304/1308	2 7/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
4 5/8" - 4 3/4"	4-5	1308	2 7/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
4 7/8" - 5"	4-5	1308/1613	2 7/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
5 1/8" - 5 1/4"	4-5	1308/1613	2 7/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
5 1/2"	4-5	1308/1613	2 7/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
5 5/8"	4-5	1308/1613	2 7/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
5 7/8"	4-5	1308/1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
6"	4-5	1308/1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
6 1/2"	4-5	1308/1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
6 3/4"	5	1308/1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
6 3/4"	6	1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
7"	5	1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
7"	6	1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
7 1/2"	5	1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
7 1/2"	6	1613	3 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
7 7/8"	5	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
7 7/8"	6	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
8 1/2"	5	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
8 1/2"	6	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
8 3/4"	5	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
8 3/4"	6	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
9 7/8"	5	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
9 7/8"	6	1613	4 1/2" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
11"	5	1613	6 5/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
12 1/4"	5	1613	6 5/8" REG	Matrix	Flushing Holes/Fixed or Adjustable Nozzles
12 1/2" - 17 1/2" +	Call for Details				

## DRAG BITS



Hole Products offers a wide selection of Step and Chevron type drag bits for use in a variety of formations. Drag bits are offered with three or four wings in sizes ranging from 2 3/4" to 26".

### **Step Type:**

Bits are primarily designed for rapid penetration in soft to medium formations such as clay, sand rock, or shale. Step bits are available with regular and heavy steps. Heavy steps are recommended for harder formations. They feature more cutting carbides and offer increased durability.

### **Chevron Type:**

Bits are designed for harder, more consolidated formations such as hard shale or limestone, areas with rock, and for drilling out concrete casings and plugs. The Chevron type drag bit does not penetrate as fast as the Step type, but will cut harder formations.

As a general rule three wing bits offer faster penetration, whereas four wing bits offer increased durability.

Replaceable blade drag bits are available on request.

Please contact your Hole Products representative for additional details and drag bit ordering assistance.

## DRAG BIT ORDERING GUIDE

Drag bits are offered with a variety of custom options to optimize penetration in a variety of formations.

Please refer to the guide below when ordering drag bits.

STEP TYPE* DRAG BIT ORDERING GUIDE	
Size:	
Number of Wings:	
Regular or Heavy Step:	
Connection:	

*\*See page 14 for additional details.*

CHEVRON TYPE* DRAG BIT ORDERING GUIDE	
Size:	
Number of Wings:	
Connection:	

*\*See page 14 for additional details.*



## CLAW BITS



Claw bits are designed for drilling in soft to medium, unconsolidated formations including gravels, sandstone, and shales. They feature field replaceable bullet shaped cutters. Cutters are designed to rotate in their blocks to provide a self sharpening effect, thus extending the life of the bit.

Hole Products offers claw bits in a wide range of sizes, with a number of thread connections, and a variety of custom manufacturing options including:

- Sizes from 3 1/2" - 24"
- 4 or 5 cutters
- Any thread connection
- Button or Blade style pilot bits

Please contact your Hole Products representative for custom design details and availability of replacement blocks, cutters, and pilot bits.

CLAW BITS			
PART #	SIZE	# OF CUTTERS	CONNECTION
2550004	4 3/4"	4	2 3/8" API
2550008	4 3/4"	4	2 7/8" API
2550006	5 1/8"	4	2 3/8" API
2550007	5 1/4"	4	2 7/8" API
2550009	5 1/2"	4	3 1/2" API
2550010	5 7/8"	4	3 1/2" API
2550001	6"	5	3 1/2" API
2550003	6 1/4"	5	3 1/2" API

## CORING BITS

Hole Products offers a large selection of diamond impregnated, surface set, carbide chip and PCD bits for use in the diamond core drilling industry.

Coring bits are specifically designed and manufactured to provide optimum performance and longevity in specific ground conditions.

For a full list of available coring bits, please refer to Coring section of this catalog.



## SONIC BITS

Hole Products offers a complete line of quality sonic bits and accessories designed to provide excellent performance and wear resistance in the demanding applications unique to sonic drilling.

All sonic bits are manufactured from premium quality materials and field tested under a variety of conditions and specific ground formations.

For a full list of available sonic bits, please refer to the Sonic section of this catalog.





# DTH HAMMERS & BITS

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## DTH HAMMERS & BITS



Hole Products offers a comprehensive range of high performance DTH hammers, DTH hammer bits, and accessories for use in the mining, construction, geothermal, and rotary drilling industries.

DTH hammers are available in sizes from 2" to 20" from the industries leading manufacturer's including Mincon<sup>®</sup>, Sandvik<sup>®</sup>, Halco<sup>®</sup>, Drill King<sup>®</sup>, Rockmore<sup>®</sup>, JK Olsen, and more.

DTH hammer bits are available in sizes from 2" to 36", with all shanks, multiple head/face designs, and with a variety of tungsten carbide button styles to suit a wide variety of drilling conditions.

DTH accessories, including hammer oil and lube, grinding and sharpening tools, adapter, subs, shock absorbers, and more, are available to complement our DTH product offering.

Please contact your Hole Products representative for additional details, product specifications, and DTH hammers and bits ordering assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles.  
Please contact your Hole Products representative for additional product offerings.*



## DTH HAMMERS



Choosing the right hammer is largely determined by the hole size and type of rock formation. Ideally, the size of the hammer should match the required hole dimension as closely as possible, leaving just enough space for cuttings to evacuate the hole.

Hole Products offers a wide range of quality, versatile DTH hammers from a number of leading industry manufacturers. Hammers are available for down hole and blast hole applications and use in nearly all ground conditions. HDD and Reverse Circulation hammers are available. Please refer to the HDD or Reverse Circulation sections of this catalog or contact your Hole Products representative for details.

Most DTH hammers are designed for use with the industry's most common bit shank types. This allows for the use of one bit on multiple hammers.

Mincon® MC and Sandvik® RH550 series hammers, however, are only compatible with special bits from the respective manufacturers. These hammers do not use foot valves and, therefore, eliminate the potential for them to break.

In addition to our complete range of DTH hammers, we offer a comprehensive line of hammer replacement and spare parts. Assembly drawings for all hammers are available on request.

Please contact your Hole Products representative for product specific information and DTH hammer ordering assistance.

# MINCON® DTH HAMMERS



## 3" MINCON HAMMERS

MODEL #	MC30	MP35	MINCON 3	MINCON 3.5
Part #	3751015	3751040	3751045	3750004
Outside Diameter	3.03"	3.35"	3.03"	3.35"
Minimum Bit Size	3.35"	3.75"	3.35"	3.75"
Hammer Length	34.00"	34.20"	34.00"	34.20"
Hammer Weight	49 lbs.	54 lbs.	49 lbs.	54 lbs.
Bit Shank Type	MINCON MC30	MINCON MD3.5	DHD3.5	DHD3.5
Backhead Thread*	2 3/8" API REG PIN	2 3/8" API REG PIN	2 3/8" API REG PIN	2 3/8" API REG PIN

\*Other backhead thread connections are available.

## 4" MINCON HAMMERS

MODEL #	MC40	4HDS	4HR	4HRSD4
Part #	3750051	3750052	3751001	3750070
Outside Diameter	3.82"	3.82"	3.82"	3.82"
Minimum Bit Size	4.33"	4.33"	4.33"	4.33"
Hammer Length	37.60"	37.60"	37.60"	37.60"
Hammer Weight	85 lbs.	85 lbs.	85 lbs.	85 lbs.
Bit Shank Type	MINCON MC42	MINCON MD4	DHD340A	SD4
Backhead Thread*	2 3/8" API REG PIN	2 3/8" API REG PIN	2 3/8" API REG PIN	2 3/8" API REG PIN

\*Other backhead thread connections are available.

# MINCON® DTH HAMMERS

5" MINCON HAMMERS						
MODEL #	MC55	MP55	5DH	5DH-QL	55BH	MP55SD5
Part #	3750048	3750042	3751019	3751050	3751055	3751060
Outside Diameter	4.88"	4.88"	4.88"	4.88"	4.88"	4.88"
Minimum Bit Size	5.50"	5.50"	5.50"	5.50"	5.50"	5.50"
Hammer Length	39.90"	39.90"	41.50"	40.70"	39.90"	39.90"
Hammer Weight	152 lbs.	148 lbs.	153 lbs.	153 lbs.	146 lbs.	152 lbs.
Bit Shank Type	MINCON MC51	QL50	DHD350R	QL50	DHD350R	SD5
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.

6" MINCON HAMMERS							
MODEL #	MC60	6DH	XP60	6DH360	6DHSD6	6BH	MC65
Part #	3750016	3750020	3750015	3751017	3750025	3751016	3751024
Outside Diameter	5.5"	5.5"	5.5"	5.75"	5.5"	5.75"	5.75"
Minimum Bit Size	6"	6"	6"	6.5"	6"	6.5"	6.25"
Hammer Length	40.6"	40.6"	40.2"	44.6"	42.7"	40.7"	40.6"
Hammer Weight	201 lbs.	192 lbs.	190 lbs.	210 lbs.	200 lbs.	216 lbs.	225 lbs.
Bit Shank Type	MINCON MC61	QL60	QL60	DHD360	SD6	QL60	MC61
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.

8" MINCON HAMMERS						
MODEL #	MC80	8DH	MP80	8DHSD8	XP80-QL80	XP80-380
Part #	3750065	3750036	3750037	3750035	3750060	3751070
Outside Diameter	7.15"	7.15"	7.15"	7.15"	7.15"	7.15"
Minimum Bit Size	7.88"	7.88"	7.88"	7.88"	7.88"	7.88"
Hammer Length	47.40"	47.40"	47.50"	47.50"	47.50"	47.40"
Hammer Weight	381 lbs.	385 lbs.	381 lbs.	383 lbs.	381 lbs.	385 lbs.
Bit Shank Type	MINCON MC80	DHD380	QL80	SD8	QL80	DHD380
Backhead Thread*	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN

\*Other backhead thread connections are available.

12" MINCON HAMMER	
MODEL #	XP120 - SD12
Part #	3751065
Outside Diameter	10.75"
Minimum Bit Size	12.00"
Hammer Length	56.60"
Hammer Weight	1,248 lbs.
Bit Shank Type	SD12/10015
Backhead Thread*	6 5/8" API REG PIN

\*Other backhead thread connections are available.



# SANDVIK® DTH HAMMERS

3" SANDVIK HAMMER	
MODEL #	RH550r
Part #	3751075
Outside Diameter	3.2"
Minimum Bit Size	90mm
Hammer Length	32.4"
Hammer Weight	55 lbs.
Bit Shank Type	M30
Backhead Thread*	2 3/8" API REG PIN

\*Other backhead thread connections are available.

4" SANDVIK HAMMER	
MODEL #	RH550r
Part #	3751080
Outside Diameter	3.56"
Minimum Bit Size	110mm
Hammer Length	36"
Hammer Weight	83 lbs.
Bit Shank Type	M40
Backhead Thread*	2 3/8" API REG PIN

\*Other backhead thread connections are available.

5" SANDVIK HAMMERS			
MODEL #	RH550	RH550G	RH550r
Part #	3751085	3751090	3751095
Outside Diameter	4.72"	4.96"	4.96"
Minimum Bit Size	130mm	130mm	130mm
Hammer Length	38.86"	38.86"	38.86"
Hammer Weight	145 lbs.	160 lbs.	160 lbs.
Bit Shank Type	M50	M50	M50
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.



# SANDVIK® DTH HAMMERS

6" SANDVIK HAMMERS				
MODEL #	RH550w	RH550	RH550g	RH550r
Part #	3750095	3750010	3750100	3750009
Outside Diameter	5.6"	5.6"	5.9"	5.9"
Minimum Bit Size	152mm	152mm	152mm	152mm
Hammer Length	36.3"	36.3"	36.3"	36.3"
Hammer Weight	158 lbs.	158 lbs.	180 lbs.	180 lbs.
Bit Shank Type	M60	M60	M60	M60
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.

8" SANDVIK HAMMERS		
MODEL #	MC80	8DH
Part #	3750105	3750110
Outside Diameter	7.12"	7.12"
Minimum Bit Size	200mm	200mm
Hammer Length	48"	50"
Hammer Weight	380 lbs.	380 lbs.
Bit Shank Type	M80	M80
Backhead Thread*	4 1/2" API REG PIN	4 1/2" API REG PIN

\*Other backhead thread connections are available.



# DRILL KING® DTH HAMMERS

3" DRILL KING HAMMER	
MODEL #	DKA30-I
Part #	3750115
Outside Diameter	3.35"
Minimum Bit Size	3.5" - 4"
Hammer Length	34.25"
Hammer Weight	53 lbs.
Bit Shank Type	IR3.5
Backhead Thread*	2 3/8" API REG PIN

\*Other backhead thread connections are available.



4" DRILL KING HAMMERS			
MODEL #	DKA40-I	DKA40-Q	DKA-40-S
Part #	3750120	3750125	3750130
Outside Diameter	3.86"	3.86"	3.86"
Minimum Bit Size	4" - 5"	4" - 5"	4" - 5"
Hammer Length	39.375"	42.1"	41.4"
Hammer Weight	84 lbs.	86 lbs.	86 lbs.
Bit Shank Type	IR340	QL4	SD4
Backhead Thread*	2 3/8" API REG PIN	2 3/8" API REG PIN	2 3/8" API REG PIN

\*Other backhead thread connections are available.

5" DRILL KING HAMMERS			
MODEL #	DKA50-I	DKA50-Q	DK-A50-S
Part #	3750135	3750140	3750145
Outside Diameter	4.76"	4.76"	4.76"
Minimum Bit Size	5" - 5 7/8"	5" - 5 7/8"	5" - 5 7/8"
Hammer Length	47.5"	46.7"	46.7"
Hammer Weight	137 lbs.	137 lbs.	137 lbs.
Bit Shank Type	IR350R	QL50	QL50
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.

# DRILL KING® DTH HAMMERS

6" DRILL KING HAMMERS			
MODEL #	DKA60-I	DK-A60-Q	DK-A60-S
Part #	3750150	3750155	3750160
Outside Diameter	5.59"	5.59"	5.59"
Minimum Bit Size	5 7/8" - 6 3/4"	5 7/8" - 6 3/4"	5 7/8" - 6 3/4"
Hammer Length	47.9"	45.7"	48.5"
Hammer Weight	198 lbs.	198 lbs.	209 lbs.
Bit Shank Type	IR360	QL60	SD6
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.

8" DRILL KING HAMMERS					
MODEL #	DKA80-I	DK-A80-Q	DK-A80-S	DKA80-IDW	DKA80-QDW
Part #	3750165	3750170	3750175	3750180	3750185
Outside Diameter	7.16"	7.16"	7.16"	7.16"	7.16"
Minimum Bit Size	7 7/8" - 10 5/8"	7 7/8" - 10 5/8"	7 7/8" - 10 5/8"	7 7/8" - 10 5/8"	7 7/8" - 10 5/8"
Hammer Length	55.9"	55.1"	55.1"	55.3"	55.3"
Hammer Weight	405 lbs.	405 lbs.	405 lbs.	405 lbs.	405 lbs.
Bit Shank Type	IR380	QL80	SD8	IR380	QL80DW
Backhead Thread*	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN

\*Other backhead thread connections are available.

12" DRILL KING HAMMERS		
MODEL #	DKA120-Q	DK-T120-S
Part #	3750190	3750195
Outside Diameter	11.25"	10.8"
Minimum Bit Size	11 7/8" - 17 1/2"	11 7/8" - 15"
Hammer Length	67.5"	71.4"
Hammer Weight	1,433 lbs.	1,433 lbs.
Bit Shank Type	QL120	SD12
Backhead Thread*	6 5/8" API REG PIN	6 5/8" API REG PIN

\*Other backhead thread connections are available.

# ROCKMORE® DTH HAMMERS

3" ROCKMORE HAMMERS							
MODEL #	ROK 3LT	ROK 3	ROK 350 - 001	ROK 350 - 002	ROK 350 - 003	ROK 350 - 004	ROK 350 - 005
Part #	3750200	3750205	3750210	3750215	3750220	3750225	3750230
Outside Diameter	3.2"	3.2"	3.4"	3.4"	3.4"	3.4"	3.4"
Minimum Bit Size	3.5" - 3.7"	3.6" - 4.1"	3.8" - 4.1"	3.7" - 4.1"	3.8" - 4.1"	3.7" - 4.1"	3.8" - 4.1"
Hammer Length	33.3"	29.5"	33.0"	33.0"	33.0"	33.0"	33.0"
Hammer Weight	53.0 lbs.	64.0 lbs.	49 lbs.	49 lbs.	51 lbs.	51 lbs.	49 lbs.
Bit Shank Type	BR33	IR3.5	IR3.5	IR3.5HD	IR3.5	IR3.5HD	IR3.5
Backhead Thread*	2 3/8" API REG PIN	2 3/8" API REG BOX	2 3/8" API REG PIN	2 3/8" API REG PIN	2 3/8" API REG BOX	2 3/8" API REG BOX	CUBEX #21 PIN W/SPLINE

\*Other backhead thread connections are available.

4" ROCKMORE HAMMERS						
MODEL #	ROK 4	ROK 400 - 001	ROK 400 - 002	ROK 400 - 004	ROK 400 - 005	ROK 400 - 006
Part #	3750235	3750240	3750245	3750250	3750255	3750260
Outside Diameter	3.8"	3.9"	3.9"	3.9"	3.9"	4.5"
Minimum Bit Size	4.9" - 5.5"	4.3" - 4.9"	4.3" - 4.9"	4.3" - 4.9"	4.3" - 4.9"	5.0" - 5.5"
Hammer Length	40.6"	35.4"	35.4"	35.4"	35.4"	35.4"
Hammer Weight	84.0 lbs.	70.8 lbs.	70.8 lbs.	70.8 lbs.	70.8 lbs.	107.0 lbs.
Bit Shank Type	340A	340A	340A	340A	340A	340A
Backhead Thread*	2 3/8" API REG PIN	2 3/8" API REG PIN	2 7/8" API REG PIN	2 3/8" API IF REG PIN	2 3/8" API REG BOX	2 3/8" API IF HD WEAR SLEEVE

\*Other backhead thread connections are available.

5" ROCKMORE HAMMER	
MODEL #	ROK 500 - 001
Part #	3750265
Outside Diameter	4.9"
Minimum Bit Size	5.5" - 6.0"
Hammer Length	40.5"
Hammer Weight	132.9 lbs.
Bit Shank Type	QL5/QL50
Backhead Thread*	3 1/2" API REG PIN

\*Other backhead thread connections are available.





# ROCKMORE® DTH HAMMERS

6" ROCKMORE HAMMERS					
MODEL #	ROK 600Q - 002	ROK 600W - 001	ROK 650Q - 001	ROK 650Q - 005	ROK 650Q - 006
Part #	3750270	3750275	3750280	3750285	3750290
Outside Diameter	5.6"	5.6"	5.9"	5.9"	5.9"
Minimum Bit Size	6.0" - 7.0"	6.1" - 7.0"	6.5" - 7.0"	6.5" - 7.0"	6.5" - 7.0"
Hammer Length	39.9"	39.9"	39.9"	39.9"	39.9"
Hammer Weight	168.0 lbs.	168.0 lbs.	218.0 lbs.	218.0 lbs.	218.0 lbs.
Bit Shank Type	QL6/QL60	QL6/QL60	QL6/QL60	QL6/QL60	QL6/QL60
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API IF REG PIN	4 1/2" API REG PIN

\*Other backhead thread connections are available.

8" ROCKMORE HAMMER	
MODEL #	ROK 875-001
Part #	3750295
Outside Diameter	7.4"
Minimum Bit Size	8.5" - 10.0"
Hammer Length	50.6"
Hammer Weight	405.6 lbs.
Bit Shank Type	QL8/QL80
Backhead Thread*	4 1/2" API REG PIN

\*Other backhead thread connections are available.



## JK OLSEN DTH HAMMERS

4" JK OLSEN HAMMERS		
MODEL #	DRILL 4	T4
Part #	3750300	3750305
Outside Diameter	3.625"	3.875"
Minimum Bit Size	4" - 5.125"	4.25" - 5.25"
Hammer Length	39.5"	40.875"
Hammer Weight	77 lbs.	86 lbs.
Bit Shank Type	SD4	340 SHANK
Backhead Thread*	2 3/8" API REG PIN	2 3/8" or 2/78" API REG PIN

\*Other backhead thread connections are available.

5" JK OLSEN HAMMERS			
MODEL #	DRILL 5	BB5.5	P5.5
Part #	3750310	3750315	3750320
Outside Diameter	4.563"	4.875"	4.875"
Minimum Bit Size	5.125" - 5.875"	5.25" - 6"	5.25" - 6"
Hammer Length	38.906"	38.75"	41.4375"
Hammer Weight	137 lbs.	146 lbs.	153 lbs.
Bit Shank Type	SD5	QL5	QL5
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.

6" JK OLSEN HAMMERS						
MODEL #	DRILL 6	BB6 STD	P6-STD	DRILL 6 HD	BB6-HD	P6-HD
Part #	3750325	3750330	3750335	3750340	3750345	3750350
Outside Diameter	5.438"	5.5"	5.5"	5.75"	5.75"	5.75"
Minimum Bit Size	6" - 10"	6" - 10"	6" - 10"	6.5" - 10"	6.5" - 10"	6.5" - 10"
Hammer Length	49.281"	40.75"	43.5"	49.281"	40.75"	43.5"
Hammer Weight	225 lbs.	189 lbs.	206 lbs.	270 lbs.	214 lbs.	234 lbs.
Bit Shank Type	SD6	QL6	QL6	SD6	QL6	QL6
Backhead Thread*	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN	3 1/2" API REG PIN

\*Other backhead thread connections are available.

# JK OLSEN DTH HAMMERS

8" JK OLSEN HAMMERS					
MODEL #	DRILL 8	TH8	BB8	BB8 DEEP HOLE	DRILL 8 5/8
Part #	3750360	3750365	3750370	3750375	370380
Outside Diameter	6.75"	7.125"	7.125"	7.125"	8.56"
Minimum Bit Size	7.375" - 12"	7.875" - 12"	7.875" - 12"	7.875" - 12"	8.625"
Hammer Length	47.0625"	52.375"	48.0625"	48.625"	47.0625"
Hammer Weight	365 lbs.	375 lbs.	392 lbs.	392 lbs.	440 lbs.
Bit Shank Type	SD8	DHD 380	QL8	QL8	SD8
Backhead Thread*	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN	4 1/2" API REG PIN

\*Other backhead thread connections are available.

10" JK OLSEN HAMMER	
MODEL #	DRILL 10
Part #	3750385
Outside Diameter	8.875"
Minimum Bit Size	9.875" - 12.5"
Hammer Length	49.875"
Hammer Weight	690 lbs.
Bit Shank Type	SD10 SHANK
Backhead Thread*	6 5/8" API REG PIN

\*Other backhead thread connections are available.

12" JK OLSEN HAMMER	
MODEL #	DRILL 12
Part #	3750390
Outside Diameter	10.75"
Minimum Bit Size	11.875" - 20"
Hammer Length	59.468"
Hammer Weight	1,150 lbs.
Bit Shank Type	SD12
Backhead Thread*	6 5/8" API REG PIN

\*Other backhead thread connections are available.



## REVERSE CIRCULATION HAMMERS

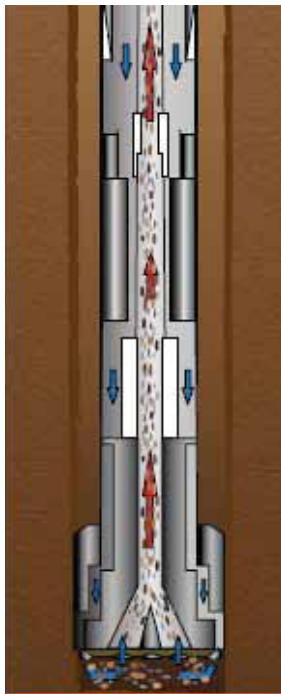
Hole Products offers a complete line of Reverse Circulation hammers and spare parts from the industry's leading manufacturers including Mincon® and Sandvik®. Hammers are available in a wide range of sizes and styles, to provide maximum performance and longevity on all RC drilling jobs.

Reverse Circulation hammers are designed with an inner sample tube that extends through the center and into the top of the hammer bit. The RC hammer exhausts the air between the bit splines and over the face of the bit. This forces the sample into the recovery holes in the face of the bit, through the center of the hammer and upward through the drill rod inner tubes to the surface for collection. The use of a shroud or collar is required when a RC hammer is used, to help direct the return air and cuttings up through the face of the bit.

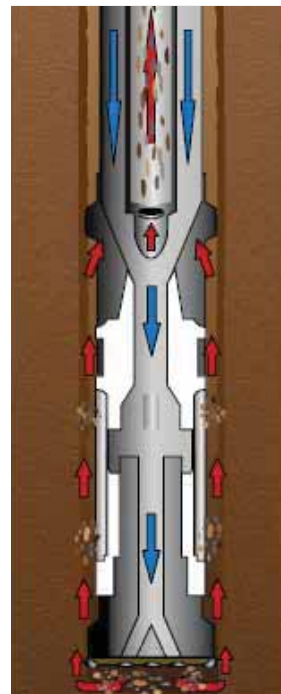
Conventional DTH hammers can also be in RC drilling operations, but increase the potential for sample loss and contamination. A conventional DTH hammer is used in conjunction with a cross-over sub located between the hammer and drill rod. The sample travels from the face of the bit up the outside of the hammer and into the cross-over sub. The sub directs the sample up the center of the dual wall rods and to the surface.

Please refer to the Reverse Circulation section of this catalog or contact your Hole Products representative for additional details.

**RC HAMMER**



**CONVENTIONAL HAMMER**



## DTH HAMMER BITS



Hole Products offers a comprehensive range of quality DTH drill bits from the industry's leading manufacturers for use in all rock types and drilling conditions. Bit life and rate of penetration are the most important criteria in selecting the right bit for a particular application.

DTH bits are available in sizes from 2" to 36". Bits come in three different standard bit head/face designs (Convex, Flat Face, and Concave), and with a number of tungsten carbide insert options, to guarantee a DTH drill bit that can tackle any challenge and rock-face formation. Additional bit head designs and custom options are available depending upon manufacturer.

Reverse Circulation hammer bits are available on request. Please refer to the Reverse Circulation section of this catalog or contact your Hole Products representative for details.



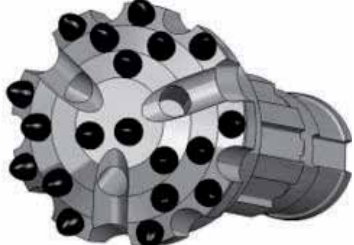
Due to the vast number of DTH bit designs options available, part numbers are not listed in this section of the catalog.

Please contact your Hole Products representative for specific product details and assistance selecting the bit designed for your particular rock drilling application.

## BIT HEAD DESIGNS



Hammer bits are available with multiple head designs suitable for a variety of rock formations.

Concave, flat, and convex are the most common head designs. Additional designs are available on request. Please contact your Hole Products representative for additional information.

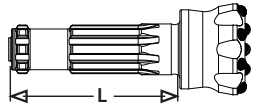
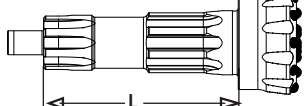
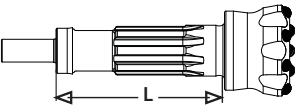
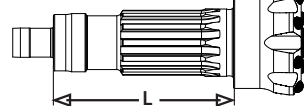
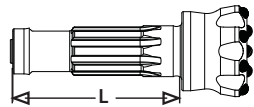
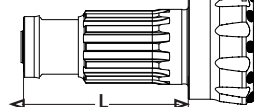
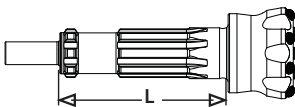
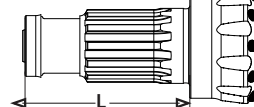
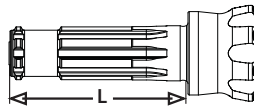
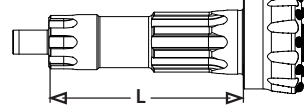
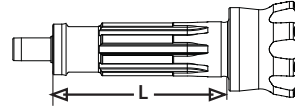
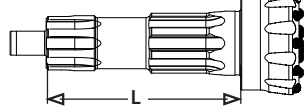
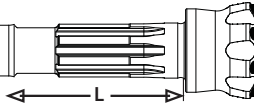
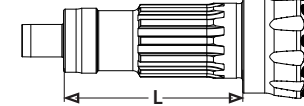
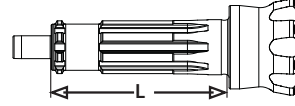
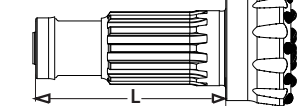
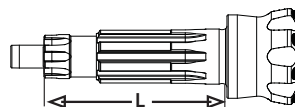
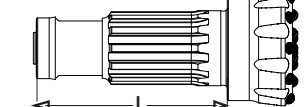
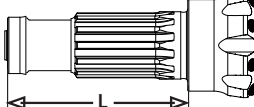
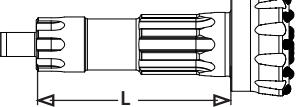
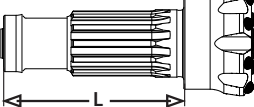
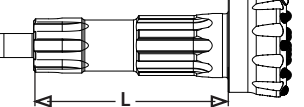
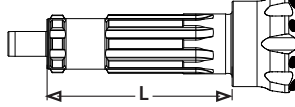
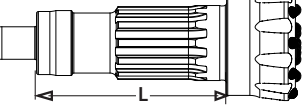
BIT HEAD DESIGNS		DESCRIPTION
CONCAVE		The concave bit design is an excellent all around bit, suitable for soft and hard formations. The cone shaped face design provides good stability during drilling, allowing for straighter holes while reducing equipment vibration. The carbide configuration design gives added penetration in many formations.
FLAT		Used for general purpose drilling, the flat face design is considered effective in very broken ground as well as hard formations that tend to over drill.
CONVEX		Convex are suitable for most drilling applications, particularly hard, abrasive rock to give a combination of speed and good service life.

## TUNGSTEN CARBIDE INSERTS

Hammer bits are offered with a variety of insert shapes. Dome/spherical and ballistic are the most common inserts. Additional tungsten carbide insert grades and shapes, as well as diamond enhanced inserts are available on request.

TUNGSTEN CARBIDE INSERTS	
	
<p><b>DOME/SPHERICAL</b> Tough shape for very hard abrasive rock and deep hole drilling.</p>	<p><b>BALLISTIC</b> Ideal for less abrasive sedimentary deposits where speed is vital.</p>

# BIT SHANK IDENTIFICATION CHART

<p>MC30 • 3"</p> 	<p>L = 5.120" (130mm) 8 Splines</p>	<p>SD5/4315 • 5"</p> 	<p>L = 10.236" (260 mm) 8 Splines</p>
<p>MD3.5 • 3"</p> 	<p>L = 7.126" (181 mm) 8 Splines</p>	<p>QL50 • 5"</p> 	<p>L = 9.45" (240 mm) 12 Splines</p>
<p>M30 • 3"</p> 	<p>L = 8.82" (224mm) 8 Splines</p>	<p>MC61 • 6"</p> 	<p>L = 7.441" (189 mm) 12 Splines</p>
<p>DHD3.5 • 3"</p> 	<p>L = 7.126" (181mm) 8 Splines</p>	<p>M60 • 6"</p> 	<p>L = 9.05" (230 mm) 8 Splines</p>
<p>MC41 • 4"</p> 	<p>L = 5.827" (148mm) 8 Splines</p>	<p>DHD360 • 6"</p> 	<p>L = 12.126" (308 mm) 8 Splines</p>
<p>MD4 • 4"</p> 	<p>L = 8.228" (209mm) 8 Splines</p>	<p>SD6/5315 • 6"</p> 	<p>L = 12.756" (324 mm) 8 Splines</p>
<p>M40 • 4"</p> 	<p>L = 8.98" (228 mm) 12 Splines</p>	<p>QL60 • 6"</p> 	<p>L = 9.97" (533 mm) 12 Splines</p>
<p>DHD340 • 4"</p> 	<p>L = 8.228" (209 mm) 8 Splines</p>	<p>MC81 • 8"</p> 	<p>L = 8.740" (222 mm) 16 Splines</p>
<p>SD4/315 • 4"</p> 	<p>L = 10.236" (260 mm) 8 Splines</p>	<p>M80 • 8"</p> 	<p>L = 12.95" (329 mm) 12 Splines</p>
<p>MC51 • 5"</p> 	<p>L = 7.007" (178 mm) 12 Splines</p>	<p>DHD380 • 8"</p> 	<p>L = 13.780" (350 mm) 10 Splines</p>
<p>M50 • 5"</p> 	<p>L = 11.30" (287 mm) 12 Splines</p>	<p>SD8 • 8"</p> 	<p>L = 12.638" (321 mm) 8 Splines</p>
<p>DHD350R • 5"</p> 	<p>L = 10.276" (261 mm) 8 Splines</p>	<p>QL8 • 8"</p> 	<p>L = 13.059" (331.7 mm) 16 Splines</p>

- See page 21 for replacement foot valves.

## DTH HAMMER BITS

### 3" SERIES BITS - (3 1/4" - 4 1/8")

BIT SHANK	COMPATIBLE HAMMERS	
MC30	MINCON MC30	
MD3.5	MINCON MP3.5	
M30	SANDVIK RH550r (3")	
DHD3.5	ATLAS COPCO DHD3.5 STD BUCYRUS (HALDCO) DOMINATOR 350, DART 350 BULOC HYPER 31	MINCON 3, 3.5 NUMA PATRIOT 35A PUMA 3.1 DHD3.5

### 4" SERIES BITS (4 1/8" - 5 1/4")

BIT SHANK	COMPATIBLE HAMMERS	
MC41	MINCON MC40	
MD4	MINCON 4HDS	
M40	SANDVIK RH550r (4")	
DHD340	ATLAS COPCO DHD4 STD ATLAS COPCO COP44, COP44Q BUCYRUS (HALCO) DOMINATOR 400 BULROC HYPER 41	MINCON 4HR NUMA CHAMPION 40 PUMA 434 DHD340 ROCKMORE ROC 4
SD4/3415	BUCYRUS (HALCO) DOMINATOR-M BUCYRUS (HALCO) MACH 44M BULROC HYPER 41-SD4	MINCON 4HRSD4 NUMA CHALLENGER 4 SANDVIK SD4

### 5" SERIES BITS (5 1/8" - 6")

BIT SHANK	COMPATIBLE HAMMERS	
MC51	MINCON MC55	
M50	SANDVIK RH550 (5") SANDVIK RH550G (5")	SANDVIK RH550R (5")
DHD350R	ATLAS COPCO DHD5 SD BUCYRUA (HALCO) DOMINATOR 500-IR BULROC HYPER 51	MINCON 5DH PUMA M5.2 DHD350
SD5/4315	BUCYRUS (HALCO) DOMINATOR 500-M BULROC HYPER 51-SD5 MINCON MP55SD5	PUMA 5.2 SD5 SANDVIK SD5
QL50	ATLAS COPCO QL50 CENTER ROCK CR50 NUMA PATRIOT 50	PUMA 5.2 QL5 MINCON MP55, 5DH-QL ROCKMORE ROCK 500-001



## DTH HAMMER BITS

6" SERIES BITS (5 7/8" - 9")	
BIT SHANK	COMPATIBLE HAMMERS
MC61	MINCON MC60, MC65
M60	SANDVIK RH550 (6") SANDVIK RH550G (6") SANDVIK RH550R (6") SANDVIK RH550W (6")
DHD360	ATLAS COPCO DHD360 STD BUCYRUS (HALCO) DOMINATOR 600-IR BULROC HYPER 63, HYPER 66/DHD360 MINCON 6DH360 NUMA PATRIOT 60W, CHALLENGER 6 PUMA M6.2 DHD360
SD6/5315	BUCYRUS (HALCO) DOMINATOR 600-M BULROC HYPER 63-SD6 MINCON MC60, MC65 MINCON 6DHSD6 PUMA M6.2 SD6 SANDVIK SD6
QL60	ATLAS COPCO QL60, QL65, TD60, TD65 BULROC HYPER 66/QL60 CENTER ROCK CR6-DW ,CR60-W MINCON 6DH, 6BH, XP60 NUMA PATRIOT 60WQ, DCS 6 PUMA M6.2 QL6

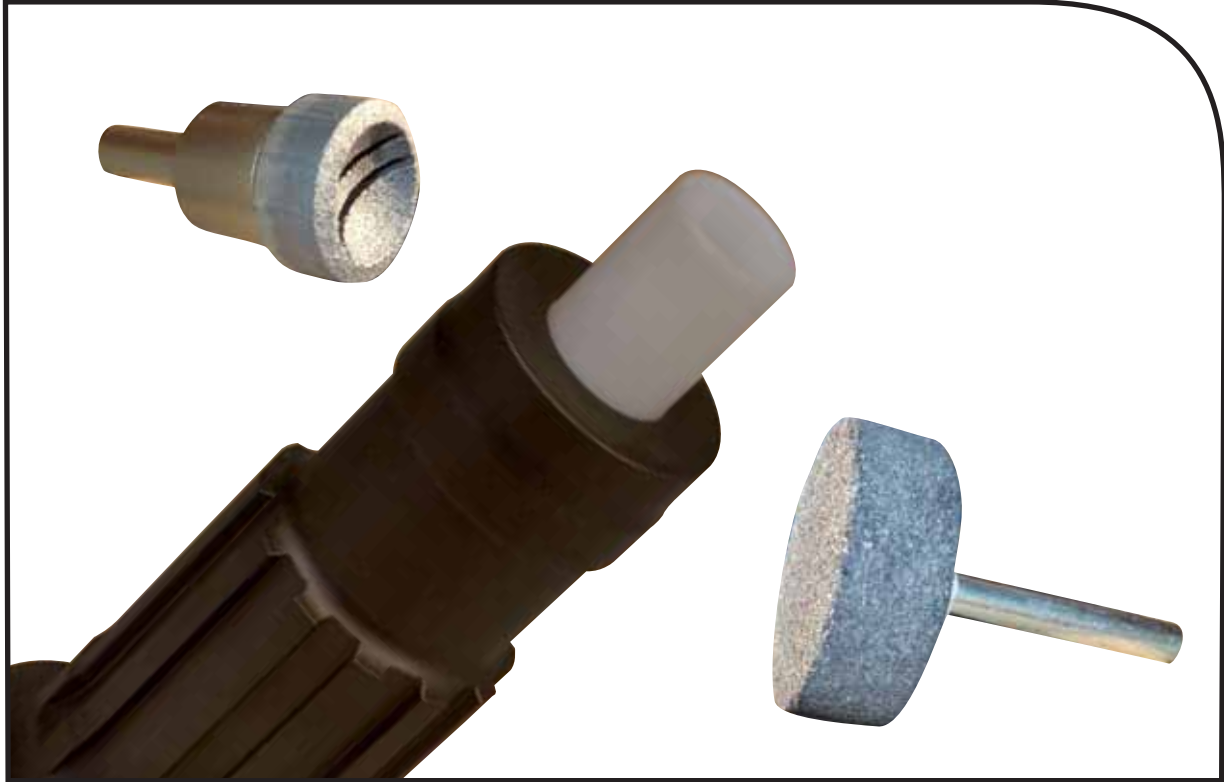
8" SERIES BITS (7 7/8" - 12")	
BIT SHANK	COMPATIBLE HAMMERS
MC81	MINCON MC80
M80	SANDVIK RH550R (8") SANDVIK RH550W (8")
DHD380	ATLAS COPCO DHD360 STD BUCYRUS (HALCO) DOMINATOR 600-IR BULROC HYPER 63, HYPER 66/DHD360 MINCON 6DH360 NUMA PATRIOT 60W, CHALLENGER 6 PUMA M6.2 DHD360
SD8	BULROC HYPER 81-SD8 MINCON 8DHSD8 SANDVIK SD8
QL8	ATLAS COPCO QL80, TD80 BUCYRUS (HALCO) DOMINATOR 850 MINCON MP80, XP80-QL80 NUMA CHALLENGER 80Q PUMA 8.1 QL8

## REVERSE CIRCULATION HAMMER BITS

Reverse Circulation hammer bits are similar to conventional hammer bits, but feature sample recovery ports in the face and a large bore through the center to accept the hammer's inner tube. Deep channels on the outside of the drill bit head to allow the exhaust air to force the sample into the recovery ports in the bit face.

Please refer to the Reverse Circulation section of this catalog for additional information, or contact your Hole Products representative for ordering assistance.

## DTH ACCESSORIES



Hole Products offers a wide range of DTH drilling accessories, from hammer oil and lube to grinding and sharpening tools, to replacement foot valves. Hole Products can provide the DTH accessories successful drilling contractors require to get the job done.

In addition, we offer a complete line of sub-adaptors, shock absorbers, and much more.

Additional accessories including custom manufactured tooling are available on request.

Please contact your Hole Products representative for availability of additional DTH drilling accessories.

## FOOT VALVES/EXHAUST TUBES

Replacement foot valves are available to fit a wide range of hammer bit shanks. Don't see what you need? Give us a call and we will get it.

FOOT VALVES/EXHAUST TUBES	
PART #	DESCRIPTION
3550019	SD4 SHANK BITS
3551066	SD5 SHANK BITS
3550001	SD6 SHANK BITS
3550049	SD8 SHANK BITS
3550072	SD10 SHANK BITS
3550039	SD12 SHANK BITS
3551134	QL40 SHANK BITS
3550045	QL50 SHANK BITS
3550003	QL60 SHANK BITS
3551067	IR340/MD4 SHANK BITS
3551049	IR340 SHANK BITS - HEAVY DUTY
3551032	IR350 SHANK BITS
3550002	IR360 SHANK BITS
3551118	IR380 SHANK BITS
3551069	MACH 303 SHANK BITS



## GRINDER AND SHARPENING TOOLS

Hole Products offers a complete line of grinders and grinding stones to increase efficiency and add to the life of the DTH bit. Additional sharpening tools, sizes, and styles are available.

GRINDER & SHARPENING TOOLS		
PART #	DESCRIPTION	
3551022	HG-105 GRINDER	
3550017	GRINDING STONE - 16MM ROUND - STRAIGHT SHAFT	
3550016	GRINDING STONE - 18MM ROUND - STRAIGHT SHAFT	
3550018	GRINDING STONE - 19MM ROUND - STRAIGHT SHAFT	
3550015	GRINDING WHEEL - 1 1/2" X 1/2" X 1/4"	

## HAMMER OIL

Hole Products offers specially formulated oil for use with DTH hammers. DTH hammers require hammer oil to operate properly. Hammer oil reduces wear and increases the longevity of the hammer.

HAMMER OIL*	
PART #	DESCRIPTION
3551044	ENVIRONMENTALLY SAFE HAMMER OIL - 5 GAL.
3550005	HAMMER OIL - 5 GAL.

\*55 Gallon drums are available on request.



## HAMMER LUBE

Hole Products offers nontoxic, biodegradable hammer lube designed to lubricate the interior workings of the hammer, thus increasing hammer life and productivity. Lube is designed for hammers up to 6" in diameter. Apply 2-3 oz. of lube into the drill string for every 300' or 3 hours of continuous drilling.

HAMMER LUBE	
PART #	DESCRIPTION
3550037	HAMMER LUBE - 10 OZ. TUBE



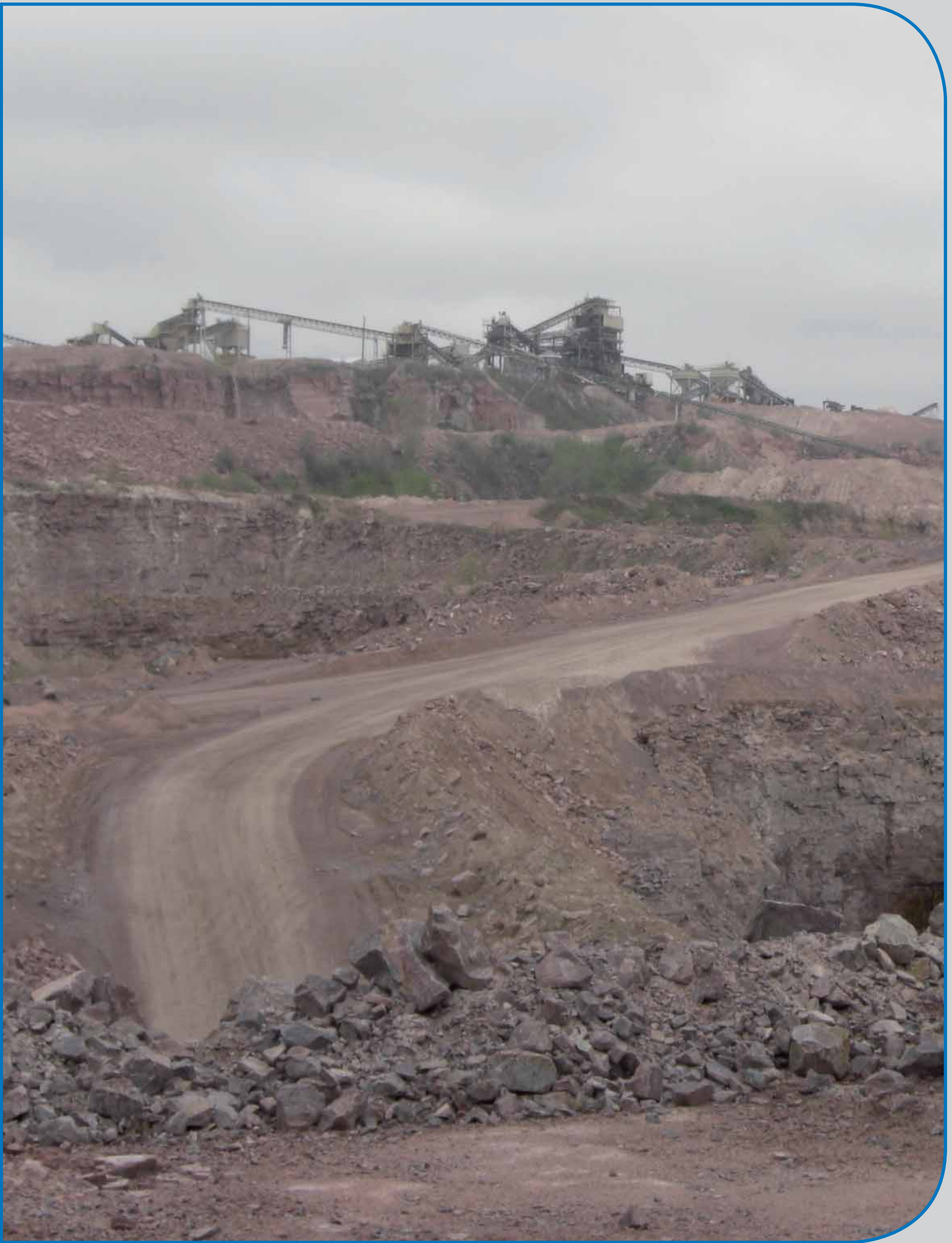
# OVERBURDEN DRILLING SYSTEMS TABLE OF CONTENTS

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- Mitsubishi® Super Max and Ultra Max Bits ..... 6-10
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## OVERBURDEN DRILLING SYSTEMS



Hole Products offers a wide range of overburden drilling systems from leading manufacturers including Mincon<sup>®</sup>, Mitsubishi<sup>®</sup>, Sandvik<sup>®</sup>, and more.

Casing advancement systems are available in a wide range of sizes and styles, for use in a variety of overburden drilling applications.

Casing hammers, extractors, jacks, and a complete offering of spare parts are available in a variety of sizes and styles on request.

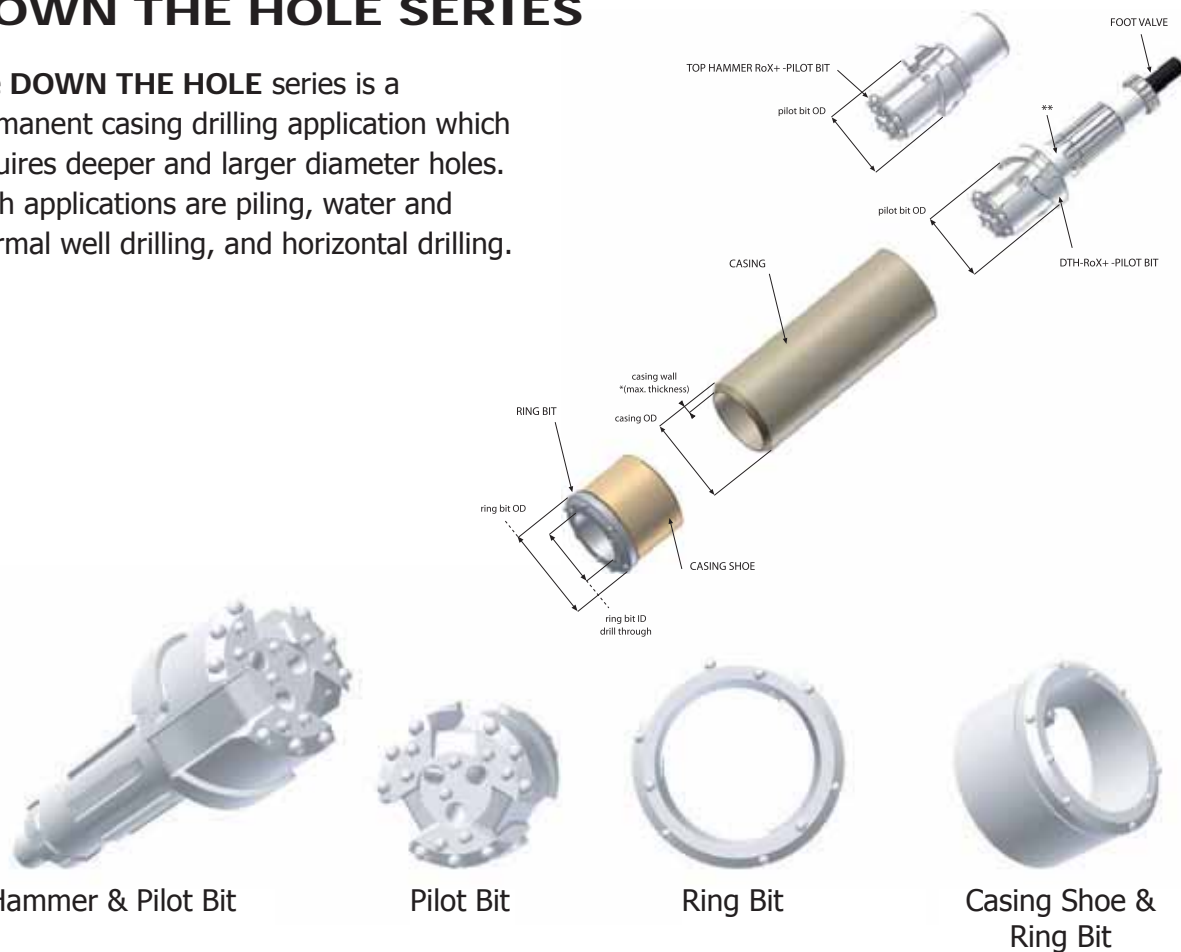
Our line of accessories includes everything successful drilling operations require for overburden drilling including casing shoes, dual rotary shoes, diverters, split wipers, and more.

Please contact your Hole Products representative for additional details.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

# MINCON® ROBIT® CASING ADVANCING SYSTEM DOWN THE HOLE SERIES

The **DOWN THE HOLE** series is a permanent casing drilling application which requires deeper and larger diameter holes. Such applications are piling, water and thermal well drilling, and horizontal drilling.



DOWN THE HOLE CASING SYSTEM					
CASING O.D	CASING WALL MAX	RING BIT		PILOT BIT O.D.	DTH HAMMER
		I.D.	O.D.		
4.500"	0.197"	3.583"	5.039"	4.016"	3.5"
4.500"	0.394"	3.071"	4.882"	3.642"	3.5"
5.500"	0.220"	4.567"	6.063"	5.020"	4"
5.500"	0.394"	3.701"	5.906"	4.626"	4"
6.625"	0.236"	5.591"	7.177"	6.102"	5"
6.625"	0.500"	4.764"	7.008"	5.512"	5"
7.625"	0.236"	6.575"	8.346"	7.087"	6"
7.625"	0.500"	5.827"	7.992"	6.575"	6"
8.625"	0.236"	7.323"	9.213"	8.071"	6"
8.625"	0.500"	6.575"	9.213"	7.520"	6"
10.750"	0.315"	9.134"	11.496"	10.039"	8"
10.750"	0.500"	8.622"	11.496"	9.685"	8"
12.750"	0.315"	11.063"	13.504"	12.047"	8"
12.750"	0.500"	10.630"	13.465"	11.693"	8"-10"
16.000"	0.500"	12.913"	16.946"	14.724"	10"-12"
24.000"	0.591"	20.197"	24.488"	22.441"	18"



# MINCON® ROBIT® CASING ADVANCING SYSTEM MULTI USE SERIES

The **MULTI-USE** series is designed to be used several times due to its stronger and more durable composition. The ring bit is slightly bigger than the casing to facilitate easier recovery of the casings from the ground. This is a useful feature whenever there is a need for temporary casing.



Hammer & Pilot Bit



Pilot Bit



Ring Bit



Casing Shoe & Ring Bit

MULTI-USE CASING SYSTEM					
CASING O.D.	CASING WALL MAX.	RING BIT		PILOT BIT O.D.	DTH HAMMER
		I.D.	O.D.		
4.500"	0.394"	3.071"	4.803"	3.642"	3.5"
5.500"	0.394"	4.094"	5.787"	4.626"	4"
6.625"	0.394"	5.079"	7.008"	5.748"	5"
7.625"	0.394"	6.063"	8.031"	6.772"	6"
8.625"	0.394"	6.772"	9.016"	7.717"	6"
16.000"	0.500"	12.913"	16.654"	14.724"	10"-12"
24.000"	0.591"	20.197"	25.079"	22.441"	18"

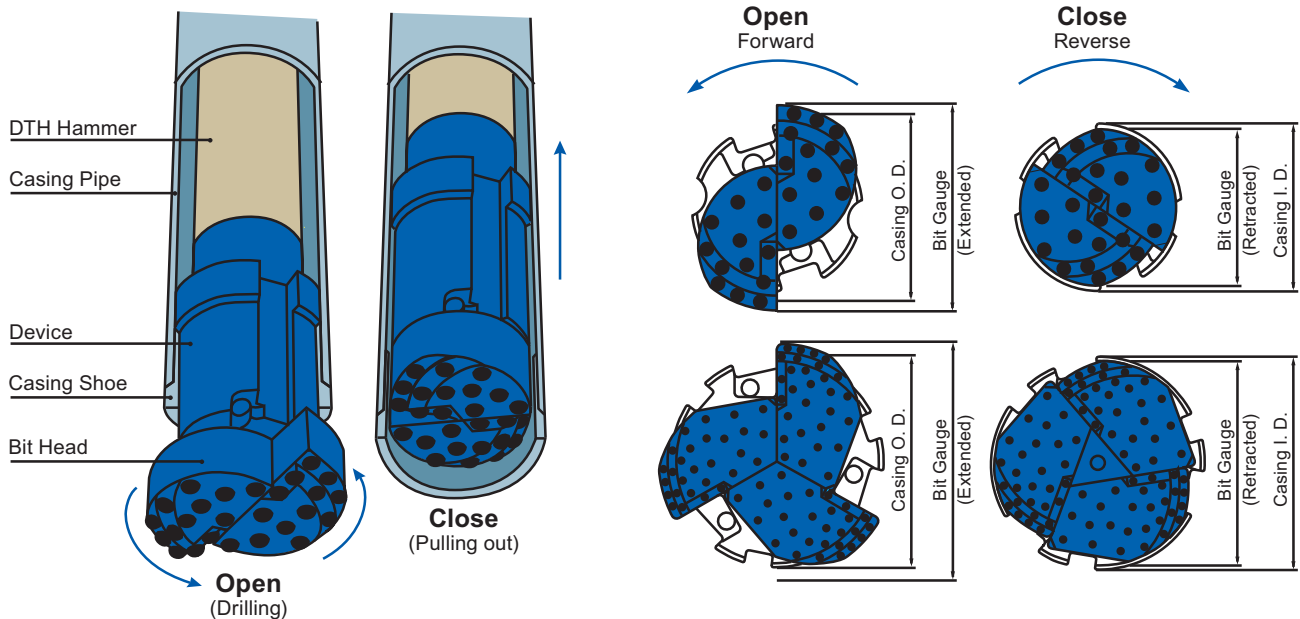
# MITSUBISHI® SUPER MAXBIT UNDER REAMING SYSTEM

The **SUPER MAXBIT** gives stability when drilling collapsing overburden formations. This is an advanced technology compared to the other eccentric drilling methods. It consists of two to three bit wings connected to the DTH Hammer. The bit head is extendable/retractable when the drill string rotates in the forward/reverse direction. Drilling and casing are possible simultaneously with the use of a casing shoe.

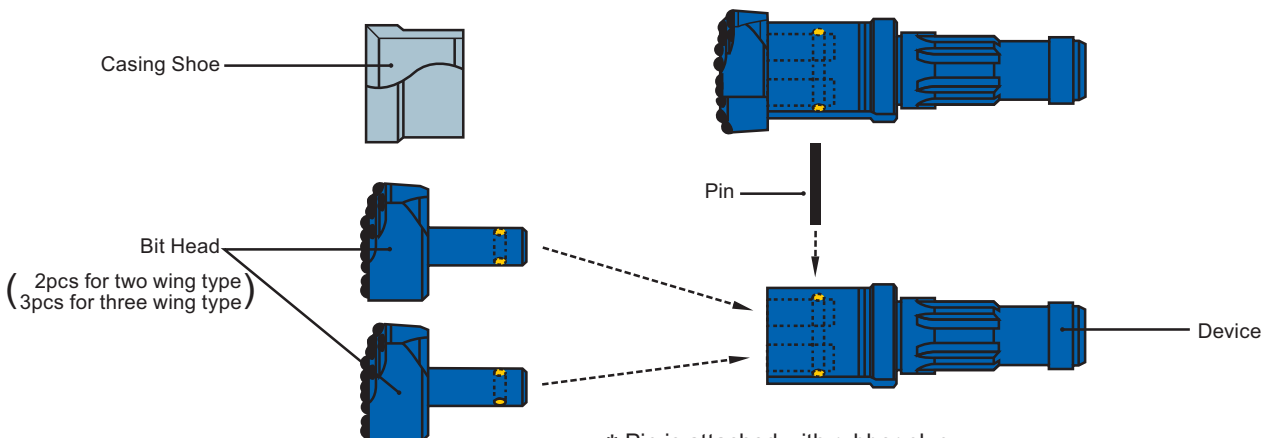
The **SUPER MAXBIT** has the following advantages:

- High-speed drilling similar to a standard DTH bit.
- Straight hole drilling.
- Uniform rotation while drilling of boulders, sand, and gravel.
- Reliability of extending and retracting proven by customer experiences.

## MECHANISM

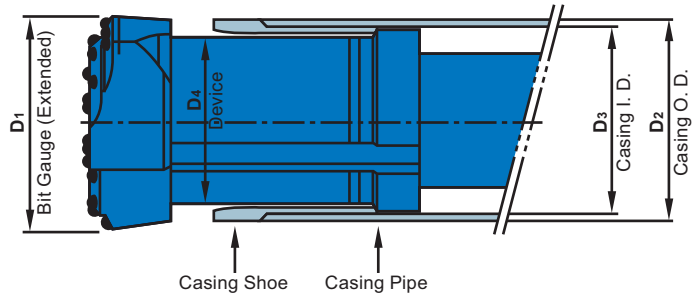


## COMPONENTS



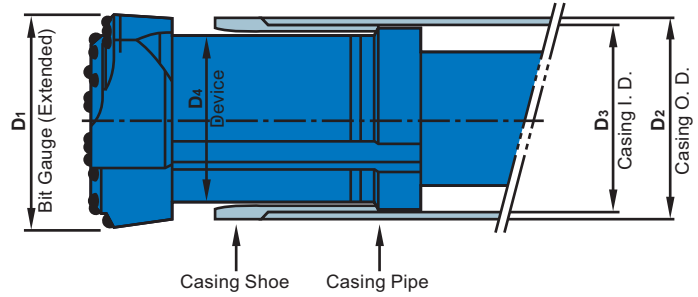
- \* Pin is attached with rubber plug.
- \* Retainer ring and rubber plug are not attached under 4" bit.
- \* Please be careful not to get your finger snapped when assembling.

# MITSUBISHI® SUPER MAXBIT UNDER REAMING SYSTEM



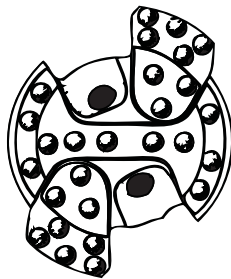
APPROPRIATE CASING AND HAMMER TYPE															
TYPE	TWO WING	THREE WING	BIT GAUGE				APPLICABLE CASING PIPE						DEVICE O. D. (D4)		HAMMER TYPE
			EXTENDED (D1)		CLOSED		MAX. O. D. (D2)		MIN. I. D. (D3)		NORMAL SIZE				
			IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	IN	MM	
90	●		4.9"	125	3.6"	91	4.5"	114.3	4.0"	102.3	4"	101.6	3.6"	92	DHD3.5, COP32
115	●		6.0"	152	4.5"	114	5.6"	141.3	5.0"	126.6	5"	127.0	4.5"	115	SD-4, DHD340, COP42
140	●		7.3"	185	5.5"	140	6.5"	165.2	6.0"	153.2	6"	152.4	5.6"	141	SD-5, DHD350
165	●		8.5"	215	6.5"	166	7.5"	190.7	7.0"	178.7	7"	177.8	6.6"	167	SD-6, DHD360, QL60
187	●		9.3"	237	7.3"	186	8.5"	216.3	8.0"	202.3	8"	203.2	7.4"	187	SD-6, DHD360, QL60
215	●		10.7"	272	8.5"	217	10.0"	254.0	9.5"	241.0	9"	228.6	8.6"	218	SD-8, DHD380, QL80
240		●	11.4"	290	9.4"	238	10.8"	273.1	10.0"	254.5	10"	254.0	9.4"	240	SD-8, DHD380, QL80
280		●	13.4"	340	11.1"	281	12.5"	318.5	11.9"	301.7	12"	304.8	11.1"	283	SD-10
315		●	14.7"	373	12.5"	318	14.0"	355.6	13.3"	336.6	14"	355.6	12.6"	320	SD-12, DHD112, N120
365		●	16.7"	425	14.3"	363	16.0"	406.4	15.3"	387.4	16"	406.4	14.4"	365	SD-12, DHD112, N120
410		●	18.8"	478	16.2"	412	18.0"	457.2	17.1"	435.0	18"	457.2	16.3"	414	SD-15, DHD112S, N120S
460		●	20.9"	530	18.1"	461	20.0"	508.0	19.0"	482.6	20"	508.0	18.2"	463	SD-15, DHD112S, N120S, SD-18
510		●	22.8"	580	20.0"	509	22.0"	558.8	21.0"	533.4	22"	558.8	20.1"	511	SD-15, DHD112S, SD-18, N180
560		●	24.8"	630	22.0"	559	24.0"	609.6	23.0"	584.2	24"	609.6	22.1"	561	SD-18, DHD120A, N180

# MITSUBISHI® SUPER MAXBIT G-MODEL CASING SYSTEM

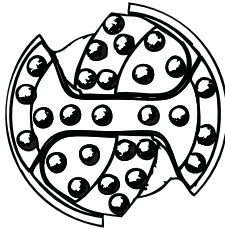


2 Wing Type

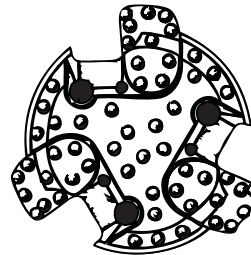
3 Wing Type



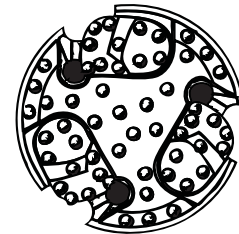
Open



Closed



Open



Closed

## APPROPRIATE CASING AND HAMMER TYPE

TYPE	TWO WING	THREE WING	BIT GAUGE				APPLICABLE CASING PIPE				DEVICE O.D. (D4)		HAMMER TYPE		
			EXTENDED (D1)		CLOSED		MAX. O.D. (D2)		MIN. I.D. (D3)					NORMAL SIZE	
			IN	MM	IN	MM	IN	MM	IN	MM	IN	MM		IN	MM
115	●		6.0"	152	4.5"	114	5.6"	141.3	5.0"	126.6	5"	127.0	4.5"	115	SD-4, DHD340, COP42, MACH 44, N4
140	●		7.3"	185	5.5"	140	6.5"	165.2	6.0"	153.2	6"	152.4	5.6"	141	SD-5, DHD350R, COP52, MACH50, QL50
187	●		9.3"	237	7.3"	186	8.5"	216.3	8.0"	202.3	8"	203.2	7.4"	187	SD-6, DHD360, DH-6, COP 62, QL60,
215	●		10.7"	272	8.5"	217	10.0"	254.0	9.5"	241.0	9"	228.6	8.6"	218	SD-8, DHD380, DHD380M, QL80
240		●	11.4"	290	9.4"	238	10.8"	273.1	10.0"	254.5	10"	254.0	9.4"	240	SD-8, DHD380M, DHD380, QL80
280		●	13.4"	340	11.1"	281	12.5"	318.5	11.9"	301.7	12"	304.8	11.1"	283	SD-10, DND310M, N100
315		●	14.7"	373	12.5"	318	14.0"	355.6	13.3"	336.6	14"	355.6	12.6"	320	SD-12, DHD112, N120
365		●	16.7"	425	14.3"	363	16.0"	406.4	15.3"	387.4	16"	406.4	14.4"	365	SD-12, DHD112, N120
460		●	20.9"	530	18.1"	461	20.0"	508.0	19.0"	482.6	20"	508.0	18.2"	463	SD-15, DHD112S, N120S, SD-18, N180
560		●	24.8"	630	22.0"	559	24.0"	609.6	23.0"	584.2	24"	609.6	22.1"	561	SD-18, DHD120A, N180

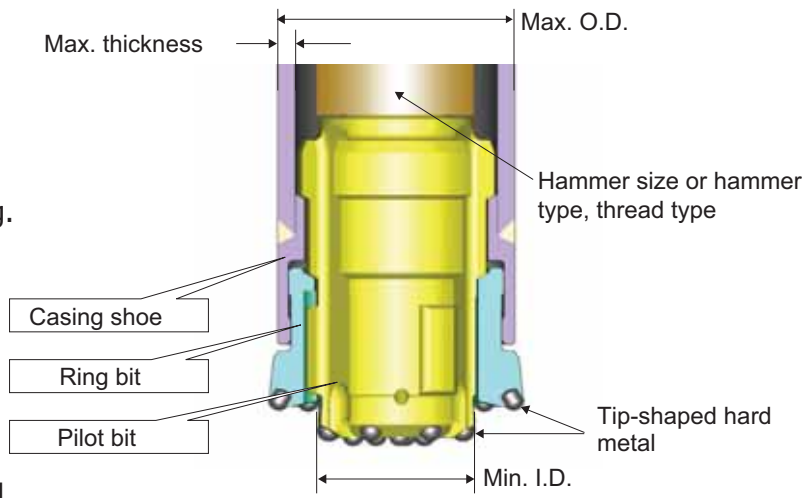
# MITSUBISHI® ULTRA MAXBIT CASING SYSTEM

The ULTRA MAXBIT is used for simultaneous drilling and casing in unstable, soft ground formations. Ultra Maxbit can also be used in sand, gravel, boulders, and rock, and for vertical, horizontal, and diagonal drilling.




The ULTRA MAXBIT is composed of three components:

- (1) PILOT BIT
- (2) RING BIT
- (3) CASING SHOE

ULTRA MAXBIT are designed for several different casing pipe diameters.



## OVERVIEW MAP

	Model	Pilot Bit	Casing Type	Casing Outer ø mm (in.)
Standard-DTH System	<b>Single Pass Model</b> • Suitable for relatively soft ground and short hole depth. • Leaving a casing pipe in the ground. • Thread connection ring set.	 For DTH Hammer  • Pilot Bit is manufactured in Single, Normal and Multi pass model as long as casing size is same.	Permanent	89.1–1016 (3 1/2"–40")
	<b>Normal Model</b> • Suitable for heavy duty single pass and longer hole depth. • Leaving a casing pipe in the ground. • Thread connection ring set.		Permanent or *1 Retrievable	114.3–457.2 (4 1/2"–8")
	<b>Multi Use Model</b> • Pulling force to remove casing is reduced. • This enables the casing pipe to be re-used. • Interlinked ring set.		Retrievable	89.1–1016 (3 1/2"–40")
Big Bore-DTH System	<b>Big Bore Model</b> • Suitable for large bore drilling. • Interlinked ring set.	 For DTH Hammer	Permanent	114.3–355.6 (4 1/2"–14")
Top Hammer System	<b>Top Hammer Model</b> • Suitable for small hole tunneling. • Thread connection ring set.	 For Top Hammer	Permanent	76.3–139.7 (3"–5 1/2")

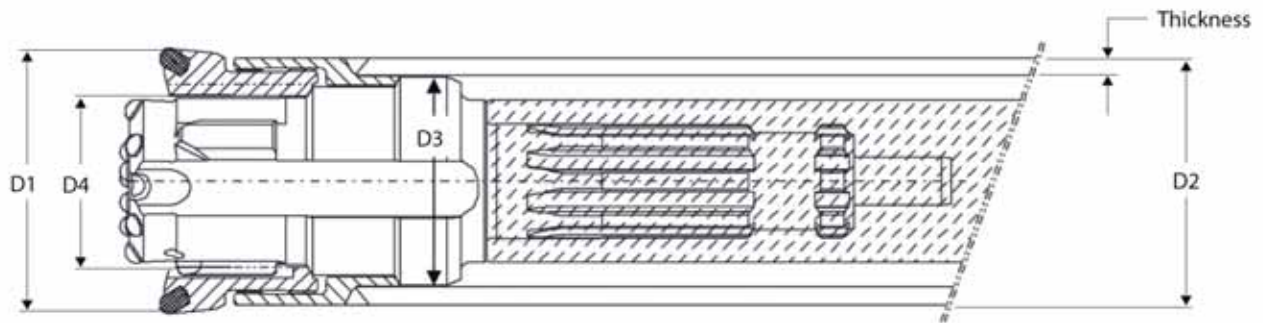
\*1 Limited to shallow hole drilling only.

# MITSUBISHI® ULTRA MAXBIT CASING SYSTEM

Ultra Maxbits are custom designed for specific formations and drilling conditions. Please refer to the chart options on page 9.

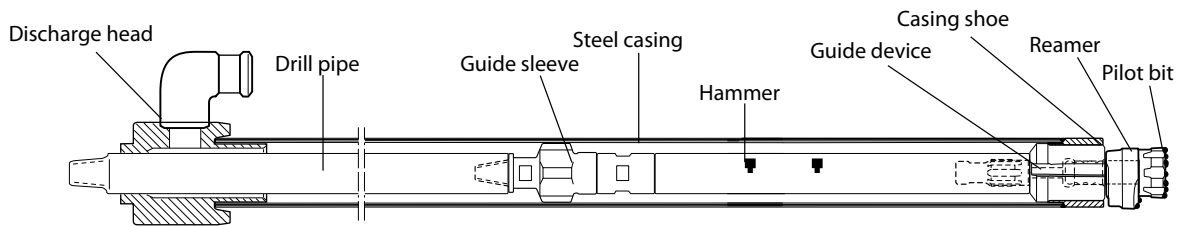
Please contact your Hole Products representative for additional details and assistance ordering Ultra Maxbits.

ULTRA MAXBIT ORDERING GUIDE					
Usage:					
DTH Model # or Thread Type:					
Rotation Direction at Drilling:	Right			Left	
Drilling Direction:	Vertical		Horizontal		Diagonal
Casing Pipe:	O.D. (D2)		Wall Thickness		
Ring Bit Model:	Single		Normal		Multi Use
Ring Bit O.D.: (D1)					
Ring Bit I.D.: (D4)					
Max. O.D. of Pilot Bit: (D3)					
Other Info.:					

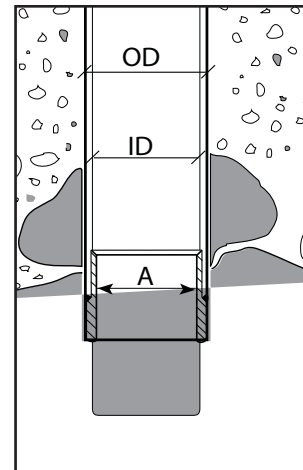


# SANDVIK® TUBEX XL SYSTEMS

The Tubex XL eccentric drilling system is designed for simultaneous drilling and casing through overburden and loose rock formations. The Tubex XL system uses a pilot bit and an eccentric reamer. The reamer drills a hole large enough for the casing to follow. After advancing a few feet into the bedrock, the drill string is rotated in the opposite direction to fold the reamer in allowing the Tubex XL system to be retracted inside the casing. After changing to a conventional DTH bit, the drill string is lowered into the casing, and drilling into the bedrock can resume.



TUBEX XL PRODUCT RANGE										
TUBEX TYPE	APPLICABLE CASING PIPE				MIN. WALL THK.		MAX. DRILL BIT DIAMETER (A)		REAMING DIAMETER	
	MAX. O.D.		MIN. I.D.		IN	MM	IN	MM	IN	MM
	IN	MM	IN	MM						
90	4.5"	115	4.0"	102	.197"	5	3.5"	90	4.8"	123
115	5.6"	142	5.0"	128	.197"	5	4.5"	115	6.0"	152
140	6.7"	171	6.2"	157	.197"	5	5.5"	140	7.4"	187
165	7.7"	196	7.2"	183	.197"	5	6.5"	165	8.3"	212
180	8.6"	219	7.6"	194	.217"	5.5	7.1"	180	9.1"	232
190	8.7"	222	8.1"	205	.248"	6.3	7.5"	190	9.3"	237
215	10.1"	257	9.5"	241	.248"	6.3	8.5"	215	10.9"	278
230	10.6"	270	9.8"	250	.248"	6.3	9.1"	230	11.3"	286
240	10.7"	273	10.2"	260	.248"	6.3	9.5"	240	12.0"	306
280	12.9"	327	12.0"	305	.280"	7.1	11.0"	280	14.6"	370



## DRIVE SHOES

Drive shoes are designed to protect the pipe or casing from splitting during casing advancement.

Hole Products offers drive shoes ranging in sizes from 2" - 60", cable tool, and rotary styles for weld on or threaded applications.

Please contact your Hole Products representative for availability of additional sizes and styles.

### CABLE TOOL STYLE

Cable tool style drive shoes are standard design for cable tool drilling and are often used in rotary drilling. The outer surface of the shoe is straight with the bevel on the inside edge.



### ROTARY STYLE

Rotary style drive shoes have an outside bevel above the cutting edge to ensure a good seat where driving may not be possible.



CABLE TOOL STYLE - WELD ON*		
PART #	CASING O.D.	SHOE O.D.
4550037	4 1/2"	5"
4550040	5 9/16"	6 1/20"
4550005	6 5/8"	7 3/8"
4550000	6 5/8"	7 5/8"
4550045	7"	7 21/32"
4550050	8 5/8"	9 5/8"
4550060	10 3/4"	11 3/4"
4550065	12 3/4"	14"
4550067	14"	15"
4550070	16"	17"
4550072	18"	19"
4550074	20"	21"
4550078	24"	25"

\*Threaded cable tool style drive shoes available on request.

ROTARY STYLE - WELD ON*		
PART #	CASING O.D.	SHOE O.D.
4550038	4 1/2"	5"
4550043	5 9/16"	6"
4550015	6 5/8"	7 3/8"
4550026	6 5/8"	7"
4550045	7"	8"
4550055	8 5/8"	9"
4550061	10 3/4"	11"
4550066	12 3/4"	14"
4550068	14"	15"
4550069	16"	17"
4550072	18"	19"
4550074	20"	21"
4550078	24"	25"

\*Threaded rotary style drive shoes available on request.

### DUAL ROTARY SHOES

Dual rotary shoes are designed for use on dual rotary drilling operations. They are welded to the bottom casing section and feature carbide studs to cut through the overburden.

DUAL ROTARY SHOES		
PART #	CASING O.D.	SHOE O.D.
4850120	6 5/8"	7 5/8"
4850121	8 5/8"	9 5/8"
4850132	10 3/4"	11 3/4"
4850122	12 3/4"	13 5/8"
4850165	14"	15"
4850168	16"	16 5/8"



\*Dual rotary shoes have the same I.D. as the casing I.D.



## DIVERTERS

Diverter are used with casing advancement systems when drilling through overburden. The diverters slip over the top of the casing to direct cutting, and fluids away from the hole. A hose can be connected to the diverter outlet to further direct the flow away from the hole.



DIVERTERS			
PART #	CASING SIZE	THRU HOLE	OUTLET
4850130	6 5/8"	3 1/4"	6" MALE NPT
4850125	6 5/8"	4 1/4"	6" MALE NPT
4850131	6 5/8"	4 3/4"	6" MALE NPT

## SPLIT RUBBER WIPERS

Split rubber wipers are designed to remove, soil, mud, and water from the drill string. They seal around the drill pipe and can be used with compression or pneumatic systems.

Additional sizes and styles are available on request.

SPLIT RUBBER WIPERS	
PART #	DESCRIPTION
4850142	3 1/2" ROD
4850138	4 1/2" ROD





# PIPE HANDLING & HOISTING TABLE OF CONTENTS

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Hole Products offers a full range of pipe handling and hoisting equipment including hoisting plugs, pipe and casing elevators, casing lifters, pipe tongs, lift rings, slip rings, safety hooks, Kwik Klamps, and more.

Pipe handling and hoisting equipment is available in a variety of sizes and styles to fit any project requirement.

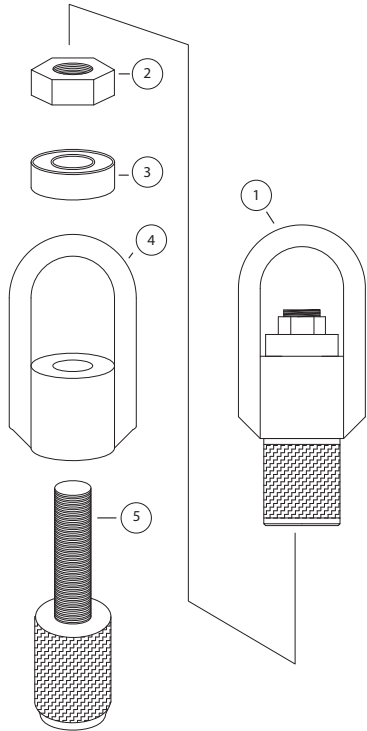
All pipe handling and hoisting equipment is constructed of top quality components, which provide superior reliability and help to ensure safe raising and lowering of drill tools.

Please contact your Hole Products representative for detailed product information and availability of additional pipe handling and hoisting plugs.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

# HOISTING PLUGS

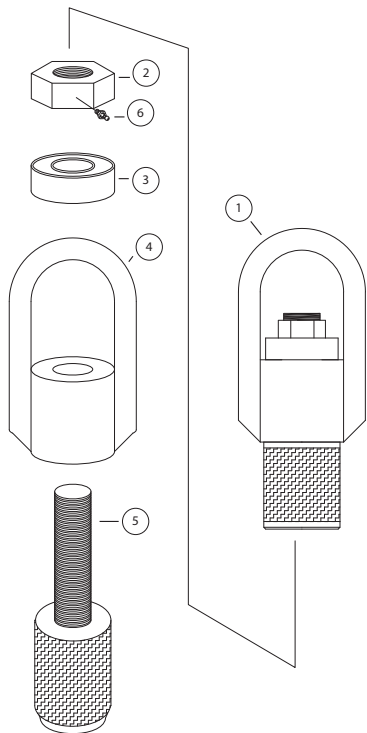
## AW HOISTING PLUG



AW BOX HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
AW	12,200 lbs. / 5,533 kg	29,400 lbs. / 13,335 kg

AW BOX HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050000	HOISTING PLUG ASSEMBLY
2	5050050	NUT
3	5050055	BEARING ASSEMBLY
4	5050060	BAIL
5	5050100	SPINDLE ASSEMBLY

## NW HOISTING PLUG

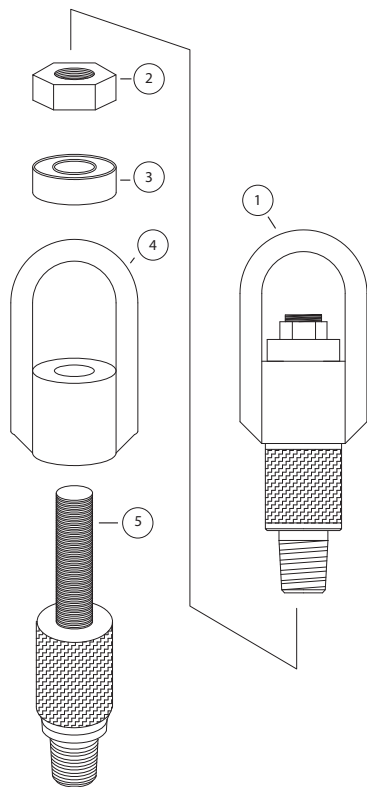


NW BOX HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NW	21,400 lbs. / 9,707 kg	43,600 lbs. / 19,777 kg

NW BOX HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050007	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050105	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

# HOISTING PLUGS

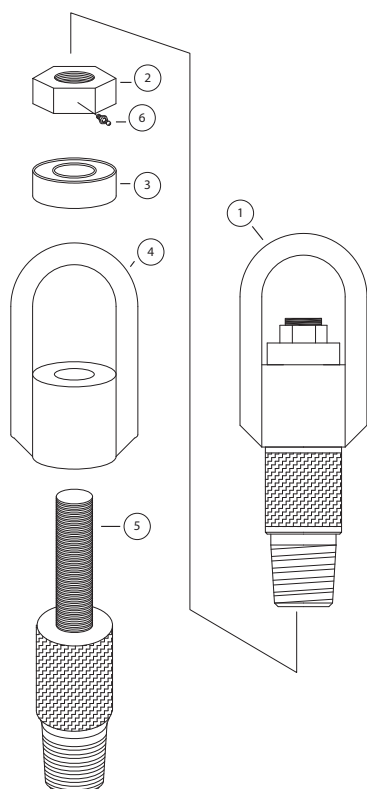
## AWJ HOISTING PLUG



AWJ PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
AWJ	12,200 lbs. / 5,533 kg	29,400 lbs. / 13,335 kg

AWJ PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050005	HOISTING PLUG ASSEMBLY
2	5050050	NUT
3	5050055	BEARING ASSEMBLY
4	5050060	BAIL
5	5050065	SPINDLE ASSEMBLY

## NWJ HOISTING PLUG

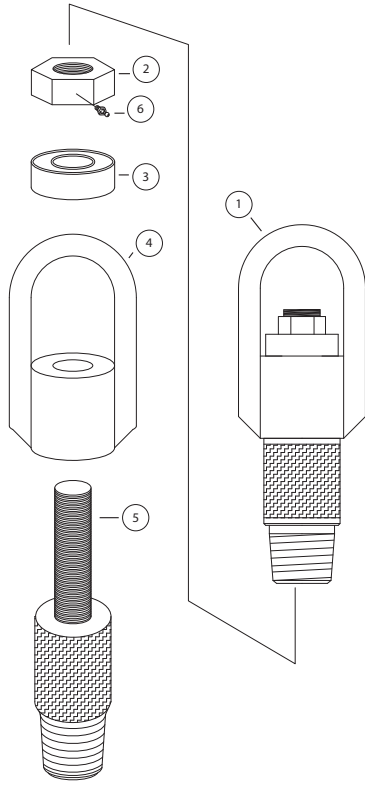


NWJ PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NWJ	21,400 lbs. / 9,707 kg	43,600 lbs. / 19,777 kg

NWJ PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050001	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050085	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

## HOISTING PLUGS

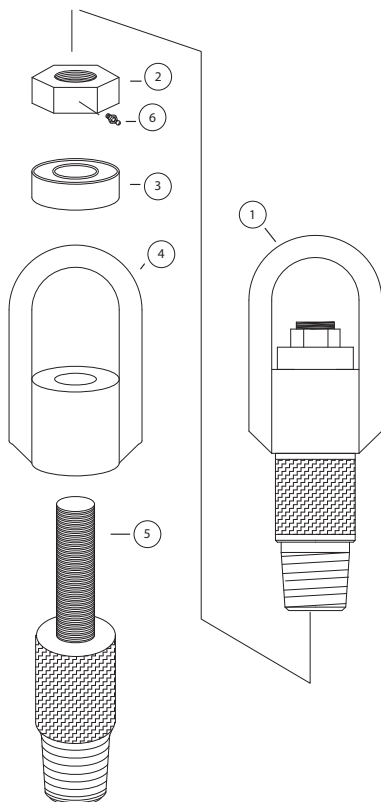
### NWL HOISTING PLUG



NWL PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NWL	21,400 lbs. / 9,707 kg	43,600 lbs. / 19,777 kg

NWL PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050008	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050170	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW

### HWL HOISTING PLUG



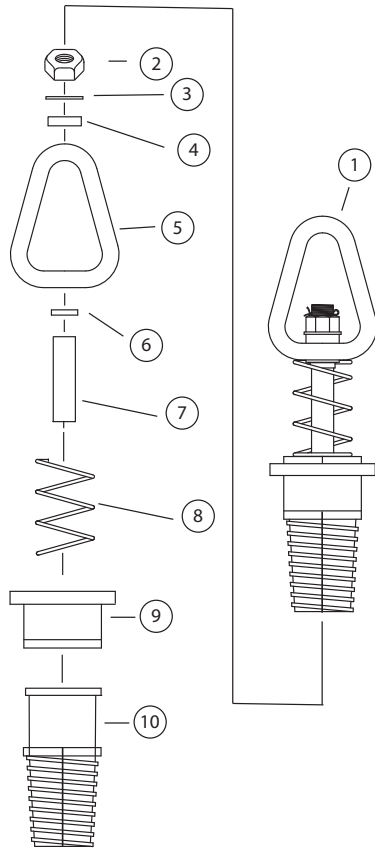
HWL PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
HWL	21,400 lbs. / 9,707 kg	43,600 lbs. / 19,777 kg

HWL PIN HOISTING PLUG		
ITEM	PART #	DESCRIPTION
1	5050019	HOISTING PLUG ASSEMBLY
2	5050070	NUT
3	5050075	BEARING ASSEMBLY
4	5050080	BAIL
5	5050175	SPINDLE ASSEMBLY
6	5050090	LOCKING SET SCREW



# HOISTING PLUGS

## MURPHY FAST PLUG



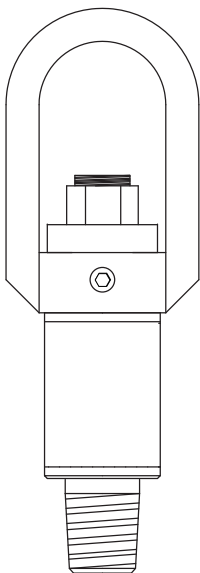
MURPHY FAST PLUG CAPACITY	
DESCRIPTION	LIFTING CAPACITY
2 3/8" BAIL	32,000 lbs.

MURPHY FAST PLUG		
ITEM	PART #	DESCRIPTION
1	5050003	NWJ COMPLETE ASSEMBLY*
	5050013	2 3/8" IF COMPLETE*
	5050044	2 3/8" MHJR COMPLETE ASSEMBLY*
2	5050125	CASTELLATED NUT
3	5050130	WASHER BEARING
4	5050135	THRUST BEARING
5	5050140	BAIL
6	5050145	SHOULDER WASHER
7	5050150	SHANK
8	5050155	SAFETY SPRING **
9	5050160	PLUG
10	5050165	SLEEVE

\* Additional sizes and thread profiles are available.

\*\* Replace bad or worn safety spring to ensure safe operation.

## HOISTING PLUG



HOISTING PLUG CAPACITY	
DESCRIPTION	LIFTING CAPACITY
LD (LIGHT DUTY)	NON-RATED
HD (HEAVY DUTY)	20,000 - 40,000 lbs.

HOISTING PLUG	
PART #	DESCRIPTION
5050030	2 3/8" IF PIN LD SWIVEL
5050032	2 7/8" IF PIN LD SWIVEL
5050011	3 1/2" REG PIN LD SWIVEL

HOISTING PLUG	
PART #	DESCRIPTION
5050020	2 3/8" IF PIN HD SWIVEL 40K
5050009	3 1/2" REG PIN HD SWIVEL 40K
5050010	3 1/2" FH PIN HD SWIVEL 40K
5050023	3 1/2" API BOX SWIVEL 20K

Additional thread patterns are available.

## PIPE ELEVATORS

Hole Products offers standard (SD) and heavy duty (HD) pipe elevators in a multiple sizes to fit a variety of project requirements.

SD pipe elevators are commonly used for lifting threaded and coupled pipe. The pipe is elevated by lifting against the bottom side of the coupling.

HD pipe elevators are commonly used for casing installation, setting well screens, and pulling pump columns.

Additional sizes are available on request.

PIPE ELEVATORS (SD)		
PART #	PIPE SIZE	RATING
5000005	1"	6,000 lbs.
5000010	1 1/4"	6,000 lbs.
5000015	1 1/2"	6,000 lbs.
5000020	2"	6,000 lbs.



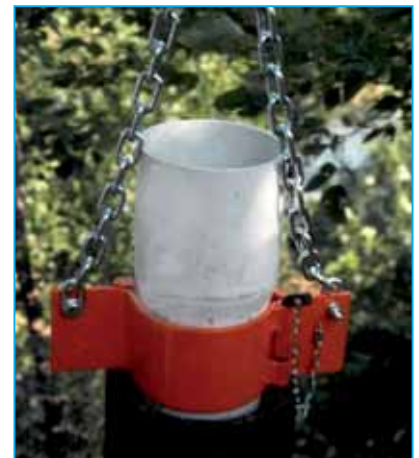
PIPE ELEVATORS (HD)		
PART #	PIPE SIZE	RATING
5000014	1"	36,000 lbs.
5000011	1 1/4"	32,000 lbs.
5000012	1 1/2"	40,000 lbs.
5000013	2"	38,000 lbs.



## PVC CASING ELEVATORS

PVC casing elevators are a safe and efficient way to install bell end PVC well casing. All elevators are manufactured from 1/4" steel and come equipped with high quality, zinc plated chains. PVC elevators are sold in pairs; one to hold the casing, and one to lift. Additional elevators for pipe sizes from 1/2" – 16" are available on request.

PVC CASING ELEVATORS		
PART #	PIPE SIZE	RATING
5000070	2"	2,000 lbs.
5000073	3"	2,000 lbs.
5000075	4"	2,000 lbs.
5000078	6"	2,000 lbs.



## CASING LIFTERS

Hole Products offers casing lifters and replacement parts to fit 6" and 8" casing. Additional sizes are available on request.

Casing lifters allow users to quickly elevate casing and simplify alignment during welding or coupling. The unique design makes pipe alignment easier during welding or threading applications.

CASING LIFTERS	
PART #	DESCRIPTION
5000025	6" COMPLETE
5000026	8" COMPLETE
5000035	6" OR 8" SET SCREW
5000027	6" OR 8" ARM W/ SET SCREW
5000030	6" BASE
5000110	8" BASE



## PIPE TONGS

Pipe tongs are designed to grip pipe for hoisting and permit an automatic release of the pipe when the lift line is slacked off. All pipe tongs come equipped with field replaceable grip pads that provide safe and positive engagement of the pipe. Additional tongs for pipe sizes up to 36" are available on request.

PIPE TONGS			
PART #	DESCRIPTION	PIPE USE	CAPACITY
5000107	3" TONGS	3.500" OD PIPE	2,000 lbs.
5000102	6" TONGS	5.875" OD PIPE	3,000 lbs.
5000101	7" TONGS	7.500" OD PIPE	3,000 lbs.
5000100	8" TONGS	8.625" OD PIPE	3,500 lbs.
5000098	10" TONGS	10.750" OD PIPE	4,000 lbs.



## AUGER HOISTING CAPS

Hoisting caps are used to pull more than one continuous flight auger section at a time using the rig's main hoist.

AUGER HOISTING CAPS		
PART #	HEX	
	IN	MM
5050036	1 1/8"	29
5050035	1 5/8"	41
5050037	2"	51



## LIFT RINGS

Hole Products' lift rings are available in a variety of rod sizes, open and closed styles, and standard or long shank models.

Lift rings are designed for removing drill rod from the hole. Using the rig's hoist, the ring is pulled upward, causing it to tilt and grab securely to the rod.



LIFT RINGS			
<b>OPEN</b>			
AW	BW	N	NW
5100005	5100004	5100006	5100011
<b>CLOSED</b>			
AW	BW	N	NW
5100000	5100003	5100001	5100010
<b>LONG SHANK LIFT RINGS</b>			
<b>OPEN</b>			
AW	BW	N	NW
5100020	----	----	----
<b>CLOSED</b>			
AW	BW	N	NW
5100015	----	----	----

## SELF-LOCKING SWIVEL HOOKS

The self-locking swivel hook allows for swiveling and easy positioning. When placed under a load, the latch closes automatically and will not open. Repair kits are available for all self-locking swivel hooks.

SELF LOCKING HOOKS				
Bronze Bushings (Swivel Eye Type)				
PART #	MODEL	CABLE SIZE	GRADE**	WORKING LOAD LIMIT* (LB) at 90°
5160001	BKL 5/6-10	7/32"	100	2,700
5160000	BKL 7/8-10	9/32"	100	4,300
5160005	BKL 10-10	3/8"	100	8,800
5160030	BKL 13 10	1/2"	100	15,000
5160010	BKL 16-10	5/8"	100	22,600

\*Design factor 4:1 Proof tested and certified.

\*\*Grade 100 hooks have recessed trigger.



SELF LOCKING LATCH REPAIR KIT			
Bronze Bushings (Swivel Eye Type)			
PART #	MODEL	CHAIN SIZE	GRADE
5160013	BKL 5/6-10	7/32"	100
5160014	BKL 7/8-10	9/32"	100
5160015	BKL 10-10	3/8"	100
5160020	BKL 13-10	1/2"	100
5160025	BKL 16-10	5/8"	100



# KWIK KLAMPS™

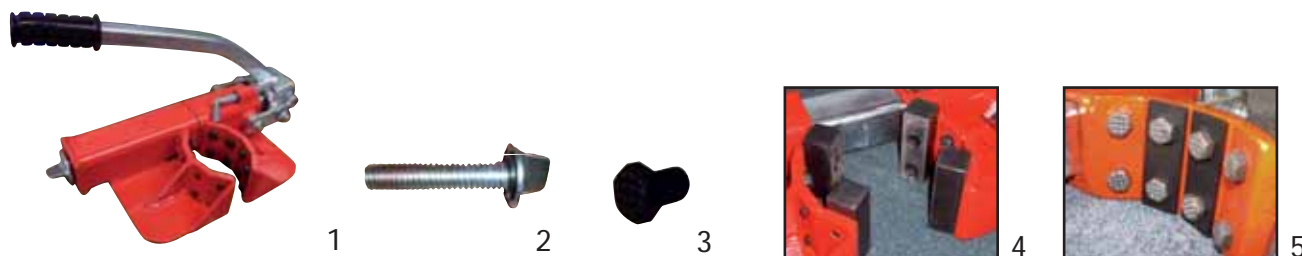
Kwik Klamps™ are a time saving and safe tool designed for clamping and holding pipe. They are lightweight, easy to use, and provide excellent holding capability. The adjustable jaws allow for use with multiple pipe sizes and most have a safety pin to prevent accidental unclamping.

KWIK KLAMP 1		
ITEM	PART #	DESCRIPTION
1	4950005	COMPLETE CLAMP - 1" TO 2" PIPE SIZE
2	4950041	ADJUSTABLE SCREW W/ NYLON WASHER
3	4950012	JAW SET
4	4950017	SUPER JAW SET



KWIK KLAMP 2		
ITEM	PART #	DESCRIPTION
1	4950010	COMPLETE CLAMP - 2 1/2" TO 4" PIPE SIZE
2	4950045	ADJUSTABLE SCREW W/ NYLON WASHER
3	4950011	CARBIDE TIP GRIPPER - 3/8" - 16" x 1/2"
4	4950019	JAW SET W/BOLTS (Specially designed for holding 2" and 2 1/2" pipe)*
5	4950050	SPACER

\*Kwik Klamp 2 can also hold 2" pipe with an additional jaw set and 4 1/2" pipe with a set of spacers. (See fig. 4 & 5)



KWIK KLAMP 3		
ITEM	PART #	DESCRIPTION
1	4950006	COMPLETE CLAMP - 6" PVC PIPE ONLY*
2	4950070	ADJUSTABLE SCREW W/ NYLON WASHER
3	4950075	CARBIDE TIP GRIPPER - 3/8" - 16" x 1"
4	4950080	CONVERSION KIT FOR 5" PIPE (10 Jaw pads & 20 Carbide Tipped Gripper Bolts)

\*Kwik Klamp 3 can also hold 5" pipe with additional jaw set (conversion kit) (See fig. 4 & 5).



## STRAIGHT PIPE WRENCHES

Hole Products offers RIDGID® pipe wrenches and replacement parts in all standard sizes.

Additional wrenches are available. Please contact your Hole Products representative for details.



### Features

- Professional strength in lightweight aluminium.
- Offers the same durability and ease-of-use found in all RIDGID® heavy-duty wrenches.

ALUMINUM STRAIGHT PIPE WRENCHES			
PART #	NOMINAL SIZE	PIPE CAPACITY	WEIGHT (LB)
5150004	10"	1 1/2"	1
5150005	12"	2"	2 1/2
5150010	14"	2"	2 1/2
5150015	18"	2 1/2"	3 3/4
5150025	24"	3"	6
5150020	36"	5"	11
5150036	48"	6"	18 1/2



### Features

- Sturdy, cast-iron housing and I-beam handle with full floating forged hook jaw, featuring self-cleaning threads with replaceable hook and heel jaws.
- Heavy-duty pipe wrenches comply with federal specifications GGG-W651E, Type II, Class A.

STEEL STRAIGHT PIPE WRENCHES			
PART #	NOMINAL SIZE	PIPE CAPACITY	WEIGHT (LB)
5150003	10"	1 1/2"	1 3/4
5150042	12"	2"	2 3/4
5150240	14"	2"	3 1/2
5150016	18"	2 1/2"	5 3/4
5150045	24"	3"	9 3/4
5150040	36"	5"	19
5150035	48"	6"	34 1/4
5150030	60"	8"	51 1/4

# PIPE WRENCH REPLACEMENT PARTS

Hole Products offers a full line of genuine RIDGID® replacement parts including nuts, pins, heel jaw and pin assemblies, coil and flat spring assemblies, and jaw hooks.

PIPE WRENCH REPLACEMENT PARTS					
NOMINAL SIZE	HEEL JAW AND PIN	JAW HOOK	JAW PIN	NUT	COIL AND FLAT SPRING ASSEMBLY
10"	5150062	5150088	5150063	5150119	5150270
12"	5150064	5150089	5150245	5150122	5150275
14"	5150064	5150090	5150250	5150121	5150280
18"	5150065	5150095	5150255	5150126	5150058
24"	5150070	5150100	5150260	5150120	5150285
36"	5150075	5150105	5150265	5150124	5150290
48"	5150080	5150110	5150082	5150125	5150076
60"	5150085	5150115	5150086	5150130	5150001

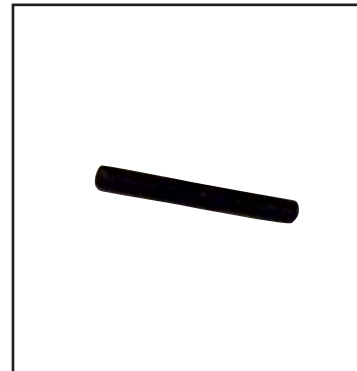
HEEL JAW AND PIN



JAW HOOK



JAW PIN



NUT



COIL AND FLAT SPRING ASSEMBLY



## CHAIN WRENCHES

Hole Products offers steel RIDGID® chain wrenches and replacement chains in all standard sizes.



CHAIN WRENCHES						
PART #	MODEL #	RATED PIPE CAP.	ACTUAL O.D. CAP	CHAIN LENGTH	WEIGHT (lb)	REPLACEMENT CHAIN PART #
5150043	C-12	2"	4"	15 3/4"	1 3/4	5150142
5150050	C-14	2"	5"	18 1/2"	2 3/4	5150143
5150034	C-18	2 1/2"	5"	20 1/4"	6	5150056
5150055	C-24	5"	5"	20 1/4"	8 1/4	5150056
5150060	C-36	4 1/2"	7 1/2"	29"	15 3/4	5150061

### Features

- A double fast jaw gives fast, ratchet-like action in either direction.
- The heavy-duty model has replaceable alloy steel jaws.
- The light-duty model has a one-piece forged alloy steel handle and jaw.
- Ideal for use in close quarters.

## PETOL TOOLS®

Hole Products is an authorized dealer of Petol Tools®. We offer a complete range of Petol wrenches and equipment for use in various areas of the drilling industry. Additional Petol tools are available on request.

Please contact your Hole Products representative for complete details.

PETOL CHAIN TONGS			
O.D.	GRIPPING WIDTH	HANDLE LENGTH	WEIGHT
1 1/2" - 6"	2.62"	30"	18 lbs.
2" - 10"	3.13"	44"	35 lbs.
PETOL DRILL PIPE TONGS			
1" - 6"	4.00"	8"	12 lbs.
2 1/8" - 5"	4.44"	12"	27 lbs.
2 1/8" - 5"	4.44"	21"	31 lbs.
3" - 8 1/4"	5.00"	8"	40 lbs.
3" - 8 1/4"	5.00"	12"	43 lbs.
3" - 8 1/4"	5.00"	21"	45 lbs.
4 1/4" - 10 3/4"	4.88"	10"	49 lbs.
4 1/4" - 10 3/4"	4.88"	36"	74 lbs.
4" - 14"	7.25"	9"	91 lbs.
4" - 14"	7.25"	18"	120 lbs.
4" - 14"	7.25"	23"	114 lbs.
4" - 14"	7.25"	28"	122 lbs.
4" - 14"	7.25"	36"	129 lbs.



# FISHING TOOLS TABLE OF CONTENTS

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## FISHING TOOLS



Hole Products offers a complete range of quality fishing tools for retrieving stuck, damaged, or lost tooling from the borehole.

Available in multiple sizes, styles, and thread connections, our fishing tools are made from premium quality materials, ensuring performance and durability.

From taper taps to overshots and magnets to junk mill bits, we have the fishing tools available to service all drilling industries.

Additional fishing tools including custom designs are available on request.

Please contact your Hole Products representative for detailed product information and availability of additional fishing tools.

*Products listed in the catalog are representative of the most common industry sizes and styles.  
Please contact your Hole Products representative for additional product offerings.*

# TAPER TAPS

Hole Products offers a complete line of quality taper taps to retrieve tubular tooling from the borehole on coring, sonic, rotary, and auger drilling operations. All taps are manufactured using high alloy material and heat treated (carbonized as applicable) to ensure great performance and durability. All taps come standard with a flushing hole, unless otherwise noted. Custom manufactured taper taps are available in any size or style on request.

Taper taps are an internal catch fishing tools designed for retrieving tubular tooling from the borehole. They are the economical choice for retrieving lost tooling.

Please contact your Hole Products representative for detailed product information and availability of additional taper taps.

## CORING TAPER TAPS

Hole Products offers quality taps designed specifically for wireline coring operations. Refer to rotary taps section for conventional coring taps.



*Designs may vary from photo.*

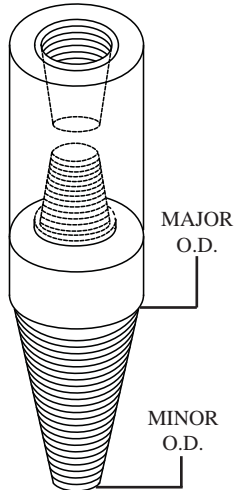
WIRELINE ROD TAPER TAPS			
PART #	DESCRIPTION	CONNECTION	FISHING USE
3850150	BWL ROD TAP	BWL BOX	BWL ROD
3850001	NWL ROD TAP	NWL BOX	NWL ROD
3850096	HWL ROD TAP	HWL BOX	HWL ROD
3850095	HWL ROD TAP	NWJ BOX	HWL ROD
3850132	HWT ROD TAP*	NWJ BOX	HWT ROD

\* HWT casing is the recommended drill rod for PWL coring systems.

CASING TAPER TAPS			
PART #	DESCRIPTION	CONNECTION	FISHING USE
3850155	AW CASING TAP	AW CASING BOX	AW CASING
3850160	BW CASING TAP	BW CASING BOX	BW CASING
1250061	NW CASING TAP	NW CASING BOX	NW CASING
3850012	HW CASING TAP	HW CASING BOX	HW CASING
3850165	PW CASING TAP	PW CASING BOX	PW CASING
3850170	SW CASING TAP	SW CASING BOX	SW CASING
3850175	ZW CASING TAP	ZW CASING BOX	ZW CASING

## SONIC TAPER TAPS

Custom manufactured taps are designed specially for sonic drilling operations. All sonic taps are carbonized to provide additional wear and fatigue resistance. Sonic taper taps are sold in two pieces (tap and coupling). Taps come standard with a wicker x pin connection. Couplings come standard with box x box connection.



Sonic taper tap w/ a Box x Box coupler shown.

SONIC TAPER TAPS*				
PART #	MAJOR O.D.	MINOR O.D.	CONNECTION	FISHING USE
3850105	3.25"	1.50"	3 1/2" HP90 RH PIN W/ COUPLING	3 1/2" RODS
3850110	4.25"	3.13"	4 1/2" HP90 RH PIN W/ COUPLING	4 1/2" CORE BARRELS
3850138	5.25"	3.13"	5 1/2" HP90 LH PIN W/ COUPLING	5 1/2" CASINGS
3850120	5.63"	3.50"	5 7/8" HP90 LH PIN W/ COUPLING	5 7/8" CASINGS
3850115	5.75"	3.63"	6" HP90 RH PIN W/ COUPLING	6" CORE BARRELS
3850125	7.38"	6.00"	7 5/8" HP90 LH PIN W/ COUPLING	7 5/8" CASINGS
3850131	8.38"	7.00"	8 5/8" HP90 LH PIN W/ COUPLING	8 5/8" CASINGS

\*All sonic taper taps come standard w/ a Box x Box coupling.

## ROTARY TAPER TAPS

Manufactured with custom connections, multiple wicker O.D.s and a variety of wicker lengths to meet the fishing requirements of any drilling operation.

Rotary taps are carbonized as necessary to provide additional wear and fatigue resistance.



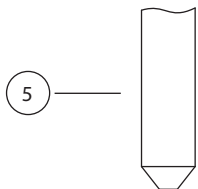
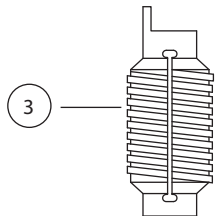
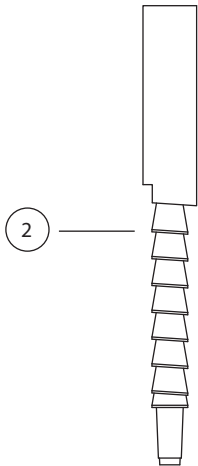
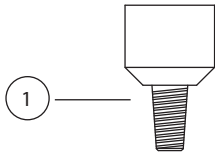
ROTARY TAPER TAPS					
PART #	MAJOR O.D.	MINOR O.D.	CONNECTION	LENGTH	FISHING USE
3850005	2 3/4"	1/2"	1 1/4" NPT	13"	PUMPS*
3850140	3 1/2"	1 1/2"	2 3/8" IF BOX	22"	2" - 3 1/4" I.D. RODS
3850000	4 1/4"	1"	3 1/2" API PIN	32"	1 1/4" - 4" I.D. RODS
3850145	4 1/2"	2"	3 1/2" API PIN	12 1/2"	2 1/4" - 4 1/4" I.D. RODS

\*Can be used for rods/pipe with I.D. less than 2 1/2".

AWJ & NWJ ROD TAPER TAPS			
PART #	DESCRIPTION	CONNECTION	FISHING USE
1250063	AW ROD TAP	AW BOX	AW RODS
1250112	AWJ ROD TAP	AWJ BOX	AWJ RODS
1250039	NW ROD TAP	NW BOX	NW RODS
3850013	NWJ ROD TAP	NWJ BOX	NWJ RODS

# BOWEN® RELEASING SPEARS

Bowen® Itco-type releasing spears are an internal catch fishing tool designed for retrieving tubular tooling from the borehole. The simple design ensures easy releasing and re-engaging if necessary.



BWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	3305085	SUB 1 1/4" API PIN X BWL BOX
2	3850180	FLUSH MANDREL W/ 1 1/4" API BOX
3	3850185	BWL SPEAR GRAPPLE
4	3850190	BWL/NWL RELEASE RING
5	3850195	BWL/NWL BULL NOSE NUT

NWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	3305060	SUB 1 1/4" API PIN X NWL BOX
2	3850050	NWL/HWL FLUSH MANDREL W/ 1 1/4" API BOX
3	3850064	NWL SPEAR GRAPPLE (NOM. SIZE 2.328")
	3850065	NWL SPEAR GRAPPLE (NOM. SIZE 2.399")
4	3850055	NWL/HWL RELEASE RING
5	3850060	NWL/HWL BULL NOSE NUT

HWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	3305060	SUB 1 1/4" API PIN X HWL BOX
2	3850050	NWL/HWL FLUSH MANDREL W/ 1 1/4" API BOX
3	3850070	HWL SPEAR GRAPPLE (NOM. SIZE 3.078")
	3850069	HWL SPEAR GRAPPLE (NOM. SIZE 3.032")
4	3850055	NWL/HWL RELEASE RING
5	3850060	NWL/HWL BULL NOSE NUT

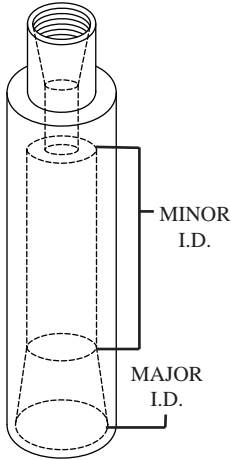
PWL RELEASING SPEAR		
ITEM	PART #	DESCRIPTION
1	-----	SUB*
2	3850075	PWL FLUSH MANDREL W/ 2 3/8" API BOX
3	3850090	PWL SPEAR GRAPPLE (NOM. SIZE 4.010")
4	3850080	PWL RELEASE RING
5	3850085	PWL BULL NOSE NUT

\*Various subs are available for PWL releasing spears. Please contact your Hole Products representative for additional details.

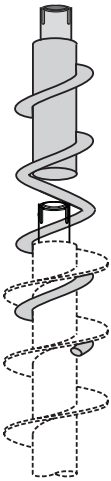
## OVERSHOTS (RECOVERY BELLS)

Hole Products offers a complete line of overshots to service the drilling industry. All overshots are manufactured using high alloy material and are heat treated. Custom manufactured overshots are available in any size or style on request.

Overshots are attached to drill pipe or tubing and lowered over the outside of pipe lost or stuck in the borehole. Hardened, self-cutting threads inside the overshots firmly grasp the pipe, allowing the fish to be pulled from the hole.



OVERSHOTS				
PART #	MAJOR I.D.	MINOR I.D.	CONNECTION	FISHING USE
3850137	3.00"	1.00"	1 1/4" NPT BOX	1 1/4" - 2 1/2" RODS
3850135	4.00"	3.00"	2 3/8" IF BOX W/ FLATS	3 1/2" RODS
3850136	4.13"	2.63"	2 3/8" IF PIN	3 1/2" RODS
3850100	4.10"	3.00"	3 1/2" HP90 RH BOX	3 1/2" SONIC RODS
3850010	4.63"	3.13"	3 1/2" API PIN	4 1/2" RODS
1250113	AWJ ROD		AWJ BOX	AWJ ROD
3850014	NWJ ROD		NWJ BOX	NWJ ROD



## AUGER RETRIEVERS

Auger retrievers are used for recovering hollow stem and continuous flight augers lost down the hole.

Outside type auger retrievers are designed to wrap around augers and grasp the auger flights.

Internal type hollow stem auger retrievers are available on request.

HOLLOW STEM AUGER RETRIEVERS			
I.D.*		2 KEY	3 KEY
IN	MM	SD**	SD**
2 1/4"	57	1250122	1250670
3 1/4"	83	1250645	1251020
4 1/4"	108	1250650	1250675
6 1/4"	159	1251005	1250680
6 5/8"	168	1250655	1250685
8 1/4"	210	1250660	1250690
10 1/4"	260	----	1250695

\*Sizes identified by the auger I.D.

\*\*HD auger retrievers are available on request.

CONTINUOUS FLIGHT AUGER RETRIEVERS			
HEX		HOLE* SIZE	PART #
IN	MM		
13/16"	21	2 1/2"	1550055
13/16"	21	3"	1550060
1 1/8"	29	3 1/2"	1550065
1 1/8"	29	4 1/2"	1550070
1 1/8"	29	5"	1550075
1 1/8"	29	6"	1550080
1 5/8"	41	4 1/2"	1550008
1 5/8"	41	5"	1550085
1 5/8"	41	6"	1550090
1 5/8"	41	7"	1550095
1 5/8"	41	8"	1550100
1 5/8"	41	10"	1550105
1 5/8"	41	12"	1550110

\*Sizes identified by the hole size.

## MAGNETS

Magnets are great for retrieving tooling that has been broken into pieces or has an irregular shape.



MAGNETS		
PART #	DESCRIPTION	LIFTING WEIGHT
3850015	3 1/2" O.D.	100 lbs.
3850020	4 1/2" O.D.	250 lbs.
3850025	5 1/2" O.D.	400 lbs.

## JUNK MILL BITS

Junk Mill Bits are commonly used for drilling through lost tooling, bridge plugs, packers, cement, or similar down the hole obstructions.

Custom sizes and API connections are available on request.



JUNK MILL BITS		
PART #	DESCRIPTION	CONNECTION
3850017	3 7/8"	2 3/8" MJR BOX
3850018	5 7/8"	3 1/2" API PIN
3850019	6"	3 1/2" API PIN





# PUMPS & SPARES

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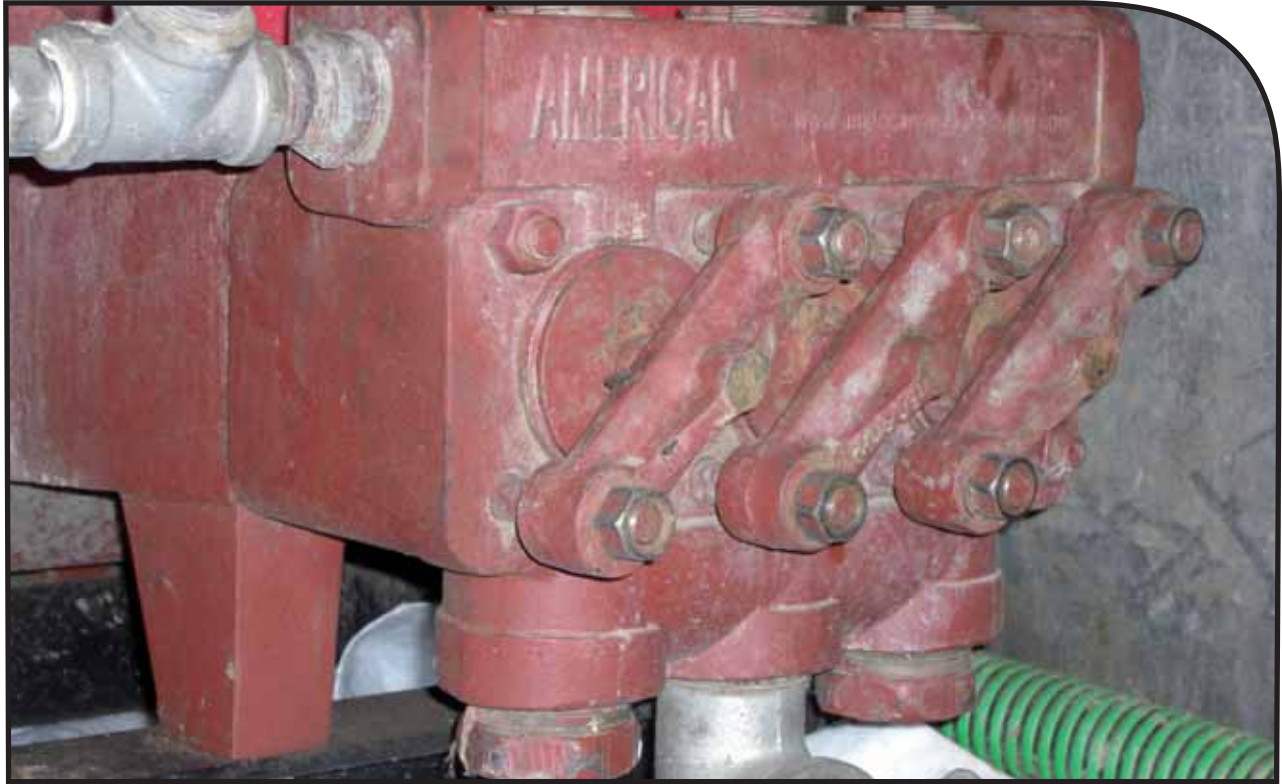
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## PUMPS & SPARES



Hole Products offers a full range of pumps and spares for use within the construction, rotary, sonic, environmental, geotechnical, surface and underground coring, and water well drilling markets.

Our product offering includes: centrifugal pumps, American Manufacturing piston pumps, FMC Technologies® “Bean” piston pumps, American Manufacturing duplex power pumps, Gardner Denver® duplex power pumps, and progressive cavity (Moyno®) pumps.

Pumps shown in this catalog are a sample of some of our most common sizes and styles. Additional pumps are available in a wide range of sizes and with a variety of capacities for use in all drilling, mining, and industrial applications.

Please contact your Hole Products representative for pump selection assistance, specific performance details, detailed installation and operation guides, and ordering assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

# CENTRIFUGAL PUMPS



Hole Products offers a complete line of centrifugal pumps and spares with a wide range of capacities.

Centrifugal pumps feature high volume, low pressure performance, making them suitable for a wide variety of drilling, mud processing, and industrial applications.

When properly selected and installed, centrifugal pumps will provide long lasting and dependable service.

Pump diagrams are shown for general reference and to aid in identifying spare parts for service. Order spare parts by part number and description. Item numbers are for reference only.

Please contact your Hole Products representative for specific pump performance details and ordering assistance.

# 178 SERIES CENTRIFUGAL PUMP FEATURES

## Pedestal

The pedestal frame provides a larger work area to facilitate packing the pump which cuts repacking time.



## Bearings

Heavy duty bearings are protected by spring type oil seals and a water slinger designed to keep fluid and dirt out of the bearing cavity.



## Housing & Face

A two piece concentric housing design allows for the versatility of either right hand or left hand operation. This unique design reduces turbulence within the pump to minimize cavitation, shaft deflection, and excessive wear. Resulting in a smoother operation and a longer running pump.



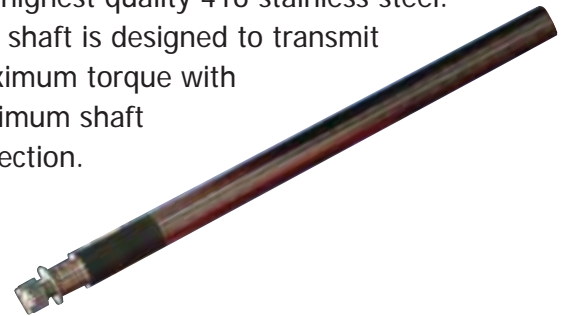
## Graphite Packing

Graphite packing rings consist of five rings and one lantern ring.



## Pump Shaft

The pump shaft is manufactured from the highest quality 416 stainless steel. The shaft is designed to transmit maximum torque with minimum shaft deflection.



## Impeller

The semi open impeller is designed to handle water or heavy slurries with equal efficiency. The pronounced back vanes of the impeller are designed to reduce the pressure on the stuffing box, thus increasing the life of the packing and decreasing the wear on the shaft.

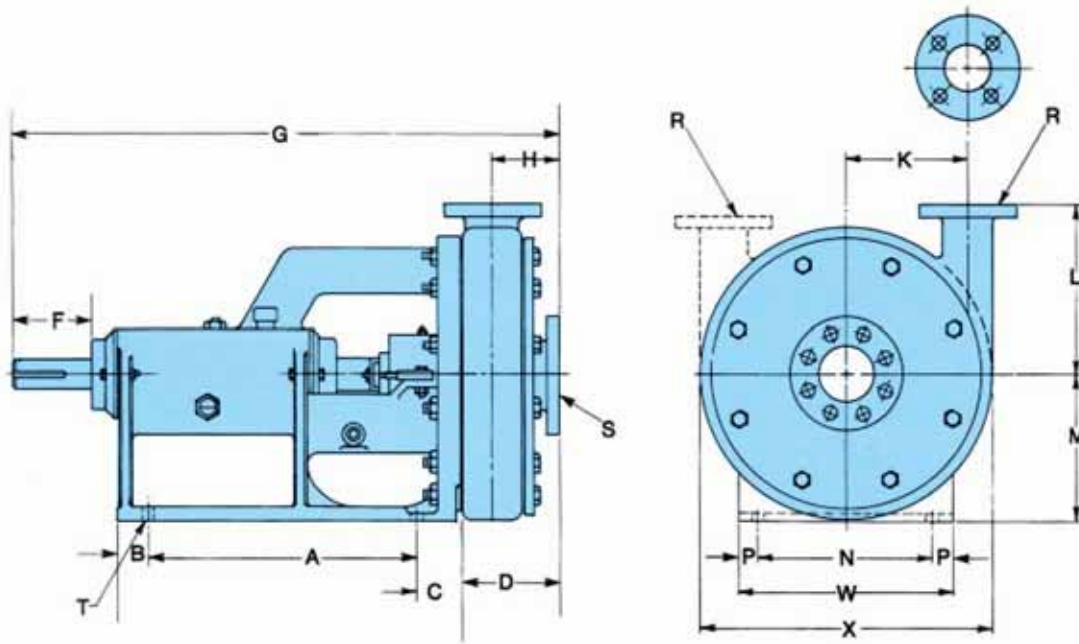


## Wear Plate

A replaceable wear plate protects the pedestal from wear and corrosion caused by fluids being pumped, therefore, extending the life of the pump.



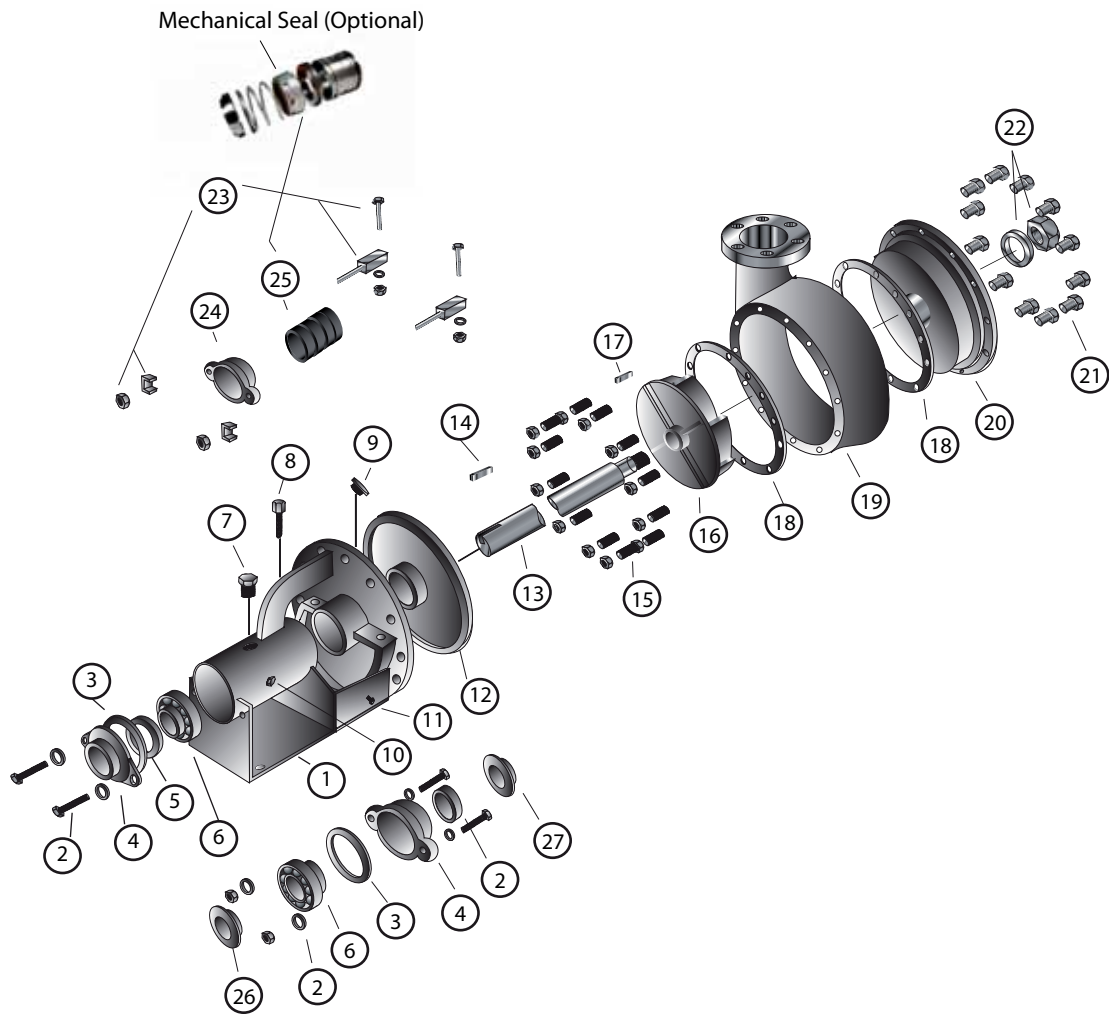
# 178 SERIES CENTRIFUGAL PUMP DIMENSIONAL OUTLINE



PEDESTAL, HOUSING & INSTALLATION DIMENSIONS																	
PUMP SIZE	A	B	C	D	F	G	H	K	L	M	N	P	R	S	T	W	X
3" x 4"	16 1/2"	1 11/16"	2 1/4"	6"	5"	33 1/2"	4"	7"	10 1/4"	9"	7"	1"	2"	3"	11/16"	9"	18"

FLANGE SIZE					
PUMP SIZE	PUMP TYPE (SHAFT DIAMETER)	DISCHARGE PIPE		SUCTION PIPE	
		SIZE	DRILLING	SIZE	DRILLING
3" x 4" R & L	1 7/8"	3"	8 HOLES 3/4" DIA. 6" B.C	4"	8 HOLES 3/4" DIA. 7 1/2" B.C.

# CENTRIFUGAL PUMP PARTS DIAGRAM 178 SERIES (1 7/8" SHAFT & PEDESTAL)



# 178 SERIES CENTRIFUGAL PUMP

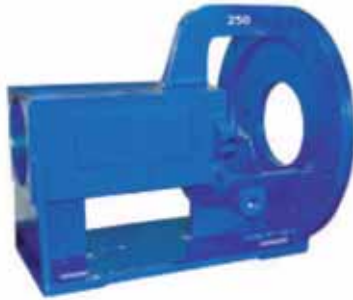
178 SERIES CENTRIFUGAL PUMP				
PUMP SIZE & ROTATION	IMPELLER SIZE	DESCRIPTION	QTY	DUCTILE IRON* PART NUMBER
3" x 4R	10"	MECHANICAL SEAL	1	5300110
3" x 4L	10"	MECHANICAL SEAL	1	5300115
3" x 4R	10"	PACKING SEAL	1	5300120
3" x 4L	10"	PACKING SEAL	1	5300125
ITEM #	DESCRIPTION		QTY	PART #
1	PEDESTAL		1	5300130
2	BEARING CAP BOLT ASSEMBLY		4	5300135
3	BEARING CAP GASKET		2	5300140
4	BEARING CAP		2	5300145
5	OIL & GREASE SEAL		2	5300150
6	BEARING ASSEMBLY		2	5300155
7	OIL VENT VALVE		1	5300160
8	DIP STICK		1	5300165
9	ZERT GREASE FITTING		1	5300170
10	HOUSING FACE CAP SCREW		1	5300175
11	DRIP BOWL DRAIN PLUG		1	5300180
12	316-SS WEAR PLATE		1	5300185
	DUCTILE IRON WEAR PLATE			5300190
	ALUMINIUM BRONZE WEAR PLATE			5300195
13	416-SS CERAMIC COATED SHAFT/ 2" X 3" THRU 5" X 6"		1	5300200
	316-SS SHAFT F/ 2" X 3" THRU 5" X 6"			5300205
	416-SS SHAFT F/ 2" X 3" THRU 5" X 6"			5300210
14	COUPLING KEY		1	5300215
15	HOUSING STUD WITH NUT		12	5300220
16*	3" X 4" DUCTILE IRON RIGHT HAND IMPELLER			5300225
	3" X 4" DUCTILE IRON LEFT HAND IMPELLER			5300230
17	IMPELLER KEY		1	5300235
18	HOUSING GASKET		2	5300039
19	DUCTILE HOUSING ONLY		1	5300240
20	DUCTILE HOUSING FACE 3" x 4"		1	5300075
21	ZERT GREASE FITTING		1	5300245
22	SHAFT LOCK NUT ASSEMBLY		1	5300250
23	GLAND ADJUSTMENT BOLT ASSEMBLY		2	5300255
24	PACKING GLAND		1	5300260
25	GRAPHITE PACKING ASSEMBLY		1	5300061
	KING PACKING ASSEMBLY			5300265
	TEFLON PACKING ASSEMBLY			5300270
	MECHANICAL SEAL (OPTIONAL)			5300275
26	SLINGER RING - OIL		1	5300280
27	SLINGER RING - WATER		1	5300285

\*Stainless steel and aluminium bronze pumps and parts also available.

## 250 SERIES CENTRIFUGAL PUMP FEATURES

### Pedestal

The heavy duty pedestal frame is built to withstand high piping loads. The frame is manufactured from cast iron for high strength and durability.



### Casing

The concentric housing eliminates vibration turbulence and cavitation and reduces bearing load and shaft deflection.



### Impeller (Open Vane Impeller)

The open vane impeller is engineered to reduce turbulence, eliminate recirculation, lower radial and thrust loads and provide a smooth flow of fluid through the pump.



### Impeller (Semi Vane Impeller)

Semi vane impellers are available in the 5" x 6", 6" x 8", and 8" x 10" sizes.

### Wear Pads

Replaceable wear pads are available in sizes from 3" x 4" x 13" through 8" x 10" x 14". Wear pads reduce maintenance costs of housing replacement by only replacing the wear pads.



### Shearing Ring

The shearing ring offers an option to convert a regular 250 series pump to a shearing pump for mud applications.



### Mechanical Seals

All mechanical seals come with a highly polished sealing face and viton bellows and stainless steel springs.



### Pump Bearings

The outboard bearing assembly consists of a pair of angular contact bearings with high thrust load ratings and zero end play.



The inboard bearing is a double row ball bearing with high radial load ratio to compensate for the larger size of impellers and heavy duty applications.

### Pump Shaft

The pump shaft is manufactured from the highest quality 416 stainless steel. The shaft is designed to transmit maximum torque with minimum shaft deflection.



### Shaft Sleeve

The shaft sleeve is designed to protect the shaft from abrasive fluids.



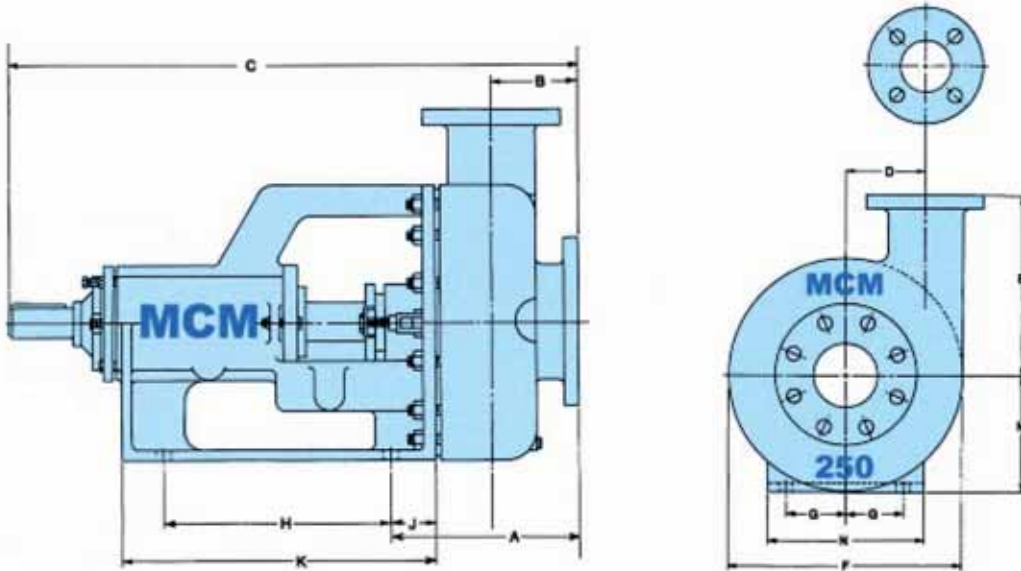
### Stuffing Box

The stuffing box cover is designed to combine the functions of the wear plate and stuffing box of conventional pumps into a one piece replaceable unit. The stuffing box cover is available in two styles for mechanical seals or for regular packing.





## 250 SERIES CENTRIFUGAL PUMP DIMENSIONAL OUTLINE



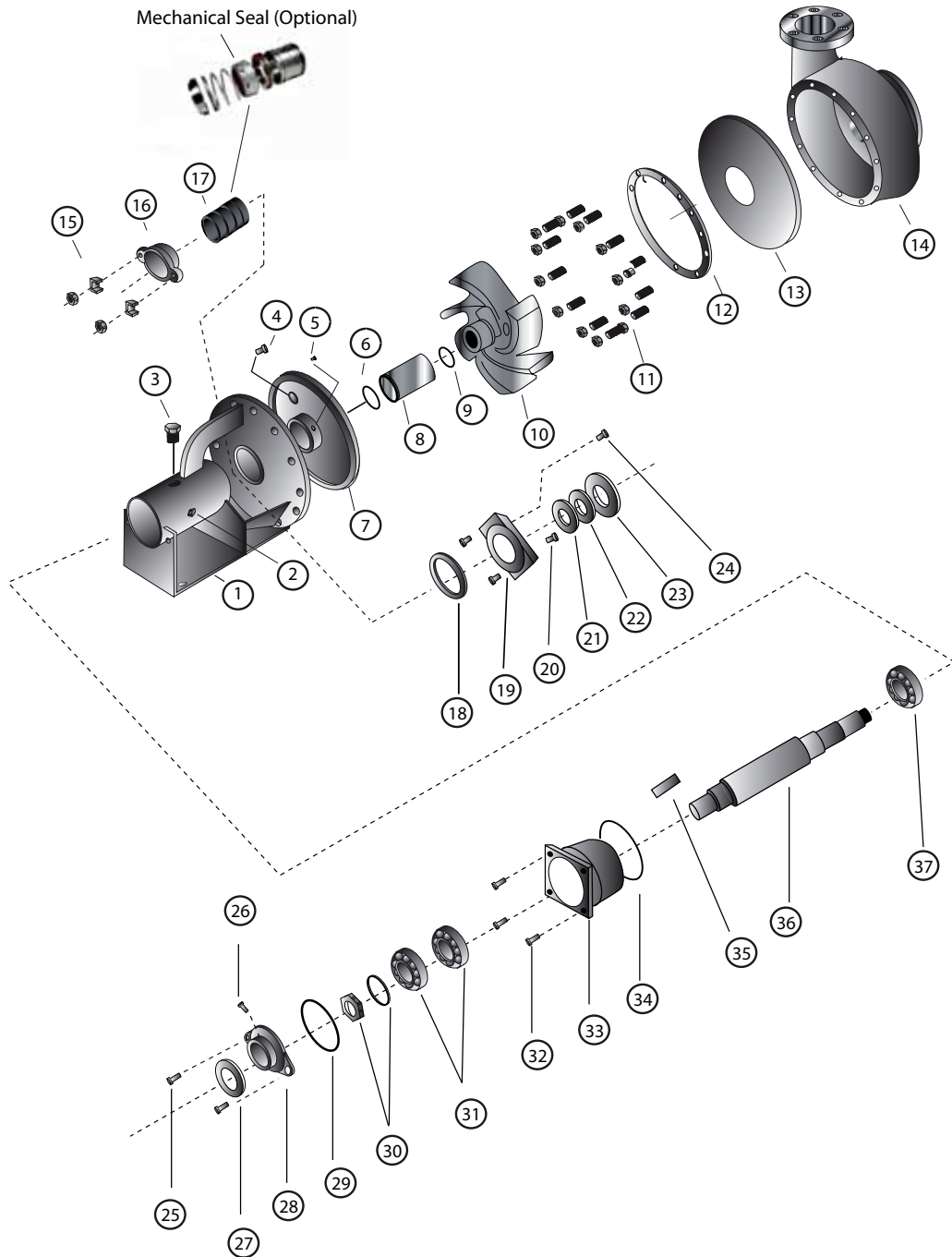
### PEDESTAL, HOUSING & INSTALLATION DIMENSIONS

PUMP SIZE	A	B	C	D	E	F	G	H	J	K	M	N	MAX. IMP. DIAM.	MIN. IMP. DIAM.	SUCTION SIZE	DISCHARGE SIZE	WEIGHT LBS.
3" x 4" x 13"	9 3/8"	4 1/4"	33 5/8"	6 3/4"	10 1/4"	17 7/8"	3 1/2"	15 7/16"	2 5/16"	19 5/8"	9"	9"	13"	6"	3"	2"	430

### FLANGE SIZE

FLANGE SIZE	I.D.	O.D.	B.C.	NO. OF HOLES	SIZE OF HOLES	THICKNESS
3" x 4" R & L	1 7/8"	7 1/2"	6"	4	3/4"	3/4"

# CENTRIFUGAL PUMP PARTS DIAGRAM 250 SERIES (2 1/2" SHAFT & PEDESTAL)



## 250 SERIES CENTRIFUGAL PUMP

250 SERIES CENTRIFUGAL PUMP				
PUMP SIZE	PART NUMBER	MATERIAL	ROTATION	IMPELLER
3" X 4" X 13"	5300030	DUCTILE IRON	RH	13"
ITEM #	DESCRIPTION		QTY	PART #
1	PEDESTAL		1	5300290
2	OIL DRAIN PLUG		1	5300295
3	DIP STICK		1	5300300
4	STUFF BOX BOLT		1	5300305
5	ZERT GREASE FITTING		1	5300310
6	SHAFT SLEEVE / O-RING		1	5300315
7	STUFFING BOX FOR PACKED PUMPS		1	5300320
	STUFFING BOX FOR MECHANICAL SEALS		1	5300325
8	SHAFT SLEEVE, CERAMIC COATED		1	5300045
9	IMPELLER SEAL / O-RING		1	5300050
10	3" x 4" x 13" DUCTILE IRON RH IMPELLER		1	5300330
11	HOUSING STUD W/ NUT		12	5300335
12	HOUSING GASKET		1	5300040
13	REPLACEABLE WEAR PAD 3" X 4" X 13"			5300093
14	3" x 4" x 13" DUCTILE IRON RH HOUSING ASSY.		1	5300035
15	GLAND BOLT ASSEMBLY		2	5300340
16	PACKING GLAND		1	5300345
17	GRAPHITE PACKING ASSEMBLY		1	5300350
	KING PACKING ASSEMBLY			5300355
	TEFLON PACKING ASSEMBLY			5300060
	MECHANICAL SEAL			5300360
18	INBOARD BEARING COVER GASKET		1	5300365
19	INBOARD BEARING COVER		1	5300370
20	INBOARD BEARING COVER BOLT		2	5300375
21	INBOARD BEARING OIL SEAL		1	5300380
22	INBOARD BEARING EXCLUSION SEAL		1	5300395
23	SLINGER RING - WATER		1	5300390
24	BEARING COVER PLUGS		1	5300395
25	OUTBOARD BEARING COVER BOLT		2	5300400
26	BEARING COVER PLUG		1	5300405
27	OUTBOARD BEARING OIL SEAL		1	5300410
28	OUTBOARD BEARING COVER		1	5300415
29	OUTBOARD BEARING COVER SEAL / O-RING		1	5300420
30	BEARING LOCK NUT KIT		1	5300425
31	OUTBOARD BEARING		2	5300430
32	BEARING HOUSING BOLT		4	5300435
33	OUTBOARD BEARING HOUSING		1	5300440
34	OUTBOARD BEARING HOUSING SEAL / O-RING		1	5300445
35	COUPLING KEY		1	5300450
36	SHAFT		11	5300455
37	INBOARD BEARING		1	5300460

## DUPLEX PUMPS



Hole Products offers a complete line of American Manufacturing and Gardner Denver® duplex reciprocating type pumps and interchangeable pump parts for use in a variety of mud pumping, drilling, and industrial applications.

Duplex power pumps can be used for numerous drilling, mud, oil field, and industrial applications.

Pump diagrams are shown for general reference and to aid in identifying spare parts for service. Order spare parts by part number and description. Item numbers are for reference only.

Please contact your Hole Products representative for additional pump performance details and ordering assistance.

## DUPLEX PUMP SPECIFICATIONS

### 5" X 6" DUPLEX PUMP

**Pump Weight:** 2,300 lbs. (1,043 kg)

**Dimensions:**

**Length:** 79.3" **Width:** 35.4" **Height:** 23.3"

**Jackshaft Extension:**

**Diameter:** 2.44" **Length:** 6.06"

**Keyway:** 6" L x 5/8" W x 5/8" H

**Stroke Length:** 6" (152 mm)

**Fluid End Type:** Cast Iron One Piece

**No. of Pistons:** 2

**Piston Rod Load:** 6,122 lbs. (2,777 kg)

**Oil Capacity:** 4.5 gal. (17 liters)

**Maximum BHP:**

**Mud Service:** 32 (24 kw)

**Ind'l. Service:** 42.5 (32 kw)

**Maximum Jackshaft RPM:**

**Mud Service:** 354

**Ind'l. Service:** 472

**Suction Connection:** 4" NPT 125#

**Discharge Connection:** 2" NPT 600#

### 5 1/2" X 8" DUPLEX PUMP

**Pump Weight:** 4,760 lbs. (2,159 kg)

**Dimensions:**

**Length:** 96.9" **Width:** 49.8" **Height:** 31.0"

**Jackshaft Extension:**

**Diameter:** 3" **Length:** 9"

**Keyway:** 9" L x 3/4" W x 3/4" H

**Stroke Length:** 8" (203 mm)

**Fluid End Type:** Cast Iron One Piece

**No. of Pistons:** 2

**Piston Rod Load:** 8,036 lbs. (3,645 kg)

**Oil Capacity:** 12 gal. (46 liters)

**Maximum BHP:**

**Mud Service:** 52 (39 kw)

**Ind'l. Service:** 73 (54 kw)

**Maximum Jackshaft RPM:**

**Mud Service:** 330

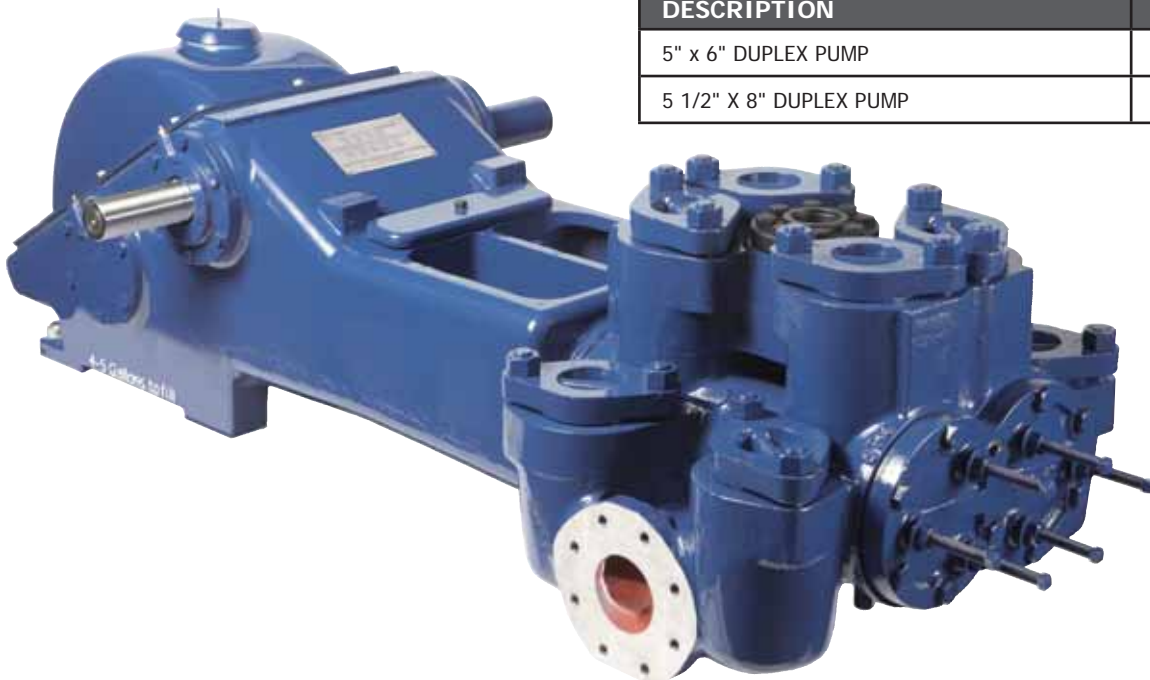
**Ind'l. Service:** 471

**Suction Connection:** 4" NPT 250#

**Discharge Connection:** 3" NPT 600#

**Note:** All installations must contain a pressure relief valve in the discharge line near the pump to help prevent breakage.

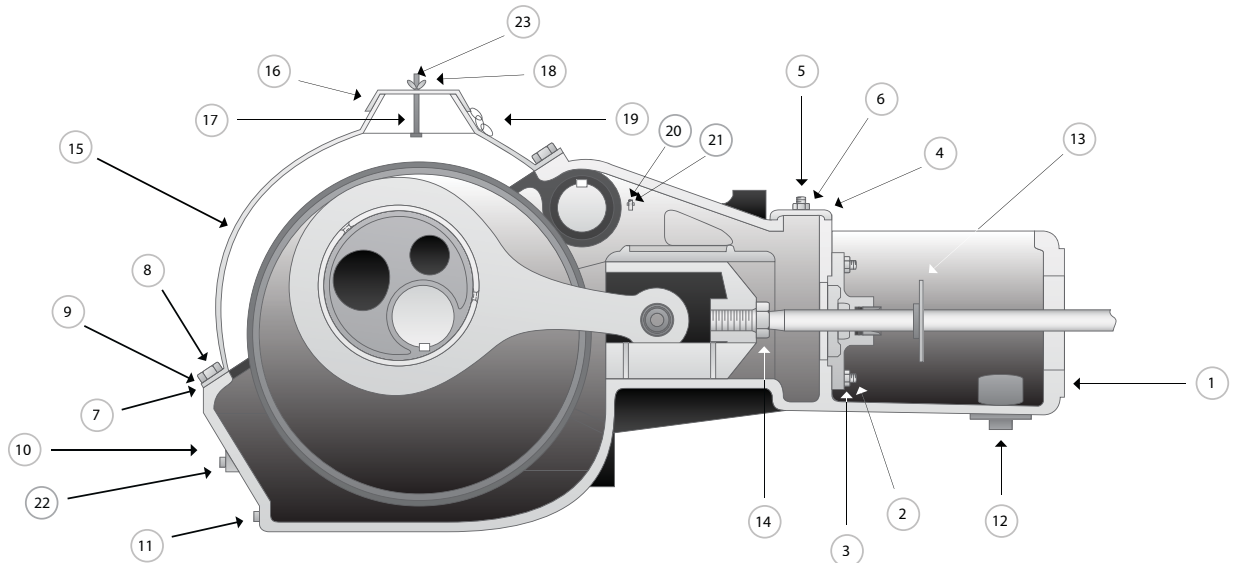
## COMPLETE PUMP ASSEMBLY



COMPLETE PUMP ASSEMBLY GROUP	
DESCRIPTION	PART #
5" x 6" DUPLEX PUMP	5400245
5 1/2" X 8" DUPLEX PUMP	5400250

# FRAME ASSEMBLY GROUP

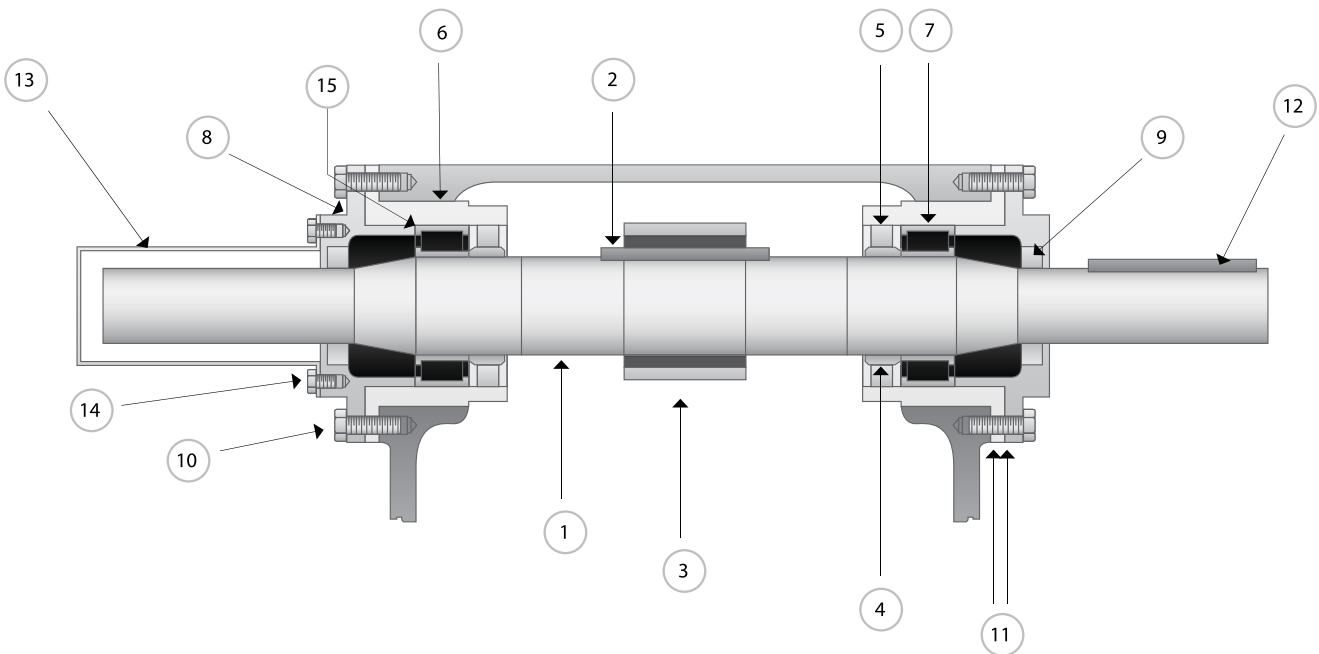
FRAME ASSEMBLY GROUP				
ITEM #	DESCRIPTION	QTY	PART #	
			5" X 6"	5 1/2" X 8"
1	FRAME ASSEMBLY 5" X 6" (INCLUDES ITEMS: 1-7, 10-12, & 15)	1	5400255	-----
	FRAME ASSEMBLY 5 1/2" X 8" (INCLUDES ITEMS: 5, 10, 11, 12, 20, & 21)	1	-----	5400260
	FRAME ONLY	1	5400265	5400350
2	STUD, OIL STOP HEAD	4	5400029	5400355
3	NUT, OIL STOP HEAD	4	5400144	5400360
4	PLATE - INSPECTION PLATE	1	5400270	5400365
5	STUD, INSPECTION PLATE	1	5400275	5400370
6	NUT, INSPECTION PLATE STUD	1	5400280	5400375
7	GASKET, HOOD	1	5400285	5400380
8	SCREW, HOOD	8	5400290	5400385
9	WASHER	8	5400295	5400390
10	PLUG, OIL LEVEL	1	5400300	5400395
11	PLUG, OIL DRAIN	1	5400305	5400400
12	PLUG, FRAME DRAIN	1	5400310	5400405
13	BAFFLE, PISTON ROD	2	5400093	5400210
14	NUT, CROSSHEAD	2	5400315	5400144
15	HOOD ASSEMBLY (INCLUDES ITEMS: 16, 17, 18, AND 19)	1	5400320	-----
	HOOD ONLY		-----	5400410
16	HOOD CAP	1	5400325	-----
17	STUD, HOOD CAP	1	5400330	-----
18	NUT, HOOD CAP	1	5400335	-----
19	CHAIN, HOOD CAP	1	5400340	-----
20	PLUG, CROSSHEAD	2	-----	5400415
21	STUD CROSSHEAD	4	-----	5400420
22	ELBOW-PIPE STREET, OIL LEVEL	1	-----	5400425
23	COVER-FILLER	1	5400345	5400430



# JACKSHAFT ASSEMBLY GROUP

JACKSHAFT ASSEMBLY GROUP				
ITEM #	DESCRIPTION	QTY	PART #	PART #
			5" X 6"	5 1/2" X 8"
----	JACKSHAFT ASSEMBLY (INCLUDES ITEMS: 1-3)	1	5400435	5400485
1	JACKSHAFT	1	5401017	5400490
2	KEY, JACKSHAFT TO GEAR	1	5400440	5400495
3	GEAR - DRIVER	1	5400445	5401020
4	SLEEVE - SHAFT	2	5400120	5400118
5	SEAL - OIL, BEARING HOUSING	2	5400148	5400141
6	HOUSING - BEARING	2	5400450	5400215
7	BEARING, JACKSHAFT	2	5400150	5400500
8	PLATE - BEARING RETAINING	2	5400455	5400505
9	SEAL - OIL, BEARING RETAINING PLATE	2	5400127	5400141
10	SCREW, HOUSING & RETAINING PLATE	12	5400460	5400510
11	GASKET, HOUSING & RETAINING PLATE	4	5400125	5401030
12	KEY, JACKSHAFT	1	5400465	5400515
13	COVER - SHAFT EXTENSION	1	5400470	5400520
14	SCREW, SHAFT EXTENSION COVER	3	5400475	5400525
15	SPACER BEARING	1	----	5400530
*	FITTING - LUBRICATION	2	5400480	5400535

\* Not shown on illustration.

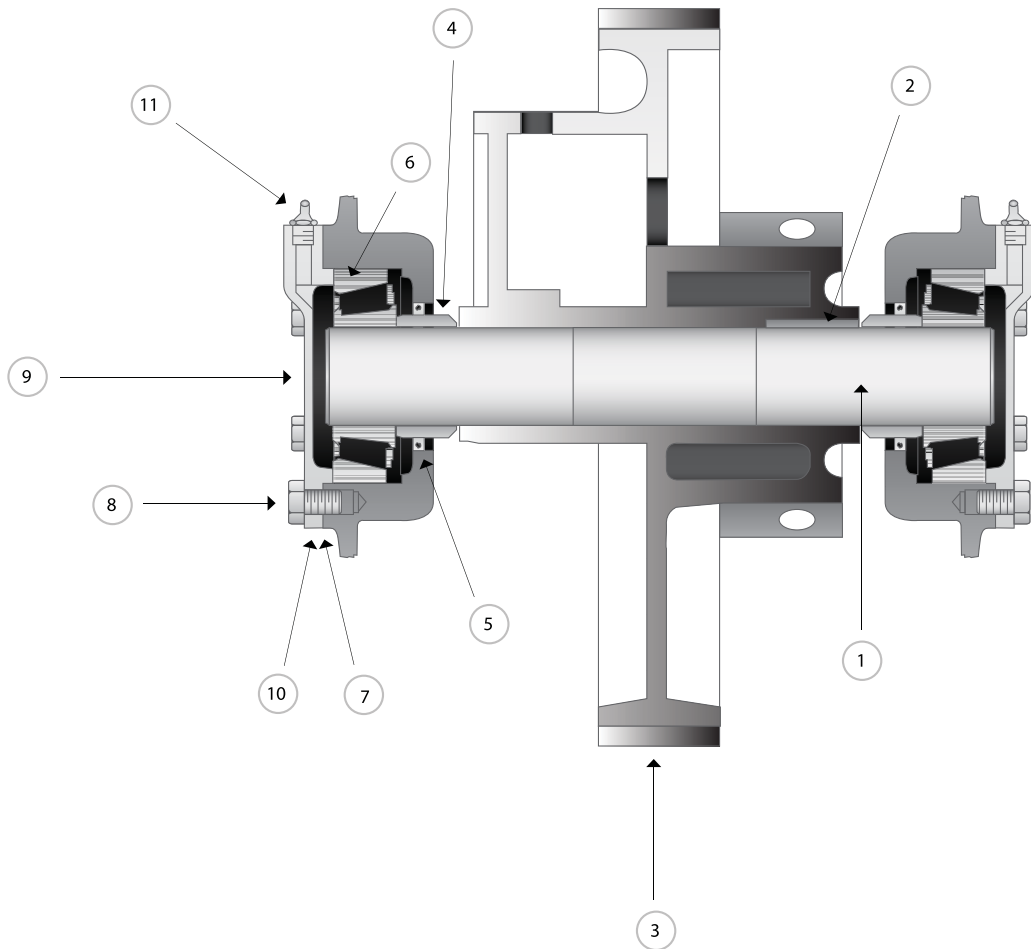


# ECCENTRIC ASSEMBLY GROUP

ECCENTRIC ASSEMBLY GROUP				
ITEM #	DESCRIPTION	QTY	PART #	
			5" X 6"	5 1/2" X 8"
1	SHAFT - ECCENTRIC	1	5400011	5401035
2	KEY	1	5400012	5401023
3	ECCENTRIC GEAR	1	5400009	5400560
4	SLEEVE - SHAFT	2	5400129	5400128
5	SEAL - OIL	2	5400130	5401040
6	BEARING, ECCENTRIC SHAFT	2	5400132	5400133
7	SHIM, BEARING COVER PLATE*	1	5400152	5401045
8	SCREW, BEARING COVER PLATE	12	5400540	5400225
9	PLATE - BEARING COVER	2	5400545	5400555
10	GASKET, BEARING COVER PLATE**	1	5400125	5401030
11	FITTING - LUBE	2	5400550	5400565

\* Used opposite PPGD 25C657 Gasket.

\*\* Used opposite PPGD 77G16 Shims.

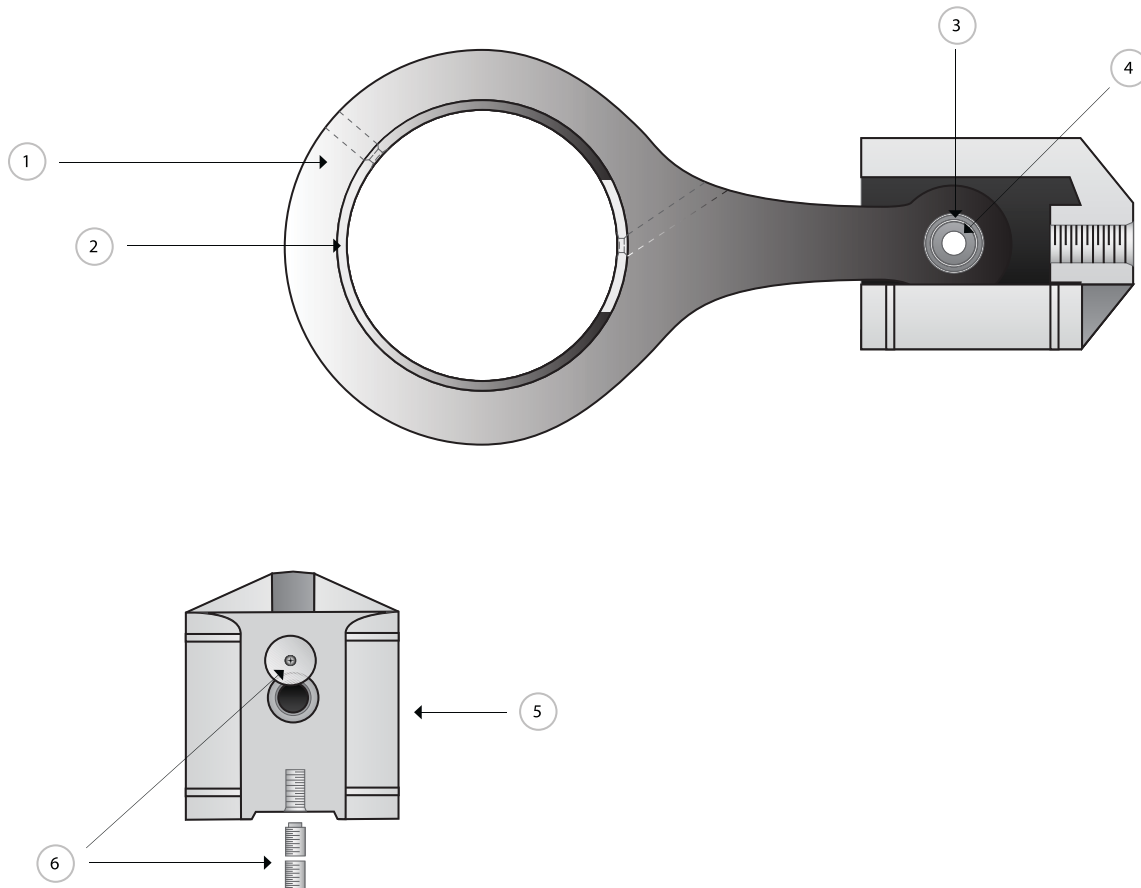




# CONNECTING ROD & CROSSHEAD

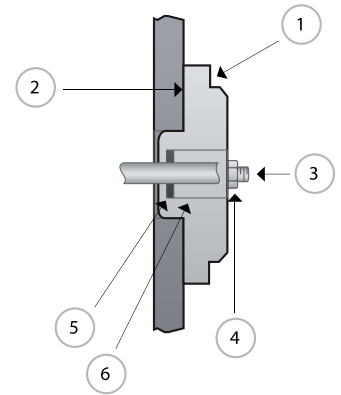
CONNECTING ROD & CROSSHEAD				
ITEM #	DESCRIPTION	QTY	PART #	
			5" X 6"	5 1/2" X 8"
1	CONNECTING ROD (INCLUDES ITEMS: 2-3)	2	5400570	5400220
2	BUSHING, ECCENTRIC	2	5400134	5400190
3	BUSHING, CROSSHEAD PIN	2	5400136	5400195
4	PIN CROSSHEAD	2	5400138	5400580
5	CROSSHEAD ASSEMBLY	2	5400008	5400200
6	SET SCREW - ASSEMBLY	2	5400575	-----
*	SCREW (1.25" LG.) RETAINER PLATE	4	-----	5400585
*	SCREW (1" LG.) RETAINER PLATE	4	-----	5400590
*	WIRE	1	-----	5400230

\* Not shown on illustration.

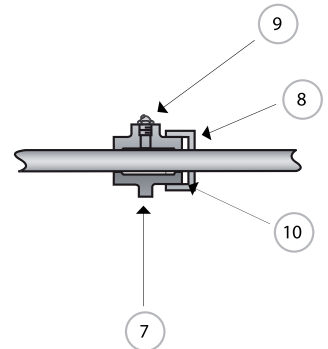


# STUFFING BOX, GLAND & OIL STOP HEAD

STUFFING BOX						
ITEM #	DESCRIPTION	QTY	PART #			
			5" X 6"		5 1/2" X 8"	
----	STUFFING BOX ASSEMBLY (INCLUDES ITEMS: 1, 3, & 4)	2	RH	LH	RH	LH
			5400595	5400600	5400615	5400620
1	STUFFING BOX		5400605		5400625	
2	GASKET, STUFFING BOX	2	5400610		5400630	
3	STUD, STUFFING BOX	4	5400160		5400635	
4	NUT, STUFFING BOX STUD	4	5400172		5400640	
5	RING - JUNK	2	5400100		5401013	
6	PACKING, CROWN TYPE	2	5400015		5400645	
	PACKING, OIL RES MOLDED CONVEX	2	----		5400650	
	PACKING, BRAIDED ASBESTOS	2	----		5400655	
	PACKING, MOLDED RUBBER AND DUCK		----		5400660	

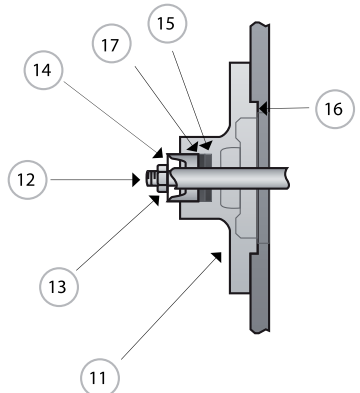


STUFFING BOX GLAND				
ITEM #	DESCRIPTION	QTY	PART #	
			5" X 6"	5 1/2" X 8"
----	GLAND ASSEMBLY (INCLUDES ITEMS: 7-10)	2	5401010	5400675
7	GLAND	2	5400162	5400680
8	NUT	2	5400665	5400685
9	FITTING - LUBE	2	5400670	5400690
10	PACKING - RING	2	5400110	5400695
*	BUSHING-GLAND	2	----	5400700



\* Not shown on illustration.

OIL STOP HEAD					
ITEM #	DESCRIPTION	QTY	5" X 6"	PART #	
				5 1/2" X 8"	
			2 BOLT	4 BOLT	
----	OIL STOP HEAD ASSEMBLY (INCLUDES ITEMS: 11-13)	2	5400013	5400705	5400710
12	STUD, OIL STOP HEAD	4	5400029	5400715	5400735
13	NUT, OIL STOP HEAD	2	5400144	5400144	5400144
14	GLAND, OIL STOP HEAD	2	5400960	5400720	5400740
15	WASHER OIL STOP HEAD	2	5400101	5401015	5401015
16	GASKET, OIL STOP HEAD	2	5400965	5400725	5400745
17	PACKING, OIL STOP HEAD	2	5400022	5400730	5400750

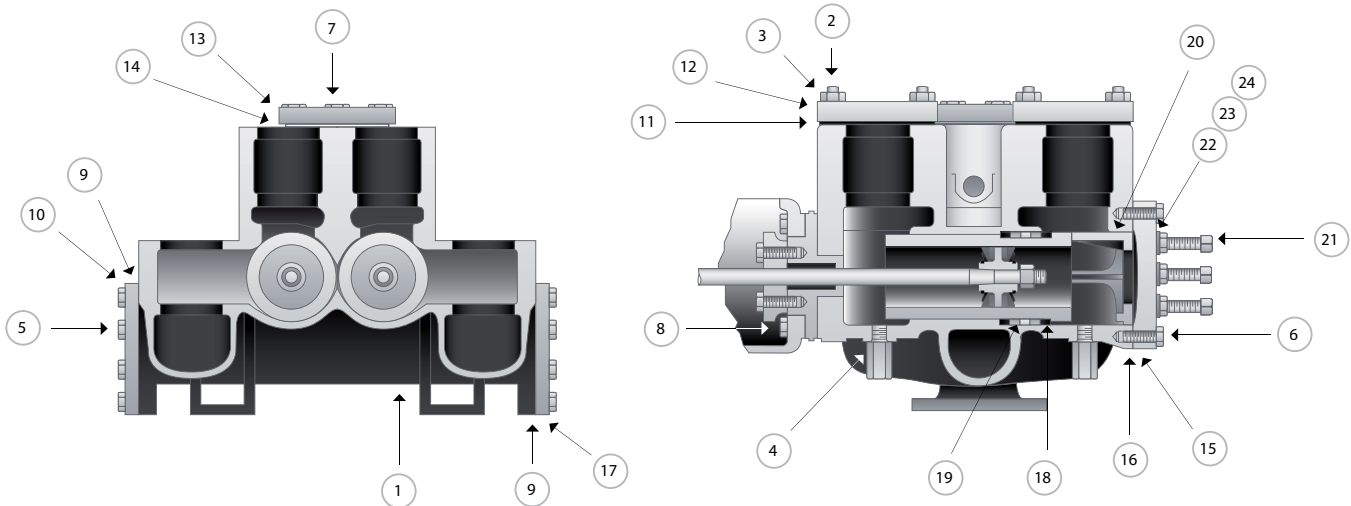


# FLUID CYLINDER GROUP

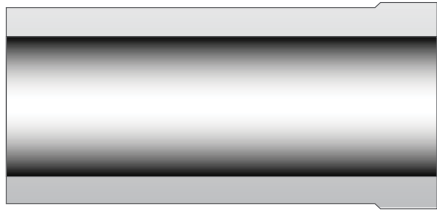
5" X 6" FLUID CYLINDER GROUP*			
ITEM #	DESCRIPTION	QTY	PART #
----	FLUID CYLINDER ASSEMBLY (INCLUDES ITEMS: 2)	1	5400755
1	FLUID CYLINDER	1	5400760
2	STUD, VALVE COVER	16	5400027
3	NUT, VALVE COVER STUD	16	5400026
4	PLUG, DRAIN	5	5400028
5	SCREW, SUCTION & BLANK FLANGE	16	5400765
6	SCREW, CYLINDER HEAD	10	5400770
7	SCREW, DISCHARGE FLANGE	8	5400775
8	SCREW, FRAME TO CYLINDER	6	5400780
9	GASKET, SUCTION & BLANK FLANGE	2	5400106
10	FLANGE, SUCTION BLANK	1	5400785
11	GASKET, VALVE COVER	8	5400790
12	COVER VALVE	8	5400795
13	FLANGE, DISCHARGE	1	5400800
14	GASKET, DISCHARGE FLANGE	1	5400805
15	HEAD - CYLINDER	1	5400810
16	GASKET, CYLINDER	2	5400815
17	FLANGE, SUCTION	1	5400820
18	PACKING, LINER	4	5400090
19	SPACER - LANTERN, LINER	2	5400085
20	CLAMP - LINER	2	5400115
21	SET SCREW, LINER CLAMP	6	5400146
22	PACKING, LINER CLAMP	6	5400019
23	WASHER, LINER CLAMP SET SCREW	6	5400825
24	NUT, LINER CLAMP SET SCREW	6	5400830
**	LINER	2	5400835

\*See page 22 for 5 1/2" x 8" fluid end options.

\*\*Not shown on illustration. See page 20.



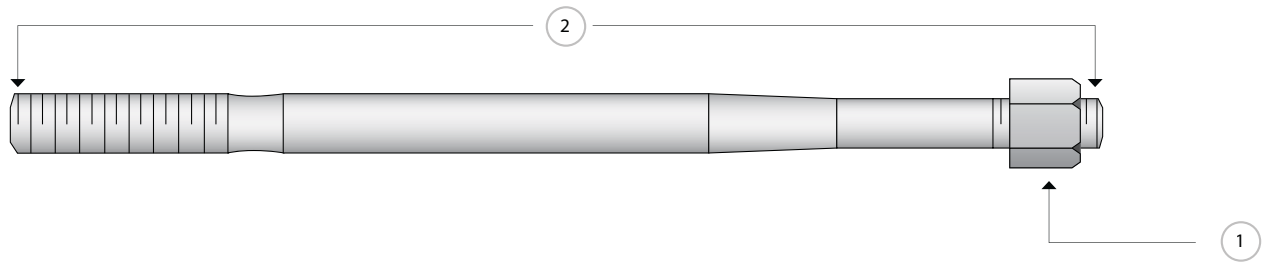
## CYLINDER LINERS



5" X 6" CYLINDER LINERS*					
SIZE	QUANTITY	HARDENED STEEL PART #	CHROME PLATED PART #	STAINLESS STEEL PART #	BRONZE PART #
2 1/2"	2	5400065	5400067	5450500	5400840
3"	2	5400845	5450510	5400850	5400855
3 1/2"	2	5400860	5450515	5400865	5400870
4"	2	5401014	5450520	5400875	5400880
4 1/2"	2	5400885	5450525	5400890	5400895
5"	2	5400167	5450530	5400900	5400905

\*See page 22 for 5 1/2" x 8" options.

## PISTON ROD & LOCK NUT



5" X 6" PISTON ROD & LOCK NUT*						
ITEM #	DESCRIPTION	QTY	HARDENED STEEL PART #	CHROME PLATE PART #	STAINLESS STEEL PART #	BRONZE PART #
1	LOCK NUT	2	5400910	5400920	5400930	5400945
2	PISTON ROD (INCLUDES ITEMS: 1-2) 5" x 6" PUMP	2	5400076	5400074	5400935	5400950
2	PISTON ROD (INCLUDES ITEMS: 1-2) 5 1/2" x 8" PUMP	2	5400915	5400925	5400940	5400955

\*See page 22 for 5 1/2" x 8" options.

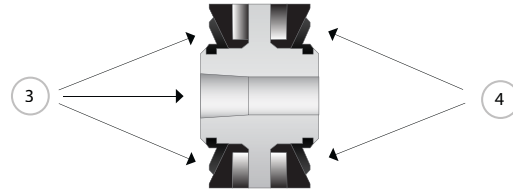
# STEEL INSERT TYPE PISTON

API No. 1 Taper

Standard for slush, grout and cement service.

5" X 6" STEEL INSERT TYPE PISTON*			
ITEM #	DESCRIPTION	QTY	PART #
3	PISTON ASSEMBLY (INCLUDES: 5" INSERT GROUP)	2	5400006
4	5" INSERT GROUP (RUBBER, RETAINER PLATE & RINGS)	2	5400007
3	4 1/2" PISTON ASSEMBLY (INCLUDES 4 1/2" INSERT GROUP)	2	5400970
4	4" PISTON ASSEMBLY (INCLUDES: 4" INSERT GROUP)	2	5400975
3	4" INSERT GROUP (RUBBER, RETAINER PLATE & RINGS)	2	5400083
4	3 1/2" PISTON ASSEMBLY (INCLUDES 3 1/2" INSERT GROUP)	2	5400980
3	3" PISTON ASSEMBLY (INCLUDES 3" INSERT GROUP)	2	5400985
4	3" INSERT GROUP (RUBBER, RETAINER PLATE & RINGS)	2	5400900

\*See page 22 for 5 1/2" x 8" options.



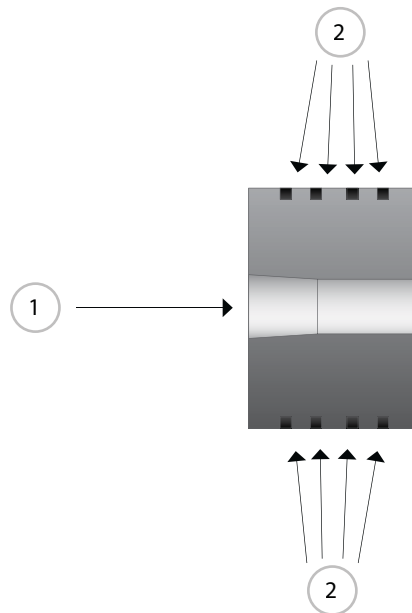
# SOLID IRON TYPE PISTON

API No. 1 Taper

With cast iron rings. Standard for oil service.

5" X 6" SOLID IRON TYPE PISTON*			
ITEM #	DESCRIPTION	QTY	PART #
1	5" PISTON	2	5400995
2	5" RING - PISTON	8	5401050
1	4 1/2" PISTON	2	5401055
2	4 1/2" RING - PISTON	8	5401060
1	4" PISTON	2	5401065
2	4" RING - PISTON	8	5401070
1	3 1/2" PISTON	2	5401075
2	3 1/2" RING - PISTON	8	5401080
1	3" PISTON	2	5401085
2	3" RING - PISTON	8	5401090

\*See page 22 for 5 1/2" x 8" options.



## 5 1/2" X 8" FLUID END PARTS

5 1/2" X 8" FLUID CYLINDER GROUP		
DESCRIPTION	QTY	PART #
ASM FLUID CYLINDER	1	5401095
STUD, CYLINDER TO FRAME	12	5401110
NUT, CYLINDER HEAD	12	5401115
STUD, VALVE COVER	16	5401120
NUT, VALVE COVER	16	5401125
STUD, DISCHARGE FLANGE	8	5401130
NUT, DISCHARGE FLANGE STUD	8	5401135
STUD, CYLINDER HEAD	24	5401140
NUT, CYLINDER HEAD STUD	24	5401145
STUD, SUCTION FLANGE	8	5401150
NUT, SUCTION FLANGE STUD	8	5401155
FLANGE, DISCHARGE	1	5401160
GASKET, DISCHARGE FLANGE	1	540116
HEAD CYLINDER	2	5401170
GASKET, CYLINDER HEAD	2	5401175
CLAMP LINER	2	5401180
SLEEVE, LINER	4	5401885
SPACER, LINER	2	5401190
LINER SET SCREW	2	5401195
NUT, LINER SET SCREW	2	5401200
WASHER, LINER SET SCREW	2	5401205
PACKING, LINER SET SCREW	2	5401210
FLANGE, SUCTION	1	5401215
GASKET, SUCTION FLANGE	1	5401225
PLUG	5	5401230
VALVE COVER	8	5401235
STUD, FLANGE & HEAD	32	5401240
NUT, FLANGE & HEAD	32	5401245
GASKET, DISCHARGE FLANGE	1	5401250
PLUG	2	5401255

5 1/2" X 8" LINER AND SEAT PULLERS		
DESCRIPTION	QTY	PART #
PULLER, SEAT STANDARD	1	5401260
PULLER, SEAT GRAVEL	1	5401265
PULLER, LINER	1	5401270

5 1/2" X 8" FLUID END OPTIONAL LINERS, PISTONS, PISTON RUBBER KITS		
DESCRIPTION	QTY	PART #
LINER 5 1/2" X 8" 5 1/2" BORE	2	5401275
PISTON 5 1/2" B API-3	2	5401280
PISTON RUBBER KITS 5 1/2"	2	5401285
LINER 5 1/2" X 8" 5" BORE	2	5401290
PISTON 5" B API-3	2	5401295
PISTON RUBBER KIT 5" B	2	5401300
LINER 4 1/2" BORE FOR 5 1/2" X 8"	2	5401305
PISTON 4 1/2" B API-3	2	5401310
PISTON RUBBER KIT 4 1/2" BORE	2	5401315
LINER 5 1/2" X 8" 4" BORE	2	5401320
PISTON 4" K API-3	2	5401325
PISTON RUBBER KIT 4" K	2	5401330
LINER 3 1/2" BORE	2	5401335
PISTON 3 1/2" K API-3	2	5401340
PISTON RUBBER KIT 3 1/2" K	2	5401345

5 1/2" X 8" FLUID END REBUILD KIT		
DESCRIPTION	QTY	PART #
LINER	2	5401350
LINER CHROME	2	5401355
LINER PACKING	4	5401360
LANTERN RING	2	5401365
HEAD GASKET	2	5401370
PISTON	2	5401375
PISTON RUBBER KIT	2	5401380
PISTON ROD (5 1/2" X 8)	2	5401385
PISTON ROD CHROME	2	5401390
JUNK RING	2	5401395
PACKING	2	5401400
BUSHING GLAND	2	5401405

# PISTON PUMPS



Hole Products offers a complete line of American Manufacturing and FMC Technologies® “Bean” piston pumps and interchangeable pump parts for use in a variety of mud pumping and drilling applications.

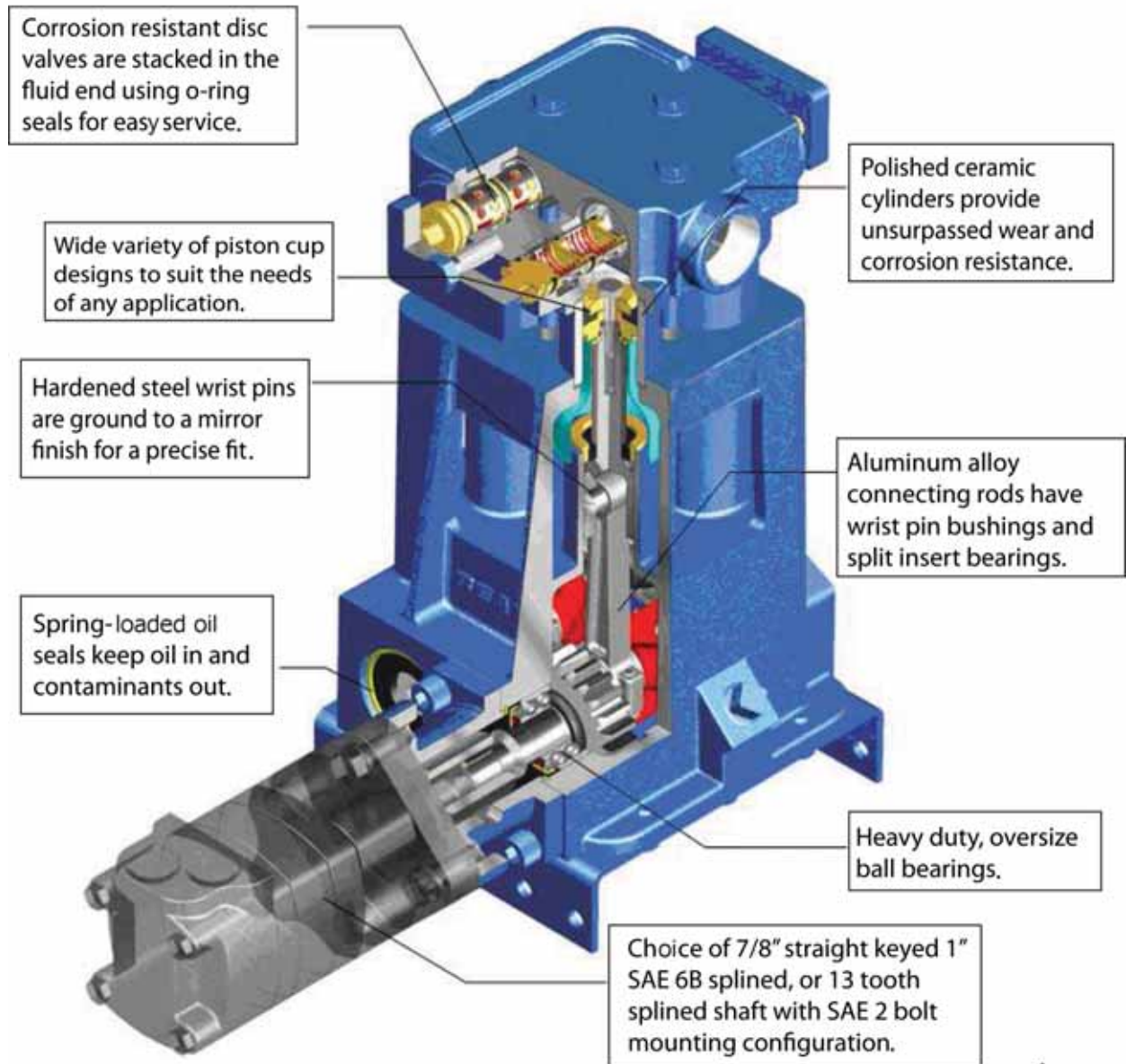
All piston pumps are designed for continuous duty industrial applications and are capable of handling even the most abrasive drilling fluids. Piston pumps feature simple designs that incorporate less wearable parts and provide for ease of service.

Piston pumps are available in duplex, triplex, and quadruplex configurations with a wide range of capacities and pressures. Pumps can incorporate ductile iron, aluminum bronze, and other materials as required.

Pump diagrams are shown for general reference and to aid in identifying spare parts for service. Order spare parts by part number and description. Item numbers are for reference only.

Please contact your Hole Products representative for pump performance details and ordering assistance.

# E0413 PUMP FEATURES





# EO413 PISTON PUMP DATA

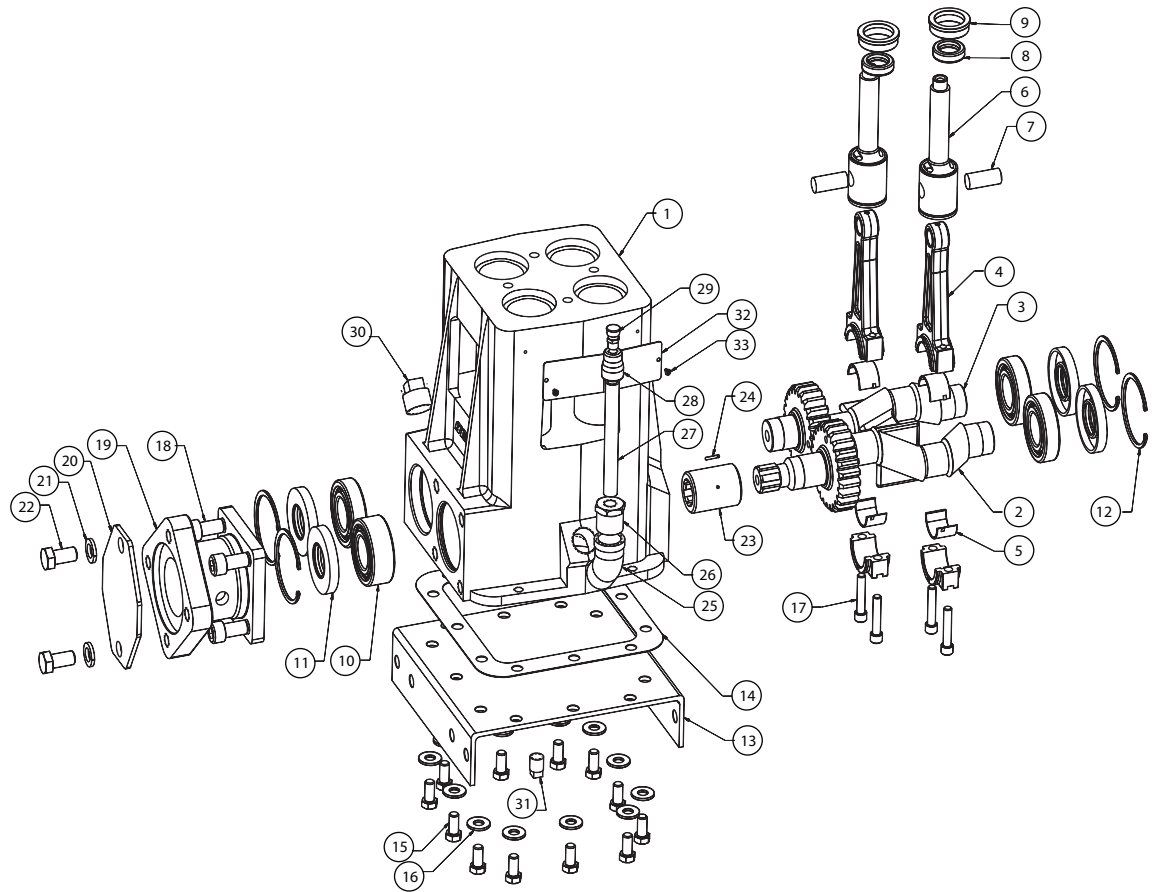


EO413 PUMP SPECIFICATIONS	
PUMP MODEL	EO413
CONFIGURATION	VERTICAL QUADRUPLEX PISTON
NUMBER OF PISTONS	4
STROKE LENGTH	1"
FRAME LOAD RATING	1,240 LBS.
PUMP WEIGHT (AVERAGE)	80 LBS.
DIRECTION OF ROTATION	EITHER
INTERNAL GEAR RATIO	1.1
INTERMITTENT DUTY SPEED RATING	575 RPM
CONTINUOUS DUTY SPEED RATING	450 RPM
BALL VALVE MAX SPEED RATING	N/A
MINIMUM SPEED	390 RPM
MECHANICAL EFFICIENCY	85%
LUBRICATION SYSTEM (STANDARD)	SPLASH, GRAVITY RETURN
LUBE OIL CAPACITY	1 QUART
LUBE OIL TYPE	SAE 30
MAXIMUM FLUID TEMPERATURE	140° F (250° F CAPABILITY)
MINIMUM FLUID TEMPERATURE	0° F (-20° F CAPABILITY)
STANDARD SUCTION SIZE	1 1/4" NPT
STANDARD DISCHARGE SIZE	3/4" NPT
FLUID END MATERIAL	CAST IRON, ALUMINIUM BRONZE
VALVE TYPES	DISC VALVES
HYDRAULIC MOTOR MOUNT	SAE A - 2 BOLT WITH 1" - 6B

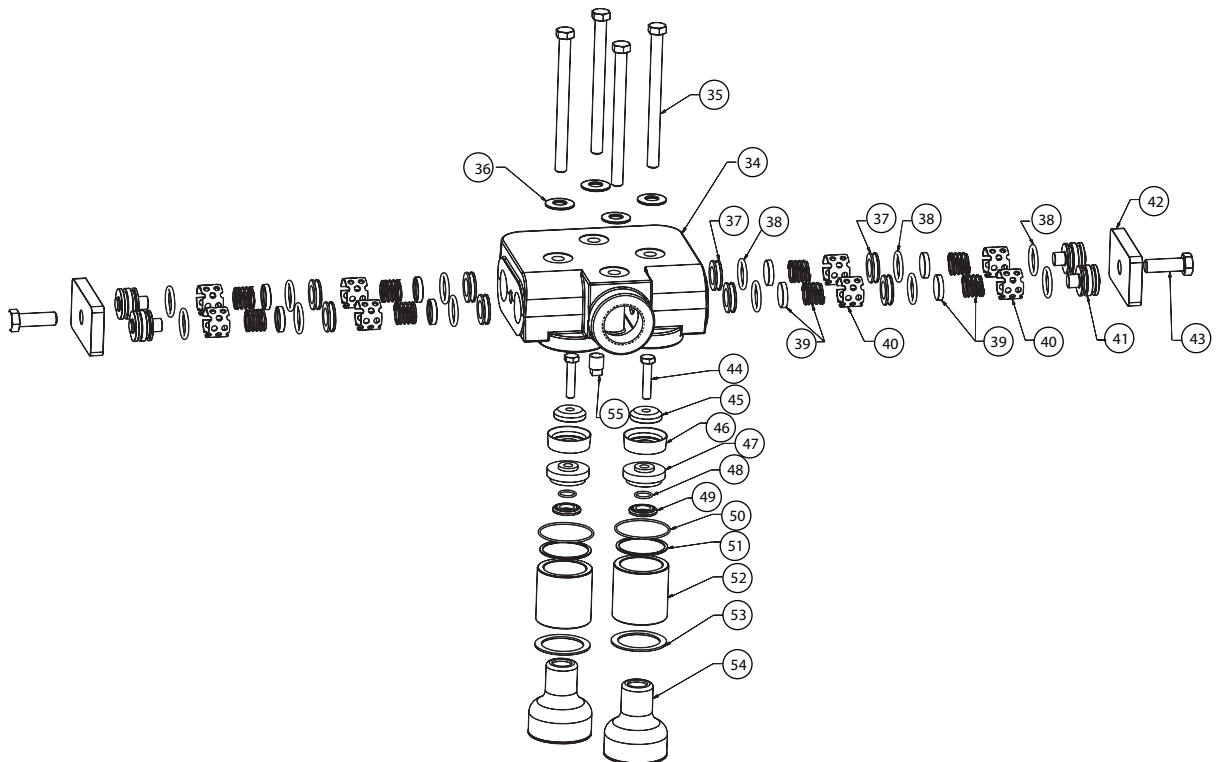
EO413 PUMP PERFORMANCE							
PISTON DIAMETER (IN)	DISPLACEMENT (GAL/REV)	MAXIMUM PRESSURE (PSI)	PUMP CAPACITY (GPM @ INPUT SPEED RPM)				
			390 RPM	400 RPM	425 RPM	450 RPM	575 RPM
1.625"	0.0359	600	14.01	14.36	15.26	16.16	20.65
Horsepower based on 85 or 90% mechanical efficiency. Actual application horsepower requirements can be calculated using the equation: $BHP = (GPM * PSI) / (1714 * 0.85 \text{ or } 0.90)$							
Pump capacities shown are based on 100% volumetric efficiency.							

# E0413 SERIES PUMP PARTS DIAGRAM

## POWER END



## FLUID END



## EO413 SERIES PUMP PARTS

EO413 COMPLETE PUMP	
DESCRIPTION	PART #
COMPLETE PUMP 4 CYLINDER	5350003

EO413 GROUPS	
DESCRIPTION	PART #
CYLINDER GROUP INCLUDES: 45,46,48,51,52,53, and 54	5350490
VALVE CHAMBER GROUP INCLUDES: 34,37,38,39,40,41,42,44, and 56	5260309

### EO413 COMPONENT PARTS POWER END

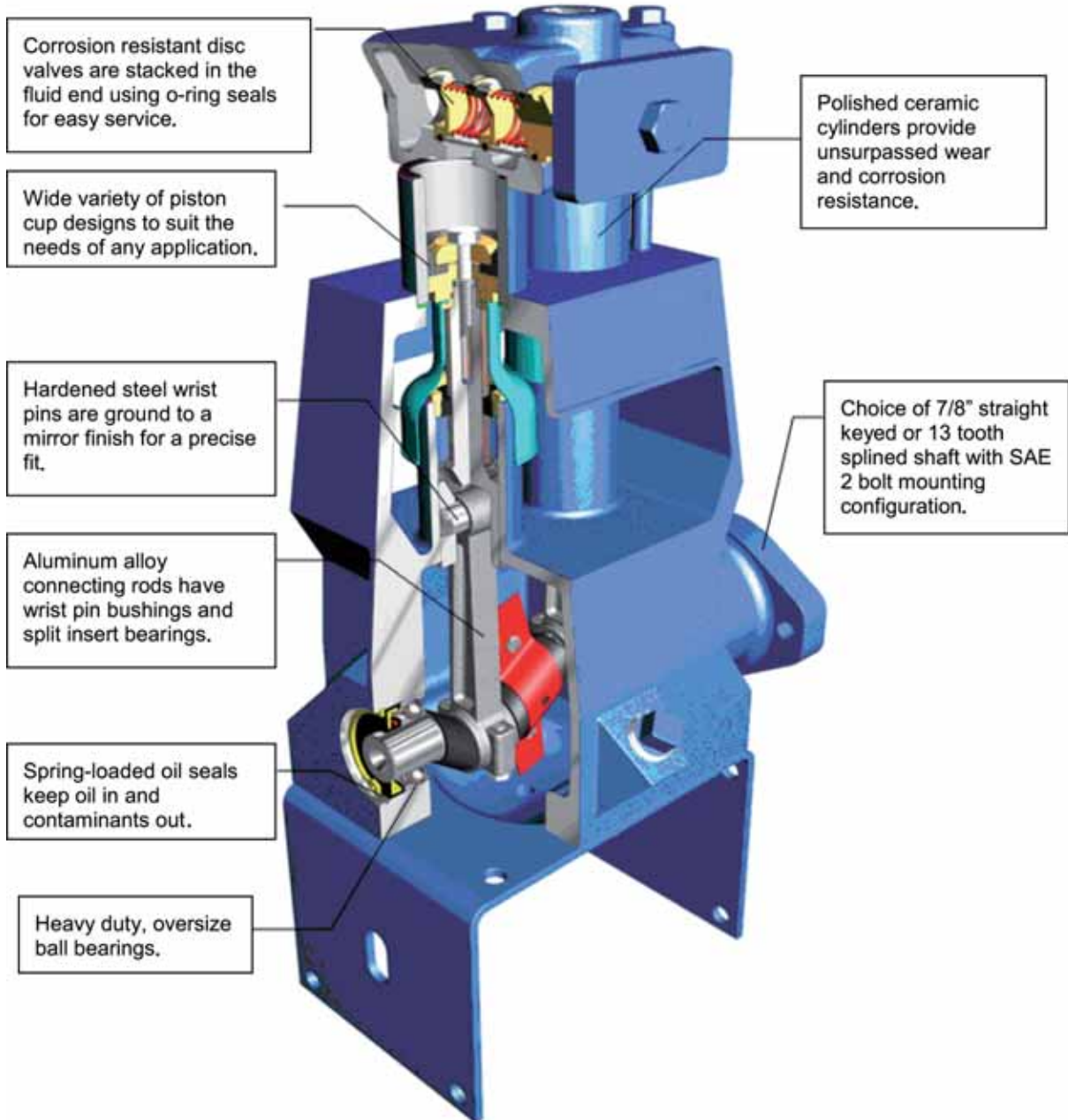
ITEM #	DESCRIPTION	QTY	PART #
1	POWER FRAME	1	5350350
2	CRANK (DRIVE)	1	5350355
3	CRANK (DRIVEN)	1	5350360
4	CONNECTING ROD ASSY	4	5350365
5	ROD BEARING	8	5350370
6	CROSSHEAD, CERAMIC	4	5350090
7	WRIST PIN	4	5350375
8	SLEEVE CROSSHEAD	4	5350030
9	UMBRELLA WASHER	4	5350080
10	BALL BEARING	4	5350380
11	OIL SEAL, CRANKSHAFT	4	5350051
12	RETAINING RING	4	5350385
13	BACK COVER	1	5350390
14	GASKET, BACK COVER	1	5350027
15	CAP SCREW BACK COVER	12	5350395
16	WASHER, BACK COVER	12	5350400
17	CAP SCREW, CONNECTING ROD	8	5350405
18	ALLEN HEAD SCREW FLANGE	4	5350410
19	FLANGE	1	5350415
20	PROTECTIVE COVER	1	5350420
21	LOCK WASHER	2	5350425
22	CAP SCREW CONNECTION FLANGE	2	5350430
23	SPINE ADAPTER	1	5350435
24	SPRING PIN	1	5350440
25	ELBOW LUBE VENT	1	5350445
26	BUSHING, LUBE VENT	1	5350450
27	NIPPLE, LUBE VENT	1	5350455
28	REDUCER, LUBE VENT	1	5350460
29	LUBE VENT	1	5350465
30	PIPE PLUG, FILL	1	5350470
31	PIPE PLUG, DRAIN	1	5350475
32	NAME PLATE	1	5350480
34	SELF TAPPING SCREW	2	5350485

### EO413 COMPONENT PARTS FLUID END

ITEM #	DESCRIPTION	QTY	PART #
34	FLUID CYLINDER	1	5350495
35	CAP SCREW, FLUID CYLINDER	4	5350500
36	WASHER, FLUID CYLINDER	4	5350505
37	DISC SEAT VALVE	8	5350006
38	O-RING, VALVE SEAT	12	5350009
39	SPRING DISK ASSEMBLY	8	5350008
40	VALVE CAGE	8	5350035
41	VALVE COVER	8	5350050
42	VALVE COVER CLAMP	4	5350510
43	CAP SCREW, VALVE COVER CLAMP	2	5350515
44	CAP SCREW, PISTON	2	5350520
45	CUP WASHER	4	5350013
46	PISTON CUP	4	5350525
47	PISTON HOLDER	4	5350012
48	O-RING, PISTON	4	5350011
49	WASHER, UMBRELLA	4	5350530
50	O-RING, CYLINDER	4	5350249
51	RING SEAL, CYLINDER	4	5350248
52	CYLINDER	4	5350010
53	GASKET	4	5350247
54	UMBRELLA	4	5350020
55	PIPE PLUG, FLUID CYLINDER DRAIN	1	5350535



# A04 PISTON PUMP FEATURES



Corrosion resistant disc valves are stacked in the fluid end using o-ring seals for easy service.

Wide variety of piston cup designs to suit the needs of any application.

Hardened steel wrist pins are ground to a mirror finish for a precise fit.

Aluminum alloy connecting rods have wrist pin bushings and split insert bearings.

Spring-loaded oil seals keep oil in and contaminants out.

Heavy duty, oversize ball bearings.

Polished ceramic cylinders provide unsurpassed wear and corrosion resistance.

Choice of 7/8" straight keyed or 13 tooth splined shaft with SAE 2 bolt mounting configuration.

The I04 piston pump is available; it is a horizontal version of the A04 pump. Please contact your Hole Products representative for details.

# AO413 PISTON PUMP DATA

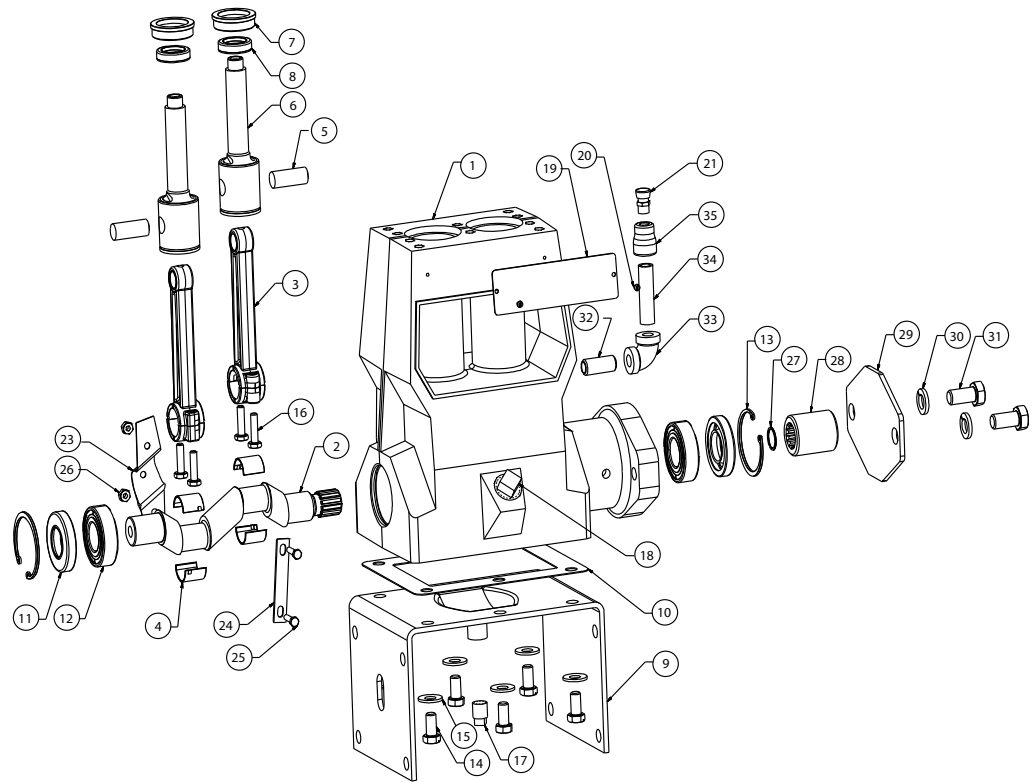


AO413 PUMP SPECIFICATIONS	
PUMP MODEL	AO413
CONFIGURATION	A04 VERTICAL DUPLEX PISTON
NUMBER OF PISTONS	2
STROKE LENGTH	1"
FRAME LOAD RATING	1,140 LBS.
PUMP WEIGHT (AVERAGE)	43 LBS.
DIRECTION OF ROTATION	EITHER
INTERNAL GEAR RATIO	N/A
INTERMITTENT DUTY SPEED RATING	500 RPM
CONTINUOUS DUTY SPEED RATING	400 RPM
BALL VALVE MAX SPEED RATING	N/A
MINIMUM SPEED	300 RPM
MECHANICAL EFFICIENCY	90%
LUBRICATION SYSTEM (STANDARD)	SPLASH, GRAVITY RETURN
LUBE OIL CAPACITY	1 QUART
LUBE OIL TYPE	SAE 30
MAXIMUM FLUID TEMPERATURE	140° F (250° F CAPABILITY)
MINIMUM FLUID TEMPERATURE	0° F (-20° F CAPABILITY)
STANDARD SUCTION SIZE	1" NPT
STANDARD DISCHARGE SIZE	1/2" NPT 3/4" NPT
FLUID END MATERIAL	CAST IRON, ALUMINIUM BRONZE
VALVE TYPES	DISC VALVES
HYDRAULIC MOTOR MOUNT	SAE A - 2 BOLT WITH 7/8" - 13T

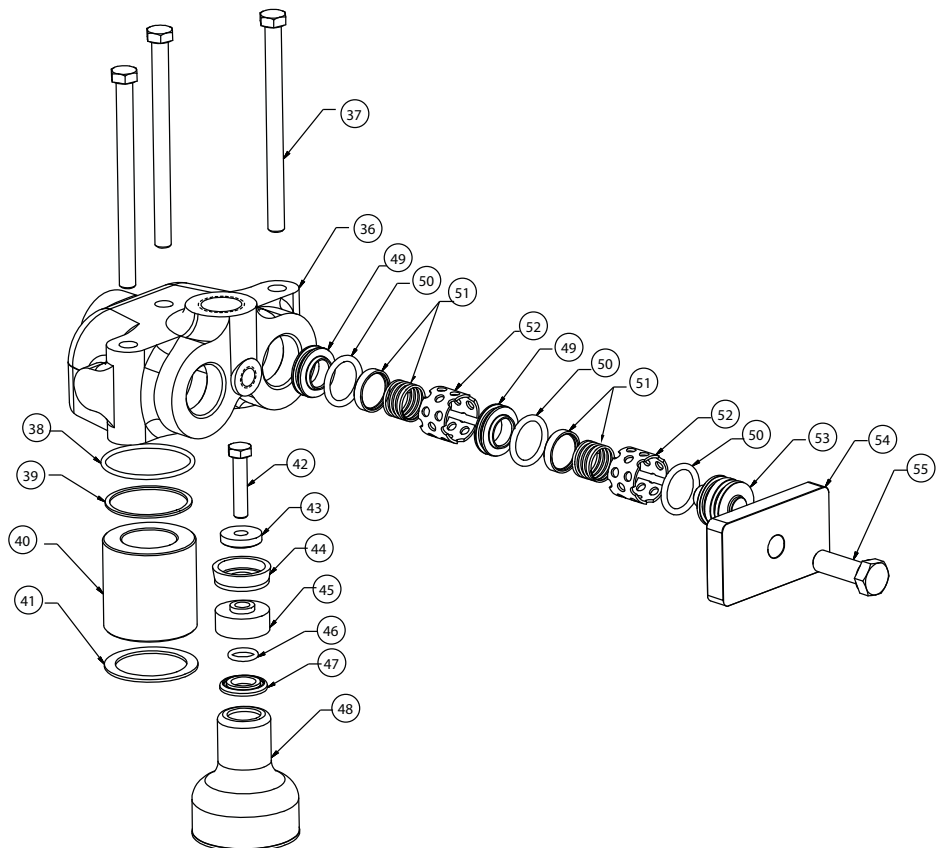
AO413 PUMP PERFORMANCE							
PISTON DIAMETER (IN)	DISPLACEMENT (GAL/REV)	MAXIMUM PRESSURE (PSI)	PUMP CAPACITY (GPM @ INPUT SPEED RPM)				
			300 RPM	350 RPM	375 RPM	400 RPM	500 RPM
1.625"	0.0180	550	5.39	6.28	6.73	7.18	8.98
Horsepower based on 85 or 90% mechanical efficiency. Actual application horsepower requirements can be calculated using the equation: $BHP = (GPM * PSI) / (1714 * 0.85 \text{ or } 0.90)$							
Pump capacities shown are based on 100% volumetric efficiency.							
Dimensions shown are for general sizing purposes and should not be used for construction.							

# A0413 PISTON PUMP PARTS DIAGRAM

## POWER END



## FLUID END



## A0413 PISTON PUMP PARTS

A0413C COMPLETE PUMP	
DESCRIPTION	PART #
COMPLETE PUMP 4 CYLINDER	5350540

A0413C GROUPS	
DESCRIPTION	PART #
CYLINDER GROUP INCLUDES: 41,42,43,44,45,46, and 47	5350690
VALVE CHAMBER GROUP INCLUDES: 51,52,53,54,55,56, and 57	5350695

A0413C COMPONENT PARTS DRIVE END			
ITEM #	DESCRIPTION	QTY	PART #
1	POWER FRAME	1	5350545
2	CRANK	1	5350550
3	CONNECTING ROD ASSY.	2	5350055
4	ROD BEARING, HALF SHELL	4	5350555
5	WRIST PIN	2	5350560
6	CROSSHEAD	2	5350090
7	SEAL HOLDER	2	5350565
8	SLEEVE	2	5350030
9	BACK COVER	1	5350570
10	GASKET, BACK COVER	1	5350025
11	OIL SEAL, CRANKSHAFT	2	5350045
12	BALL BEARING	2	5350575
13	RETAINING RING	2	5350580
14	CAP SCREW, BACK COVER / FRONT FOOT	6	5350585
15	WASHER, BACK COVER	6	5350590
16	CAP SCREW, CONNECTING ROD	4	5350595
17	PIPE PLUG, DRAIN	1	5350600
18	PIPE PLUG, FILL	1	5350605
19	NAME PLATE	1	5350610
20	SELF TAPPING SCREW	2	5350615
21	LUBE VENT	1	5350620
22	KEY*	1	5350625
23	OIL SLINGER	1	5350630
24	BOLTING STRIP, OIL SLINGER	1	5350635
25	CAP SCREW, OIL SLINGER	2	5350640
26	HEX NUT, OIL SLINGER	2	5350645
27	RETAINER RING**	1	5350650
28	SPLINE ADAPTER**	1	5350655
29	PROTECTIVE COVER**	11	5350660
30	LOCK WASHER**	2	5350665
31	CAP SCREW, CONNECTION FLANGE**	2	5350670
32	NIPPLE, LUBE VENT	1	5350675
33	ELBOW, LUBE VENT	1	5350680
34	NIPPLE, LUBE VENT	1	5350675
35	REDUCER, LUBE VENT	1	5350685

A0413C COMPONENT PARTS FLUID END			
ITEM #	DESCRIPTION	QTY	PART #
36	FLUID CYLINDER	1	5350700
37	CAP SCREW, FLUID CYLINDER	3	5350705
38	O-RING, CYLINDER	2	5350249
39	RING SEAL, CYLINDER	2	5350248
40	CYLINDER	2	5350710
41	GASKET, CYLINDER	2	5350247
42	CAP SCREW, PISTON	2	5350715
43	PISTON CUP WASHER	2	5350720
44	PISTON CUP	2	5350725
45	PISTON CUP HOLDER	2	5350730
46	O-RING, PISTON	2	5350011
47	WASHER, UMBRELLA	2	5350080
48	UMBRELLA	2	5350020
49	VALVE SEAT	4	5350006
50	O-RING, VALVE SEAT	6	5350735
51	VALVE DISC & SPRING	4	5350008
52	VALVE CAGE	4	5350035
53	VALVE COVER	4	5350050
54	VALVE COVER CLAMP	2	5350740
55	CAP SCREW, VALVE COVER CLAMP	1	5350745

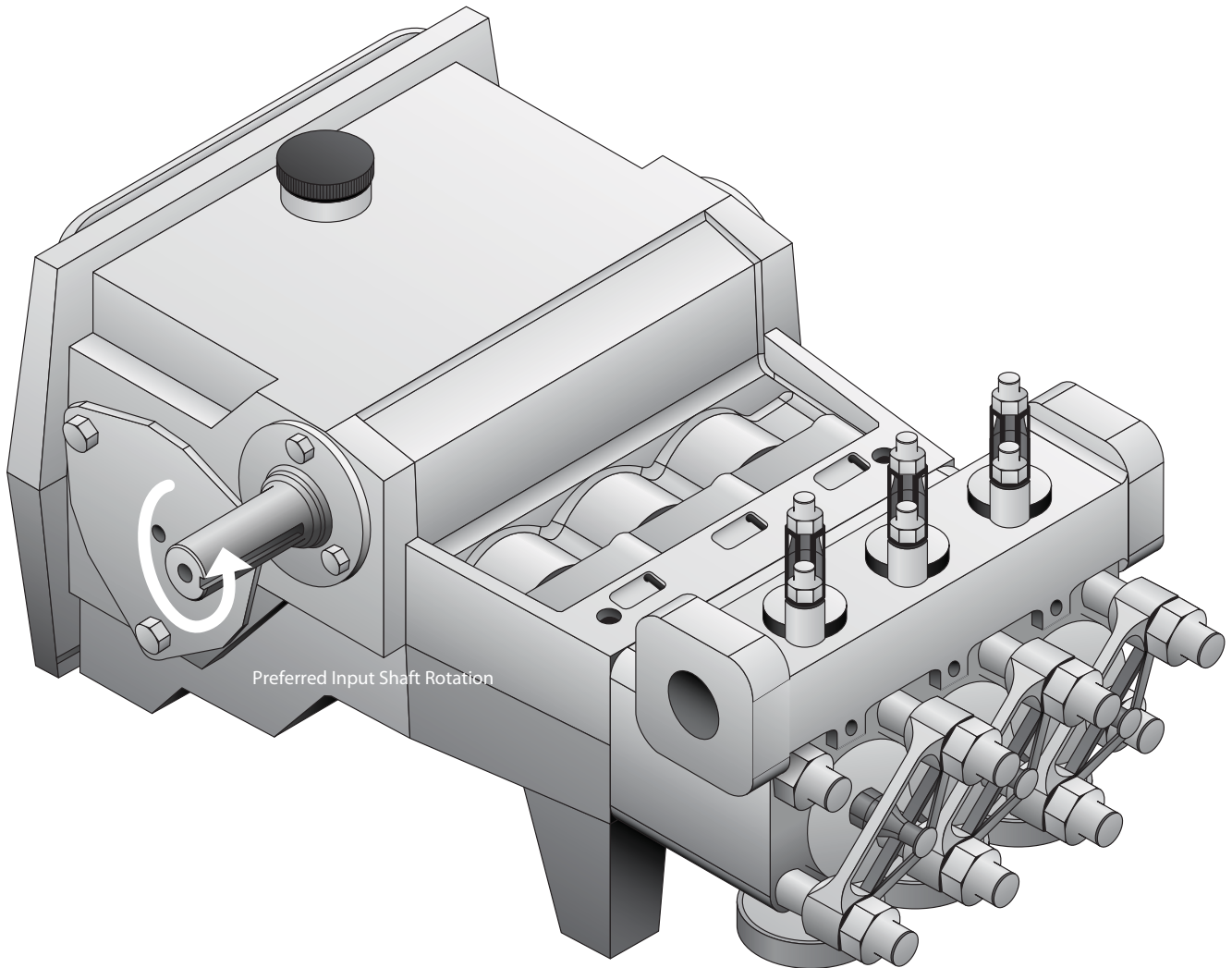
\*Used if pump is equipped with a keyed shaft.

\*\*Used if pump is equipped with flanged adapter for hydraulic drive with spined shaft.



## W1122BCD PISTON PUMP FEATURES

The W1122BCD pump includes the integral gear reduction pinion shaft. Drive shaft standard end comes with 1 1/2" diameter shaft and 3/8" square keyway. Splined shaft option comes with 14 tooth 12/24" diameter pitch female spline per ANSI B92.1 specifications.



W1122BCD Pump Assembly with Pinion Shaft



## W1122BCD PUMP DATA

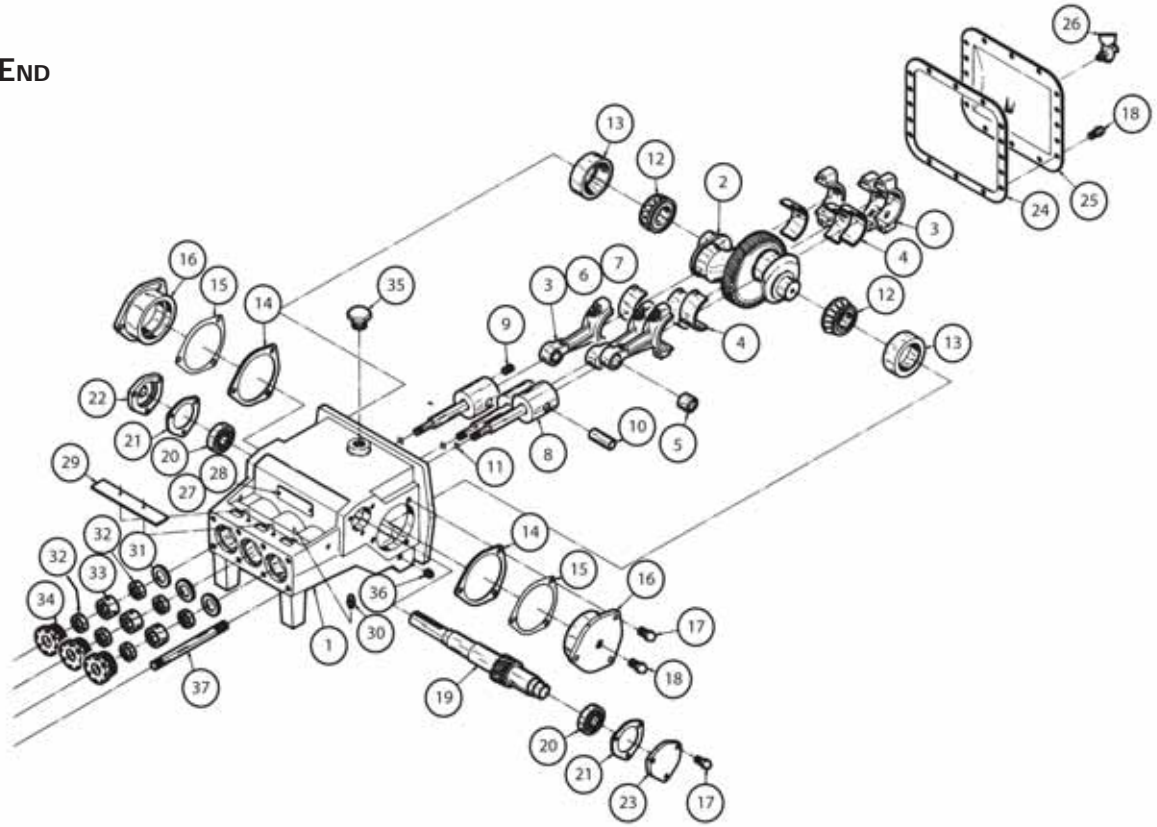
PUMP MODEL	W1122BCD
CONFIGURATION	HORIZONTAL TRIPLEX PISTON
NUMBER OF PISTONS	3
STROKE LENGTH	2 3/4" (69.9 MM)
FRAME LOAD RATING	6,000 LBS. (2,721 KG)
PUMP WEIGHT	425 LBS. (192 KG)
DIRECTION OF ROTATION	TOP OF SHAFT AWAY FROM HEAD
INTERNAL GEAR ROTATION	3.6:1
INTERMITTENT DUTY SPEED RATING	900 RPM (JACKSHAFT)
CONTINUOUS DUTY SPEED RATING	750 RPM (JACKSHAFT)
BALL VALVE MAX SPEED RATING	635 RPM (JACKSHAFT)
MINIMUM SPEED	360 RPM
MECHANICAL EFFICIENCY	85%
LUBRICATION SYSTEM	SPLASH, GRAVITY RETURN
LUBE OIL CAPACITY	1 GALLON
LUBE OIL TYPE	SAE 30
MAXIMUM FLUID TEMPERATURE	140° F (250° CAPABILITY)
MINIMUM FLUID TEMPERATURE	0° F (-20° CAPABILITY)
STANDARD SUCTION SIZE	2" NPT (50.8 MM)
STANDARD DISCHARGE SIZE	1 1/4" NPT (38.1 MM)
FLUID END MATERIAL	DUCTILE IRON
VALVE TYPE	DISC VALVES/BALL VALVES
HYDRAULIC MOTOR MOUNT	SAE C - 2 BOLT WITH 1 3/4" - 14T SAE C - 4 BOLT WITH 1 3/4" - 14T



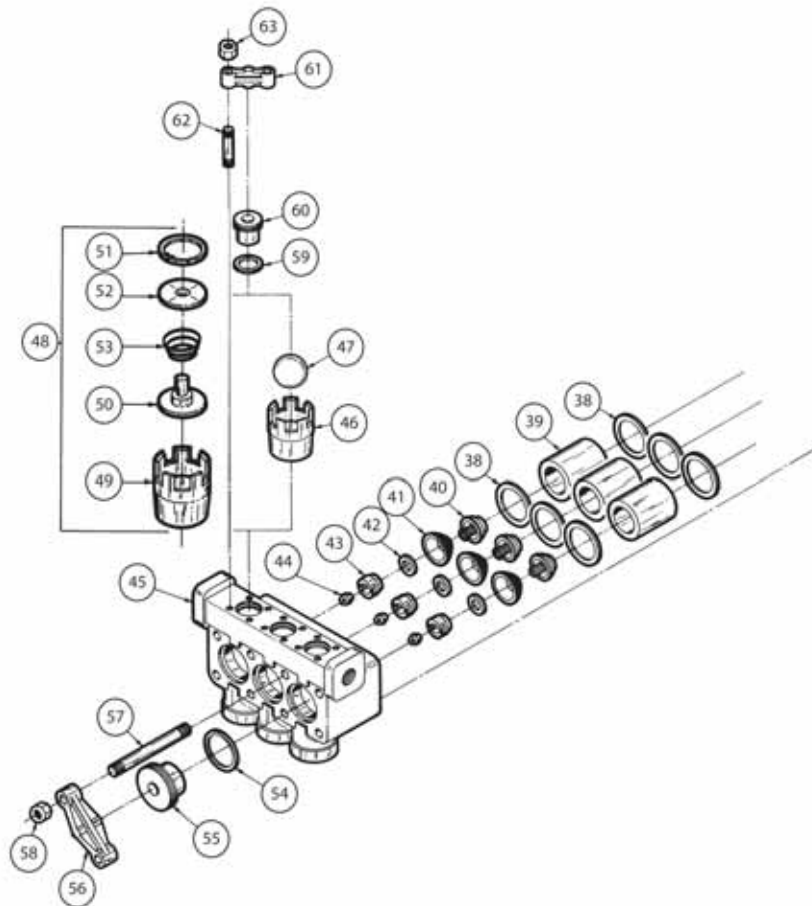
W1122 PUMP PERFORMANCE							
PISTON DIAMETER (IN)	DISPLACEMENT / (GAL/REV)	MAXIMUM PRESSURE	PUMP CAPACITY @ INPUT SPEED (RPM)				
			350 RPM	500 RPM	635 RPM	750 RPM	900 RPM
2 3/4"	0.0589	1,000	20.6	29.5	37.4	44.2	53
Horsepower based on 85 or 90% mechanical efficiency. Actual application horsepower requirements can be calculated using the equation: $BHP = (GPM * PSI) / (1714 * 0.85 \text{ or } 0.90)$ .							
Pump capacities shown are based on 100% volumetric efficiency.							

# W1122BCD SERIES PUMP PARTS DIAGRAM

## DRIVE END



## FLUID END

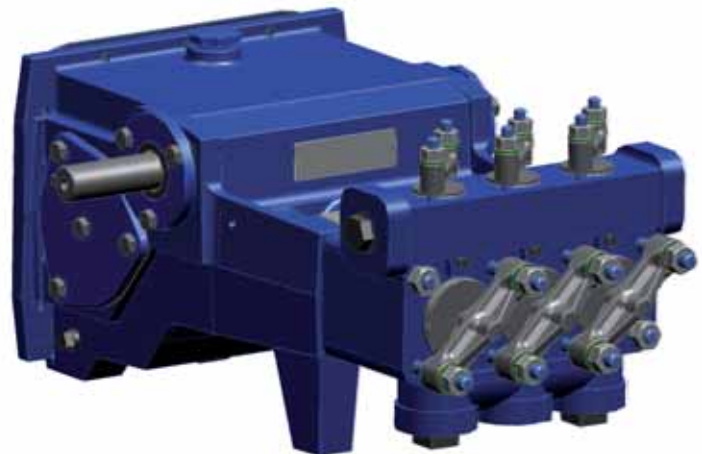


# W1122BCD PISTON PUMP PART DIAGRAM

W11221BCD COMPONENT PARTS DRIVE END			
ITEM #	DESCRIPTION	QTY	PART #
1	PUMP CASE	1	5350316
2	CRANKSHAFT	1	5350317
3	CONNECTING ROD	3	5350750
4	BEARING INSERT	3	5350755
5	BUSHING, CONNECTING ROD	3	5350760
6	BOLT CONNECTING ROD	6	5350765
7	NUT 1/2" - 20 ELAS. STOP	6	5350770
8	CROSSHEAD & ROD ASSEMBLY	3	5350319
9	SET SCREW 5/16"-18 X 5/16"	6	5350775
10	WRIST PIN	3	5350780
11	O-RING 5/8" O.D. X 1/16"	3	5350785
12	CONE, BEARING	2	5350110
13	CUP, BEARING	2	5350115
14	GASKET	2	5350120
15	SHIM	2	5350125
16	HOUSING, CRANKSHAFT BEARING	2	5350320
17	CAP SCREW, HEX HEAD 1/2" X 13 X 1 1/4"	12	5350790
18	CAP SCREW, HEX HEAD 1/2" X 13 X 3/4"	18	5350795
19	PINION SHAFT	1	5350130
	PINION SHAFT (DOUBLE SIDED)	1	5350800
20	BALL BEARING	2	5350805
21	GASKET	2	5350810
22	CAP BEARING	1	5350815
23	CAP PINION BEARING	1	5350820
24	GASKET COVER	1	5350825
25	COVER PLATE	1	5350830
26	PETCOCK	1	5350297
27	PLATE, MODEL	1	5350835
28	SCREW #4 X 3/16"	2	5350840
29	INSPECTION PLATE	1	5350845
30	LUBE FITTING, 1/8" C/Z	3	5350850
31	WASHER PACKING	3	5350855
32	SEAL OIL	6	5350155
33	SLEEVE, PACKING NUT	3	5350860
34	NUT, PLUNGER ROD	3	5350323
35	CAP OIL	1	5350865
36	PLUG, 1/2" PIPE	2	5350225
37	STUD, LONG 5/8" DIAMETER	6	5350870

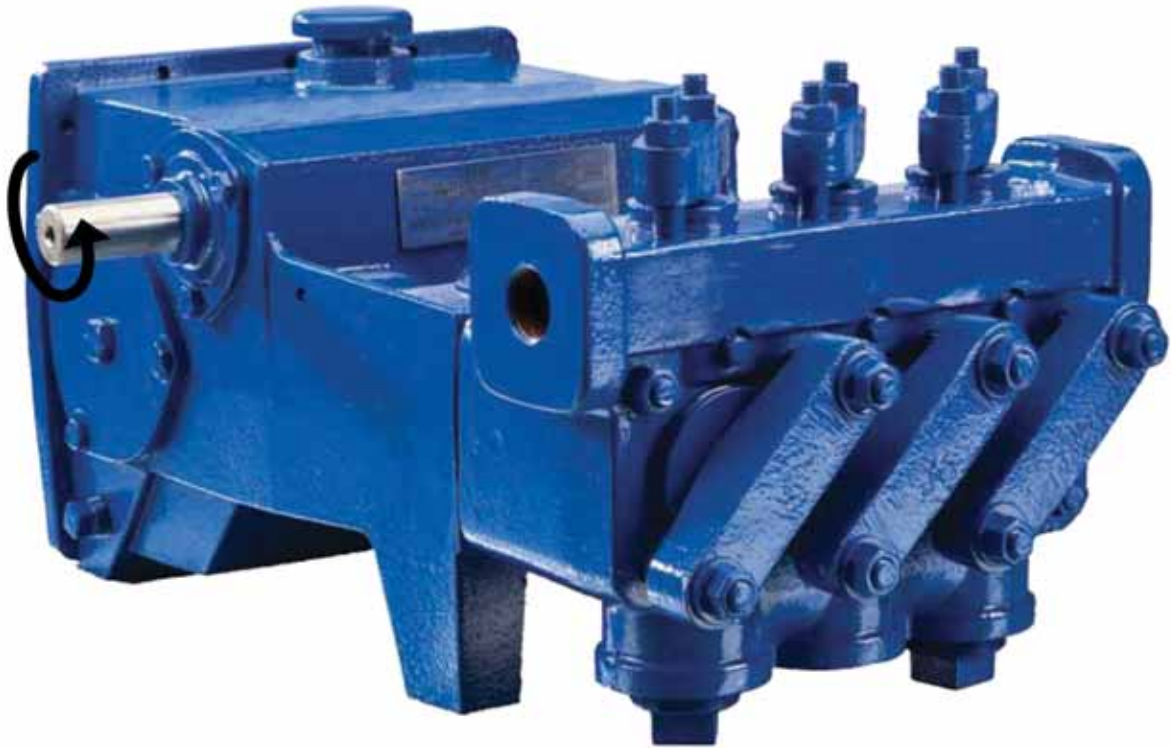
W11221BCD COMPONENT PARTS FLUID END			
ITEM #	DESCRIPTION	QTY	PART #
38	GASKET CYLINDER	6	5350165
39	CYLINDER, CERAMIC	3	5350170
40	PACKING CUP	3	5350175
41	CYLINDER PACKING		5350875
42	WASHER, PACKING	3	5350185
43	PISTON NUT (SLOTTED)	3	5350190
44	HEX NUT	3	5350211
45	FLUID CHAMBER	1	5350235
46	VALVE SEAT	6	5350269
47	BALL 1 1/8"	6	5350240
48	VALVE ASSEMBLY R-6-50 (INCLUDES: 49-53)	---	----
49	SEAT VALVE	---	---
50	VALVE	---	---
51	RETAINING RING	---	---
52	WASHER	---	---
53	SPRING	---	---
54	GASKET CYLINDER HEAD	3	5350205
55	CYLINDER COVER	3	5350245
56	CLAMP CYLINDER HEAD	3	5350290
57	STUD	2	5350250
58	HEX NUT 5/8" - 11	----	----
59	GASKET VALVE COVER	3	5350210
60	VALVE COVER	3	5350255
61	VALVE COVER CLAMP	3	5350280
62	STUD, 1/2" X 3 1/4"	6	5350265

W11221BCD COMPLETE PUMP	
MODEL	PART #
W11221BCD	5350880



## AL0918B PISTON PUMP FEATURES

The AL0918B pump includes the integral gear reduction pinion shaft and ball valves. Drive shaft standard end comes with 1 1/8" diameter shaft and 1/4" square keyway. Splined shaft option comes with 14 tooth 12/24" diameter pitch female spline per ANSI B92.1 specifications.



AL0918B Pump Assembly with Pinion Shaft.

## AL0918B PISTON PUMP DATA

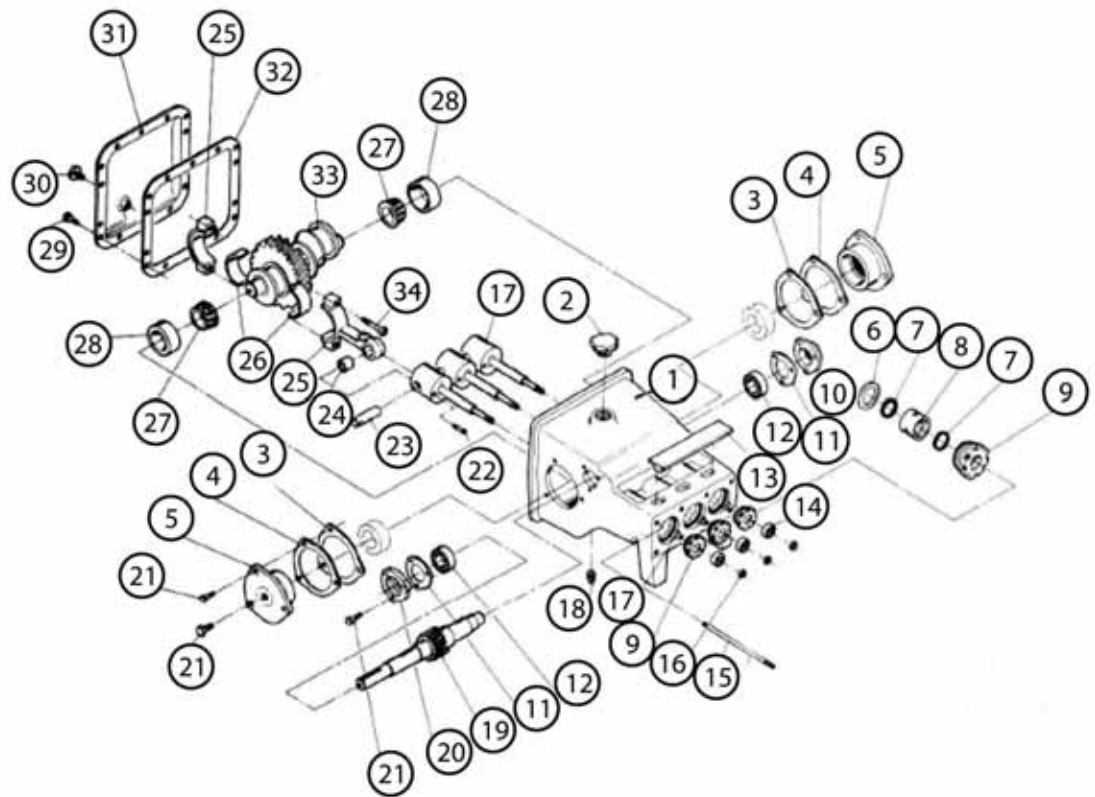
PUMP MODEL	AL0918B
PUMP MODEL	L09
CONFIGURATION	HORIZONTAL TRIPLEX PISTON
NUMBER OF PISTONS	3
STROKE LENGTH	2. 1/4" (57.15 MM)
FRAME LOAD RATING	2,800 LBS. (1,270 KG)
PUMP WEIGHT	200 LBS. (90 KG)
DIRECTION OF ROTATION	TOP OF SHAFT AWAY FROM HEAD
INTERNAL GEAR ROTATION	3.6:1
INTERMITTENT DUTY SPEED RATING	890 RPM
CONTINUOUS DUTY SPEED RATING	750 RPM
BALL VALVE MAX SPEED RATING	625 RPM
MINIMUM SPEED	360 RPM
MECHANICAL EFFICIENCY	85%
LUBRICATION SYSTEM	SPLASH, GRAVITY RETURN
LUBE OIL CAPACITY	2 1/4 QUARTS
LUBE OIL TYPE	SAE 30
MAXIMUM FLUID TEMPERATURE	140° F (250° CAPABILITY)
MINIMUM FLUID TEMPERATURE	0°F (-20° CAPABILITY)
STANDARD SUCTION SIZE	1 1/2" NPT (38.1 MM)
STANDARD DISCHARGE SIZE	1" NPT (25.4 MM)
FLUID END MATERIAL	CAST IRON
VALVE TYPE	DISC VALVES/BALL VALVES
HYDRAULIC MOTOR MOUNT	SAE B - 4 BOLT WITH 1 1/4" - 14T SAE C - 4 BOLT WITH 1 1/4" - 14T



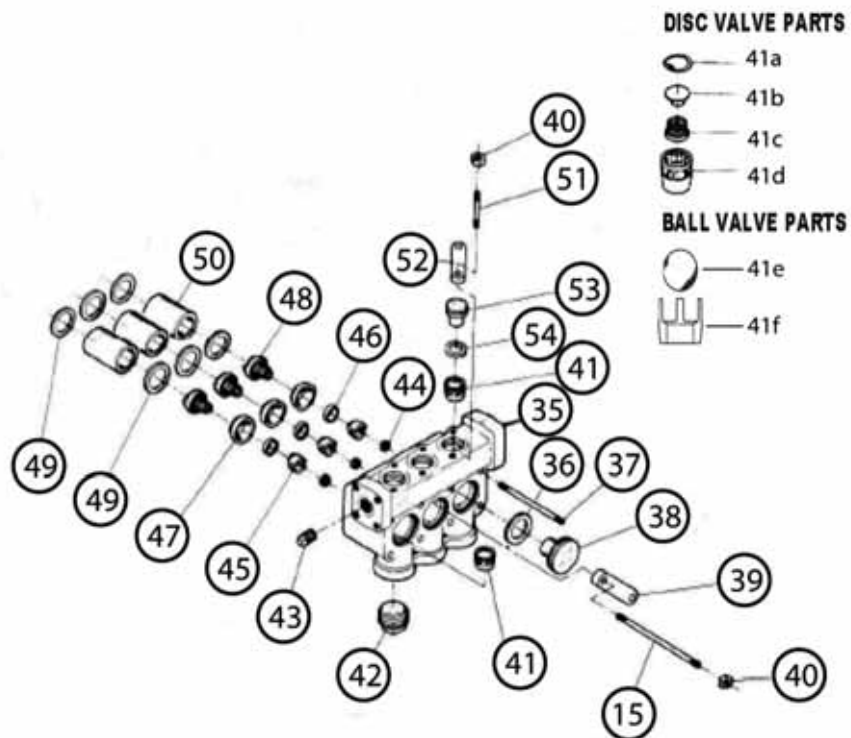
AL0918B PUMP PERFORMANCE							
PISTON DIAMETER (IN)	DISPLACEMENT/ (GAL/REV)	MAXIMUM PRESSURE	PUMP CAPACITY @ INPUT SPEED (RPM)				
			350 RPM	625 RPM	700 RPM	750 RPM	890 RPM
2 1/4"	.0323	700	11.3	20.2	22.6	24.2	28.7
Horsepower based on 85 or 90% mechanical efficiency. Actual application horsepower requirements can be calculated using the equation: BHP = (GPM * PSI) / (1714 * 0.85 or 0.90).							
Pump capacities shown are based on 100% volumetric efficiency.							

# ALO918B SERIES PUMP PARTS DIAGRAM

DRIVE END



FLUID END



# ALO918B PISTON PUMP PART DIAGRAM

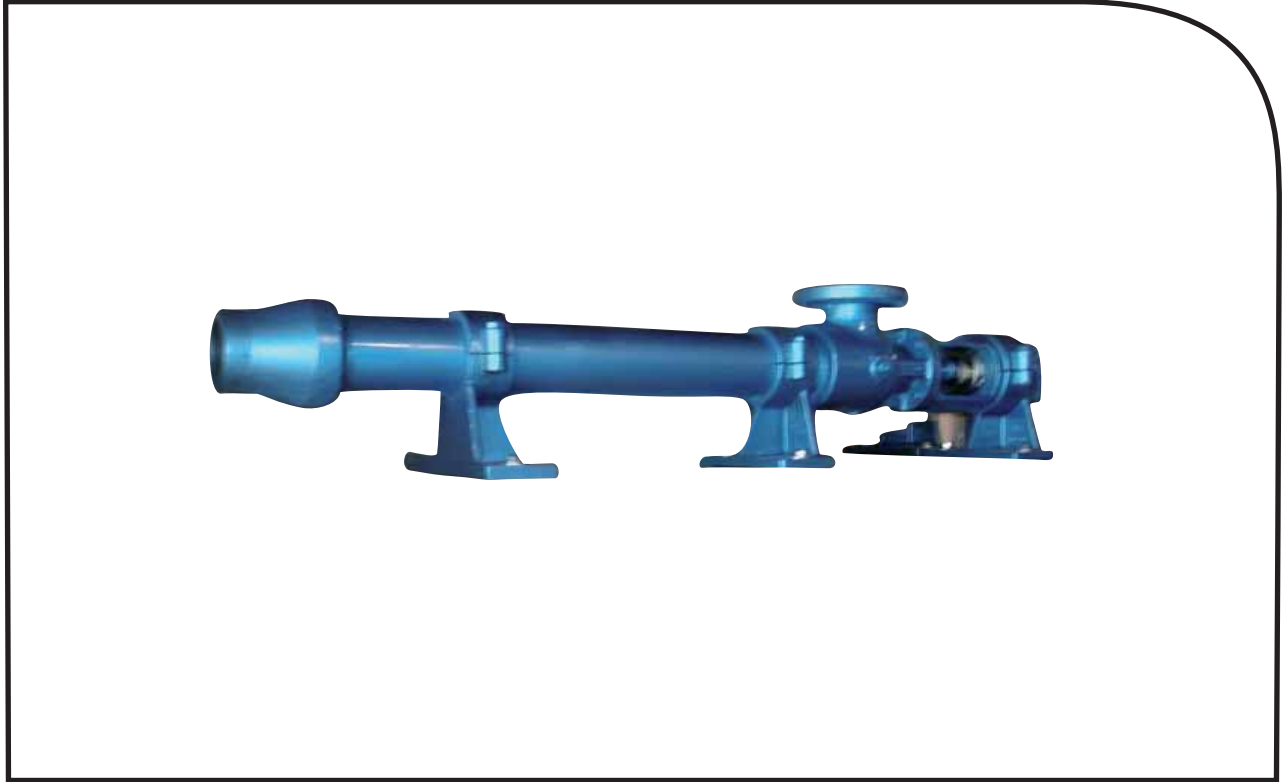
ALO918B COMPONENT PARTS - DRIVE END			
ITEM #	DESCRIPTION	QTY	PART #
1	PUMP CASE	1	5350885
2	OIL CAP	1	5350300
3	SHIM	5	5350890
4	GASKET	2	5350895
5	BEARING HOUSING	2	5350900
6	PACKING WASHER L09	3	5350186
7	TOP OIL SEAL	6	5350085
8	HOLDER SEAL	3	5350029
9	SEAL RETAINER NUT	3	5350345
10	BEARING CAP	1	5350905
11	GASKET	2	5350910
12	BALL BEARING	2	5350915
13	COVER PLATE ASSEMBLY	1	5350920
14	SEAL HOLDER	3	5350925
15	CYLINDER COVER STUD	6	5350930
16	O - RING 5/8" O.D. X 1/16"	3	5350105
17	CROSSHEAD & ROD	3	5350335
18	PLUG, 1/2"	2	5350225
19	PINION SHAFT	1	5350935
20	BEARING CAP	1	5350940
21	HHCS 3/8 - 16 X 3/4"	12	5350945
22	SET SCREW 5/16"-18 X 1/2"	3	5350347
23	PIN	3	5350950
24	BUSHING	3	5350348
25	CONNECTING ROD	3	5350955
26	BEARING ECCENTRIC	6	5350960
27	CONE BEARING	2	5350965
28	CUP BEARING	2	5350970
29	HHCS 3/8 - 16 X 1/2"	14	5350975
30	PETCOCK 1/8" NPT	1	5350297
31	COVER ASSEMBLY	1	5350980
32	GASKET - COVER	1	5350985
33	ECCENTRIC GEAR ASSEMBLY	1	5350990
34	BOLT	6	5350995

ALO918B COMPONENT PARTS - FLUID END			
ITEM #	DESCRIPTION	QTY	PART #
35	VALVE CHAMBER	1	5351000
36	GASKET CYLINDER HEAD	3	5350234
37	STUD CYLINDER	2	5351005
38	CYLINDER HEAD	3	5351010
39	CLAMP CYLINDER HEAD	3	5351015
40	HEX NUT 1/2" -13	14	5350281
41	DISC VALVE PARTS INCLUDES: 41a thru 41d	-----	5351020
41	BALL VALVE PARTS INCLUDES: 41e and 41f	-----	5351025
41a	SNAP RING	6	5351045
41b	DISC AND SPRING ASSY.	6	5351035
41c	VALVE SEAT	6	5351030
41d	SEAT VALVE	6	5351040
41e	BALL	6	5350031
41f	SEAT VALVE	6	5351030
42	PLUG 1 1/2" PIPE	2	5351050
43	PLUG 1" PIPE	1	5351055
44	HEX NUT 1/2" -13SS	3	5350211
45	PISTON NUT (SLOTTED)	3	5350190
46	PACKING WASHER	3	5350184
47	PACKING 1 5/8"	3	5350033
48	PACKING CUP	3	5350174
49	GASKET CYLINDER	3	5350164
50	CYLINDER 1 5/8" I.D.	3	5350017
51	VALVE CLAMP STUD	6	5351060
52	VALVE COVER CLAMP	3	5351065
53	VALVE COVER	3	5351070
54	GASKET VALVE COVER	3	5350233

ALO918B COMPLETE PUMP	
MODEL	PART #
ALO918B	5351075



## PROGRESSIVE CAVITY PUMPS



Hole Products offers a complete line of progressive cavity (Moyno®) pumps with a wide range of capacities and pressures.

Progressive cavity pumps are suitable for a wide variety of drilling applications, and when properly applied, offer cost effective, long life performance.

Pump diagrams are shown for general reference and to aid in identifying spare parts for service. Order spare parts by part number and description. Item numbers are for reference only.

Please contact your Hole Products representative for pump performance details and to order additional pumps and spare parts.



# PROGRESSIVE CAVITY PUMP DATA



## MATERIALS OF CONSTRUCTION:

**Pump Body:** Cast Iron 316 Stainless Steel

**Internals, Including Rotor:** Alloy Steel, 316 Stainless Steel

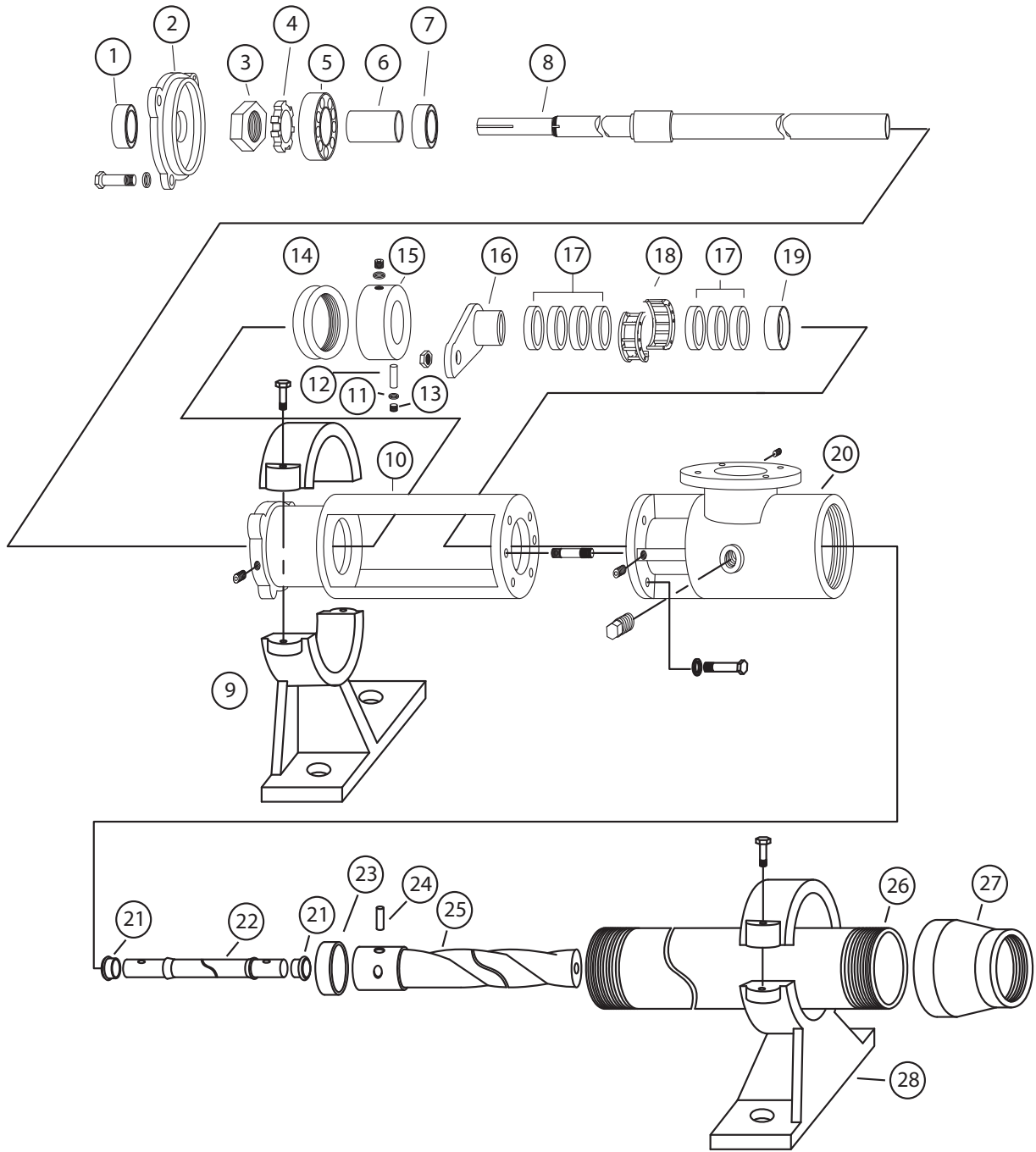
**Stators:** EPDM (TO 260° F)  
 FLUORELASTOMER (TO 350° F)  
 NITRILE (TO 210° F)  
 NATURAL RUBBER (TO 185° F)

## OPTIONS:

- Variety of drives and mounting configurations
- Mechanical or packing seals
- Electronic pump controls
  - Open and closed loop systems
  - Variable speed control
  - Metering and batching control
  - Fluid detection control
- Tachometer, gauges, and other accessories

PROGRESSIVE CAVITY PUMP RATINGS								
MODEL #	MAXIMUM GPM	MAXIMUM RPM	MAXIMUM PRESSURE PSI	SHAFT DIAMETER	KEYWAY	WEIGHT	PORT SIZES SUCTION	PORT SIZES DISCHARGE
2L4	24	2,100	15	15/16"	1/4" x 1/8"	91 bs.	2 1/2"	2"
3L4	24	1,200	225	15/16"	1/4" x 1/8"	97 lbs.	2 1/2"	2"
2L6	46	900	150	1 1/8"	1/4" x 1/8"	159 lbs.	3"	2 1/2"
3L6	46	900	225	1 1/8"	1/4" x 1/8"	192 lbs.	3"	2 1/2"
2L8	100	900	150	1 3/8"	3/8" x 3/16"	332 lbs.	4"	4"
3L8	100	900	225	1 3/8"	3/8" x 3/16"	372 lbs.	4"	4"

# PROGRESSIVE CAVITY PUMP PARTS DIAGRAM 2L4, 2L6, 2L8, 3L4, 3L6, AND 3L8



# PROGRESSIVE CAVITY PUMP PARTS

PROGRESSIVE CAVITY PUMP PARTS							
ITEM #	DESCRIPTION	2L4	2L6	2L8	3L4	3L6	3L8
----	COMPLETE PUMP GROUP	5450040	5450046	5450080	5450041	5450015	5450020
----	CONNECTING ROD KIT INCLUDES: 11, 12, 13, 21, 22 & 24	5450002	5450025	5450058	5450002	5450025	5450058
1	GREASE SEAL (THRUST)	5450058	5450098	5450055	5450058	5450098	5450115
2	BEARING COVER PLATE	5450120	5450125	5450130	5450135	5450140	5450145
3	BEARING LOCK NUT	5450150	5450155	5450160	5450165	5450170	5450175
4	BEARING LOCK WASHER	5450180	5450185	5450190	5450195	5450205	5450210
5	BALL BEARING (THRUST)	5450094	5450099	5450215	5450094	5450099	5450220
6	BEARING SPACERS	5450092	5450097	5450225	5450092	5450097	5450230
7	BALL BEARING (RADIAL)	5400093	5450098	5450235	5400093	5450098	5450240
8	DRIVE SHAFT	5450057	5450052	5450016	5450057	5450052	5450016
9	BODY SUPPORT	5450245	5450250	5450255	5450260	5450265	5450270
10	BEARING HOUSING	5450275	5450049	5450280	5450285	5450049	5450290
11	RETAINING NUT WASHER	5450295	5450007	5450010	5450300	5450007	5450010
12	SHAFT PIN	5450037	5450023	5450024	5450037	5450023	5450024
13	DRIVE PIN RETAINING SCREW	5450305	5450013	5450011	5450310	5450013	5450011
14	GREASE SEAL (RADIAL)	5450059	5450032	5450056	5450059	5450032	5450056
15	SHAFT COLLAR	5451023	5450315	5450320	5451023	5451020	5451021
16	PACKING GLAND	5450335	5450340	5450200	5450345	5450350	5450200
17	PACKING	5450004	5450026	5450029	5450004	5450026	5450029
18	LANTERN RING	5450067	5450061	5450064	5450067	5450061	5450064
19	PACKING WASHER	5450100	5450062	5450018	5450100	5450062	5450018
20	SUCTION HOUSING	5450355	5450047	5450065	5450360	5450047	5450065
21	CONNECTING ROD WASHER	5450102	5450001	5450000	5450102	5450001	5450000
22	CONNECTING ROD	5450365	5450019	5450370	5450375	5450019	5450380
23	RETAINER, PIN (ROTOR BAND)	5450003	5450039	5450006	5450003	5450039	5450006
24	ROTOR PIN	5450012	5450022	5450024	5450012	5450022	5450024
25	ROTOR	5450045	5450070	5450048	5450042	5450030	5450031
26	STATOR	5450050	5450071	5450038	5450043	5450035	5450036
27	REDUCER	5450390	5450027	5450081	5450390	5450027	5450081
28	STATOR SUPPORT	5450395	5450400	5450405	5450410	5450415	5450068



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**REVERSE CIRCULATION & OTHER SWIVEL OPTIONS..... 14**



## SWIVELS



Hole Products offers a complete range of quality coring, and top and side feed water swivels. Air swivels are also available for reverse circulation drilling applications.

Swivels are designed to provide a watertight/airtight rotating joint to connect the pump to the drill string with a high pressure hose. Various swivels are suitable for use with a variety of flushing mediums including water, air, foam, or bentonite drilling fluids. All Hole Products' swivels are field serviceable with minimal tooling and downtime.

Subs are available to adapt to all industry standard sized rods and casing.

Swivels shown are representative of the most common industry sizes and styles. Additional swivels are available on request.

Please contact your Hole Products representative for assistance selecting the swivel best suited for your drilling needs and availability of additional swivels.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

## CORING SWIVELS



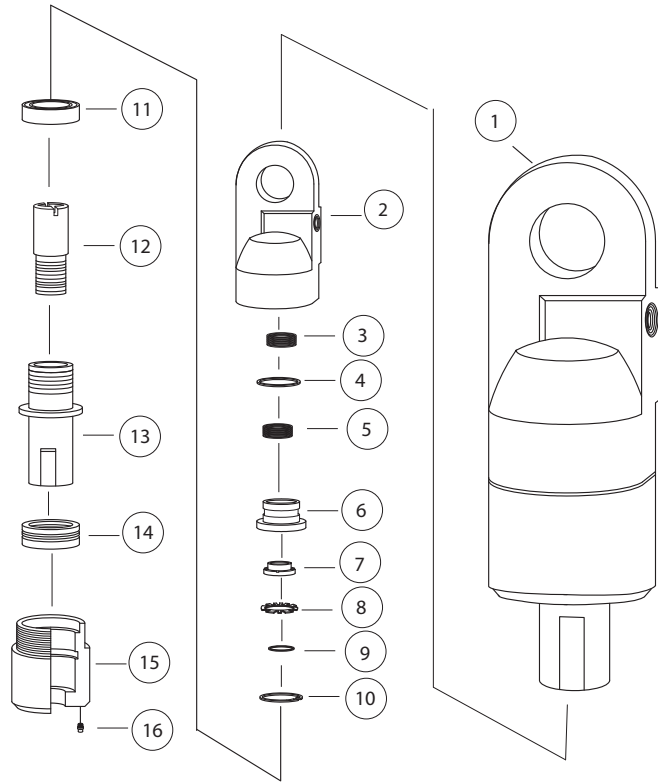
Hole Products offers quality compact plus and universal high speed coring swivels. Coring swivels provide a watertight rotating joint to help pump pressurized water to the bottom of the borehole. All swivels are suitable for use with various flushing mediums and are field serviceable.

In addition, we offer a complete line of replacement parts for quick and easy field repairs.

Subs are available to adapt to all DCDMA sized rods and casing.

Please contact your Hole Products representative for assistance selecting the swivel best suited for your drilling needs and availability of additional coring swivels.

# UNIVERSAL WATER SWIVEL

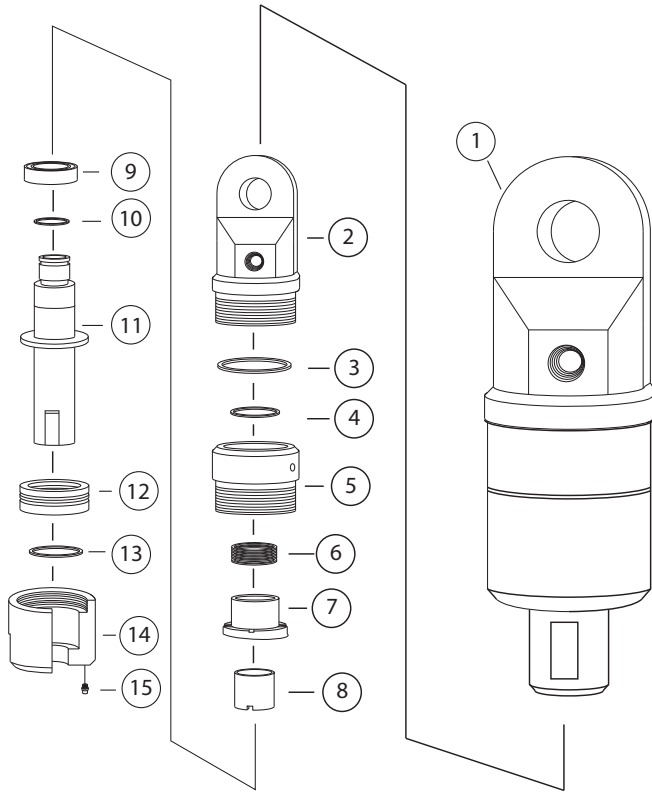


UNIVERSAL CAPACITY	
ROTATING CAPACITY	11,000 LBS / 5,000 KG
STATIC CAPACITY	25,000 LBS / 11,400 KG

UNIVERSAL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1	7700015	UNIVERSAL WATER SWIVEL ASSY BW ROD BOX CONNECTION (ITEMS: 2-16)
2	7700120	SWIVEL CAP (1-1/4" NPT)
3	7700125	COMPRESSION SPRING
4	4750024	O-RING
5	7700130	PACKING SET
6	7700135	PACKING HOUSING
7	7700140	SPINDLE NUT
8	7700145	LOCKING WASHER
9	7700150	SPACER
10	7700155	RETAINING RING
11	7700160	ANGULAR CONTACT BALL BEARING
12	7700165	SPINDLE EXTENSION
13	7700170	SPINDLE BW ROD BOX CONNECTION
14	7700175	BALL THRUST BEARING
15	7700180	SWIVEL BODY
16	7700185	GREASE FITTING



# COMPACT PLUS WATER SWIVEL



## COMPACT PLUS CAPACITY

ROTATING CAPACITY	10,000 LBS / 4,536 KG
STATIC CAPACITY	20,000 LBS / 9,072 KG

## COMPACT PLUS ASSEMBLY

ITEM	PART #	DESCRIPTION
1	7700008	COMPACT PLUS WATER SWIVEL ASSY AW ROD BOX CONNECTION (ITEMS: 2-14)
2	7700045	SWIVEL CAP (1" NPT)
3	7700050	O-RING
4	7700055	WAVE SPRING WASHER
5	7700060	UPPER BODY
6	7700018	PACKING SET
7	7700070	PACKAGING CAGE
8	7700019	WEAR SLEEVE
9	7700080	ANGULAR CONTACT BALL BEARING
10	7700085	O-RING
11	7651013	SPINDLE AW ROD BOX CONNECTION
12	7700095	BALL THRUST BEARING
13	7700100	FELT SEAL
14	7700105	LOWER SWIVEL BODY
15	7700110	GREASE FITTING
----	7700009	REPAIR KIT - Includes items: 2 sizes (3 of each size) O-Ring (2) Spring Washer (2) "V" Packing Set (2) Wear Sleeve (1) Ball Bearing (2) Felt Seal (1) Ball Thrust Bearing



## TOP FEED SWIVELS



Hole Products offers a variety of quality top feed water swivels for use on conventional rotary drill rigs. Swivels are designed to provide a watertight rotating joint to connect the pump and drill string with a high pressure hose. Water swivels help pump water or other drilling fluids to the bottom of the bore hole.

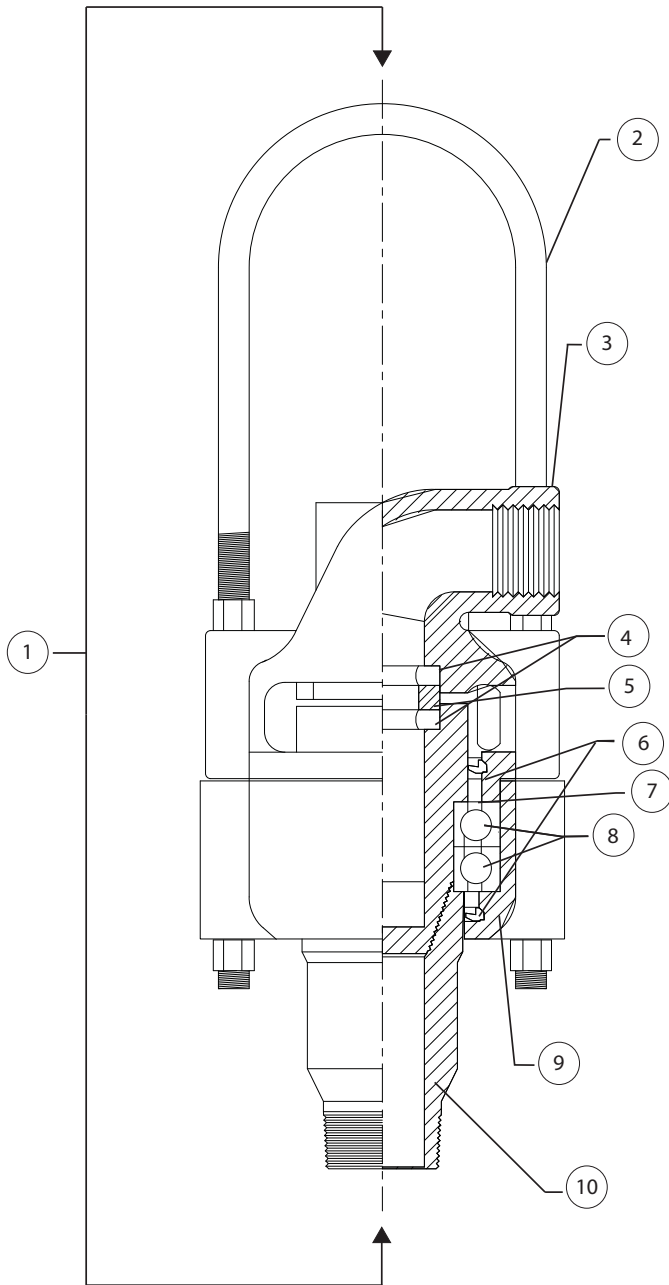
Top feed swivels are available with a number of NPT top connection and multiple lower connection sizes.

In addition, we offer a complete line of replacement parts for repairs to existing swivels.

Subs are available to adapt to all industry standard sized rods and casing.

Please contact your Hole Products representative for assistance selecting the swivel best suited for your drilling needs and availability of additional top feed swivels.

# 1-J TOP FEED SWIVEL



## 1-J TECHNICAL DATA

LENGTH	WT LBS	WORKING PRESSURE
13"	15	300 P.S.I.

## 1-J TOP FEED CAPACITY

ROTATING CAPACITY	1,135 LBS. / 515 KG @ 100 RPM
STATIC CAPACITY	5,000 LBS. / 2,268 KG

## 1-J TOP FEED ASSEMBLY

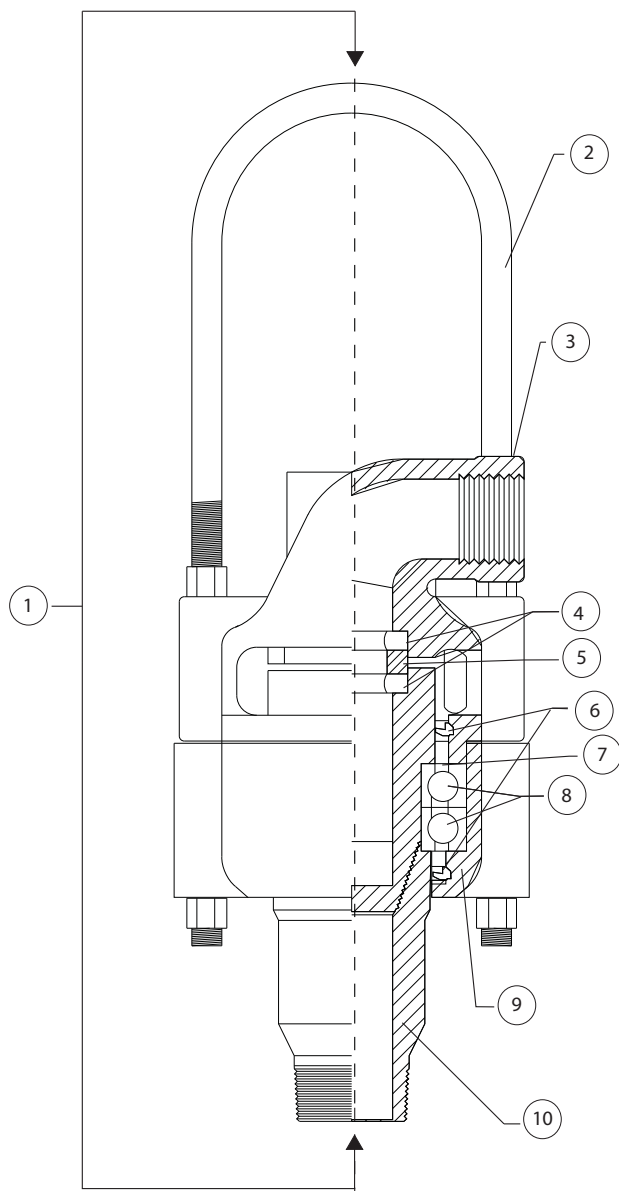
ITEM	PART #	DESCRIPTION
1	7651008	1-J WATER SWIVEL ASSY. 1 1/4" LH PIN X 1 1/4" NPT (STD.)* (ITEMS: 2-10)
2	7650110	BAIL WITH NUTS
3	7650115	GOOSENECK 1 1/4" FEMALE**
4	7650006	PACKING BLACK 03 (STD.)
	7650120	PACKING 03-90 RED (OPT.)
5	7650011	WEAR BUSHING 1JW04 STEEL
6	7650059	HOUSING SEAL
7	7650125	BEARING SPINDLE
8	4750029	BEARING
9	7650060	BEARING HOUSING (IRON)
10	7650138	LOWER CONNECTION*** 1 1/4" NPT LH PIN (STD)
	7650130	LOWER CONNECTION*** 1 1/2" NPT LH PIN (OPT.)
	7650135	LOWER CONNECTION*** 2" NPT LH PIN (OPT.)
---	7650063	MAINTENANCE KIT - Includes items: (8) Packings (1) Wear Bushing

\* Swivels are available with additional lower connection sizes.

\*\* Additional NPT inlet sizes are available.

\*\*\* Subs are available to adapt the bottom connection to all industry standard sized rods.

## 2-J TOP FEED SWIVEL



### 2-J TECHNICAL DATA

LENGTH	WT LBS	WORKING PRESSURE
16"	21	300 P.S.I.

### 2-J TOP FEED CAPACITY

ROTATING CAPACITY	1,825 LBS. / 828 KG @ 100 RPM
STATIC CAPACITY	7,000 LBS. / 3,175 KG

### 2-J TOP FEED ASSEMBLY

ITEM	PART #	DESCRIPTION
1	7651006	2-J WATER SWIVEL ASSY. 1 1/2" LH PIN X 1 1/2" NPT (STD.)* (ITEMS: 2-10)
2	7650061	BAIL WITH NUTS
3	7650056	GOOSENECK 1 1/2" FEMALE**
	7650140	GOOSENECK 2" FEMALE**
4	7650005	PACKING 03 BLACK (STD.)
	7650014	PACKING 03-90 RED (OPT.)
5	7650010	WEAR BUSHING 2JW04 STEEL
6	7650007	HOUSING SEAL (2 REQ.)
7	7650058	BEARING SPINDLE
8	7650012	BEARING
9	7650057	BEARING HOUSING (IRON)
10	7650051	LOWER CONNECTION*** 1 1/2" NPT LH PIN (STD.)
	7650047	LOWER CONNECTION*** 1 1/4" NPT LH PIN (OPT.)
	7650053	LOWER CONNECTION*** 2" NPT LH PIN (OPT.)
----	7650065	MAINTENANCE KIT - Includes items: (8) Packings (1) Wear Bushing

\* Swivels are available with additional lower connection sizes.

\*\* Additional NPT inlet sizes are available.

\*\*\* Subs are available to adapt the bottom connection to all industry standard sized rods.

## SIDE FEED SWIVELS



Hole Products offers a variety of quality side inlet water swivels, designed for use with hydraulic, top-head drive rigs and/or to convert auger rigs to circulating, rotary drilling rigs. Swivels are designed to provide a watertight rotating joint to connect the pump and drill string with a high pressure hose. Water swivels help pump water or other drilling fluids to the bottom of the bore hole.

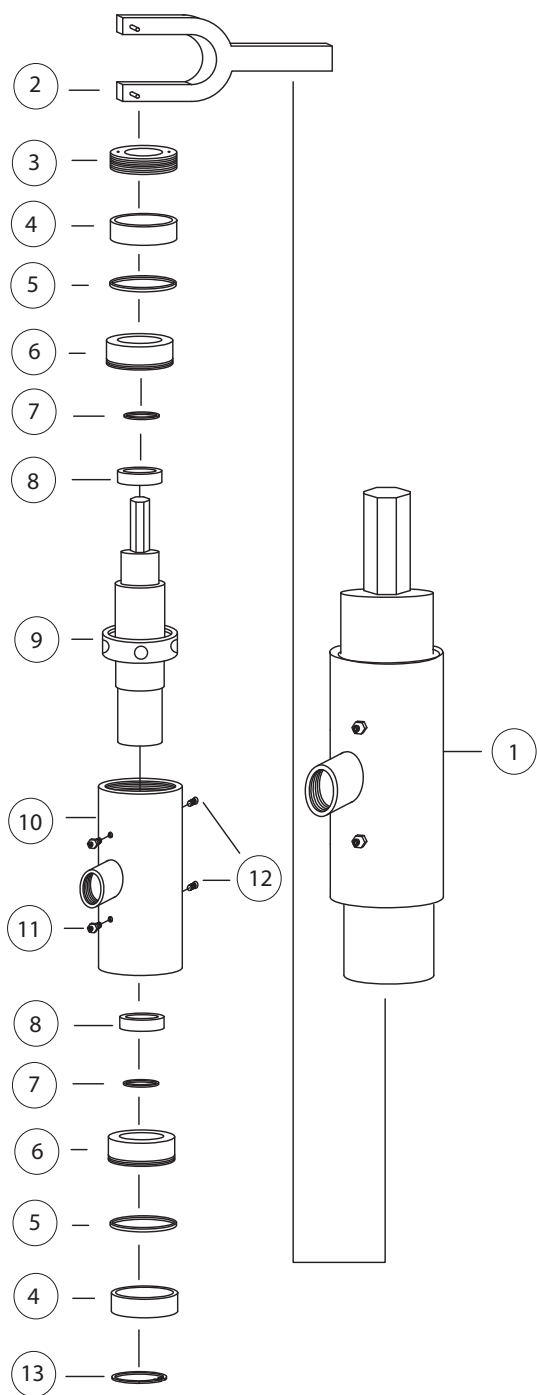
Side feed swivels are available with a number of HEX top connection, multiple lower connection and NPT side feed connection sizes.

In addition, we offer a complete line of replacement parts for quick and easy field repairs.

Subs are available to adapt to all industry standard sized rods and casing.

Please contact your Hole Products representative for assistance selecting the swivel best suited for your drilling needs and availability of additional side feed swivels.

# H26 SIDE FEED SWIVEL



## H26 TECHNICAL DATA

LENGTH	WIDTH	WT LBS	HOSE CONNECTION
12"	4"	17	1"

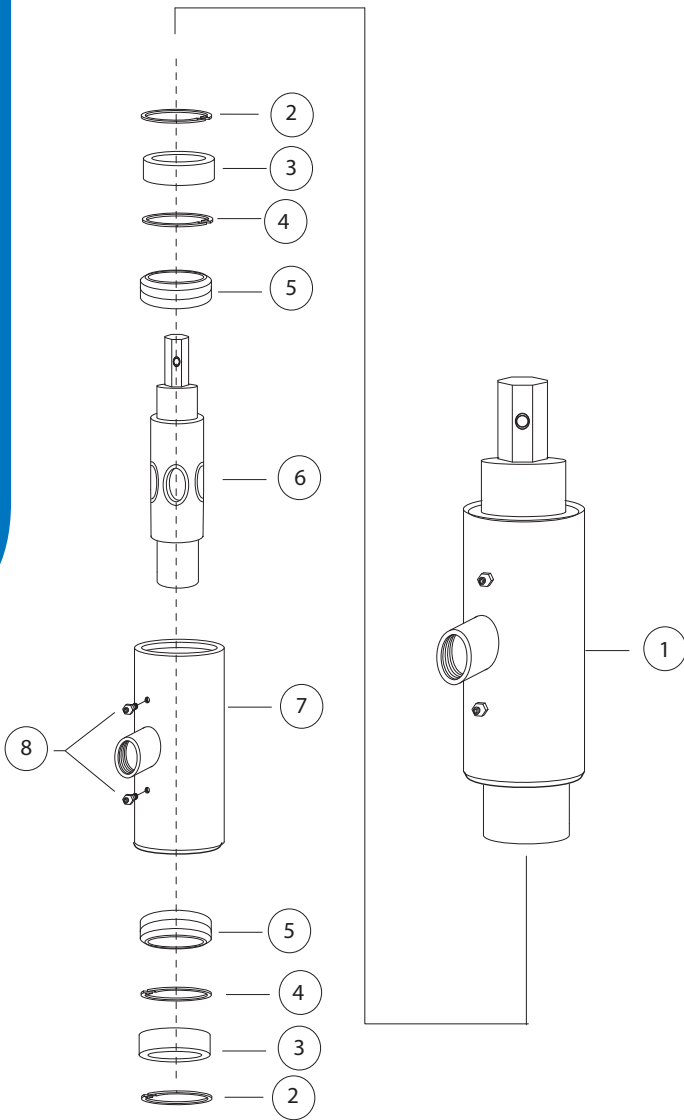
## H26 SIDE FEED SWIVEL

ITEM	PART #	DESCRIPTION
1	7700000	H26 WATER SWIVEL ASSY. 1 5/8" HEX X AW BOX* (ITEMS: 2-13)
	7700004	H26 WATER SWIVEL ASSY. 1 5/8" HEX X NW BOX* (ITEMS: 2-13)
	7700014	H26 WATER SWIVEL ASSY. 1 5/8" HEX X AWJ PIN* (ITEMS: 2-13)
	7700003	H26 WATER SWIVEL ASSY. 1 5/8" HEX X NWJ PIN* (ITEMS: 2-13)
2	7650052	SPANNER WRENCH
3	7650044	GLAND
4	7700022	BEARING
5	7650069	WEAR BUSHING O-RING
6	7650046	WEAR BUSHING
7	7650145	STEM ASSEMBLY O-RING
8	7650071	PACKING RING
9	7700021	STEM 1 5/8" HEX X NW BOX
	7700047	STEM 1 5/8" HEX X AWJ PIN
	7650150	STEM 1 5/8" HEX X NWJ PIN
10	7650064	BODY
11	1800115	GREASE FITTING
12	7650027	SET SCREW
13	7650070	SNAP RING
----	7700001	PACKING SET - Includes items: (2) Wear Bushing O-rings (2) Stem Assembly O-rings (2) Packing Ring

\* Additional hex sizes are available.

\* Subs are available to adapt the bottom connection to all industry standard sized rods.

# 6 RG SIDE FEED SWIVEL



6 RG TECHNICAL DATA				
LENGTH	WIDTH	WT LBS	HOSE CONNECTION	WORKING PRESSURE
13 1/2"	4"	22	1"	350 P.S.I.

6 RG SIDE FEED SWIVEL		
ITEM	PART #	DESCRIPTION
1	7700013	6 RG WATER SWIVEL ASSY. 1 1/8" HEX X AW BOX* (ITEMS: 2-8)
	7700012	6RG WATER SWIVEL ASSY. 1 5/8" HEX X AW BOX* (ITEMS: 2-8)
2	7650041	BEARING RETAINER
3	7650029	BEARINGS
4	7650042	PACKING RETAINER
5	7650026	CHEVRON PACKING KIT (2 REQ.)**
6	7650155	STEM 1 1/8" HEX X AW BOX
	7650032	STEM 1 5/8" HEX X AW BOX
7	7650160	SWIVEL HOUSING 1" NPT
8	1800115	GREASE FITTINGS

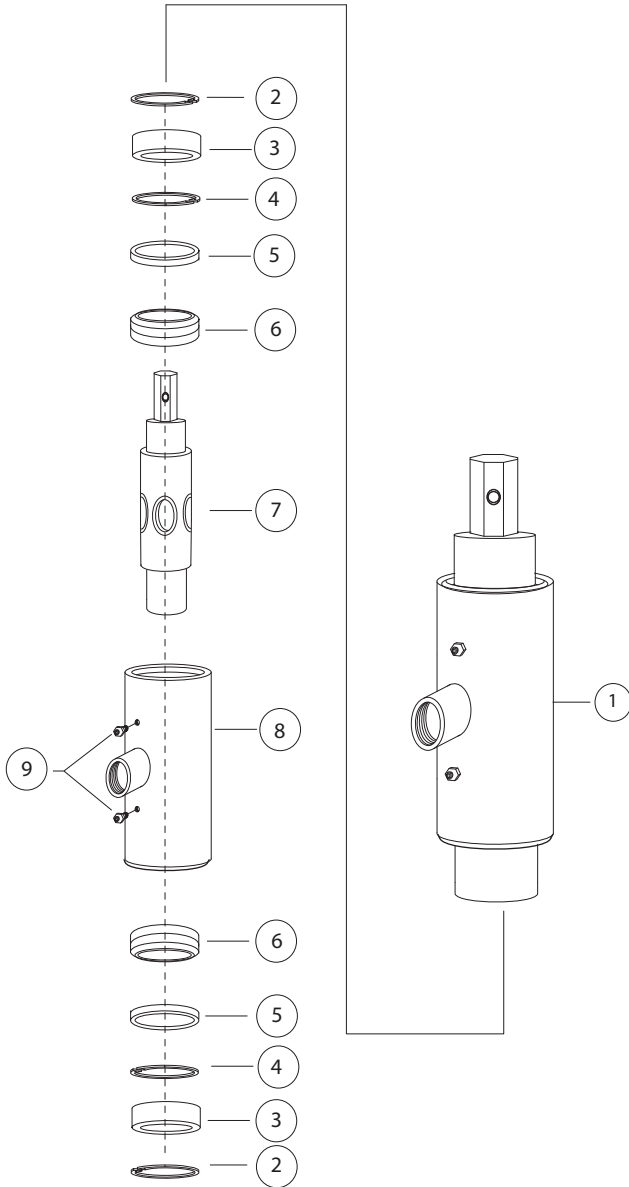
\* Additional hex sizes and bottom connection sizes are available.

\* Subs are available to adapt the bottom connection to all industry standard sized rods.

\*\* Optional steel pack seat ring are available to increase working pressure.



# 12 RG SIDE FEED SWIVEL



12 RG TECHNICAL DATA				
LENGTH	WIDTH	WT LBS	HOSE CONNECTION	WORKING PRESSURE
14 1/16"	5"	35	1 1/4"	750 P.S.I.

12 RG SIDE FEED SWIVEL		
ITEM	PART #	DESCRIPTION
1	7700016	12 RG WATER SWIVEL ASSY. 1 5/8" HEX X NW BOX* (ITEMS: 2-9)
	7650165	12 RG WATER SWIVEL ASSY. 1 5/8" HEX X NWJ PIN* (ITEMS: 2-9)
	7650170	12 RG WATER SWIVEL ASSY. 2" HEX X NW BOX* (ITEMS: 2-9)
	7650175	12 RG WATER SWIVEL ASSY. 2" HEX X NWJ PIN* (ITEMS: 2-9)
2	7650039	BEARING RETAINER
3	7650037	BEARINGS
4	7650038	PACKING RETAINER
5	7650036	STEEL SEAT RING
6	7650031	CHEVRON PACKING KIT (2 REQ.)
7	7650043	STEM 1 5/8" HEX X NW BOX
8	7650180	SWIVEL HOUSING 1 1/4" NPT
9	7650185	GREASE FITTINGS

\* Additional hex sizes and bottom connection sizes are available.

\* Subs are available to adapt the bottom connection to all industry standard sized rods.

# REVERSE CIRCULATION AIR SWIVELS

Hole Products offers a variety of air swivels for use on reverse circulation drilling operations. Reverse Circulation air swivels can be customized to connect any pin or box connection, and designed for use on any rig.

Air swivels attach to the top of the Reverse Circulation drill rods or tubing to form a connection with the compressor or pump to allow circulation of the drilling mud, air, or water. The swivel feeds air or fluids into the outer drill rod, while maintaining a sealed inner tube to allow the cuttings to flow to the surface. Reverse Circulation swivels allow the drill pipe to rotate, while the side port for the cuttings to be returned remains stationary.



## OTHER SWIVEL OPTIONS

### SIDE FEED SWIVELS

#### 20 RG SIDE FEED SWIVEL TECHNICAL DATA

LENGTH	WIDTH	WT LBS.	HOSE CONNECTION	WORKING PRESSURE
21"	6"	75	2"	2000

#### 4.5 RG SIDE FEED SWIVEL TECHNICAL DATA

LENGTH	WIDTH	WT LBS.	HOSE CONNECTION	WORKING PRESSURE
22 3/4"	9"	230	2"	1,500
22 3/4"	9"	230	2 1/2"	1,500
19 3/4"	9"	215	2 1/2"	1,500

### WATER WELL SWIVELS

#### 3-JW TECHNICAL DATA

LENGTH	WT LBS.	WORKING PRESSURE
19"	36	300

#### 3-JW TOP FEED CAPACITY

ROTATING CAPACITY	7,200 LBS / 3,266 KG @ 100 RPM
STATIC CAPACITY	10,000 LBS / 4,536 KG

#### 20 WX TECHNICAL DATA

LENGTH	WT LBS.	WORKING PRESSURE
34"	140	300

#### 20 WX TOP FEED CAPACITY

ROTATING CAPACITY	36,000 LBS / 16,329 KG @ 100 RPM
STATIC CAPACITY	70,000 LBS / 31,751 KG

#### 20 WXA ADJUSTABLE PACKING SWIVEL TECHNICAL DATA

LENGTH	WT LBS.	WORKING PRESSURE
38"	165	300

#### 20 WXA TOP FEED CAPACITY

ROTATING CAPACITY	36,000 LBS / 16,329 KG @ 100 RPM
STATIC CAPACITY	70,000 LBS / 31,751 KG

#### 15 WX TECHNICAL DATA

LENGTH	WT LBS.	WORKING PRESSURE
33"	95	300

#### 15 WX TOP FEED CAPACITY

ROTATING CAPACITY	27,000 LBS / 12,246 KG @ 100 RPM
STATIC CAPACITY	50,000 LBS / 22,680 KG

#### 15 WXA ADJUSTABLE PACKING SWIVEL TECHNICAL DATA

LENGTH	WT LBS.	WORKING PRESSURE
36"	125	300

#### 15 WXA TOP FEED CAPACITY

ROTATING CAPACITY	27,000 LBS / 12,246 KG @ 100 RPM
STATIC CAPACITY	50,000 LBS / 22,680 KG

# HOSES & FITTINGS TABLE OF CONTENTS

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## HOSES & FITTINGS



Hole Products offers a complete line of high pressure air hose, multi-purpose driller's hose, EPDM suction hose, PVC layflat hose, fittings, and accessories for a variety of suction, discharge, and transfer applications.

Hoses are available in a wide range of sizes, psi ratings, and lengths to meet any requirement.

Pre-coupled assemblies are available in any length with a variety of custom fittings.

Please contact your Hole Products representative for additional product offerings and pre-coupled assembly ordering details.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

## HIGH PRESSURE AIR HOSE

High pressure air hoses are mandrel built and wrapped with a special blended cover compound to provide excellent performance and cut/abrasion resistance in even the most demanding drilling applications. Pre-coupled assemblies with custom Boss fittings are available on request.

Sizes: 1" to 3" I.D.

Temp. Range: -30° to +200° F



HIGH PRESSURE AIR HOSE*				
I.D.	O.D.	APPROX. WT LBS/FT	PART #	
			500 WP P.S.I.	600 WP P.S.I.
1"	1 1/2"	.75	4351009	4351015
1 1/2"	2"	1.25	4351008	4351020
2"	2 31/50"	1.90	4350000	4351005
2 1/2"	3 5/32"	2.40	4351025	4351006
3"	3 23/32"	2.90	4351030	4350010

\*Additional sizes and P.S.I. ratings are available on request.

## WHIP CHECKS

Add whip checks at each hose connection and from tool to hose to prevent serious injury due to hose or coupling failure.

All whip checks are highly resistant to rust and corrosion and are available to fit hoses from 1/2" to 4" I.D.



WHIP CHECKS			
HOSE I.D.	WHIP CHECK LENGTH	CONNECTION TYPE	PART #
1/2" - 1 1/4"	20 1/4"	HOSE TO HOSE	4310039
1/2" - 2"	28"	HOSE TO HOSE	4310115
1 1/2" - 3"	38"	HOSE TO HOSE	4310040
UP TO 4"	44"	HOSE TO HOSE	4310120
1/2" - 1 1/4"	20 1/4"	HOSE TO TOOL	4310125
1/2" - 2"	28"	HOSE TO TOOL	4310130
1 1/2" - 3"	38"	HOSE TO TOOL	4310135
UP TO 4"	44"	HOSE TO TOOL	4310140

## MULTI-PURPOSE DRILLERS HOSE

Hole Products offers multi-purpose drillers hose designed for use with air, water, and diluted chemicals. Drillers hose offers resistance to heat and weathering and is oil mist resistant. Multi-purpose hoses feature a smooth red cover, black EPDM tube, and are reinforced with layers of high tensile polyester yarn. Pre-coupled assemblies with custom Boss fittings are available on request.

Sizes: 1/4" to 2" I.D.

Temp. Range: -40° to +93° F



MULTI-PURPOSE DRILLERS HOSE*				
I.D.	O.D.	MAX WP P.S.I.	APPROX. WT LBS/FT	PART #
3/4"	1.13"	150	.34	4351035
3/4"	1.16"	250	.38	4351040
1"	1.37"	200	.51	4351045
1 1/4"	1.78"	200	.81	4351050
1 1/2"	2.03"	200	.95	4351055
2"	2.50"	200	1.13	4351060

*\*Additional sizes and P.S.I. ratings are available on request.*



# BOSS™ AIR FITTINGS

Boss™ air fittings provide a convenient threaded fitting to connect two lengths of high pressure hose or a single length to a threaded NPT outlet on a piece of equipment.

Hole Products offers a variety of plated iron Boss™ fittings, ranging in size from 1" through 3".

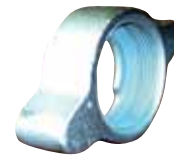
Plated steel fittings are available on request.



\*COMPLETE FEMALE



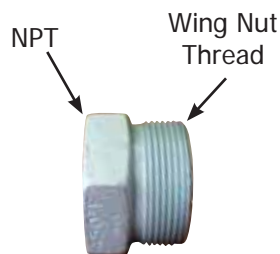
TAPERED TOP STEM



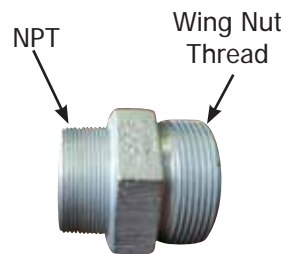
WING NUT

BOSS™ AIR FITTINGS			
HOSE SHANK X NPT	COMPLETE FEMALE* PART #	STEM PART #	WING NUT PART #
1"	4250060	4250075	4250100
1 1/2"	4250065	4250080	4250105
2"	4250005	4250085	4250110
2 1/2"	4250055	4250090	4250115
3"	4250070	4250095	4250120

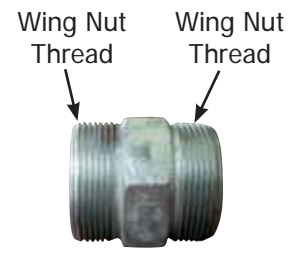
\*Complete fittings include a female spud, stem, and wing nut. Fittings are available as complete assemblies or as individual parts.



FEMALE SPUD



MALE SPUD



DOUBLE SPUD

BOSS™ AIR FITTINGS			
HOSE SHANK X NPT	FEMALE SPUD PART #	MALE SPUD PART #	DOUBLE SPUD PART #
1"	4250125	4250140	4250150
1 1/2"	4250040	4250045	4250155
2"	4250010	4250025	4250030
2 1/2"	4250026	4250050	4250160
3"	4250135	4250145	4250165

## BOSS™ CLAMPS

Hole Products offers four bolt, plated malleable iron clamps, available in 2 grip and 4 grip styles to fit hose I.D.s, ranging from 1" through 3".

The bolts used in the Boss™ interlocking clamps are not standard bolts. Speciality replacement nuts and bolts are available.

Additional Boss™ clamps including stainless steel and brass clamps are available on request.

BOSS CLAMPS					
HOSE I.D.	HOSE O.D.		PSI	2 GRIP	4 GRIP
	FROM	TO			
1"	1 1/2"	1 3/4"	600	4250170	4250190
1 1/2"	2"	2 1/4"	600	4250175	4250195
2"	2 1/2"	2 3/4"	600	4250020	4250200
2 1/2"	3 1/2"	3 3/4"	450	4250180	4250205
3"	3 1/2"	3 3/4"	450	4250185	4250210

- This chart is intended as a guide only.

- The use of lubricant on bolts will adversely affect clamp performance. Do not lubricate nuts and bolts.



**2 GRIP**



**4 GRIP**





## EPDM SUCTION HOSE

Hole Products offers EPDM suction hose for wet or dry applications. These hoses provide an excellent blend of durability, chemical resistance, and cold weather flexibility. Pre-coupled assemblies with custom cam lock fittings are available on request.

Sizes: 1" to 6" I.D.

Temp Range: -40° to 140° F



EPDM SUCTION HOSE				
I.D.	O.D.	WP P.S.I. 72° F	APPROX. WT LBS/FT	PART #
1"	1.34"	50	.23	4400115
1.5"	1.84"	50	.40	4400100
2"	2.43"	50	.67	4400080
3"	3.52"	43	1.10	4400120
4"	4.61"	38	1.84	4400049
6"	6.81"	23	3.07	4400125

## PVC LAYFLAT DISCHARGE HOSE

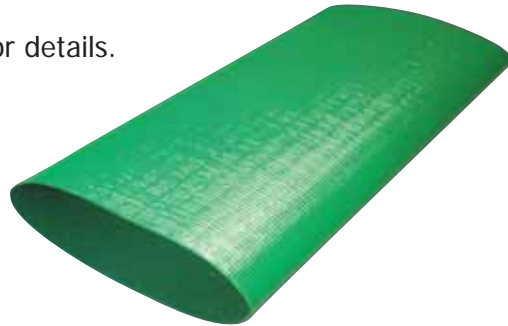
Hole Products offers a large selection of PVC layflat hose. Layflat hose is constructed of premium quality PVC and a reinforced cover. Layflat is lightweight, flexible, and easy to transfer and store. It is an excellent hose for drilling, mining, construction, and industrial applications. Pre-coupled assemblies with custom cam lock fittings are available on request.

Please contact your Hole Products representative for details.

Sizes: 1" to 6" I.D.

Temp Range: -5° to 170° F

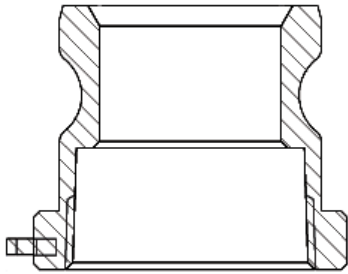
WP P.S.I.: 50 to 600 P.S.I.



## CAM LOCK FITTINGS

Hole Products offers cam lock fittings in a broad range of sizes and styles. Cam lock fittings are an excellent choice for applications in low pressure fluid handling. These couplings mate quickly and conveniently by inserting the grooved coupling into the cam coupling and simply closing the cam arms. Safety pins prevent the cam arms from accidental disconnection during use.

### TYPE A

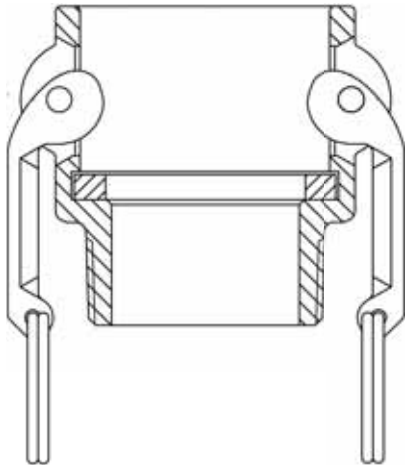


#### TYPE A - (ADAPTER X FEMALE NPT THREAD)\*

PART #	SIZE
4300010	1" ADAPTER X 1" FEMALE NPT THREAD
4300005	2" ADAPTER X 2" FEMALE NPT THREAD
4300110	3" ADAPTER X 3" FEMALE NPT THREAD
4300053	4" ADAPTER X 4" FEMALE NPT THREAD
4300062	5" ADAPTER X 5" FEMALE NPT THREAD
4300115	6" ADAPTER X 6" FEMALE NPT THREAD

\*Aluminium fittings listed. Call for brass or polypropylene fittings.

### TYPE B

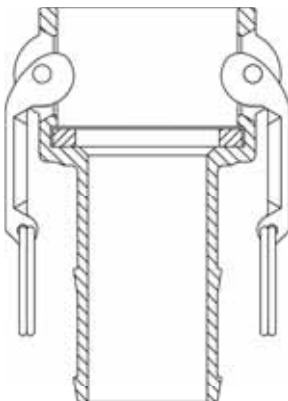


#### TYPE B - (COUPLER X MALE NPT THREAD)\*

PART #	SIZE
4300018	1" COUPLER X 1" MALE NPT THREAD
4300011	2" COUPLER X 2" MALE NPT THREAD
4300099	3" COUPLER X 3" MALE NPT THREAD
4300120	4" COUPLER X 4" MALE NPT THREAD
4300125	5" COUPLER X 5" MALE NPT THREAD
4300130	6" COUPLER X 6" MALE NPT THREAD

\*Aluminium fittings listed. Call for brass or polypropylene fittings.

### TYPE C



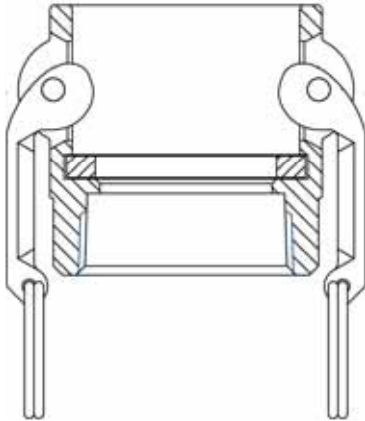
#### TYPE C MALE - (COUPLER X HOSE SHANK)\*

PART #	SIZE
4300016	1" COUPLER X 1" HOSE SHANK
4300006	2" COUPLER X 2" HOSE SHANK
4300135	3" COUPLER X 3" HOSE SHANK
4300054	4" COUPLER X 4" HOSE SHANK
4300140	5" COUPLER X 5" HOSE SHANK
4300145	6" COUPLER X 6" HOSE SHANK

\*Aluminium fittings listed. Call for brass or polypropylene fittings.

# CAM LOCK FITTINGS

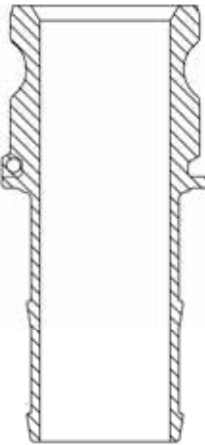
## TYPE D



TYPE D - (COUPLER X FEMALE NPT THREAD)*	
PART #	SIZE
4300015	1" COUPLER X 1" FEMALE NPT THREAD
4300040	2" COUPLER X 2" FEMALE NPT THREAD
4300050	3" COUPLER X 3" FEMALE NPT THREAD
4300052	4" COUPLER X 4" FEMALE NPT THREAD
4300160	5" COUPLER X 5" FEMALE NPT THREAD
4300165	6" COUPLER X 6" FEMALE NPT THREAD

\*Aluminium fittings listed. Call for brass or polypropylene fittings.

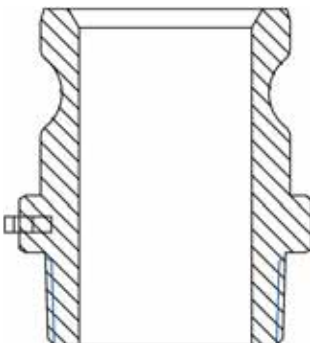
## TYPE E



TYPE E - (ADAPTER X HOSE SHANK)*	
PART #	SIZE
4300017	1" ADAPTER X 1" HOSE SHANK
4300007	2" ADAPTER X 2" HOSE SHANK
4300170	3" ADAPTER X 3" HOSE SHANK
4300058	4" ADAPTER X 4" HOSE SHANK
4300175	5" ADAPTER X 5" HOSE SHANK
4300056	6" ADAPTER X 6" HOSE SHANK

\*Aluminium fittings listed. Call for brass or polypropylene fittings.

## TYPE F



TYPE F - (ADAPTER X MALE NPT THREAD)*	
PART #	SIZE
4300019	1" ADAPTER X 1" MALE NPT THREAD
4300180	2" ADAPTER X 2" MALE NPT THREAD
4300185	3" ADAPTER X 3" MALE NPT THREAD
4300190	4" ADAPTER X 4" MALE NPT THREAD
4300195	5" ADAPTER X 5" MALE NPT THREAD
4300200	6" ADAPTER X 6" MALE NPT THREAD

\*Aluminium fittings listed. Call for brass or polypropylene fittings.



# DRILLING FLUIDS, GROUTS & ADDITIVES

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## DRILLING FLUIDS, GROUTS, ADDITIVES & SANDS



Hole Products offers a complete line of specially designed, high performance bentonite drilling fluids, additives, grouts, polymers, chemicals, sands, equipment, and accessories from the industry's leading manufacturers including Baroid, Cetco, NuWell, ChemGrout, GeoLoop, Johnson, PDS, Red Flint, Unimin, and more.

These products are specifically designed to improve drilling, grouting, well development and well completion performance in a variety of drilling industries including, construction, environmental, geotechnical, geothermal, horizontal directional drilling (HDD), mineral exploration, water well, and more.

All products are supported by our experienced team, offering the industry's best technical advice, service, and support.

Please contact your Hole Products representative for additional product information, data sheets, MSDS's or technical assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

## DRILLING FLUIDS










Hole Products offers a complete line of high performance drilling fluids from industry leading manufacturers including Baroid, Cetco, Johnson, and more.





Drilling fluids are designed to optimize drilling performance by providing a number of functions including:





- Suspending, releasing, and removing cuttings from the borehole
- Maintaining borehole stability
- Sealing permeable formations
- Cooling and lubricating tooling
- Minimizing environmental impacts
- And more

Refer to product descriptions, or contact your Hole Products representative for assistance selecting the drilling fluids properly suited for your specific drilling application.



BAROID® DRILLING FLUIDS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400084	50 lbs.	AQUAGEL®	AQUAGEL® bentonite functions as a viscosifier and filtrate reducer in freshwater drilling fluids.
	3400085	50 lbs.	AQUAGEL GOLD SEAL®	AQUAGEL GOLD SEAL® contains no polymer additives or chemical treatments. It functions as a viscosifier and filtrate reducer in freshwater drilling fluids.
	3400205	3000 lbs.		
No Photo Available	3451009	50 lbs.	BIO-BORE™	BIO-BORE™ concentrate is a free-flowing dry powder for use in various HDD drilling applications, particularly in situations where clay-based drilling fluids are restricted.
	3400055	50 lbs.	BORE-GEL®	BORE-GEL® fluid system is a single sack, boring fluid system specially formulated for use in (HDD) applications.
	3400131	14 lbs.	POLY BORE™	When mixed with fresh water, a small quantity of POLY BORE™ polymer provides a clear, solid-free, viscous borehole stabilizing fluid.
	3400180	35 lbs.		
	3400080	50 lbs.	QUIK GEL®	QUIK GEL® viscosifier imparts viscosity, fluid loss control and gelling characteristics to freshwater-based drilling fluids.
	3400081	50 lbs.	QUIK GEL GOLD™	QUIK GEL GOLD™ viscosifier provides an optimized grind size which results in easy mixing and rapid hydration characteristics.
	3400210	50 lbs.	ZEOGEL®	ZEOGEL® attapulgite clay helps provide high yield and rheological stability in systems that contain large concentrations of salt.

CETCO® DRILLING FLUIDS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400145	50 lbs.	HYDRAUL-EZ®	HYDRAUL-EZ® is designed to maintain borehole integrity in horizontally drilled boreholes.
	3400115	50 lbs.	PREMIUM GEL®	PREMIUM GEL® is used for all types of freshwater mud rotary drilling where higher solids are desired.
	3400133	50 lbs.	PUREGOLD® GEL	PUREGOLD® GEL is recommended for environmental rotary drilling where ambient groundwater quality and soil chemistry must be maintained.
	3400110	50 lbs.	SUPER GEL X®	SUPER GEL X® may be used for all types of freshwater mud rotary drilling.

OTHER MANUFACTURERS DRILLING FLUIDS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400132	50 lbs.	FLORIGEL® H-Y	FLORIGEL® H-Y is designed for use in drill fluids whenever ionic contamination from materials such as salts, gypsum, sea water and cement is encountered or anticipated.
	3450020	25 lbs.	REVERT®	REVERT® a natural polymer-based powder that, when added to water, makes a biodegradable drilling mud.
	3450021	40 lbs.	REVERT® II	REVERT II® a natural polymer-based powder that, when added to water, makes a biodegradable drilling mud. REVERT II® contains no blue dye and is a finer grained powder than REVERT®.
	3400114	5 gal.	SUPER MUD	SUPER MUD is a liquid polymer slurry which is primarily used as a soil stabilizer to prevent sloughing and/or collapse of a borehole.

# ADDITIVES














Hole Products offers a complete line of high performance drilling fluid additives from the industry's leading manufacturers including Baroid, Cetco, and more.











Additives help improve the performance of drilling operations by controlling and improving drilling fluid properties.





Refer to specific product descriptions for additional details.













Additional additives and speciality products are available on request.

Drilling fluid additives are speciality products designed for specific applications. Please contact your Hole Products representative for assistance selecting additives, additional product literature, or MSDS's.

BAROID® ADDITIVES				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400021	5 gal.	AQF-2™	AQF-2™ foaming agent can be added to fresh water for air/foam, air/gel-foam, or mist drilling applications.
	3400117	4 - 1 gal. jars	AQUA-CLEAR® PFD	AQUA-CLEAR® PFD concentrated liquid polymer is a dispersant that provides superior mud and sediment removal from the producing formation and gravel pack.
	3450037	5 gal.		
	3451010	5 lbs.	BARA-DEFOAM® 500	BARA-DEFOAM® 500 defoamer is designed for topical applications to break down foam associated with air/foam drilling operations.
	3400128	50 lbs.	BARAFOS®	BARAFOS® non-glassy, modified polyphosphate is used as a thinner and dispersant in freshwater drilling fluids and as an aid in water well development.
	3400060	50 lbs.	BAROID® 41	BAROID® 41 weighting material has a specific gravity of 4.1 and can be used to increase the density of drilling fluids up to 21 lbs./gal. (2.40 SG).
	3400025	5 gal.	CON DET®	CON DET® is used as a wetting agent that promotes bit cleaning and reduces stickiness of clay.
	3451012	25 lbs.	CORE-LUBE™	CORE-LUBE™ is a natural, linseed-based soft soap which is used as an inner tube lubricant and minimizes core blockage caused by fractured/broken formations.
	3450026	10 lbs.	DIAMOND SEAL®	DIAMOND SEAL® is intended for use primarily as a lost circulation material for horizontal directional drilling.
	3400035	1 gal.	EZ-MUD® POLYMER EMULSION	EZ-MUD® is used primarily as a borehole stabilizer. It can also be added to low-solids drilling fluids to help increase lubricity, fluid viscosity, and to help improve carrying capacity of air/foam injection fluids.
	3400030	5 gal.		
	3400036	14 lbs.	EZ-MUD® DRY POLYMER	EZ-MUD® DP water-soluble polymer, disperses and dissolves in fresh water rapidly. When mixed with fresh water, EZ-MUD DP polymer hydrates quickly and forms a clear, viscous fluid.
	3400098	10 lbs.	EZ-MUD® GOLD	EZ-MUD® GOLD can be mixed with water to improve drill hole stability for rotary mud-circulation drilling and to improve carrying capacity for air or air/foam drilling.
	3400099	40 lbs.		

BAROID® ADDITIVES				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400094	5 lbs.	EZ-MUD® PLUS	EZ-MUD® PLUS is used primarily as a viscosifier and borehole stabilizer to help prevent reactive shales and clays from swelling and sloughing.
No Photo Available	3451015	5 gal.	EP MUDLUBE®	EP MUDLUBE® modified tall oil fatty acid can be used to impart extreme pressure lubricating properties to drilling fluids.
	3451013	5 gal.	FUSE-IT®	FUSE-IT® is a fast-acting lost circulation material designed to help seal off loss circulation zones, allowing the operator to return to normal drilling activities.
	3450010	30 lbs.	N-SEAL™	N-SEAL™ lost circulation material can be used as an additive for loss of circulation in concentrations up to 70 lbs./100 gal.
	3400040	20 lbs.	NO-SAG®	NO-SAG® is used to enhance the carrying capacity of both clay and polymer-base drilling fluids.
	3400350	5 gal.	NXS-LUBE®	NXS-LUBE® extreme pressure lubricant is specially formulated to help provide friction reduction in water-based fluids.
	3400065	5 gal.	PENETROL®	PENETROL® wetting agent is designed to help counteract the sticking tendencies of clay and enhances the rate of penetration.
	3400020	5 gal.	QUIK-FOAM®	QUIK-FOAM® foaming agent can be added to fresh, brine, or brackish water for air/foam, air/gel-foam, or mist drilling applications.
	3400015	55 gal.		
	3400185	5 gal.	QUIK-MUD® D-50	QUIK-MUD® D-50 liquid polymer dispersion is used primarily as a viscosifier and borehole stabilizer to prevent reactive shale and clay from swelling and sloughing.
	3400355	10 lbs.	QUIK-MUD® GOLD	QUIK-MUD® GOLD clay/shale stabilizer assists in reducing swelling and/or dispersion. It also promotes borehole stabilization in water sensitive formations. It also assists in minimal rotational torque and circulating pressure.
	3400356	40 lbs.		
	3400362	20 lbs.	QUIK-TROL® GOLD	QUIK-TROL® GOLD polymer, when added to an AQUAGEL®, QUIK-GEL®, or BORE-GEL® slurry, yields a low filtrate drilling fluid system suitable for drilling in water sensitive formations.
	3400215	40 lbs.		
	3400043	50 lbs.		

BAROID® ADDITIVES				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400044	20 lbs.	QUIK-TROL® GOLD LV	QUIK-TROL® GOLD LV filtration control additive, when added to an AQUAGEL, QUIK-GEL or BORE-GEL slurry, yields a low filtrate drilling fluid system suitable for drilling in water sensitive formations.
	3400046	40 lbs.		
	3400220	50 lbs.		
	3400045	20 lbs.	QUIK-TROL® LV	QUIK-TROL® LV polymer, when added to a QUIK-GEL or BORE-GEL slurry, yields a drilling mud system suitable for drilling in sandy formation.
	3400225	40 lbs.		
	3450005	50 lbs.	SODA ASH	SODA ASH granular powder is primarily used to help condition and soften make-up water and raise pH.
	3400360	5 gal.	SYSTEM FLOC 360®	SYSTEM FLOC 360® polymeric flocculant is used to flocculate clays and shales encountered in drilling operations and facilitate disposal of water-based drilling fluids.

CETCO® ADDITIVES				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400340	5 gal.	CLAY CUTTER™	CLAY CUTTER™ is an ideal additive for HDD bores in reactive clay soils.
	3400086	5 gal.	DRILL-TERGE™	DRILL-TERGE™ is designed to control interfacial tension and inhibit the hydration and dispersion of clay and shale.
	3400137	14 lbs.	INSTA-VIS™ DRY	INSTA-VIS DRY™ improves drilling efficiency in both horizontal and vertically drilled holes by controlling shales and clays.
	3400108	5 gal.	INSTA-VIS™ PLUS	INSTA-VIS™ PLUS is a multi-functional liquid polymer designed to improve drilling efficiency in both horizontal and vertical drilled holes.
	3400068	5 gal.	LIQUI-TROL™	LIQUI-TROL™ vicosifer is a modified natural cellulosic polymer, in an ultra-clean oil. It is suitable for drilling in water sensitive formations.
	3400333	7.5 lbs.	PROSHOT™	PROSHOT™ is an easy mixing, water soluble, polymer used in horizontal and vertical drilling applications.
	3400334	2 lbs.	REL PAC®	REL-PAC® is designed to increase borehole stability in a variety of rotary and horizontal drilling applications.
	3400335	5 gal.	SUPER PAC™	SUPER PAC™ is an easy mixing, liquid polymer that enhances the properties of a bentonite drilling fluid.
	3400135	45 lbs.	SUPER THIN™	SUPER THIN™ is a highly concentrated additive which reduces drilling fluid viscosity, and assist in settling solids.
	3400336	2 lbs.	SUSPEND-IT™	SUSPEND-IT™ is designed to enhance gel strength of the drilling fluid for improved suspension and transporting of drill cuttings, gravel, and cobble on long bores.
	3400116	25 lbs.	VARIFLO® QD	VARIFLO® QD is a coarse granular, high-viscosity blend of guar gum formulated for easy and quick dispersion in drilling applications.
	3400119	43 lbs.	VERSAFOAM® PLUS	VERSAFOAM® PLUS is an ultra high-yielding, biodegradable, liquid foaming agent for use in fresh and saltwater air rotary drilling.

## WELL DEVELOPMENT & REHABILITATION CHEMICALS






Hole Products offers a complete line of Baroid® and Johnson® well development and rehabilitation chemicals. These chemicals are designed for removing minerals and/or biological debris (mud and sediment) to develop new wells and/or rehabilitate existing wells. Chemicals can help improve well productivity, lengthen the life of well, and lower operating cost by improving pumping efficiency.

Well chemicals are speciality products designed for specific applications. Refer to specific product descriptions for additional details.







Please contact your Hole Products representative for detailed product specifications or MSDS's.






## BAROID® CHEMICALS

	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400123	5 gal.	AQUA-CLEAR® AE	AQUA-CLEAR® AE liquid blend of acids and acid enhancers are formulated to control bacterial slime contamination due to the presence of iron-related and sulphate-reducing bacteria.
	3400138	50 lbs.	AQUA-CLEAR® MGA	AQUA-CLEAR® MGA dry blend of granular acid and additives is used in the removal of iron, manganese and carbonate scale.
	3400117	4 - 1 gal. jars	AQUA-CLEAR® PFD	AQUA-CLEAR® PFD concentrated liquid polymer is a dispersant that provides superior mud and sediment removal from the producing formation and gravel pack.
	3450037	5 gal.		

## NUWELL™ REHABILITATION PRODUCTS

	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3451002	4 - 1 gal. jars	NUWELL™ 220 DISPERSANT POLYMER	NUWELL™ 220 is designed to remove mud and clay from the well environment. It successfully develops new wells without using phosphate and rehabilitates old wells plugged with clays, silts and fines.
	3451001	5 gal.		
	3451020	30 gal.		
	3451025	55 gal.		
	3450040	5 gal.	NUWELL™ 310 BIOACID POLYMER	NUWELL™ 310 is used for breaking down biofilm and dispersing mineral salts. It may be used to treat potable water systems and related equipment in addition to large municipal and industrial wells.
	3450043	30 gal.		
	3450045	55 gal.		
	3451030	4 - 1 gal. jars	NUWELL™ 320 BIOCAUSTIC DISPERSANT	NUWELL™ 320 enhances solubility of minerals and biological debris when used with caustic products for cleaning wells, potable water distribution lines or other structural systems.
	3451035	5 gal.		
	3451040	30 gal.		
	3451045	55 gal.		
	3451050	4 - 1 gal. jars	NUWELL™ 400 NON-IONIC SURFACTANT	NUWELL™ 400 is for use over a wide pH range. It is ideal for improving penetration of hard deposits or for wetting surfaces to be cleaned.
	3451004	5 gal.		
	3451055	30 gal.		
	3451060	55 gal.		
	3451065	4 - 1 gal. jars	NUWELL™ 410 CHLORINE ENHANCER	NUWELL™ 410 is used with hypochlorite to increase effectiveness of chlorination. It increases the hypochlorous acid and bacteriological activity.
	3451007	5 gal.		
	3451006	30 gal.		
	3451005	55 gal.		
	3451070	4 - 1 gal. jars	NUWELL™ 500 CHLOROUT	NUWELL™ 500 is a concentrated crystal that is used to neutralize chlorine solutions before their disposal. It is used on the surface, after the well or system discharge has been pumped into a tank.
	3451075	5 gal.		
	3451080	30 gal.		
	3451085	55 gal.		

NUWELL™ ACIDS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3450015	9 lbs.	NUWELL™ 100 PELLETIZED ACID	NUWELL™ 100 is a pelletized acid designed for pouring directly into the well. NuWell 100 is best for wells with short to moderate lengths of screen at the bottom.
	3450055	45 lbs.		
	3450060	70 lbs.		
	3450065	450 lbs.		
	3450070	50 lbs.	NUWELL™ 110 GRANULAR ACID	NUWELL™ 110 granular acid blend is used for cleaning residential, irrigation, commercial, and municipal water wells.
	3450016	80 lbs.		
	3450017	450 lbs.		
	3450053	15 gal.	NUWELL™ 120 LIQUID ACID	NUWELL™ 120 liquid food-grade phosphoric mineral acid which effectively removes common mineral deposits found in wells, filter beds, and water system equipment.
	3450050	55 gal.		

# GROUTS








Hole Products offers a variety of bentonite based grouts from the industry's leading manufacturers including Baroid, Cetco, PDS, and more. Grouts are available as ground and naturally sized bentonite clay or blended with additives for increased dispersibility. Time released bentonite pellets are also available to prevent swelling upon contact with water for a specified period of time.







Choosing the correct grout for your drilling project is an important decision. The choice must comply with local, state, and federal code, and it is dependent upon a variety of factors including subsurface geology and water characteristics.


Hole Products has the expertise necessary to assist in recommending the proper grout for your drilling projects.


Refer to product description or contact your Hole Products representative for assistance selecting the grout(s) properly suited for your specific drilling application.

BAROID® GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400070	50 lbs.	AQUAGUARD®	AQUAGUARD® is designed for sealing the annular space around monitor or water well casing. Can develops a 30% solid slurry.
	3400075	50 lbs.	BENSEAL®	BENSEAL® granular (8-mesh), used in sealing and grouting of well casing and earthen structures. Benseal has a high swelling capacity and allows for hole re-entry.
	3400230	5 gal.	1/4" BENTONITE PELLETS	BENTONITE PELLETS are used to seal wells, boreholes, and monitoring well.
	3400235	5 gal.	1/2" BENTONITE PELLETS	
	3400150	5 gal.	3/8" BENTONITE PELLETS	
	3400056	50 lbs.	BORE-GROUT™	BORE-GROUT™ is a bentonite grout designed for use in grouting boreholes containing horizontally installed ground source heat loops.
	3400096	50 lbs.	CASING-SEAL™	CASING-SEAL™ bentonite (8 to 14 mesh), is an effective sealing and plugging material for sealing a leaking pond, and for use as a clay liner.
	3400005	50 lbs.	3/8" HOLEPLUG®	HOLEPLUG® is sized and graded chip material used to seal and plug earthen boreholes.
	3400050	50 lbs.	QUIK-GROUT®	QUIK-GROUT® is designed for grouting water wells, monitoring wells, and for plugging holes. Can develop a 20% active slurry.

- 3,000 lbs. super sacks are available for specific products on request.

CETCO® GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400112	5 gal.	1/4" BENTONITE PELLETS	BENTONITE PELLETS are designed to seal wells, boreholes, and monitoring wells.
	3400105	5 gal.	3/8" BENTONITE PELLETS	
	3400106	50 lbs.	PUREGOLD® CHIPS	PUREGOLD® CHIPS are used for sealing shallow boreholes and seismic shot holes, decommissioning wells, providing an interface between gravel pack and bentonite.
	3400107	50 lbs.	PUREGOLD® GROUT	PUREGOLD® GROUT is engineered to form a contaminant resistant seal without affecting groundwater chemistry. To achieve a 30% solids slurry, add one 50 lb bag of grout to 14 gallons of freshwater.
	3400109	50 lbs.	ACCU-VIST™/ BELLE CRUMBLES™	ACCU-VIST™/BELLE CRUMBLES™ is a quick activating liquid polymer which provides a way to seal and grout boreholes, well casings, and earthen structures.
	3400111	50 lbs.	GRANULAR GROUT	GRANULAR GROUT offers reduced friction going down the tremie pipe, and has a firm set-up with little settling.
	3400101	50 lbs.	VOLCLAY® GROUT CG-50	VOLCLAY® GROUT CG-50 is recommended for slurry wall applications. VOLCLAY® GROUT CG-50 can be used to seal earthen structures, general sealing, and slurry wall construction.

PDS GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400118	50 lbs.	3/8" BENTONITE CHIPS	Sealant to seal wells, boreholes, and monitoring wells.
	3400104	5 gal.	1/2" BENTONITE PELLETS	
	3400105	5 gal.	3/8" BENTONITE PELLETS	

PDS TIME RELEASE PELLETS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400103	5 gal.	1/4" COATED BENTONITE PELLETS TR30	Coated bentonite pellets prevent swelling upon contact with water for a specific time period. Most suitable for use in deep hole sealing.
	3400139	5 gal.	1/4" COATED BENTONITE PELLETS TR90	
	3400130	5 gal.	1/2" COATED BENTONITE PELLETS TR30	
	3400113	5 gal.	3/8" COATED BENTONITE PELLETS TR30	
	3400136	5 gal.	3/8" COATED BENTONITE PELLETS TR60	

## THERMALLY ENHANCED GROUTS






Hole Products offers a complete line of thermally enhanced grouts with various thermal conductivity values from the industry's leading manufacturers including Baroid, Cetco, GeoPro, and more.



Thermally enhanced grouts are specially formulated bentonite materials, designed specifically for use in grouting boreholes containing geothermal heat loops. They easily mix into a uniform slurry with low permeability that allows for efficient heat transfer and develops a permanent flexible seal.




Additional thermally enhanced grouts and additives are available to meet specific engineering requirements.

3,000 lb super sacks are available for specific products.

See product descriptions or contact your Hole Products representative for assistance selecting the thermally enhanced grouts properly designed for your next geothermal drilling project.

BAROID® THERMALLY ENHANCED GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400140	50 lbs.	BAROTHERM® GOLD	BAROTHERM® GOLD a bentonite material designed for use in grouting boreholes containing ground source heat loops. When combined with silica sand at various concentrations yields grout w/thermal conductivity values ranging between 0.4 and 1.2 BTU/hr • ft • °F (0.69-2.08 watts/m - °C).
	3400142	50 lbs.	BAROTHERM® GOLD 550 1.0	BAROTHERM® GOLD 1.0 a preblended mixture of sodium bentonite and high-purity silica sand designed for grouting boreholes containing ground source heat loops. Thermal conductivity of 1.0 BTU/hr • ft • (1.73 watts/m - °C).
	3400143	50 lbs.	BAROTHERM® GOLD 523 1.2	BAROTHERM® GOLD 1.2 is designed for use in grouting boreholes containing ground source heat loops. Thermal conductivity of 1.2 BTU/hr • ft • (2.08 watts/m - °C).

CETCO® THERMALLY ENHANCED GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400122	50 lbs.	GEO THERMAL GROUT™	GEO THERMAL GROUT™ is an easy pumping grout that has been carefully developed to efficiently suspend solids (silica sand) for enhanced thermal conductivity. When combined with silica sand at various concentrations yields grout w/thermal conductivity values ranging between 0.4 and 1.00 BTU/hr • ft • °F (0.68-1.69 watts/m - °C).
	3400240	50 lbs.	HIGH TC GEO THERMAL GROUT™	HIGH TC GEO THERMAL GROUT™ is an easy pumping grout that has been developed to efficiently suspend solids (silica sand) for enhanced thermal conductivity. When combined with silica sand at various concentrations yields grout w/thermal conductivity values ranging between 0.4 and 1.21 BTU/hr • ft • °F (0.68-2.05 watts/m - °C).

GEOPRO THERMALLY ENHANCED GROUTS				
	PART #	UNIT SIZE	PRODUCT	PRODUCT DESCRIPTION
	3400090	50 lbs.	BH 20 GROUT	BH 20 GROUT mixed as a 20% - 25% solids grout, BH20 sets into a semi-rigid plug well suited for sealing well casings, decommissioning abandoned wells and for geothermal heating and cooling systems. Thermal conductivity of 0.40 - 0.42 BTU/hr • ft.
	3400095	50 lbs.	THERMAL GROUT LITE	THERMAL GROUT LITE is designed to optimize the performance of ground heat exchangers for the geothermal heating and cooling industry. Thermal conductivity of 0.45 - 1.00 BTU/hr • ft.
	3400100	50 lbs.	THERMAL GROUT SELECT	THERMAL GROUT SELECT is designed to optimize the performance of ground heat exchangers for the geothermal heating and cooling industry. Thermal conductivity of 0.45 - 1.20 BTU/hr • ft.

## SAND & CEMENT



Hole Products offers a complete range of quality well pack sand, silica sand, cement, and asphalt for use on a variety of drilling projects.

**Well Pack Sand** - Our complete line of well pack sand is available in a variety of slot sizes for use with any screen and in any ground formation.

**Silica Sand** - Silica sand is a critical component in geothermal grout mixtures for achieving required thermal conductivity values. We offer a complete line of premium silica sand in a variety of particle sizes to meet the requirements of any geothermal project.

**Cement** - We offer a complete line of concrete products for grouting and well completion applications including, Portland cement, calcium cement, concrete mix, and more.

**Asphalt** - We offer a variety of asphalt repair products to easily and permanently repair roads.

Please contact your Hole Products representative for assistance selecting the sands and cements properly suited for your specific application and to learn more about the availability of additional products.



# WELL PACK SAND

Hole Products offers a full range of fine, medium, and coarse well pack sands to complement any well screen slot size and ground formation. All sands are washed, kiln dried, and screened, ensuring a clean and uniform product. Additional sand sizes available on request.

WELL PACK SAND		
PART #	UNIT SIZE	PRODUCT
3500016	50 lbs.	#0 WELL SLOT SAND
3500110	100 lbs.	#0 WELL SLOT SAND
3500015	50 lbs.	#1 WELL SLOT SAND
3500115	100 lbs.	#1 WELL SLOT SAND
3500120	50 lbs.	#7 WELL SLOT SAND
3500017	100 lbs.	#7 WELL SLOT SAND
3500001	50 lbs.	#10 WELL SLOT SAND
3500002	100 lbs.	#10 WELL SLOT SAND
3500050	50 lbs.	#15 WELL SLOT SAND
3500099	100 lbs.	#15 WELL SLOT SAND
3500020	50 lbs.	#20 WELL SLOT SAND
3500005	100 lbs.	#20 WELL SLOT SAND
3500035	50 lbs.	#30 WELL SLOT SAND
3500036	100 lbs.	#30 WELL SLOT SAND
3500025	50 lbs.	#40 WELL SLOT SAND
3500010	100 lbs.	#40 WELL SLOT SAND
3500027	50 lbs.	#50 WELL SLOT SAND
3500026	100 lbs.	#50 WELL SLOT SAND
3500098	50 lbs.	#60 WELL SLOT SAND
3500096	100 lbs.	#60 WELL SLOT SAND
3500100	50 lbs.	#80 WELL SLOT SAND
3500125	100 lbs.	#80 WELL SLOT SAND
3500101	50 lbs.	#90 WELL SLOT SAND
3500130	100 lbs.	#90 WELL SLOT SAND
3500073	50 lbs.	6/20 WELL SLOT SAND
3500070	50 lbs.	20/30 WELL SLOT SAND
3500071	50 lbs.	30/45 WELL SLOT SAND
3500072	50 lbs.	30/65 WELL SLOT SAND
3500075	50 lbs.	70/200 WELL SLOT SAND

## SILICA SAND

Hole Products offers a full line of premium quality silica sands available in 50 lb. or 100 lb. bags and 3,000 lb. super sacks. Silica sand is combined with geothermal grout at various concentrations to help yield a specific thermal conductivity rating.

Bulk dump loads and additional sand sizes are available on request.

Please contact your Hole Products representative for additional details.



SILICA SAND		
PART #	UNIT SIZE	PRODUCT
3500043	50 lbs.	4030 SILICA SAND
3500135	100 lbs.	4030 SILICA SAND
3500046	3,000 lbs. SUPER SACK	4030 SILICA SAND
3500140	50 lbs.	4070 SILICA SAND
3500145	100 lbs.	4070 SILICA SAND
3500150	3,000 lbs. SUPER SACK	4070 SILICA SAND
3500003	50 lbs.	5010 SILICA SAND
3500155	100 lbs.	5010 SILICA SAND
3500097	3,000 lbs. SUPER SACK	5010 SILICA SAND
3500044	50 lbs.	5020 SILICA SAND
3500160	100 lbs.	5020 SILICA SAND
3500165	3,000 lbs. SUPER SACK	5020 SILICA SAND
3500040	50 lbs.	5030 SILICA SAND
3500170	100 lbs.	5030 SILICA SAND
3500045	3,000 lbs. SUPER SACK	5030 SILICA SAND
3500175	50 lbs.	5040 SILICA SAND
3500039	100 lbs.	5040 SILICA SAND
3500180	3,000 lbs. SUPER SACK	5040 SILICA SAND

## CEMENT & ASPHALT

Hole Products offers a variety of cement, concrete, and asphalt products for grouting, well completion, and other drilling related applications.

CEMENT		
PART #	UNIT SIZE	PRODUCT
3500066	47 lbs.	PORTLAND CEMENT TYPE 1
3500065	94 lbs.	PORTLAND CEMENT TYPE 1
3500061	94 lbs.	PORTLAND CEMENT TYPE H
3500060	100 lbs.	CALCIUM CEMENT W60
3500068	55 lbs.	MICROFINE CEMENT MC 500

CONCRETE		
PART #	UNIT SIZE	PRODUCT
3500089	40 lbs.	READY MIX
3500079	60 lbs.	READY MIX
3500080	80 lbs.	READY MIX
3500095	50 lbs.	FAST SET
3500103	70 lbs.	FAST SET
3500104	55 lbs.	FAST SET DOT
3500090	80 lbs.	FIBER REINFORCED

ASPHALT		
PART #	UNIT SIZE	PRODUCT
3500093	50 lbs.	ASPHALT PATCH
3500094	60 lbs.	ASPHALT PATCH

## EQUIPMENT & ACCESSORIES



Hole Products offers a wide range of equipment and accessories to complement our drilling fluids, additives, grouts, and sands product offerings.

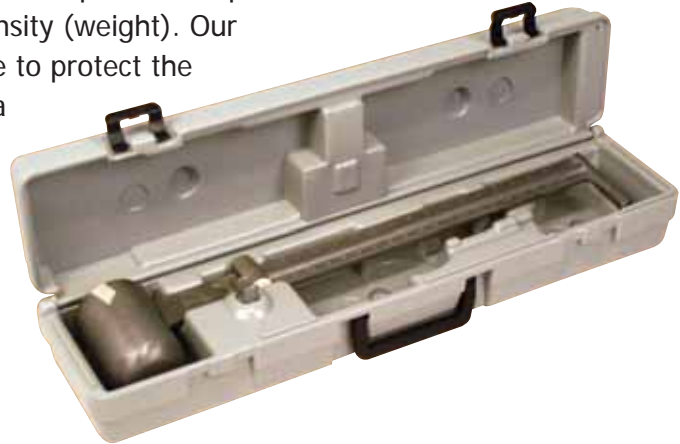
Our range of products includes everything successful drilling and grouting operations need to complete projects on time and under budget.

Custom designed and manufactured grouting equipment and accessories are available to fit any requirement.

Please contact your Hole Products representative for specific product information and to learn more about the availability of additional drilling fluid and grouting equipment and accessories.

## MUD SCALE/BALANCE

Hole Products offers durable mud scales/balances to provide simple and accurate measurements of drilling fluid density (weight). Our complete kits include a high impact plastic case to protect the scale/balance during transport and to provide a solid working platform.



MUD SCALE/BALANCE	
PART #	DESCRIPTION
3710000	COMPLETE MUD SCALE

## MARSH FUNNEL AND MEASURING CUP

Marsh funnels and measuring cups are used to determine an accurate measure of the drilling fluid's viscosity. Viscosity is a measurement of a fluid's resistance to flow; the greater the resistance, the higher the viscosity.



FUNNEL & MEASURING CUP	
PART #	DESCRIPTION
3710001	MARSH FUNNEL
3710002	MARSH CUP

## SAND CONTENT TEST KIT

Sand content kits measure the percentage of sand (by volume) suspended within the drilling fluid. Excessive sand may result in the deposition of a thick filter cake on the wall of the hole. High sand content may also cause excessive abrasion affecting pump parts and pipe connections.



SAND CONTENT TEST KIT	
PART #	DESCRIPTION
3710033	SAND CONTENT TEST KIT

## TEST STRIP INDICATORS

Quick and accurate field tests for determining pH, iron, and calcium levels in drilling fluids and water.

**PH Test Strips** - Field measurement of drilling fluid pH and adjustments to the pH are fundamental to the effectiveness of drilling fluids and additives.

**Iron Test Strips** - Used to determine the iron content in water.

**Hardness Test Strips**- Used to measure the hardness of water.

**Calcium Test Strips** - Used to determine the calcium content of the make-up of water and soda ash (sodium carbonate).



TEST STRIP INDICATORS	
PART #	DESCRIPTION
3710005	PH TEST STRIPS - 50/BTL
3710006	IRON TEST STRIPS - 100/BTL
3710075	HARDNESS TEST STRIPS - 50/BTL
3710090	CALCIUM TEST STRIPS - 25/BTL

## GROUT SHOES

Hole Products offers a wide range of custom grout shoes manufactured from aluminium and made to any size to fit your specific project requirements.

Grouts shoes are designed to simplify the process of grouting casing into overburden formations.

### Grouting:

The grout shoe is welded to the end of the casing and installed into the borehole. A stinger is attached to a tremie line and lowered into the casing until the stinger o-rings seat into the grout shoe funnel, providing a tight seal.

As grout is pumped through the tremie line, it exits the grout shoe side outlets and is forced up the annulus of the borehole. Double ball valves prevent the grout from traveling back up into the I.D. of the casing.

Upon completion of the grouting process, the aluminium grout shoe is simply drilled out, and the borehole can continue into bedrock.

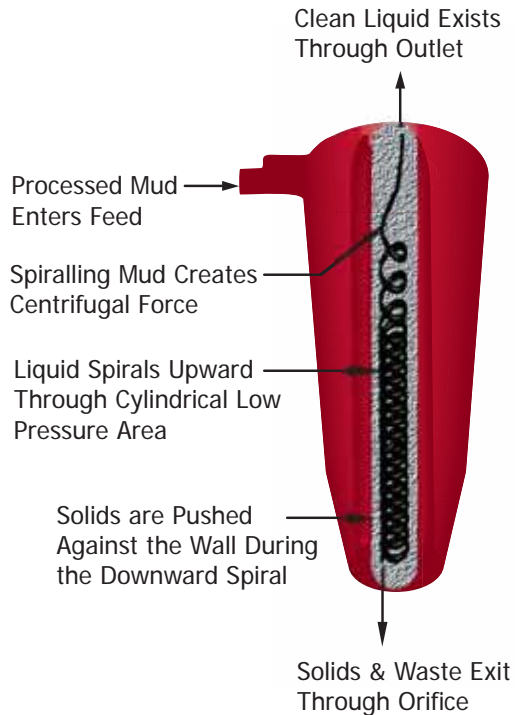
GROUT SHOES	
PART #	DESCRIPTION
3951004	5" GROUT SHOE
3951005	6" GROUT SHOE
3951010	8" GROUT SHOE
3951015	10" GROUT SHOE
3951025	12" GROUT SHOE
3951030	14" GROUT SHOE
3951035	16" GROUT SHOE
3951040	18" GROUT SHOE
3951045	20" GROUT SHOE
3951050	24" GROUT SHOE
3951051	26" GROUT SHOE



STINGER	
PART #	DESCRIPTION
3951000	2" FEMALE NPT

# MINI-MUD DESANDER

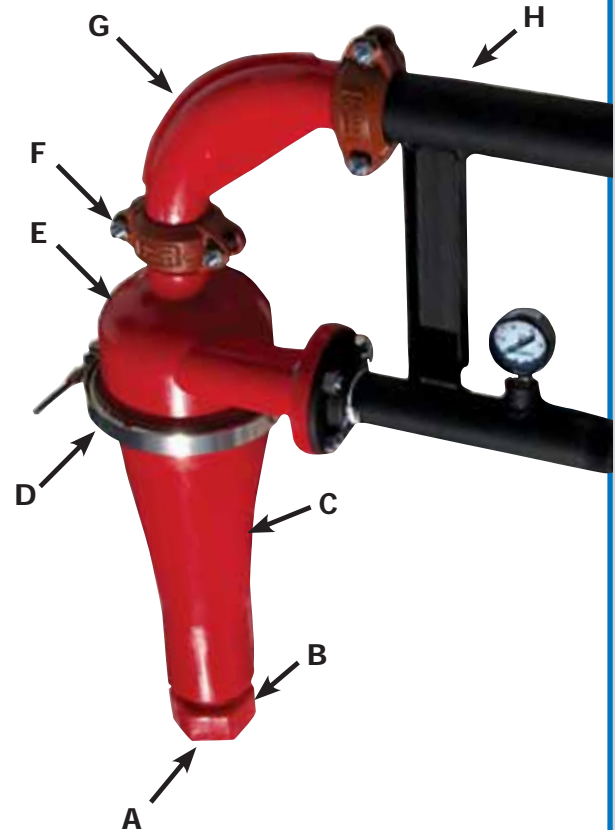
The mini-mud desander is designed to separate fine particles from your drilling fluids that would otherwise be recirculated. Maintaining clean drilling fluid with good density and weight will help increase the life of pumps, swivels, and hoses, and ensure cuttings are carried away from the borehole.



## HOW THE MINI-MUD DESANDER WORKS

There are no moving parts in the cone. Centrifugal forces are generated within the cone by high speed rotation of the drilling fluid which separates solids from liquids. The mini-desander has two exits on the axis; the smaller on the bottom (underflow) and larger (outlet) at the top. The underflow is used for denser or thicker waste products, while the overflow takes the cleaned fluid up the center of the cone and back into the circulating system for reuse.

MINI MUD DESANDER		
ITEM	PART #	DESCRIPTION
A-H	3710010	COMPLETE MINI MUD DESANDER
A	3710011	ADJUSTABLE ORIFICE (Underflow located at this hole)
B	3710016	ADJUSTABLE NUT
C	3710017	BOTTOM CONE SECTION
D	3710024	STAINLESS STEEL BAND CLAMP 5"
E	3710023	TOP CONE SECTION (Overflow located at the neck of this opening)
F	3710015	VITAULIC W/ EPDM GASKET
G	3710013	ELBOW 90°
H	3710022	PIPE ASSEMBLY





## MUD CLEANING SYSTEMS

Hole Products offers a complete line of MudSlayer® portable mud cleaning systems. These systems are available in a range of sizes for use on all drill sites.

These portable systems are designed to clean and recycle drilling mud by removing rocks and sand, thus reducing wear and tear on pumps, tooling and other parts. In addition, mud cleaning systems eliminate the need for settling pits and mud pans, and reduce the amount of water needed to drill, thus helping to maintain clean and safe jobsites.

Please contact your Hole Products representative for additional details.



## TRAILER PACKAGES

Hole Products offers a variety of custom trailer packages, designed specifically for environmental, geothermal, and water well grouting operations.

Custom trailer packages give you ability to choose the pump, hose reel, water tank, pallet table, accessories, and trailer size that best fits your specific requirements.

Please contact your Hole Products representative for additional details.



## GROUTERS

Hole Products offers custom designed powerful grout pumps in a variety of sizes and styles and with multiple accessory options. Grouters help by increasing grouting productivity, which in turn increase overall project profits.

Pumps are available with numerous mixing tank sizes, hose reel options, gas or diesel motors, and with a variety of custom accessories to fulfill even the most demanding gallons per minute, weight, and footprint requirements.

Please contact your Hole Products representative for additional details.



## GROUT MIXER

Hole Products variable speed, high-efficiency grout mixer is designed to provide rapid mixing of drilling fluids and grouts. Handle(s) provide for easy handling and/or resting the mixer on the mixing tank during the mixing cycle.

Please contact your Hole Products representative for additional details.



GROUT MIXER	
PART #	DESCRIPTION
3710025	GROUT MIXER

## HOSE REELS

Hole Products offers a full range of versatile, efficient, and durable hose reels.

Hose reels come standard with a powder coated finish, quick couplers for hydraulics, and are available with a variety of options including small or large diameter spools, remote control, depth counter, and more.

Hose/Loop reel combos are available on request.

Please contact your Hole Products representative for additional details.



## LOOP REELS

Hole Products offers a variety of durable, powered and non-powered loop reels with small and large diameter spools.

Loop reels feature adjustable width and diameter, making them suitable for a variety of applications.

Large loop reels feature fork lift pockets on both ends of the framework to allow for jobsite mobility.

Loop/Hose reel combos are available on request.

Please contact your Hole Products representative for additional details.





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## PVC SCREEN, CASING, FITTINGS & ACCESSORIES



Hole Products offers a full line of PVC well screens, risers, casings, drop pipe, fittings, and accessories, as a long lasting alternative to steel.

PVC offers a number of advantages over metal screens including custom design flexibility and durability. In addition, PVC is economical and lightweight, making it an ideal solution for a number of applications including:

- Water wells
- Monitoring wells
- Vapor extraction wells
- Groundwater extraction wells
- Air or oxygen sparging
- De-watering
- Heavy metals sampling
- Mining
- And more

Please contact your Hole Products representative for product recommendations, availability of additional PVC products, and assistance ordering custom PVC.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

## FLUSH THREAD PVC



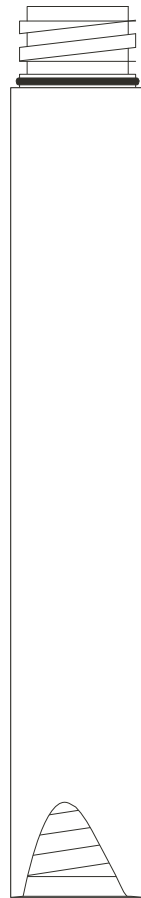
Hole Products' offers flush thread screen, riser and fittings in a variety of diameters, lengths, screen openings, and thread types. All flush thread screens and risers are free of printing, cleaned, and bagged. Our flush thread PVC offering includes the following options:

- Well screens and risers from 1/2" to 18" diameter
- ASTM F-480 flush threads with 2, 4, or 8 threads per inch
- NPT or custom threads are available on request
- Schedule 40 and Schedule 80
- Custom schedules and SDR's are available on request
- Screen openings from 0.006" to 0.500", in multiple row patterns and spacing
- Standard lengths of 2 1/2', 5', and 10'
- Custom lengths to 20'
- O-ring pre-installed
- Box or bulk packages options are available

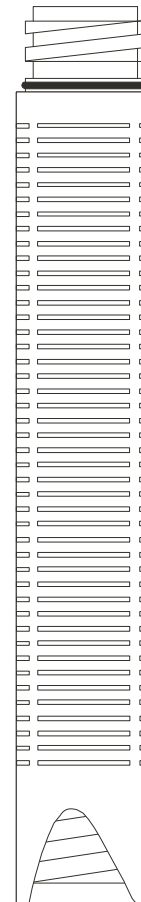
Please contact your Hole Products representative for availability of additional flush thread PVC.

# FLUSH THREAD PVC DRAWINGS

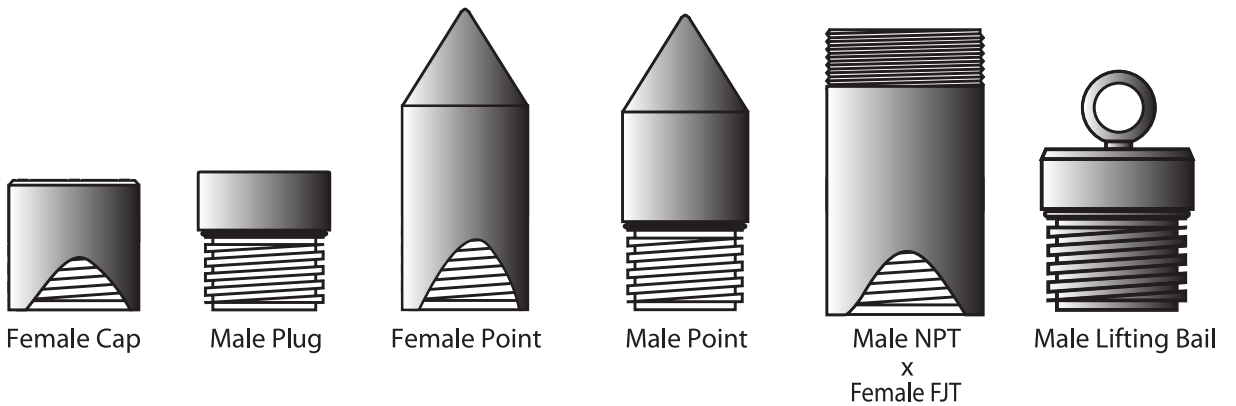
## RISER/CASING



## SCREEN



## FITTINGS





# PVC ORDERING REFERENCE GUIDE

Refer to the ordering guide below as a reference when ordering flush thread pvc.

Please contact your Hole Products representative for additional information and assistance ordering the PVC best suited for your specific needs.

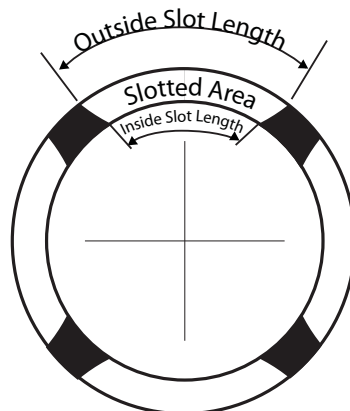
PVC RISER ORDERING REFERENCE GUIDE			
Schedule:		End Type:	
Diameter:		Thread Type:	
Length:		Threads Per Inch:	
Thread Type:			
Threads Per Inch:			
Additional Information:			

PVC SLOTTED SCREEN ORDERING REFERENCE GUIDE			
Schedule:		End Type:	
Diameter:		Thread Type:	
Length:		Threads Per Inch:	
Slot Size:		Plain or Belled End:	
Slot Spacing:			
# of Rows:			
Additional Information:			

## TYPICAL SLOT WIDTHS\*



\* Slot widths shown are approximate - not to scale



Slots are 4 rows 90° apart

## 1/2" PVC SCHEDULE 40

1/2" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800210	2.5'	8	40
5800002	5'	8	40
5800001	10'	8	40

1/2" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5800215	.010	2.5'	8	40
5950067	.010	5'	8	40
5800220	.010	10'	8	40
5800225	.020	2.5'	8	40
5800003	.020	5'	8	40
5800230	.020	10'	8	40

1/2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650024	FLAT FEMALE CAP	8	25
5650155	FEMALE POINT	8	25
5650008	FLAT MALE PLUG	8	25
5650160	MALE POINT	8	25
5650165	O-RING	8	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 1/2" PVC SCHEDULE 80

1/2" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800240	2.5'	8	40
5800080	5'	8	40
5800082	10'	8	40

1/2" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951150	.010	2.5'	8	40
5951155	.010	5'	8	40
5951160	.010	10'	8	40
5951165	.020	2.5'	8	40
5951170	.020	5'	8	40
5951175	.020	10'	8	40

1/2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650115	FLAT FEMALE CAP	8	25
5650170	FEMALE POINT	8	25
5650175	FLAT MALE PLUG	8	25
5650180	MALE POINT	8	25
5650185	O-RING	8	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 3/4" PVC SCHEDULE 40

3/4" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800245	2.5'	8	25
5801015	5'	8	25
5801001	10'	8	25

3/4" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951180	.010	2.5'	8	25
5950025	.010	5'	8	25
5950060	.010	10'	8	25
5957185	.020	2.5'	8	25
5950074	.020	5'	8	25
5951190	.020	10'	8	25

3/4" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650070	FLAT FEMALE CAP	8	25
5651028	FEMALE POINT	8	25
5650006	FLAT MALE PLUG	8	25
5650003	MALE POINT	8	25
5650190	O-RING	8	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 3/4" PVC SCHEDULE 80

3/4" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800255	2.5'	8	25
5800015	5'	8	25
5800016	10'	8	25

3/4" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951195	.010	2.5'	8	25
5950058	.010	5'	8	25
5951210	.010	10'	8	25
5951215	.020	2.5'	8	25
5951220	.020	5'	8	25
5951225	.020	10'	8	25

3/4" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650072	FLAT FEMALE CAP	8	25
5650195	FEMALE POINT	8	25
5650007	FLAT MALE PLUG	8	25
5650200	MALE POINT	8	25
5650205	O-RING	8	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 1" PVC SCHEDULE 40

1" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5801005	2.5'	8	20
5800000	5'	8	20
5801025	10'	8	20

1" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951230	.006	2.5'	8	20
5950003	.006	5'	8	20
5951235	.006	10'	8	20
5950998	.010	2.5'	8	20
5950000	.010	5'	8	20
5951020	.010	10'	8	20
5951240	.020	2.5'	8	20
5950001	.020	5'	8	20
5951021	.020	10'	8	20

1" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650010	FLAT FEMALE CAP	8	25
5650012	FEMALE POINT	8	25
5650005	FLAT MALE PLUG	8	25
5650018	MALE POINT	8	25
5650210	O-RING	8	----

*\*ASTM F-480 Flush threads; additional threads are available.  
 Note: Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.*

## 1" PVC SCHEDULE 80

1" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800260	2.5'	8	20
5800265	5'	8	20
5801116	10'	8	20

1" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5950998	.010	2.5'	8	20
5951066	.010	5'	8	20
5951250	.010	10'	8	20
5951255	.020	2.5'	8	20
5951260	.020	5'	8	20
5951265	.020	10'	8	20

1" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650019	FLAT FEMALE CAP	8	25
5651060	FEMALE POINT	8	25
5650215	FLAT MALE PLUG	8	25
5650220	MALE POINT	8	25
5650225	O-RING	8	----

*\*ASTM F-480 Flush threads; additional threads are available.  
 Note: Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.*

## 1 1/4" PVC SCHEDULE 40

1 1/4" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800270	2.5'	8	14
5800004	5'	8	14
5800039	10'	8	14

1 1/4" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951270	.010	2.5'	8	14
5951013	.010	5'	8	14
5951009	.010	10'	8	14
5951275	.020	2.5'	8	14
5951280	.020	5'	8	14
5951285	.020	10'	8	14

1 1/4" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650011	FLAT FEMALE CAP	8	25
5651029	FEMALE POINT	8	25
5651012	FLAT MALE PLUG	8	25
5650235	MALE POINT	8	25
5650240	HOISTING PLUG	8	-----
5650245	O-RING	8	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 1 1/4" PVC SCHEDULE 80

1 1/4" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800275	2.5'	8	14
5800280	5'	8	14
5800285	10'	8	14

1 1/4" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951290	.010	2.5'	8	14
5951295	.010	5'	8	14
5951300	.010	10'	8	14
5951305	.020	2.5'	8	14
5951310	.020	5'	8	14
5951315	.020	10'	8	14

1 1/4" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650230	FLAT FEMALE CAP	8	25
5650250	FEMALE POINT	8	25
5650255	FLAT MALE PLUG	8	25
5650260	MALE POINT	8	25
5700023	HOISTING PLUG	8	-----
5650265	O-RING	8	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 1 1/2" PVC SCHEDULE 40

1 1/2" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800310	2.5'	8	9
5801002	5'	8	9
5801000	10'	8	9

1 1/2" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951320	.010	2.5'	8	9
5951001	.010	5'	8	9
5951000	.010	10'	8	9
5951325	.020	2.5'	8	9
5951330	.020	5'	8	9
5951335	.020	10'	8	9

1 1/2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650002	FLAT FEMALE CAP	8	25
5650021	FEMALE POINT	8	25
5650009	FLAT MALE PLUG	8	25
5650017	MALE POINT	8	
5650270	HOISTING PLUG	8	-----
5650275	O-RING	8	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 1 1/2" PVC SCHEDULE 80

1 1/2" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800315	2.5'	4	9
5800320	5'	4	9
5801004	10'	4	9

1 1/2" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951006	.010	2.5'	4	9
5951007	.010	5'	4	9
5951340	.010	10'	4	9
5951345	.020	2.5'	4	9
5951350	.020	5'	4	9
5951355	.020	10'	4	9

1 1/2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650280	FLAT FEMALE CAP	4	25
5650285	FEMALE POINT	4	25
5651008	FLAT MALE PLUG	4	25
5650290	MALE POINT	4	25
5650295	HOISTING PLUG	4	-----
5650300	O-RING	4	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 2" PVC SCHEDULE 40

2" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5801030	2.5'	2	7
5800005	5'	2	7
5800010	10'	2	7

2" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951360	.006	2.5'	2	7
5950004	.006	5'	2	7
5950009	.006	10'	2	7
5951025	.010	2.5'	2	7
5950005	.010	5'	2	7
5950010	.010	10'	2	7
5951023	.020	2.5'	2	7
5950006	.020	5'	2	7
5950011	.020	10'	2	7

2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650075	FLAT FEMALE CAP	2	40
5650050	FEMALE POINT	2	40
5650080	FLAT MALE PLUG	2	40
5650045	MALE POINT	2	40
5700021	HOISTING PLUG	2	-----
5650305	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 2" PVC SCHEDULE 80

2" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800325	2.5'	2	7
5801012	5'	2	7
5801011	10'	2	7

2" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951365	.010	2.5'	2	7
5951012	.010	5'	2	7
5951011	.010	10'	2	7
5951370	.020	2.5'	2	7
5951375	.020	5'	2	7
5951017	.020	10'	2	7

2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650083	FLAT FEMALE CAP	2	40
5651026	FEMALE POINT	2	40
5650082	FLAT MALE PLUG	2	40
5651020	MALE POINT	2	40
5700034	HOISTING PLUG	2	-----
5650310	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 2 1/2" PVC SCHEDULE 40

2 1/2" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800330	2.5'	2	4
5800335	5'	2	4
5800340	10'	2	4

2 1/2" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951380	.010	2.5'	2	4
5950085	.010	5'	2	4
5950080	.010	10'	2	4
5951385	.020	2.5'	2	4
5951390	.020	5'	2	4
5951395	.020	10'	2	4

2 1/2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650095	FLAT FEMALE CAP	2	40
5650315	FEMALE POINT	2	40
5650320	FLAT MALE PLUG	2	40
5650325	MALE POINT	2	40
5650330	HOISTING PLUG	2	-----
5650335	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 2 1/2" PVC SCHEDULE 80

2 1/2" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800345	2.5'	2	4
5800050	5'	2	4
5800045	10'	2	4

2 1/2" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
1951400	.010	2.5'	2	4
5950075	.010	5'	2	4
5950070	.010	10'	2	4
1951405	.020	2.5'	2	4
1951410	.020	5'	2	4
1951415	.020	10'	2	4

2 1/2" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650090	FLAT FEMALE CAP	2	40
5650340	FEMALE POINT	2	40
5650079	FLAT MALE PLUG	2	40
5650345	MALE POINT	2	40
5700020	HOISTING PLUG	2	-----
5650350	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.



## 3" PVC SCHEDULE 40

3" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800031	2.5'	2	3
5800022	5'	2	3
5800023	10'	2	3

3" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
1951420	.010	2.5'	2	3
5950063	.010	5'	2	3
5950062	.010	10'	2	3
1951425	.020	2.5'	2	3
1951430	.020	5'	2	3
1951435	.020	10'	2	3

3" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650033	FLAT FEMALE CAP	2	10
5650088	FEMALE POINT	2	10
5650048	FLAT MALE PLUG	2	10
5650047	MALE POINT	2	10
5650355	HOISTING PLUG	2	-----
5650360	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 3" PVC SCHEDULE 80

3" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800350	2.5'	2	3
5800355	5'	2	3
5800360	10'	2	3

3" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
1951440	.010	2.5'	2	3
1951445	.010	5'	2	3
1951450	.010	10'	2	3
1951455	.020	2.5'	2	3
1951460	.020	5'	2	3
1951465	.020	10'	2	3

3" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650365	FLAT FEMALE CAP	2	10
5650370	FEMALE POINT	2	10
5650375	FLAT MALE PLUG	2	10
5650380	MALE POINT	2	10
5650385	HOISTING PLUG	2	-----
5650390	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 4" PVC SCHEDULE 40

4" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800024	2.5'	2	2
5800020	5'	2	2
5800025	10'	2	2

4" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
1951470	.006	2.5'	2	2
1951475	.006	5'	2	2
5951135	.006	10'	2	2
5950071	.010	2.5'	2	2
5950015	.010	5'	2	2
5950020	.010	10'	2	2
5950068	.020	2.5'	2	2
5950026	.020	5'	2	2
5950024	.020	10'	2	2

4" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650035	FLAT FEMALE CAP	2	20
5650039	FEMALE POINT	2	20
5650030	FLAT MALE PLUG	2	20
5651025	MALE POINT	2	20
5700047	HOISTING PLUG	2	-----
5650395	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 4" PVC SCHEDULE 80

4" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800365	2.5'	2	2
5800044	5'	2	2
5800036	10'	2	2

4" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
1951480	.010	2.5'	2	2
5950038	.010	5'	2	2
1951485	.010	10'	2	2
5952300	.020	2.5'	2	2
5950125	.020	5'	2	2
5950115	.020	10'	2	2

4" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650044	FLAT FEMALE CAP	2	20
5650037	FEMALE POINT	2	20
5650051	FLAT MALE PLUG	2	20
5650034	MALE POINT	2	20
5700026	HOISTING PLUG	2	-----
5650400	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 5" PVC SCHEDULE 40

5" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800370	2.5'	2	1
5801062	5'	2	1
5801061	10'	2	1

5" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951490	.010	2.5'	2	1
5951125	.010	5'	2	1
5951107	.010	10'	2	1
5951495	.020	2.5'	2	1
5951126	.020	5'	2	1
5951108	.020	10'	2	1

5" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650057	FLAT FEMALE CAP	2	10
5651049	FLAT MALE PLUG	2	10
5650420	HOISTING PLUG	2	-----
5650425	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 5" PVC SCHEDULE 80

5" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800375	2.5'	2	1
5800380	5'	2	1
5800385	10'	2	1

5" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951500	.010	2.5'	2	1
5951505	.010	5'	2	1
5951510	.010	10'	2	1
5951520	.020	2.5'	2	1
5951525	.020	5'	2	1
5951530	.020	10'	2	1

5" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650430	FLAT FEMALE CAP	2	10
5650440	FLAT MALE PLUG	2	10
5650450	HOISTING PLUG	2	-----
5650455	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 6" PVC SCHEDULE 40

6" SCHEDULE 40 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800033	2.5'	2	1
5800034	5'	2	1
5800035	10'	2	1

6" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951535	.006	2.5'	2	1
5952011	.006	5'	2	1
5950099	.006	10'	2	1
5951540	.010	2.5'	2	1
5950035	.010	5'	2	1
5950029	.010	10'	2	1
5951100	.020	2.5'	2	1
5950064	.020	5'	2	1
5950030	.020	10'	2	1

6" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650085	FLAT FEMALE CAP	2	10
5650065	FLAT MALE PLUG	2	10
5650470	HOISTING PLUG	2	-----
5650475	O-RING	2	----

*\*ASTM F-480 Flush threads; additional threads are available.  
 Note: Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.*

## 6" PVC SCHEDULE 80

6" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800390	2.5'	2	1
5800199	5'	2	1
5800200	10'	2	1

6" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951545	.010	2.5'	2	1
5950220	.010	5'	2	1
5950211	.010	10'	2	1
5951550	.020	2.5'	2	1
5950215	.020	5'	2	1
5950210	.020	10'	2	1

6" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650120	FLAT FEMALE CAP	2	10
5651017	FLAT MALE PLUG	2	10
5650490	HOISTING PLUG	2	-----
5650495	O-RING	2	----

*\*ASTM F-480 Flush threads; additional threads are available.  
 Note: Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.*

## 8" PVC SCHEDULE 40

8" SCHEDULE 40 RISER			
PART #	SLOT SIZE	TPI *	PIECES PER BOX
5800395	2.5'	2	1
5801043	5'	2	1
5801040	10'	2	1

8" SCHEDULE 40 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951555	.010	2.5'	2	1
5950090	.010	5'	2	1
5951560	.010	10'	2	1
5951565	.020	2.5'	2	1
5951570	.020	5'	2	1
5952013	.020	10'	2	1

8" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650089	FLAT FEMALE CAP	2	1
5650032	FLAT MALE PLUG	2	1
5650510	HOISTING PLUG	2	-----
5650515	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## 8" PVC SCHEDULE 80

8" SCHEDULE 80 RISER			
PART #	LENGTH	TPI *	PIECES PER BOX
5800400	2.5'	2	1
5801047	5'	2	1
5801046	10'	2	1

8" SCHEDULE 80 SCREEN				
PART #	SLOT SIZE	LENGTH	TPI *	PIECES PER BOX
5951575	.010	2.5'	2	1
5951580	.010	5'	2	1
5951585	.010	10'	2	1
5951590	.020	2.5'	2	1
5951044	.020	5'	2	1
5951043	.020	10'	2	1

8" CAPS, PLUGS & O-RINGS			
PART #	DESCRIPTION	TPI *	PIECES PER BOX
5650091	FLAT FEMALE CAP	2	1
5650525	FLAT MALE PLUG	2	1
5650535	HOISTING PLUG	2	-----
5650540	O-RING	2	----

\*ASTM F-480 Flush threads; additional threads are available.  
**Note:** Pieces per box shown for reference only. Parts available for purchase in any quantity at no additional charge.

## PVC ADAPTERS

Hole Products offers a wide range of adapters for use with PVC screens and risers.

Our PVC adapter offering includes the following options:

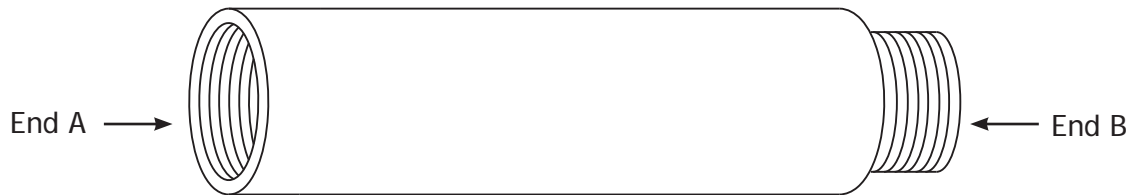
- Nominal Pipe Sizes: 1/2" to 18"
- Schedules: 40, 80, and 120 (SDRs are available on request)
- Threads: F-480 Flush (2, 4, and 8 TPI), Male / Female NPT

Refer to ordering guidelines below as a reference when ordering PVC adapters.

Please contact your Hole Products representative for additional information and ordering assistance.

PVC ADAPTER ORDERING REFERENCE GUIDE	
<b>END A*</b>	
Nominal Pipe Size:	
Schedule:	
Thread Type:	
Threads Per Inch:	
Slip End (Yes or No):	
Other Information:	
<b>END B*</b>	
Nominal Pipe Size:	
Schedule:	
Thread Type:	
Threads Per Inch:	
Slip End (Yes or No):	
Other Information:	

\* Make selections for both "End A" and "End B".

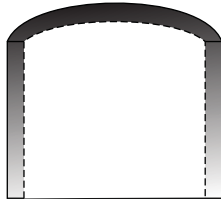


*Designs may vary from photo.*

## SLIP CAPS AND PLUGS

Hole Products offers a complete range of PVC slip fittings including slip points, slip bottoms, slip caps, and slip couplings. Slip fittings are offered in sizes ranging from 1/2" – 18" in Schedule 40 and Schedule 80 (SDR fittings are available on request).

Please contact your Hole Products representative for additional information and assistance selecting slip caps and plugs.



SLIP CAPS (SCHEDULE 40)	
PART #	SIZE
5650054	1/2"
5651027	3/4"
5650043	1"
5650041	1 1/4"
5651002	1 1/2"
5650040	2"
5650092	2 1/2"
5650163	3"
5650038	4"
5650059	5"
5650060	6"
5650086	8"

PVC SLIP PLUGS (SCHEDULE 40)	
PART #	SIZE
5650545	3/4"
5650550	1"
5700032	1 1/4"
5650555	1 1/2"
5650098	2"
5650560	3"
5651001	4"
5650565	5"
5650570	6"
5650087	8"
5650096	10"
5650097	12"



## U-PACK® SCREEN

U-Pack® Well Screens offer an economical solution for installing wells where a normal sand pack is not feasible. Typical applications include horizontal and angled wells, artesian wells, rock wells, jetted wells, open excavations, silty and fine grained soils, heaving sands, industrial filtration, and the relining of deteriorated wells.

- U-Pack® well screens consist of an outer PVC well screen and a centralized inner PVC well screen.
- U-Pack® well screens are shipped fully assembled and ready to pack. Since they are shipped empty, freight costs are reduced and ease of handling is increased. These units are filled with a clean filter media before, during, or after the well is drilled. A different filter media may be used for each hole depending on the well requirements.
- All materials are clean, ink free, and NSF approved. Additionally no glues or solvents are used in the manufacturing or assembly of these units.
- U-Pack® well screens are available from 1/2" to 6" diameters in a variety of lengths, slot sizes, and slot configurations. U-packs come standard with M x M FJT threads that conform to ASTM F-480.
- Flush Thread U-Pack® screens are compatible with our PVC flush thread casings. Units can be ordered with flush thread caps or female flush thread points for the bottom.

Please contact your Hole Products representative for additional information and assistance.





## VEE-WIRE® SCREEN

Commonly used in shallow wells, Vee-Wire® screens have more open area per foot than other non-metallic screens, allowing more water to enter at lower velocities. Vee-Wire screens resist corrosion from salts and gases commonly found in either salt or fresh water and are resistant to acid treatments commonly used to clean wells.

- Vee-Wire® screens are furnished with Schedule 40 or 80 flush threads or plain ends for connecting to standard PVC fittings.
- Sizes range from 1.25" to 8", and screen slot size can be as small as 0.005 and up.

Please contact your Hole Products representative for additional information and ordering assistance.



## PREPACKED SCREENS

Prepacked well screens consist of a slotted PVC well screen, surrounded by a stainless steel mesh. #20/40 grade environmental sand is packed between the flush threaded PVC and the stainless steel mesh. This method of packing equalizes distribution of the sand around the well screen, thus reducing disturbance of the natural formation and installation time.

Prepacked screens are available in a variety of sizes for use with 1/2" - 2" PVC risers.

Please contact your Hole Products representative for additional information and ordering assistance.



## SCHUMASOIL® SCREENS

SCHUMASOIL®, is a porous polyethylene well screen, designed to minimize flow resistance by providing 35% - 45% porosity uniformly distributed along the entire length of the well screen. Greater porosity, uniform pore distribution, and closely controlled pore size allow users to closely match the flow characteristics of the well screen to that of the formation.

### Features:

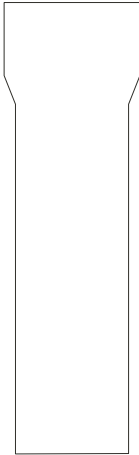
- Available to fit pipe sizes from 1" to 6"
- Highly porous with a homogeneous and uniform pore structure
- High permeability for water, soil vapor, and solvent phases
- High level of chemical resistance
- Light weight
- Low, long-term well operating costs
- Six different pore sizes offered to match soil formation characteristics
- Environmentally friendly



## BELL END CASING

Hole Products offers bell end PVC casing in Schedules 40 and 80, and SDR's 17, 21, and 26. All PVC casings meet or exceed specification ASTM F-480 and are available in sizes ranging from 3/4" through 10" diameter and 20' lengths.

Please contact your Hole Products representative for availability of additional Bell End PVC casing.



BELLED END			
PART #	DIAMETER *	LENGTH	SCHEDULE
5900030	2"	20'	SCH40
5900035	2"	20'	SDR21
5900004	4"	20'	SCH40
5900005	4"	20'	SDR21
5900025	5"	20'	SCH40
5900008	5"	20'	SDR21
5900006	6"	20'	SCH40
5900011	6"	20'	SDR21
5900007	8"	20'	SCH40
5900010	8"	20'	SDR21

*\*Larger diameters are available.*

## PLAIN END CASING

Hole Products offers plain end PVC casing in Schedules 40 and 80 and SDR's 17, 21, and 26. All PVC casings meet or exceed specification ASTM F-480 and are available in sizes ranging from 3/4" through 10" diameter and 20' lengths.

Please contact your Hole Products representative for availability of additional Plain End PVC casing.



PLAIN END			
PART #	DIAMETER *	LENGTH	SCHEDULE
5900040	2"	20'	SCH40
5900045	2"	20'	SDR21
5900050	4"	20'	SCH40
5900055	4"	20'	SDR21
5900060	5"	20'	SCH40
5900065	5"	20'	SDR21
5900015	6"	20'	SCH40
5900070	6"	20'	SDR21
5900075	8"	20'	SCH40
5900080	8"	20'	SDR21

*\*Larger diameters are available.*

## ACCESSORIES



Hole Products offers a wide range of PVC accessories including stainless steel centralizers, shale traps, surge blocks, well cleaning brushes and chemicals, filter socks, PVC cutters, pipe handling and hoisting tools, and much more.

PVC accessories listed in this catalog are representative of the industry's most common sizes and styles. Additional products are available on request.

Please contact your Hole Products representative for further assistance and availability of additional PVC accessories.

## CENTRALIZERS

Hole Products' adjustable centralizers easily attach to screens and risers to prevent off center well placement. All centralizers are constructed of high quality, corrosion resistant stainless steel, and they will not contaminate the well. Centralizers are available to fit screen/casing ranging in size from 3/4" through 12" and adjust to fit boreholes up to 28".

CENTRALIZERS		
PART #	SCREEN/CASING SIZES	HOLE DIAMETER
5600008	3/4"	Up to 11"
5600009	1"	Up to 11"
5600004	1 1/2"	Up to 12"
5600010	2"	Up to 12"
5600017	2 1/2"	Up to 13"
5600011	3"	Up to 13"
5600005	4"	Up to 12"
5600001	4"	Up to 16"
5600013	5"	Up to 17"
5600015	6"	Up to 20"
5600018	8"	Up to 24"
5600020	10"	Up to 24"
5600025	12"	Up to 26"
5600035	14"	Up to 28"



## SHALE TRAPS

Hole Products offers a variety of neoprene rubber shale traps for risers ranging in size from 2" – 12" and borehole sizes up to 20". Shale traps are offered in soft or hard rubber and come standard with a stainless steel clamp for attaching to the well riser.

Shale traps are designed to support a grout column above the producing zone to seal between the casing and the bore hole when grouting.

Please contact your Hole Products representative for additional information.

### STANDARD SHALE TRAPS

STANDARD SHALE TRAPS		
PART #	RISER/ CASING SIZE	MAXIMUM BOREHOLE SIZE
7001070	2"	5"
7001051	4"	7"
7001040	6"	10"



### SUPREME SHALE TRAPS

Supreme shale traps have a thicker wall section than standard shale traps.

SUPREME SHALE TRAPS		
PART #	RISER/ CASING SIZE	MAXIMUM BOREHOLE SIZE
7001075	2"	4 1/2"
7001080	2"	5"
7001061	2"	6 1/2"
7001065	3"	6"
7001090	4"	7"
7001045	4"	8"
7000195	4"	9 1/2"
7001095	5"	7"
7001050	5"	8"
7001100	5"	9"
7001105	6"	10 1/2"
7001042	8"	14"
7001110	10"	16 1/4"
7001046	12"	20"



## SURGE BLOCKS

Hole Products offers a variety of sizes and styles of surge blocks. Surge blocks are designed to develop gravel packed wells by gently forcing water to flow through the screen. The in and out action helps provide for maximum water flow into the well by settling and setting the gravel pack.

### PVC SURGE BLOCKS

PVC surge blocks are constructed of solid PVC and designed to match the applicable I.D. of Schedule 40 PVC. PVC surge blocks are internally threaded with female pipe threads.

PVC SURGE BLOCKS		
PART #	SIZE	CONNECTION
5700035	2"	3/4" NPT
5700036	2" REPLACEMENT SEALS - (5)	-----
5700145	2" REPLACEMENT KIT	-----
5700025	4"	1" NPT
5700048	4" REPLACEMENT SEAL - (5)	-----
5700029	4" REPLACEMENT KIT	-----
5700082	6"	2" NPT
5700140	6" REPLACEMENT SEAL - (5)	-----
5700028	6" REPLACEMENT KIT	-----



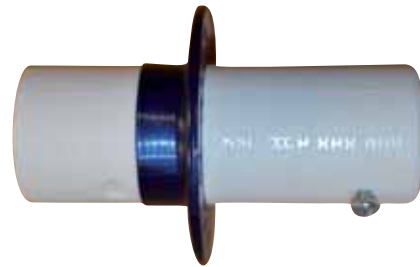
## WELL DEVELOPER SURGE BLOCKS

Well Developer surge blocks utilize the surge block method and ball valve to effectively develop a well and purge clays and silt all in one step. These surge blocks are available in two series for use in wells ranging from 3/4" to 6".

### ENVIRONMENTAL SERIES

The Environmental Series includes lightweight, inexpensive, disposable well developers that can be operated manually using flexible or rigid tubing (PVC, PEX, or polyethylene). The Environmental Series includes smaller well developers ranging from 3/4" through 2". These tools work best in wells with water levels to 30' and well depths to 100'.

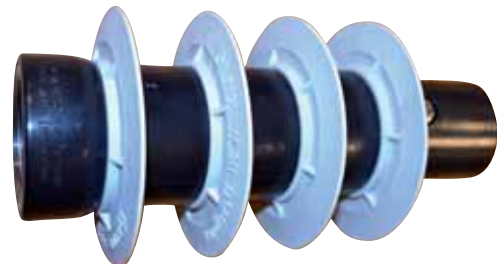
ENVIRONMENTAL SERIES	
PART #	SIZE
5700150	3/4"
5700037	1"
5700155	1 1/4"
5700160	1 1/2"
5700038	2"



### PRODUCTION SERIES

The Production Series includes 4" and 6" reusable well developers. They are constructed of a tough ABS body, feature a molded 1 1/2" steel female NPT pipe fitting for attaching to a weighted wireline or drill pipe, and four tough, field replaceable polyurethane wipers. To convert to a less aggressive two wiper development tool, spacer rings are available to be used in place of two of the wipers.

PRODUCTION SERIES	
PART #	SIZE
5700033	4"
5700163	5"
5700165	6"





## WELL CLEANING BRUSHES

Hole Products offers 2" well cleaning brushes featuring fixed brushes and 1/4" NPT threads for a pipe connection. The 4", 6", and 8" brushes are used in conjunction with a brush tool. The versatile design allows users to change the brush sizes to fit the screen or casing to be brushed and the ability to run the brush on a cable or pipe. Brushes are available to clean screen and casing ranging in sizes from 4" – 24".

WELL CLEANING BRUSHES*	
PART #	DESCRIPTION
5700071	2" - FIXED BRUSH
5700131	REPLACEABLE BRUSH TOOL
5700110	4" REPLACEABLE BRUSHES (4 REQ.)
5700132	6" REPLACEABLE BRUSHES (4 REQ.)
5700063	8" REPLACEABLE BRUSHES (4 REQ.)



2" Brush - Fixed Brush



Replaceable Brush Tool

\*Other well cleaning brushes sizes and styles are available.

## CLEANING DETERGENTS

Hole Products offers Liqui-nox® and Alconox® cleaning detergents for cleaning of sampling equipment, rigs, tooling, PPE, and more. Liqui-nox and Alconox are free rinsing and completely water soluble detergents.

CLEANING DETERGENTS	
PART #	DESCRIPTION
5610000	LIQUI-NOX® 1 QUART
5610002	LIQUI-NOX® 1 GALLON
5610001	ALCONOX® 4 LB BOX
3450035	ALCONOX® DISPENSER BOX (50 X 1/2 OZ)
3450036	ALCONOX® DISPENSER BOX (CASE OF 12 - 50 x 1/2 OZ)



## FILTER SOCKS

Hole Products offers seamless, knitted filter socks for groundwater monitoring and remediation applications. Filter socks install quickly and easily over slotted well screens, providing additional filtration of unwanted soil particles.

Filter socks are offered in sizes from 1" – 8" and sold in 100' rolls.

FILTER SOCKS		
PART #	SIZE	LENGTH
5700000	1"	100'
5700001	2"	100'
5700002	4"	100'
5700003	6"	100'
5700170	8"	100'



## PVC CUTTERS

Hole Products offers a variety of internal, ratcheting action, and Ridgid® quick acting PVC cutters.

Please contact your Hole Products representative for selection assistance and availability of additional PVC cutters.

### INTERNAL CUTTERS

Internal cutters are designed to make quick accurate cuts inside Schedule 40 and 80 PVC pipes ranging in size from 1 1/2" to 6" (nominal pipe size) using a supplied power source. Cutting depth is easily preset, and cuts are made in seconds. They are recommended for use with a 350-450 RPM drill. Replacement cutter blades are available on request.

INTERNAL CUTTERS	
PART #	PIPE SIZE
5700095	1 1/2" S40
5700005	2" S40
5700013	2" S80
5700006	4" S40
5700012	4" S80
5700007	6" S40
5700175	6" S80



### RATCHETING CUTTERS

Ratcheting action cutters are available for cutting 1/8" to 2 3/8" PVC pipe. Ratcheting cutters save time, eliminate shavings, and work well in tight spaces or hard to reach spaces.

RATCHETING CUTTERS	
PART #	PIPE SIZE
5700008	1/8" TO 1 5/8"
5151029	1/2" TO 2 3/8"



### QUICK ACTING CUTTERS

Ridgid® quick acting PVC cutters are available in various models for cutting PVC pipe ranging in sizes from 1/8" – 6 5/8". Quick acting cutters cut PVC quickly and easily and allow for quick, no tool cutting wheel changes.

QUICK ACTING CUTTERS	
PART #	PIPE SIZE
5700015	1 7/8" - 4 1/2"
5700016	4" - 6 5/8"



## KWIK KLAMPS™

Kwik Klamps™ are a time saving and safe tool designed for clamping and holding pipe. They are lightweight, easy to use, and provide excellent holding capability. The adjustable jaws allow for use with multiple pipe sizes and boast have a safety pin to prevent accidental unclamping.

KWIK KLAMP 1		
ITEM	PART #	DESCRIPTION
1	4950005	COMPLETE CLAMP - 1" TO 2" PIPE SIZE
2	4950041	ADJUSTABLE SCREW W/ NYLON WASHER
3	4950012	JAW SET
4	4950017	SUPER JAW SET



1



2



3



4

KWIK KLAMP 2		
ITEM	PART #	DESCRIPTION
1	4950010	COMPLETE CLAMP - 2 1/2" TO 4" PIPE SIZE
2	4950045	ADJUSTABLE SCREW W/ NYLON WASHER
3	4950011	CARBIDE TIP GRIPPER - 3/8" - 16" x 1/2"
4	4950019	JAW SET W/BOLTS (Specially designed for holding 2" and 2 1/2" pipe)*
5	4950050	SPACER

\*Kwik Klamp 2 can also hold 2" pipe with an additional jaw set and 4 1/2" pipe with a set of spacers. (See fig. 4 & 5)



1



2



3



4



5

KWIK KLAMP 3		
ITEM	PART #	DESCRIPTION
1	4950006	COMPLETE CLAMP - 6" PVC PIPE ONLY*
2	4950070	ADJUSTABLE SCREW W/ NYLON WASHER
3	4950075	CARBIDE TIP GRIPPER - 3/8" - 16" x 1"
4	4950080	CONVERSION KIT FOR 5" PIPE (10 Jaw pads & 20 Carbide Tipped Gripper Bolts)

\*Kwik Klamp 3 can also hold 5" pipe with additional jaw set (conversion kit) (See fig. 4 & 5).



1



2



3



4



5

## PVC CASING ELEVATORS

PVC casing elevators are a safe and efficient way to install bell end PVC well casing. All elevators are manufactured from 1/4" steel and come equipped with high quality, zinc plated chains. PVC elevators are sold in pairs; one to hold the casing, and one to lift. Additional elevators for pipe sizes from 1/2" – 16" are available on request.

PVC CASING ELEVATORS		
PART #	PIPE SIZE	RATING
5000070	2"	2,000 lbs.
5000073	3"	2,000 lbs.
5000075	4"	2,000 lbs.
5000078	6"	2,000 lbs.



# PVC PIPE SPECIFICATIONS

PVC SCHEDULE 40 & 80		PVC SCHEDULE 40				PVC SCHEDULE 80			
Nom. Pipe Size	O.D.	Average I.D.	Min. Wall	Nom. Wt. / Ft.	Max. W.P. PSI *	Average I.D.	Min. Wall	Nom. Wt. / Ft.	Max. W.P. PSI *
1/8"	0.405"	0.249"	0.068"	0.051	810	.203"	.095"	0.058	1230
1/4"	0.540"	0.344"	0.088"	0.086	780	.288"	.119"	0.100	1130
3/8"	0.675"	0.473"	0.091"	0.115	620	.407"	.126"	0.138	920
1/2"	0.840"	0.608"	0.109"	0.161	600	.528"	.147"	0.202	850
3/4"	1.050"	0.804"	0.113"	0.214	480	.724"	.154"	0.273	690
1"	1.315"	1.033"	0.133"	0.315	450	.935"	.179"	0.402	630
1 1/4"	1.660"	1.364"	0.140"	0.426	370	1.256"	.191"	0.554	520
1 1/2"	1.900"	1.592"	0.145"	0.509	330	1.476"	.200"	0.673	470
2"	2.375"	2.049"	0.154"	0.682	280	1.913"	.218"	0.932	400
2 1/2"	2.875"	2.445"	0.203"	1.076	300	2.289"	.276"	1.419	420
3"	3.500"	3.042"	0.216"	1.409	260	2.864"	.300"	1.903	370
3 1/2"	4.000"	3.520"	0.226"	1.697	240	3.326"	.318"	2.322	350
4"	4.500"	3.998"	0.237"	2.006	220	3.786"	.337"	2.782	350
5"	5.563"	5.017"	0.258"	2.726	190	4.767"	.375"	3.867	320
6"	6.625"	6.031"	0.280"	3.535	180	5.709"	.432"	5.313	290
8"	8.625"	7.943"	0.322"	5.305	160	7.565"	.500"	8.058	280
10"	10.750"	9.976"	0.365"	7.532	140	9.492"	.593"	11.956	230
12"	12.750"	11.890"	0.406"	9.949	130	11.294"	.687"	16.437	230
14"	14.000"	13.073"	0.437"	12.462	130	12.410"	.750"	19.790	220
16"	16.000"	14.940"	0.500"	16.286	130	14.214"	.843"	25.430	220
18"	18.000"	16.809"	0.562"	20.587	130	16.014"	.937"	31.830	220
20"	20.000"	18.743"	0.593"	24.183	120	17.814"	1.031"	40.091	220
24"	24.000"	22.544"	0.687"	33.652	120	21.418"	1.218"	56.882	210

SDR 21 & 26		SDR 21 - W.P. 200 P.S.I. (Water @ 73.4°F.)			SDR 26 - W.P. 160 P.S.I. (Water @ 73.4°F.)		
Nom. Pipe Size	O.D.	Average I.D.	Min. Wall	Nom. Wt. / Ft.	Average I.D.	Min. Wall	Nom. Wt. / Ft.
1"	1.315	1.029"	0.133"	0.333	0.935"	0.179"	0.402
1 1/4"	1.660	1.360"	0.140"	0.450	1.256"	0.191"	0.554
1 1/2"	1.900	1.590"	0.145"	0.537	1.476"	0.200"	0.673
2"	2.375	2.047"	0.154"	0.720	1.913"	0.218"	0.932
2 1/2"	2.875	2.445"	0.203"	1.136	2.289"	0.276"	1.419
3"	3.500	3.042"	0.216"	1.488	2.864"	0.300"	1.903
3 1/2"	4.000	3.596"	0.190"	1.443	3.672"	0.154"	1.183
4"	4.500	3.998"	0.237"	2.118	3.326"	0.318"	2.322
5"	5.563	5.016"	0.258"	2.874	3.786"	0.337"	2.782
6"	6.625	6.031"	0.280"	3.733	4.767"	0.375"	3.867
8"	8.625	7.942"	0.322"	5.619	5.709"	0.432"	5.313



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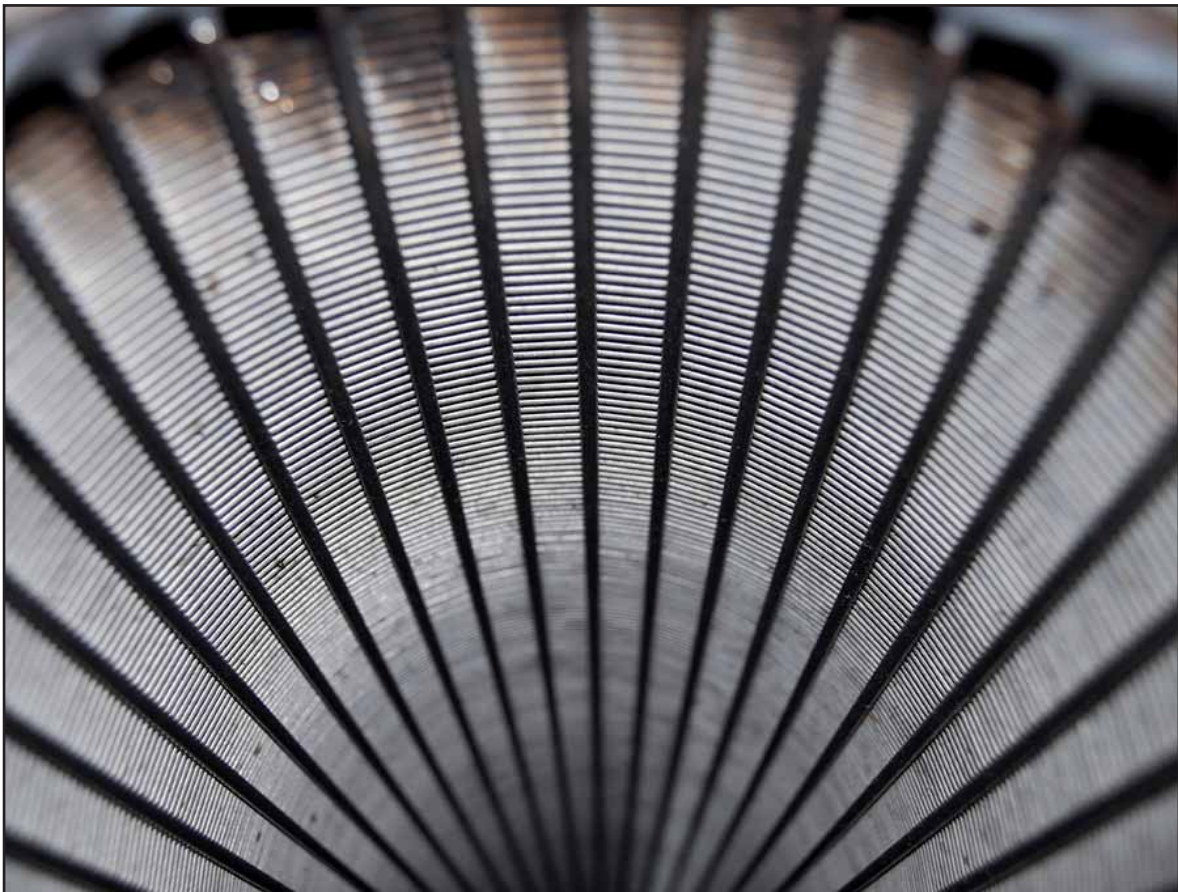
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## STAINLESS STEEL



Hole Products offers a complete line of stainless steel (SS) well screens, casings, and fittings in a wide range of sizes, lengths, and styles for use in water and environmental wells where performance and longevity are of the utmost importance. Screens, casings, and fittings are available in 304, 304L, 316, and 316L stainless steel. Low carbon steel screens for non-water well applications are available on request. For environmental applications screens and casings are available cleaned and bagged at an additional charge.

**Screens:** Stainless and low carbon steel screens are available in lengths to 40', slot sizes from 0.006" – 0.250", for setting in any depth, and in sizes from 1/2" – 36" in pipe (PS) and telescope (T) sizes. Telescope size screens install through the casing and commonly have a K-packer as the top fitting. Pipe size screens usually have weld rings at each end and attach directly to the casing. See below for end fitting options.

**Casings:** Stainless steel casing and low carbon steel casings are available in sizes from 1" PS – 12" PS, lengths to 20', and schedules 5, 10, and 40. See below for end fitting options.

### End Fittings:

- Flush Threads (Sch 40 and Sch 80)
- NPT Thread
- Weld Ring
- Plate Bottom
- Threaded Point
- Threaded Caps & Plugs
- Beveled Ends

### Other Fittings:

- K-Packers
- Shale Traps
- Centralizers
- Adapters
- Couplings
- Wash Down Valves
- Back Pressure Valves

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*



# STAINLESS STEEL ORDERING REFERENCE GUIDE

Refer to the ordering guide below when ordering stainless steel screens and casing.

Please contact your Hole Products representative for additional information and assistance ordering the stainless steel screen best suited for your specific needs.

STAINLESS STEEL SCREEN ORDERING REFERENCE GUIDE							
SS Type:	304		304L		316		316L
Construction:	Standard		Reinforced		Pipe Based		
Size:				Specify Pipe or Telescope Size:			
Length:							
Slot Size:							
End Fittings:	Top:		Bottom:				
Max Depth:							
Cleaned & Bagged: (Yes or No)							
Additional Info:							

STAINLESS STEEL CASING ORDERING REFERENCE GUIDE			
Size:			
Length:			
Schedule:			
End Fitting:	Top:		Bottom:
Additional Info:			

## SMALL DIAMETER SCREENS

Hole Products offer a wide range of small diameter water and environmental well screens in 304, 304L, 316, and 316L type stainless steel. These screens are available in sizes from 1/2" PS - 5" PS/6"T, lengths to 40', slot sizes from 0.006" – 0.250", and with a number of end fitting options. Please see below for additional details regarding small diameter water well and environmental stainless steel screens.

**Small Diameter Water Well Screens:** Small diameter water well screens and drive points are available in W60 and W90 models. W60 models are designed for setting in deeper depths and feature more open area, whereas W90 models are designed for shallower depths and feature less open area. Water well screens are measured by the actual length of the screen opening and commonly manufactured with NPT threads or weld rings (additional options are available).

**Small Diameter Environmental Well Screens:** Small diameter environmental well screens are available in E60 and E90 models. E60 models are designed for setting in deeper depths and feature more open area, whereas E90 models are designed for shallower depths and feature less open area. Environmental screens are measured shoulder to shoulder and are commonly manufactured with flush threads (additional options are available). Cleaning and bagging are available for an additional charge.

Small diameter prepacked and pipe-based stainless steel and low carbon steel screens are available on request in a wide range of sizes, lengths, and screen slot sizes.

Please contact your Hole Products representative for ordering assistance and information regarding custom screen design options and availability.



# SMALL DIAMETER WATER WELL SCREEN 304 STAINLESS STEEL

4" TELESCOPING SIZE										
MALE PIPE THREAD X FEMALE PIPE THREAD										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301250	7301255	7301255	7301265	7301270	7301275	7301280	7301285	7301290	7301295
4'	7301300	7301305	7300209	7300210	7300215	7300220	7300225	7300226	7300227	7301310
MALE PIPE THREAD X PLATE										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301315	7301320	7301325	7301330	7301019	7301201	7301014	7301335	7301015	7301340
4'	7301345	7301350	7301355	7301360	7301365	7301370	7301375	7301380	7301385	7301390
FEMALE PIPE THREAD X FEMALE PIPE THREAD										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301395	7301400	7301405	7301225	7301226	7301410	7301415	7301420	7301425	7301430
4'	7301435	7301440	7301445	7300233	7300234	7301450	7301455	7301460	7301465	7301470
FEMALE PIPE THREAD X PLATE										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301475	7301480	7301485	7301490	7301495	7301500	7301505	7301510	7301515	7301520
4'	7301525	7300229	7301530	7300230	7300235	7300236	7301535	7301540	7301545	7301550



# SMALL DIAMETER WATER WELL SCREEN 304 STAINLESS STEEL

5" TELESCOPING SIZE										
MALE PIPE THREAD X FEMALE PIPE THREAD										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301560	7300240	7301565	7300245	7300250	7300251	7301570	7300253	7301575	7300254
4'	7301580	7301585	7300262	7300263	7300264	7300345	7301590	7300265	7301595	7301600
MALE PIPE THREAD X PLATE										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301605	7301610	7301615	7301620	7301625	7301630	7301635	7301640	7301645	7301650
4'	7301655	7301660	7301665	7301670	7301675	7301680	7301685	7301690	7301695	7301700
FEMALE PIPE THREAD X FEMALE PIPE THREAD										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7601705	7301710	7301715	7301720	7301725	7301730	7301735	7301740	7301745	7301750
4'	7301755	7301760	7301765	7300015	7300020	7301770	7301775	7301780	7301785	7301790
FEMALE PIPE THREAD X PLATE										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301795	7301800	7301805	7301810	7301815	7301820	7301825	7301830	7301835	7301840
4'	7301845	7301850	7301855	7301860	7301865	7301870	7301875	7301880	7301885	7301890



# SMALL DIAMETER WATER WELL SCREEN 304 STAINLESS STEEL

6" TELESCOPING SIZE										
MALE PIPE THREAD X FEMALE PIPE THREAD										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7300030	7300031	7300035	7300040	7300045	7300050	7300055	7300060	7300065	7300070
4'	7300075	7300080	7300025	7300005	7300085	7300010	7300090	7300095	7300100	7301895
MALE PIPE THREAD X PLATE										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7300103	7301900	7300104	7300105	7300110	7300115	7300120	7300125	7301905	7301910
4'	7301915	7301920	7301925	7301128	7301129	7300194	7301930	7300192	7301935	7301940
FEMALE PIPE THREAD X FEMALE PIPE THREAD										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7301945	7301950	7301955	7301960	7301965	7301970	7301975	7300172	7301980	7301985
4'	73001900	7301995	7302000	7302005	7302010	7302015	7302020	7302025	7302030	7302035
FEMALE PIPE THREAD X PLATE										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7302040	7302045	7302050	7300155	7300160	7300165	7302055	7300170	7302060	7302065
4'	7302070	7302075	7302080	7302085	7302090	7302095	7302100	7302105	7302110	7302115
K-PACKER X PLATE										
LENGTH	SLOT SIZE									
	.006	.007	.008	.010	.012	.015	.018	.020	.025	.030
3'	7300127	7300129	7300128	7300130	7300135	7300140	7300145	7300150	7300156	7300157
4'	7302120	7302125	7302130	7302135	7302140	7302145	7302150	7300074	7302155	7302160

## WATER WELL DRIVEPOINTS

Water well drive points can be used to install wells in shallow water tables 25' or less. Stainless steel water well drive points are available in either 1 1/4" or 2" diameters and lengths from 2' - 5'.

WATER WELL DRIVE POINTS*				
PART #	PIPE SIZE	LENGTH	FITTING	SLOT SIZE
7301230	1 1/4"	3'	MALE PIPE THREAD X POINT	.007
7301187	1 1/4"	5'	MALE PIPE THREAD X POINT	.010
7300336	2"	4'	MALE PIPE THREAD X POINT	.012
7300340	2"	4'	MALE PIPE THREAD X POINT	.015
7300350	2"	4'	MALE PIPE THREAD X POINT	.020

\*Additional sizes, lengths, and slot sizes are available.

## SMALL DIAMETER ENVIRONMENTAL SCREEN 304 STAINLESS STEEL

2" PIPE SIZE "E60"					
	MALE PIPE THREAD X FEMALE PIPE THREAD			MALE X FEMALE FLUSH THREAD JOINT	
LENGTH	SLOT SIZE			SLOT SIZE	
	.010	.020	.050	.010	.020
5'	7300288	7300271	7302170	7300288	7300271
10'	7300283	7301238	7302185	7300283	7301238
	MALE PIPE THREAD X PLATE			MALE FLUSH JOINT X PLATE	
LENGTH	SLOT SIZE			SLOT SIZE	
	.010	.020	.050	.010	.020
5'	7300297	7300272	7302195	7300297	7300272
10'	7300280	7300274	7302210	7300280	7300274
	FEMALE PIPE THREAD X PLATE			FEMALE FLUSH JOINT X PLATE	
LENGTH	SLOT SIZE			SLOT SIZE	
	.010	.020	.050	.010	.020
5'	7300277	7300276	7302220	7300277	7300276
10'	7300278	7300275	7302235	7300278	7300275

4" PIPE SIZE "E60"						
	MALE PIPE THREAD X FEMALE PIPE THREAD			MALE X FEMALE FLUSH THREAD JOINT		
LENGTH	SLOT SIZE			SLOT SIZE		
	.010	.020	.050	.010	.020	.050
5'	7302240	7302245	7302250	7300402	7300405	7301153
10'	7302255	7301154	7302260	7300407	7300409	7301152
15'	7302265	7302270	7302275	-----	-----	-----
	MALE PIPE THREAD X PLATE			MALE FLUSH JOINT X PLATE		
LENGTH	SLOT SIZE			SLOT SIZE		
	.010	.020	.050	.010	.020	.050
5'	7302280	7302285	7302290	7300411	7300413	-----
10'	7302295	7302300	7302305	7300414	7300417	-----
15'	7301205	7302310	7302315	-----	-----	-----
	FEMALE PIPE THREAD X PLATE			FEMALE FLUSH JOINT X PLATE		
LENGTH	SLOT SIZE			SLOT SIZE		
	.010	.020	.050	.010	.020	.050
5'	7302320	7302325	7302330	7300419	7300422	-----
10'	7302335	7302340	7302345	7300423	7300424	-----
15'	7302350	7302355	7302360	-----	-----	-----

# SMALL DIAMETER ENVIRONMENTAL SCREEN 304 STAINLESS STEEL

2" PIPE SIZE "E90"				
	MALE PIPE THREAD X FEMALE PIPE THREAD		MALE X FEMALE FLUSH THREAD JOINT	
LENGTH	SLOT SIZE		SLOT SIZE	
	.010	.020	.010	.020
5'	7302231	7302232	7300285	7300295
10'	7302371	7302370	7300289	7300290
	MALE PIPE THREAD X PLATE		MALE FLUSH JOINT X PLATE	
LENGTH	SLOT SIZE		SLOT SIZE	
	.010	.020	.010	.020
5'	7302365	7302366	7300297	7300298
10'	7302241	7302242	7302375	7302385
	FEMALE PIPE THREAD X PLATE		FEMALE FLUSH JOINT X PLATE	
LENGTH	SLOT SIZE		SLOT SIZE	
	.010	.020	.010	.020
5'	7302251	7302380	7300291	7300281
10'	7302261	7302262	7300286	7300292

4" PIPE SIZE "E90"				
	MALE PIPE THREAD X FEMALE PIPE THREAD		MALE X FEMALE FLUSH THREAD JOINT	
LENGTH	SLOT SIZE		SLOT SIZE	
	.010	.020	.010	.020
5'	7302390	7302395	7300429	7300401
10'	7302400	7302412	7300425	7301154
	MALE PIPE THREAD X PLATE		MALE FLUSH JOINT X PLATE	
LENGTH	SLOT SIZE		SLOT SIZE	
	.010	.020	.010	.020
5'	7302405	7302410	7300416	7300415
10'	7302415	7302420	7300412	7300410
	FEMALE PIPE THREAD X PLATE		FEMALE FLUSH JOINT X PLATE	
LENGTH	SLOT SIZE		SLOT SIZE	
	.010	.020	.010	.020
5'	7301009	7302430	7302425	7300406
10'	7302435	7302440	7300427	7300246

## LARGE DIAMETER SCREENS

Hole Products offers a complete line of large diameter well screens in 304, 304L, 316, and 316L type stainless and low carbon steel. These screens are available in sizes from 6" - 36" pipe size (telescope sizes also available), lengths to 40', slot sizes from 0.006" – 0.250", with a wide range of depth capacities, and with a number of end fitting options.

Due to the vast number of large diameter stainless steel screen options, part numbers are not shown in the catalog in this section of the catalog.

Please contact your Hole Products representative for screen design and ordering assistance.

STAINLESS STEEL SCREEN ORDERING REFERENCE GUIDE							
SS Type:	304		304L		316		316L
Construction:	Standard		Reinforced		Pipe Based		
Size:				Specify Pipe or Telescope Size:			
Length:							
Slot Size:							
End Fittings:	Top:				Bottom:		
Max Depth:							
Cleaned & Bagged: (Yes or No)							
Additional Info:							





## 304 STAINLESS STEEL CASING



Hole Products offers a full line of premium stainless steel casings with a number of end fitting options. Casings are offered in a variety of sizes, schedules, lengths, and with a variety of end fitting options.

Standard casing is available in 304 stainless steel and offered with the following options:

- Sizes from 1" - 12" pipe size (PS)
- Schedules 5, 10, and 40
- Lengths to 20'
- End Fitting Options:
  - Flush Threads (Sch 40 and Sch 80)
  - NPT Thread
  - Weld Ring
  - Plate Bottom

Please contact your Hole Products representative for additional details and stainless steel casing ordering assistance.

# 304 STAINLESS STEEL CASING SPECIFICATIONS

304 STAINLESS STEEL CASING					
NOMINAL DIAMETER	SCHEDULE	O.D.	I.D.	WEIGHT/ FT (lbs.)	COLLAPSE PSI
1" PS	5	1.315"	1.185"	.88	2,445
	10		1.097"	1.42	4,795
	40		1.049"	1.70	6,122
1 1/4" PS	5	1.660"	1.530"	1.12	1,362
	10		1.442"	1.82	3,271
	40		1.380"	2.29	4,736
1 1/2" PS	5	1.900"	1.770"	1.29	1,074
	10		1.682"	2.10	2,704
	40		1.610"	2.74	4,177
2" PS	5	2.375"	2.245"	1.62	650
	10		2.157"	2.66	1,824
	40		2.067"	3.69	3,208
3" PS	5	3.500"	3.334"	3.06	468
	10		3.260"	4.37	1,050
	40		3.068"	7.65	2,972
4" PS	5	4.500"	4.334"	3.95	253
	10		4.260"	5.67	614
	40		4.026"	10.9	2,303
5" PS	5	5.563"	5.345"	6.41	295
	10		2.295"	7.84	486
	40		5.047"	14.75	1,854
6" PS	5	6.625"	6.407"	7.66	189
	10		6.357"	9.38	319
	40		6.065"	19.15	1,570
8" PS	10	8.625"	8.329"	13.53	210
	40		7.981"	28.82	1,243
10" PS	10	10.75"	10.420"	18.83	157
	40		10.020"	40.86	1,030
12" PS	10	12.75"	12.390"	24.39	126
	40		12.000"	50.03	762

STAINLESS STEEL CASING ORDERING REFERENCE GUIDE			
Size:			
Length:			
Schedule:			
End Fitting:	Top:		Bottom:
Additional Info:			

## STAINLESS STEEL FITTINGS



Most stainless steel well screen installations involve the use of a few standard fitting combinations. Telescope screens commonly use a k-packer on the top of the screen and a plate or point on the bottom. Pipe size screens attach directly to the casing, and often feature a weld ring on the top and a plate or point on the bottom. Environmental screens generally have flush threads on the top and bottom. Many other fittings, including centralizers and shale traps, are also commonly used in well installations.

Hole Products offers a variety of stainless steel fittings commonly used in well screen installations in a wide range of sizes and styles. Low carbon steel fittings are also available. Please refer to the Low Carbon Steel section of this catalog for additional details.

Available fittings include the following:

### End Fittings:

- Flush Threads (Sch 40 and Sch 80)
- NPT Thread
- Weld Ring
- Plate Bottom
- Threaded Point
- Threaded Caps & Plugs
- Locking Cap
- Beveled Ends

### Other Fittings:

- K-Packers
- Shale Traps
- Centralizers
- Adapters
- Couplings
- Wash Down Valves
- Back Pressure Valves

Please contact your Hole Products representative for ordering assistance.

# STAINLESS STEEL FITTINGS CAPS, PLUGS, ADAPTERS AND COUPLINGS

Hole Products offers a wide range of caps, plugs, adapters, and couplings for use in stainless steel well installations.

Our standard fittings include the following options:

- Size from 3/4" to 6" (larger sizes are available on request)
- Schedule 40 and 80 flush threads
- NPT threads

When ordering adapters, please make selections for both the top and bottom of the adapter.

Please contact your Hole Products representative for additional information and assistance ordering the caps, plugs, adapters, and couplings best suited for your specific needs.

CAPS, PLUGS, ADAPTERS & COUPLINGS ORDERING REFERENCE GUIDE		
	TOP	BOTTOM
Size: (Specify Pipe or Telescope)		
Threads:		
Type: (Schedule 40 or Schedule 80)		
Male or Female Thread:		
Additional Info:		

## SHALE TRAPS

Hole Products offers a variety of neoprene rubber shale traps for risers ranging in size from 2" – 12" and borehole sizes up to 20". Shale traps are offered in soft or hard rubber and come standard with a stainless steel clamp for attaching to the well riser.

Shale traps are designed to support a grout column above the producing zone to seal between the casing and the bore hole when grouting.

Please contact your Hole Products representative for additional information.

### STANDARD SHALE TRAPS

STANDARD SHALE TRAPS		
PART #	RISER/ CASING SIZE	MAXIMUM BOREHOLE SIZE
7001070	2"	5"
7001051	4"	7"
7001040	6"	10"



### SUPREME SHALE TRAPS

Supreme shale traps have a thicker wall section than standard shale traps packers.

SUPREME SHALE TRAPS		
PART #	RISER/ CASING SIZE	MAXIMUM BOREHOLE SIZE
7001075	2"	4 1/2"
7001080	2"	5"
7001061	2"	6 1/2"
7001065	3"	6"
7001090	4"	7"
7001045	4"	8"
7000195	4"	9 1/2"
7001095	5"	7"
7001050	5"	8"
7001100	5"	9"
7001105	6"	10 1/2"
7001042	8"	14"
7001110	10"	16 1/4"
7001046	12"	20"



## K-PACKERS

K-packers are designed to provide a sand tight seal between the well screen and casing and are typically used on the top of telescope size screens in the water well, construction, and environmental drilling industries.

Hole Products offers a wide range of neoprene rubber K-packers. Our standard K-packers are available in 2 styles:

- Right Hand x Right Hand Coupling
- Weld On

Custom K-packers are available with the following options:

- Right Hand x Left Hand Coupling
- Blank Style - Designed for Gluing to PVC
- Stainless Steel Construction
- Sizes Up to 24"

Please contact your Hole Products representative for additional details and assistance selecting the right K-packer for your specific well installation.



THREADED



WELD ON



K-PACKERS				
SIZE OF CONNECTION	NOMINAL CASING DIAMETER	NOTES	RIGHT BY RIGHT PART #	WELD ON PART #
1 1/4"	2"	-----	7000004	-----
	3"	-----	7001063	-----
	4"	-----	7000065	-----
2"	3"	-----	7000070	-----
	4"	-----	7701060	-----
	4 1/2"	SDR 17	7701061	-----
	5"	-----	7701064	-----
2 1/2"	4"	-----	7000080	-----
	4"	SDR 17	7000085	-----
	5"	-----	7000090	-----
	5"	SDR 17	7000016	-----
3"	4"	-----	7000005	-----
	4"	SDR 26	7000095	-----
	4 1/2"	SDR 17	7000100	-----
	4 1/2"	-----	7000006	-----
	5"	-----	7000011	-----
	5"	SDR 17	7000105	-----
	6"	-----	7000010	-----
4"	5"	-----	7000035	7000115
	5"	SDR 26	-----	7000120
	6"	-----	7000020	7000015
	8"	-----	7001009	7000125
5"	6"	-----	7000025	7000030
	8"	-----	7001010	7000130
6"	8"	-----	7001002	7000135
	10"	-----	7000060	7000140
7.5"	8"	-----	-----	7000145
8"	10"	.375 W	-----	7000150
	10"	.250 W	-----	7000155
	12"	.375 W	-----	7000160
	12"	.250 W	-----	7000165
	14"	.375 W - 16" LONG	-----	7000170
	14"	.250 W	-----	7000175
9.5"	10"	.375 W	-----	7001015
10"	12"	-----	-----	7001021
	12"	.250 W	-----	7000180
	14"	.375 W	-----	7001020
11 1/4"	12"	-----	-----	7001057
12"	14"	.375 W	-----	7001030
	14"	.250 W	-----	7001056
	16"	.375 W	-----	7001034
	16"	.250 W	-----	7000185
14"	16"	.375 W	-----	7001005
	16"	.250 W	-----	7000190
16"	18"	-----	-----	7001036

## CENTRALIZERS

Hole Products' adjustable centralizers easily attach to screens and risers to prevent off center well placement. All centralizers are constructed of high quality, corrosion resistant stainless steel, and they will not contaminate the well. Centralizers are available to fit screen/casing ranging in size from 3/4" through 12" and adjust to fit boreholes up to 28".

CENTRALIZERS		
PART #	SCREEN/CASING SIZES	HOLE DIAMETER
5600008	3/4"	Up to 11"
5600009	1"	Up to 11"
5600004	1 1/2"	Up to 12"
5600010	2"	Up to 12"
5600017	2 1/2"	Up to 13"
5600011	3"	Up to 13"
5600005	4"	Up to 12"
5600001	4"	Up to 16"
5600013	5"	Up to 17"
5600015	6"	Up to 20"
5600018	8"	Up to 24"
5600020	10"	Up to 24"
5600025	12"	Up to 26"
5600035	14"	Up to 28"





# SCREEN SPECIFICATIONS



For shallow and medium-depth wells. High flow rates due to large open area.



For medium-depth and deep wells. Greater collapse strength is achieved with the use of heavy duty Vee-Wire®.



For deep wells. Very high strength as screen is supported by a perforated pipe.

STANDARD SCREEN				
NOMINAL DIAMETER	I.D.	O.D.	WT. LBS./FT. SHALLOW	
2"	2.0	2.4	2.3	
3 1/2"	3.1	3.5	2.8	
4"	3.5	4.0	3.1	
4 1/2"	4.0	4.5	3.7	
5"	4.5	5.0	4.0	
5 1/2"	5.0	5.5	4.5	
6 5/8"	6.1	6.6	5.0	
7"	6.5	7.0	6.7	
7 5/8"	7.0	7.6	7.4	
8 5/8"	8.1	8.6	8.3	
9 5/8"	9.1	9.6	9.4	
10 3/4"	10.1	10.8	11.5	
12"	12.0	12.8	14.5	
14"	13.2	14.0	15.7	
16"	15.2	16.0	20.0	
18"	17.2	18.0	25.7	
20"	19.1	20.0	28.9	
24"	23.0	24.0	39.9	
30"	28.7	30.0	49.1	
32"	30.7	32.0	53.1	

REINFORCED SCREEN				
NOMINAL DIAMETER	I.D.	O.D.	WT. LBS./FT. SHALLOW	
4 1/2"	4.0	4.5	4.5	
5"	4.5	5.0	5.0	
5 1/2"	5.0	5.5	6.0	
6 5/8"	6.1	6.6	7.3	
7"	6.5	7.0	7.9	
7 5/8"	7.0	7.6	8.7	
8 5/8"	8.1	8.6	10.8	
9 5/8"	9.1	9.6	14.2	
10 3/4"	10.1	10.8	15.8	
12"	12.0	12.8	23.2	
14"	13.2	14.0	25.3	
16"	15.2	16.0	28.8	
18"	17.2	18.0	32.0	

PIPE - BASED SCREEN				
NOMINAL DIAMETER	I.D.	WALL THK.	O.D.	WT. LBS./FT. SHALLOW
4 1/2"	4.5	.25	5.1	14.1
5 1/2"	5.5	.25	6.1	17.5
6 5/8"	6.6	.29	7.2	23.5
8 5/8"	8.6	.35	9.2	34.3
9 5/8"	9.6	.35	10.2	37.6
10 3/4"	10.8	.40	11.3	46.4
13 3/8"	13.4	.48	13.9	61.8



# HOLE SAMPLING & MONITORING

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## HOLE SAMPLING AND MONITORING



Hole Products offers a wide range of environmental and geotechnical sampling and monitoring equipment to collect samples, obtain information, and monitor sub surface conditions.

Sampling tools are designed to recover two distinct types of samples; disturbed or relatively undisturbed samples.

A disturbed sample is one in which the soil has been changed sufficiently that tests of structural properties of the soil will not be representative of their natural conditions. Disturbed samples are generally used in environmental applications. Examples of tooling used to collect disturbed samples are split spoons, Modified California Samplers, and similar style tooling.

A relatively undisturbed sample is one where the condition of the soil in the sample is close enough to the conditions of the natural soil to allow tests of structural properties or detailed laboratory analysis. Relatively undisturbed samples are commonly used in geotechnical and environmental applications. Examples of tooling used to collect relatively undisturbed samples are Shelby tubes, Piston Samplers, and similar style tooling.

Monitoring equipment is used to obtain information about and monitor subsurface conditions. Examples of monitoring equipment are inclinometer casing, piezometers, water level indicators, down-hole cameras, and similar equipment.

Please contact your Hole Products representative for product specific information and availability of additional hole sampling and monitoring equipment.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

# STANDARD SPLIT SPOON SAMPLER

Standard split spoon samplers are designed for in-hole sampling and are generally driven using a safety hammer. Standard samplers feature a ball check valve to prevent sample wash-out during removal of the sampler from the hole and are designed to accommodate brass, stainless steel, and plastic liners. Couplers can be used to join two split barrels together to extend the sampler's length.




Standard split spoon samplers feature 8 tpi threads on each end, thus the head and shoe can be swapped end for end.

STANDARD SPLIT SPOON SAMPLER										
SAMPLER		LENGTH	TPI	ROD CONNECTION	COMPLETE ASSEMBLY	HEAD ASSEMBLY	SPLIT BARREL	COUPLER	SHOE TYPE	
O.D.	I.D.								BLUNT	SHARP
2"	1 1/2"	18"	8	AW	4150120	4150130	4150033	4150029	4150020	4150140
				AWJ	4150125	4150135				
2"	1 1/2"	24"	8	AW	4150014	4150130	4150085	4150029	4150020	4150140
				AWJ	4150028	4150135				
2 1/2"	2"	18"	8	AW	4150150	4150160	4150170	4150105	4150175	4150185
				AWJ	4150155	4150113				
2 1/2"	2"	24"	8	AW	4150190	4150160	4150155	4150105	4150175	4150185
				AWJ	4150195	4150113				
3"	2 1/2"	18"	8	AW	4150215	4150405	4150220	4150062	4150240	4150245
				AWJ	4150220	4150410				
3"	2 1/2"	24"	8	AW	4150036	4150405	4150250	4150062	4150240	4150245
				AWJ	4150092	4150410				
				NW	4150265	4150285				
				NWJ	4150027	4150290				
STANDARD SPLIT SPOON SAMPLER - STAINLESS STEEL										
SAMPLER		LENGTH	TPI	ROD CONNECTION	COMPLETE ASSEMBLY	HEAD ASSEMBLY	SPLIT BARREL	COUPLER	SHOE TYPE	
O.D.	I.D.								BLUNT	SHARP
2"	1 1/2"	24"	8	AW	4150295	4150300	4150310	4150029	4150320	4150330
3"	2 1/2"	24"	8	AW	4150031	4150305	4150315	4150062	4150325	4150335
SPLIT BARREL										
HEAD							SHOE			
										

## HEAVY DUTY "LYNAC" SPLIT SPOON SAMPLER

The Lynac sampler is a heavy duty, heat treated version of the standard split spoon sampler, designed to perform in the most demanding driving conditions. Features include coarse threads in the sampler head to speed assembly and disassembly, heat treated shoes to increase durability, and a ball check valve to prevent sample wash-out during removal of the sampler from the hole.

Lynac split spoon samplers feature 8 tpi threads on the shoe end and coarse threads on the head. Heads are interchangeable with Nordic split spoon samplers.



HEAVY DUTY "LYNAC" SPLIT SPOON SAMPLER									
SAMPLER		LENGTH	TPI	ROD CONNECTION	COMPLETE ASSEMBLY	HEAD	TUBE	SHOE	
O.D.	I.D.							BLUNT	SHARP
2"	1 1/2"	18"	8	AW	4150015	4150045	4150086	4150020	4150350
				AWJ	4150340	4150040			
2"	1 1/2"	24"	8	AW	4150017	4150045	4150025	4150020	4150350
				AWJ	4150016	4150040			
SPLIT BARREL									
HEAD					SHOE*				

\*Shoes designed to accommodate trap valves and spring or basket retainers.

## NORDIC SPLIT SPOON SAMPLER

The Nordic sampler is a heavy duty, heat treated version of the standard split spoon sampler, designed to perform in the most demanding driving conditions. Features include coarse threads in the sampler head to speed assembly and disassembly, heat treated shoes to increase durability, and ball check valve to prevent sample wash-out during removal of the sampler from the hole.

Nordic split spoon samplers feature 4 tpi threads on the shoe end and coarse threads on the head. Heads are interchangeable with Lynac split spoon samplers.

NORDIC SPLIT SPOON SAMPLER									
SAMPLER		LENGTH	TPI	ROD CONNECTION	COMPLETE ASSEMBLY	HEAD	TUBE	SHOE	
O.D.	I.D.							BLUNT	SHARP
2"	1 1/2"	18"	4	AW	4150360	4150045	4150032	4150035	4150038
				AWJ	4150018	4150040			
2"	1 1/2"	24"	4	AW	4150023	4150045	4150030	4150035	4150038
				AWJ	4150026	4150040			
3"	2 1/2"	18"	4	AW	4150365	4150375	4150385	4150112	4150390
				AWJ	4150370	4150380			
3"	2 1/2"	24"	4	AW	4150395	4150405	4150415	4150112	4150390
				AWJ	4150400	4150410			
SPLIT BARREL									
HEAD						SHOE			

## SPLIT SPOON LINERS & CAPS

Split spoon liners can be used in conjunction with split spoons to minimize cross contamination between samples and to facilitate transportation of samples to laboratories. Plastic end caps slide onto each end of the liner to keep the sample intact.

PLASTIC LINERS				
LENGTH	SAMPLER SIZE			
	1 1/2"	2"	2 1/2"	3"
18"	4150455	4150460	4150465	4150064
24"	4150470	4150066	4150475	4150069
36"	4150780	4150075	4150785	4150480



BRASS SPLIT SPOON LINERS				
LENGTH	SAMPLER SIZE			
	1 1/2"	2"	2 1/2"	3"
6"	4150067	4150072	4150065	4150485



SPLIT SPOON LINER CAPS				
SIZE	SAMPLER SIZE			
	1 1/2"	2"	2 1/2"	3"
CAP	4150490	4150495	4150021	4150009



## RETAINER BASKETS

Available in soft, medium, and hard plastic. Retainer baskets have flexible fingers that open to allow the sample into the tube, then close to retain the sample as the sampler is removed.



RETAINER BASKET			
SAMPLER SIZE	SOFT*	MEDIUM*	HARD*
2"	4150005	4150012	4150010
2.5"	4150077	4150500	4150059
3"	4150061	4150505	4150060

\*Plastic hardness to correspond with the hardness of the soil being sampled. Soft for softer formations, medium for medium formations and hard for hard formations.



## SPLIT SPOON SPACER RINGS

Spacer rings are installed in the slot of the sampler shoe when retainers or trap valves are not being used.

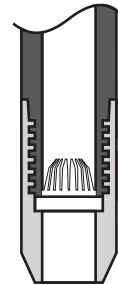
SPACER RINGS	
SAMPLER SIZE	PART #
2" SPACER	4150063
3" SPACER	4150101



## STEEL SPRING TYPE SAMPLE RETAINERS

Spring type retainers work well in coarse sands and small gravels. They feature spring fingers that gently press against the sample to retain it until the sampler is removed.

STEEL SPRING TYPE SAMPLE RETAINERS	
SAMPLER SIZE	PART #
2"	4150102



## TRAP VALVES

Trap valves are inserted in open shoes to retain thin mud and other watery samples.

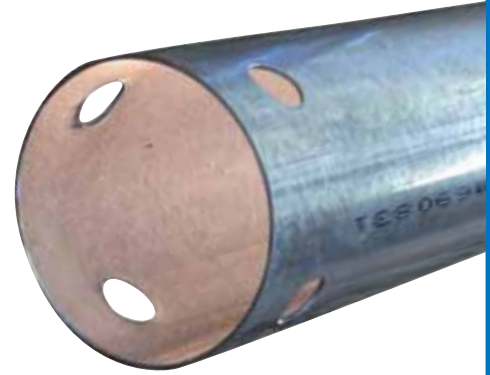
TRAP VALVES	
SAMPLER SIZE	PART #
2.0"	4150013
2.5"	4150103
3.0"	4150104



## SHELBY TUBES, HEADS, CAPS & SEALS

Shelby tube samplers are designed for taking undisturbed soil samples. Shelby tube samplers consist of a head section with check valve, rod box connection, and thin wall sample tube. The ball valve feature provides positive vacuum control. The thin wall tubes are designed to be removed from the sample head and used to transport the sample.

SHELBY TUBES*				
SIZE O.D.	LENGTH	GALVANIZED TUBE	STEEL TUBE	CAP
2"	18"	4100120	4100150	4100033
2"	24"	4100106	4100155	
2"	30"	4100006	4100017	
2"	36"	4100125	4100108	
3"	18"	4100019	4100160	4100035
3"	24"	4100130	4100003	
3"	30"	4100005	4100004	
3"	36"	4100007	4100165	
5"	18"	4100135	4100170	4100018
5"	24"	4100140	4100175	
5"	30"	4100109	4100180	
5"	36"	4100145	4100104	



\* Other diameters, lengths, and heavy wall tubes are available on request.

SHELBY TUBE HEADS		
SHELBY TUBE SIZE	HEAD	ROD CONNECTION
2"	4100011	AW
	4100014	AWJ
3"	4100010	AW
	4100015	AWJ
	4100078	NW
	4100016	NWJ
5"	4100185	NW
	4100225	NWJ



REPLACEMENT SCREWS	
SHELBY TUBE SIZE	PART#
2" FLAT HEAD	4100075
3" HEX	4100020
3" FLAT HEAD	4100021



SOIL SEALS	
FITS INTO	PART#
2"	4100190
3"	4100041
5"	4100105



## SEALING WAX

Sealing wax is used to seal samples in tubes and jars before shipping.

SEALING WAX	
DESCRIPTION	PART #
SEALING WAX	4100000



## SAMPLE JARS

Hole Products offers 8 and 16 oz. glass sample jars with lids for containment of soil or water samples. Sample jar, are by the case.

SAMPLE JARS		
DESCRIPTION	JAR PART #	LID PART #
8 OZ GLASS (12/CASE)	4150050	4150051
8 OZ GLASS (24/CASE)	4150055	4150051
16 OZ PLASTIC (12/CASE)	4150080	4150053



## VANE SHEAR TEST KIT

The Vane Shear Test Kit has everything needed to obtain fast, accurate "in-place" shear readings to depths of 100'. Two torque wrenches are included in the kit with a high and low range for shearing soft, cohesive materials, or heavier clays. Designed to accept standard AW drill rod.

Please contact your Hole Products representative for additional details and ordering assistance.



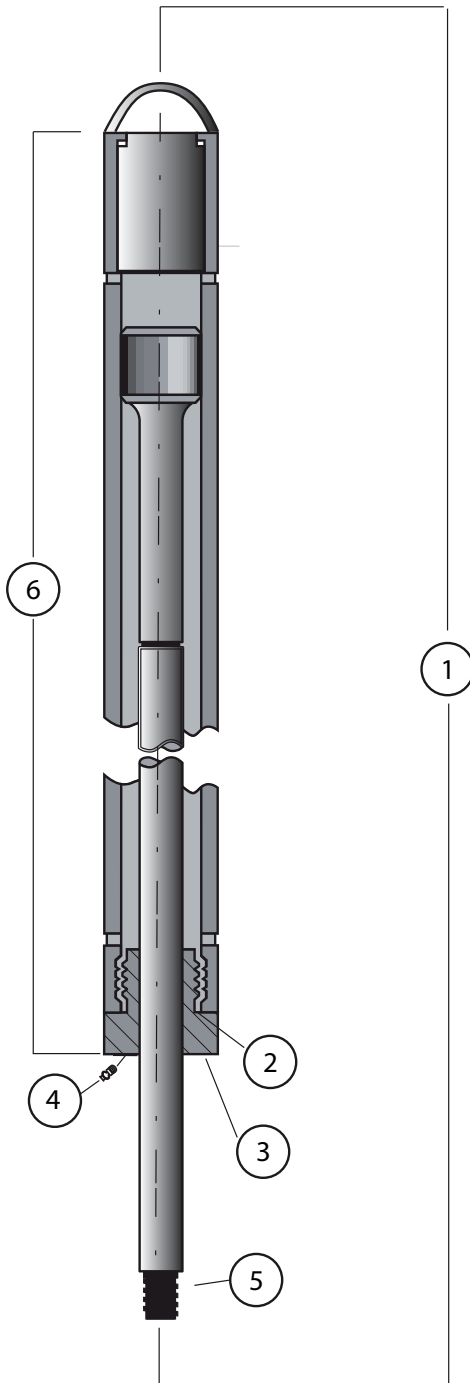
## SAFETY HAMMER

Hole Products offers quality, one piece drive hammers for safe and accurate driving of sampling equipment.

The one piece stem and impact block provide durability and accuracy, and the fully enclosed hammer action offers maximum safety.

140 lb hammers are available with AW or AWJ rod connections.

Additional hammers are available on request. Please contact your Hole Products representative for additional details and ordering assistance.



SAFETY HAMMER		
ITEM #	PART #	DESCRIPTION
1	4160000	AW COMPLETE 140 LB. SAFETY HAMMER
	4160020	AWJ COMPLETE 140 LB. SAFETY HAMMER
2	4160055	WASHER
3	4160060	AW ANVIL RETAINER
	4160007	AWJ ANVIL RETAINER
4	4160025	SCREW
5	4160005	AW STEM/IMPACT
	4160006	AWJ STEM/IMPACT
6	4160065	SAFETY HAMMER BARREL

## SOIL SAMPLERS

### Stationary Piston Samplers

Stationary piston samplers are commonly used to return undisturbed samples in soft soils. These samplers are designed with a piston that remains stationary as the outer tube of the sampler is pushed ahead into the formation. The suction created by the piston draws the sample into the outer tube. During operation, the piston closes the entrance of the sample tube, helping to eliminate the chance of contamination prior to pressing the tube into the formation.

Additional sampler sizes and rod connections are available on request.

Please contact your Hole Products representative for details.

PISTON SOIL SAMPLER	
PART #	DESCRIPTION
4100058	PISTON SAMPLER - 3" O.D. X 2 7/8" I.D. (AWJ BOX CONNECTION)
4100195	HEAD
4100039	CLAMP SPRING
4100038	CONE CLAMP ASSEMBLY
4100210	PLUG
4100079	SOCKET HEAD CAP SCREW
4100044	PACKING CUP (2 REQ'D)
4100050	PISTON SPACER
4100049	PISTON
4100051	LOCK WASHER
4100052	LOCKNUT
4100205	STEEL TUBE - 30"
4100210	BRASS TUBE - 30"
4100215	STAINLESS STEEL TUBE - 30"
4100037	PISTON ROD - MASTER
4100055	ACTUATING ROD - 2'
4100048	ACTUATING ROD - 5'
4100065	ACTUATING ROD - 10'



## SOIL SAMPLERS

### Modified California Sampler

The Modified California Sampler is a split-barrel sampler adapted to allow installation of 12" or 18" rings or liners. The most common size is 3" O.D. x 2.50" I.D. with a shoe bore of 2.38". They often include a 6" long non-split section of barrel above the split barrel section. This 6" long section is a "sluff barrel" and is intended to receive loose soil (sluff) which may have been on the bottom of the bore hole prior to driving of the sampler. Sluff barrels may be 2.50" I.D. allowing for use of a 6" long liner or 2.38" I.D. which eliminates the use of a liner.

Please contact your Hole Products representative for additional information and/or ordering assistance.



### Pitcher Sampler

The Pitcher Sampler combines a thin-walled tube (protruding out the bottom) with a cutter barrel. The tube is on a spring-loaded mechanism that will compress if hard soils are encountered. The tube stays extended in soft soils but is pushed back into the cutter barrel in hard soils. In hard soils the cutter advances the hole, and the tube is protected against buckling.

Please contact your Hole Products representative for additional information and/or ordering assistance.

### Hydraulic Piston Sampler

The Hydraulic Piston Sampler uses water or air pressure to advance the sample tube. As pressure is applied, the piston in the head of the assembly forces the thin wall sample tube into the formation to collect the sample. When the sampler reaches its maximum travel, the water or air used for pressing the piston returns immediately to the surface, signalling the operator the sample tube has been pushed to its maximum depth.

Please contact your Hole Products representative for additional information and ordering assistance.



## HAND AUGERS

Hand augers are commonly used for obtaining disturbed soil samples at or near the surface and for boring to depths where samples may be obtained with a soil sampler or soil core sampler.



3 1/4" QUICK CONNECT HAND AUGER	
PART #	DESCRIPTION
4050036	3 1/4" HAND AUGER ASSEMBLY
4050000	3 1/4" AUGER HEAD WITH CONNECTOR
4050020	TEE HANDLE WITH CONNECTOR
4050010	36" EXTENSION WITH CONNECTOR
4050015	HAND AUGER QUICK CONNECT PIN
4050005	3 1/4" MUD (WINDOW) AUGER HEAD

## RUBBER COATED T-HANDLE

The rubber coated t-handle is a one piece probe, completely rubber coated with a 48" long t-handle. It comes standard with a quick connect adapter, which connects easily to a bucket or additional extension.



RUBBER COATED T-HANDLE	
PART #	DESCRIPTION
4050045	18" X 48" W/ ROUND ROD

## MIGHTY PROBE™

Heavy duty soil probe resists bending and is designed for easy penetration and withdrawal. The Mighty Probe™ also has a current isolator to increase operator protection against electrical shock.



RUBBER COATED T-HANDLE	
PART #	DESCRIPTION
4750130	48" W/ 3/8" ROUND ROD
4750131	72" W/ 3/8" ROUND ROD

## BAILERS

### White PVC Bailers

PVC bailers are designed to retrieve samples from various depths. They are available in numerous sizes, custom lengths, and styles. Threaded all PVC construction eliminates contamination by solvents, and the removable top bottom check valves make cleaning quick and easy.



WHITE PVC BAILERS			
O.D.	12"	24"	36"
.840"	4000025	4000050	4000080
1.050"	4000030	4000055	4000085
1.315"	4050027	4000060	4000090
1.666"	4000035	4000065	4000095
2.375"	4000040	4000070	4000006
3.500"	4000045	4000075	4050033

### Clearview Bailers

Clearview bailers are designed to allow samples to be poured easily and accurately. They are available in numerous sizes, lengths, and styles. Clear bailers are sold by the case as standard.



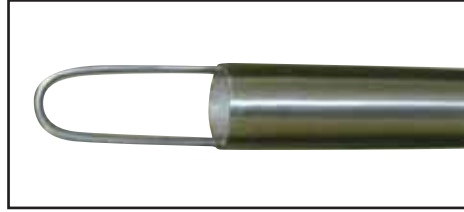
CLEAR PVC BAILERS				
O.D.	CASE QTY.	12"	24"	36"
1.050"	24	4000105	4000140	4050029
1.315"	24	4000110	4000145	4000170
1.666"	24	4000115	4000150	4000175
2.375"	24	4000125	4000160	4000180
3.500"	24	4000130	4000165	4000185



# BAILERS

## Stainless Steel Bailers

Stainless steel bailers feature a tubular stainless body. The stainless steel construction allows for quick and easy decontamination.



STAINLESS STEEL BAILERS				
O.D.	12"	24"	36"	60"
.500"	4000190	4000210	4000225	4000240
1.500"	4000195	4000215	4000230	4000245
1.666"	4000200	4000004	4000005	4050034
3.500"	4000205	4000235	4000235	4000250

## Disposable Bailers

Disposable bailers are pre-assembled and ready for use. No solvents, glues, or adhesives are used in manufacturing or construction of these bailers.

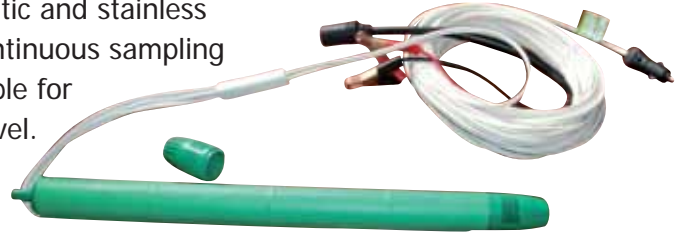


DISPOSABLE BAILERS				
PVC BAILERS				
O.D.	24"	36"	48"	60"
1.666"	4000015	4050022	4000010	4000255
POLYETHYLENE BAILERS				
O.D.	DESCRIPTION	36"	DESCRIPTION	36"
.750"	WEIGHTED	4001001	NON - WEIGHTED	4000265
1.500"	WEIGHTED	4000260	NON - WEIGHTED	4000270

# 12 VOLT SAMPLING AND PURGING PUMPS

Hole Products offers a complete line of premium plastic and stainless steel 12 volt pumps and accessories designed for continuous sampling and purging of groundwater wells. Pumps are available for pumping from 25' to as deep as 220' from ground level.

Please contact your Hole Products representative for additional details and pump selection assistance.



STANDARD PLASTIC PUMPS					
PART #	LENGTH	DIAMETER	MAX PUMPING DEPTH	REQUIRED LDPE TUBING	RECOMMENDED CONTROLLER
5560024	20"	1.82"	70'	3/8" or 1/2" I.D. LDPE	NO CONTROLLER NEEDED
5560040	22"	1.82"	85'	3/8" or 1/2" I.D. LDPE	NO CONTROLLER NEEDED
5560058	27"	1.82"	100'	3/8" or 1/2" I.D. LDPE	NO CONTROLLER NEEDED
5560067	12"	3.82"	220'	1/2" I.D. LDPE	NO CONTROLLER NEEDED

PLASTIC PUMPS					
PART #	LENGTH	DIAMETER	MAX PUMPING DEPTH	REQUIRED LDPE TUBING	RECOMMENDED CONTROLLER
5560052	20"	1.82"	120'	3/8" or 1/2" I.D. LDPE	5560070 OR 5560053 LOW FLOW
5560090	26"	1.82"	150'	3/8" or 1/2" I.D. LDPE	5560070 OR 5560053 LOW FLOW
5560051	26"	1.82"	200'	3/8" or 1/2" I.D. LDPE	5560050 LOW FLOW

STAINLESS STEEL PUMPS					
PART #	LENGTH	DIAMETER	MAX PUMPING DEPTH	REQUIRED LDPE TUBING	RECOMMENDED CONTROLLER
5560061	7.5"	1.82"	80'	3/8" I.D. LDPE	NO CONTROLLER NEEDED
5560069	7.5"	1.82"	120'	3/8" I.D. LDPE	5560078 LOW FLOW
5560072	7.5"	1.82"	150'	3/8" I.D. LDPE	5560082 LOW FLOW
5560083	7.5"	1.82"	200'	3/8" I.D. LDPE	5560085 LOW FLOW

## TUBING

Hole Products offers a wide range of quality, economical tubing for applications requiring low-temperature flexibility and durability.

Please contact your Hole Products representative for additional details and pump selection assistance.



LOW DENSITY POLYETHYLENE TUBING			
PART #	I.D.	O.D.	LENGTH
4001009	1/8"	1/4"	1,000'
4001025	11/64"	1/4"	1,000'
4001008	1/4"	3/8"	500'
4001006	3/8"	1/2"	500'
4001013	1/2"	5/8"	100'
4001018	1/2"	5/8"	250'
4001011	1/2"	3/4"	100'

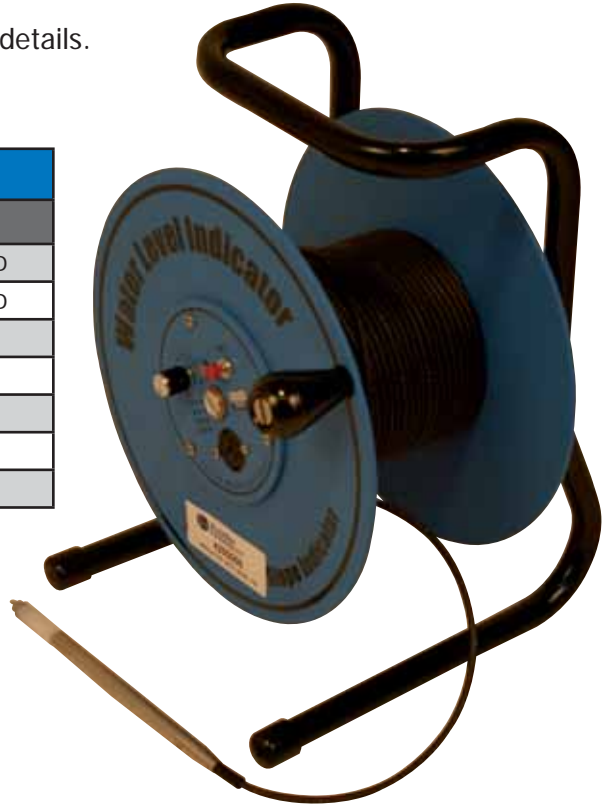
SILICONE TUBING			
PART #	I.D.	O.D.	LENGTH
4001015	3/16"	3/8"	100'
4001024	1/4"	7/16"	100'

## WATER LEVEL INDICATORS

Hole Products offers a wide range of water level indicators used to measure water levels in standpipes and wells. Reels are constructed of heavy gauge aluminium plate sides, PVC spools and feature rotating knobs. 9" and 11" reels come standard with a steel stand. 7" reel has an aluminium handle but no stand. Additional water level indicator sizes and styles are available on request.

Please contact your Hole Products representative for details.

WATER LEVEL INDICATORS - ALUMINIUM			
PART #	CABLE	REEL	DESCRIPTION
4200010	100'	7"	HANDLE NO STAND
4200000	100'	9"	HANDLE NO STAND
4200015	150'	7"	WITH STAND
4200016	150'	9"	WITH STAND
4200020	300'	9"	WITH STAND
4200011	500'	11"	WITH STAND
4150012	1,000'	11"	WITH STAND

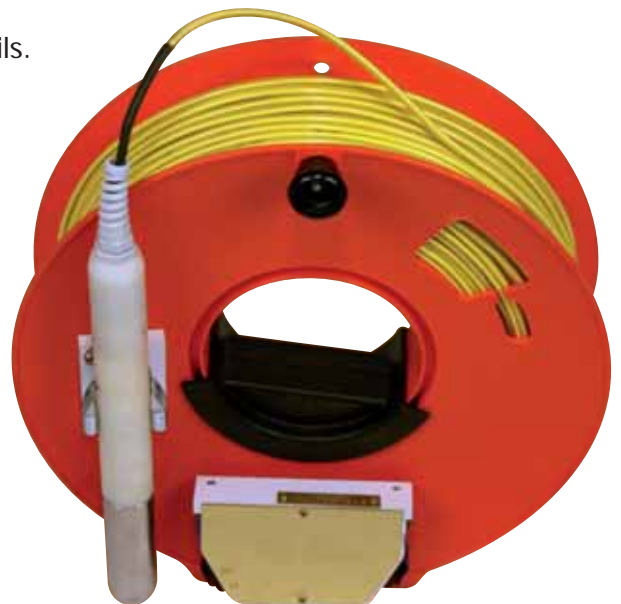


## CASING/WATER LEVEL INDICATOR

Hole Products offers a casing/water level indicator that measures both casing depths and water levels in stand pipes and wells.

Please contact your Hole Products representative for details.

CASING/WATER LEVEL INDICATOR			
PART #	CABLE	REEL	DESCRIPTION
4200005	450'	9"	NO STAND



## INCLINOMETER CASING

Inclinometer casing is a special purpose extruded casing used in inclinometer installations to assist in obtaining subsurface measurements. The pipe is designed to maintain access for the inclinometer probe, control the orientation of the probe via internal grooves, and conform to movement of the surrounding ground.

Hole Products offers a variety Quick Connect (QC) inclinometer casing and accessories. QC casing features snap together convenience resulting in strong, flush joints. Factory lubricated o-ring seals prevent entry of grout. Extra o-rings and lubricant are available.



2.75" (70MM) QUICK CONNECT CASING	
PART #	DESCRIPTION
4200042	5' CASING SECTION
4200040	10' CASING SECTION
4200130	TELESCOPING SECTION
4200050	BOTTOM CAP
4200051	BOTTOM CAP HD
4200048	GROUT VALVE
4200045	TOP CAP
4200046	LOCKING CAP
4200135	MALE SPLICE KIT
4200140	FEMALE SPLICE KIT
4200043	CASING ANCHOR

3.34" (85MM) QUICK CONNECT CASING	
PART #	DESCRIPTION
4200110	5' CASING SECTION
4200103	10' CASING SECTION
4200145	TELESCOPING SECTION
4200104	BOTTOM CAP
4200150	BOTTOM CAP HD
4200155	GROUT VALVE
4200160	TOP CAP
4200165	LOCKING CAP
4200170	MALE SPLICE KIT
4200175	FEMALE SPLICE KIT
4200111	CASING ANCHOR

### Casing Anchors

Casing anchors feature spring loaded arms that are activated when a pin is pulled and are designed to self-center the casing in the borehole. Anchors are installed in place of the bottom cap, providing a convenient way to counter casing buoyancy and reduce casing curvature.



### Grout Valves

Grout valves allow placement of grout in boreholes that cannot accommodate an external grout pipe. The one-way valve is installed in the bottom section of casing. A grout pipe is lowered through the casing until it meets the grout valve, at which time the grout can be pumped.

Please contact your Hole Products representative for additional product information and for details on the availability of additional inclinometer casings, accessories, and equipment.

## STANDPIPE PIEZOMETERS

The standpipe piezometer is the most basic of piezometer types. It consists of a filter tip joined to a riser pipe. Water flows from the surrounding soil into the standpipe. Readings are obtained with a water level indicator.



STANDPIPE PIEZOMETERS	
PART #	DESCRIPTION
4200105	1.5" X 12" POROUS STONE (68 MICRON PORES)
4200056	1.5" X 24" POROUS STONE (68 MICRON PORES)
4200059	1.5" X 12" POLY (60 MICRON PORES)
4200057	1.5" X 24" POLY (60 MICRON PORES)

## VIBRATING PIEZOMETERS

The vibrating wire piezometer is the most commonly deployed piezometer and is suitable for almost all applications. It consists of a vibrating wire pressure transducer and single cable. It can be installed in a borehole, embedded in fill, or suspended in a standpipe. Readings are obtained with a portable readout or data logger.

VIBRATING PIPE PIEZOMETERS		
PART #	PSI	LENGTH
4200007	50 PSI	50'
4200113	50 PSI	100'
4200114	50 PSI	150'
4200101	50 PSI	200'
4200127	100 PSI	100'
4200128	100 PSI	150'
4200115	100 PSI	200'

## PNEUMATIC PIEZOMETERS

The pneumatic piezometer operates by gas pressure. It consists of a pneumatic pressure transducer and pneumatic tubing. It can be installed in a borehole, embedded in fill, or suspended in a standpipe. Readings are obtained with a pneumatic indicator.

PNEUMATIC PIPE PIEZOMETERS	
PART #	DESCRIPTION
4200008	PIEZOMETER & 100' TUBING
4200124	PIEZOMETER & 150' TUBING
4200125	PIEZOMETER & 200' TUBING

## STEEL DOT DRUMS

Hole Products offers a variety of sizes and styles of new and reconditioned steel drums, ideal for containing, storing, and transporting hazardous or nonhazardous materials. All drums comply with Title 49 CFR, and are UN approved.

**Open Head Drums** feature a removable top, gasket, and a 12 gauge bolt ring.

**Closed Head Drums** feature two bung openings; one for filling and one for venting.

Additional sizes, styles, and speciality drums are available on request.

Please contact your Hole Products representative for details.



STEEL DOT DRUMS		
PART #	SIZE	DESCRIPTION
4170001	55 GAL	NEW - OPEN HEAD
4170016	55 GAL	NEW - CLOSED HEAD
4170015	55 GAL	RECONDITIONED - OPEN HEAD

# WELL COMPLETION & PROTECTION TABLE OF CONTENTS

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## MONITORING WELL MANHOLES



Hole Products offers a wide range of monitoring well manholes (flushmounts). Manholes allow access to monitoring/observation wells and/or tank hardware and monitoring equipment in roadways, driveways, and parking lots.

### Manholes/Flushmounts

All manholes/flushmounts feature iron rings and covers, incorporate API compliant monitoring well markings, and carry the H-20 load rating. Plain covers for general purposes are available on request.

Manholes/flushmounts are available with the following standard options:

- Sizes from 2" – 18"
- Skirt heights from 6" – 18"
- Steel, galvanized, aluminium, cast aluminium, cast iron, HDPE, and heavy duty skirts
- Drop-in, bolt-down (1, 2, and 3 bolt), and cam locking lids
- Standard, water resistant, and water tight models
- Custom lids, sizes, and skirt heights are available

Please contact your Hole Products representative for additional product specifications and ordering assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*



# MONITORING WELL MANHOLES

## DROP IN MANHOLES

Drop in manholes feature a cast iron ring and cover with monitoring well markings, steel skirt, and carry the H-20 load rating. Heavy duty 100% welded and polyethylene skirts are available.

DROP-IN MANHOLES				
PART #	SIZE	HEIGHT	STYLE	SKIRT
7801010	8"	7 1/2"	Drop In	Steel
7800080	8"	8"	Drop-in	Steel
7800085	8"	12"	Drop In	Steel
7801135	12"	8"	Drop In	Steel
7801015	12"	12"	Drop-in	Steel
7800048	12"	18"	Drop-in	Steel



## BOLT DOWN MANHOLES

Bolt down manholes feature a cast iron ring and cover with monitoring well markings; steel skirt, and 3/8" flush mount stainless steel bolts for limited access and meets H-20 load rating requirements.

Additional sizes, replacement bolts, gaskets, and lids are available.

BOLT DOWN MANHOLES				
PART #	SIZE	HEIGHT	STYLE	SKIRT
7801023	8"	7 1/2"	Bolt Down	Steel
7800020	8"	8"	Bolt Down	Steel
7801027	8"	12"	Bolt Down	Steel
7800017	8"	12"	Bolt Down	Steel
7801150	12"	8"	Bolt Down	Steel
7801020	12"	12"	Bolt Down	Steel



## MONITORING WELL MANHOLES

### BOLT DOWN WATER RESISTANT MANHOLES

Round manholes come with stainless steel bolted and a Buna-N gasket cover. Bolts are standard hex head, except for the 18" x 18", which uses a flat head screw. Manholes meet H-20 load rating requirements.

BOLT DOWN WATER RESISTANT MANHOLES				
PART #	SIZE	HEIGHT	STYLE	SKIRT
7800035	7"	10"	Bolt Down, Water Resistant	Galvanized
7801160	9"	7"	Bolt Down, Water Resistant	Galvanized
7800010	9"	12"	Bolt Down, Water Resistant	Welded
7800041	9"	12"	Bolt Down, Water Resistant	Galvanized
7800030	12"	12"	Bolt Down, Water Resistant	Galvanized
7800012	12"	12"	Bolt Down, Water Resistant	Welded
7800014	18"	12"	Bolt Down, Water Resistant	Galvanized
7800055	18"	18"	Bolt Down, Water Resistant	Galvanized



# MONITORING WELL MANHOLES

## BOLT DOWN WATERTIGHT MANHOLES

Bolt down watertight manholes are available in a variety of sizes and with a number of skirt styles. All watertight models carry the H-20 load rating and feature replaceable Buna-N rubber seals and stainless steel bolts.

Additional sizes, replacement bolts, gaskets, and lids are available.

BOLT DOWN, WATERTIGHT MANHOLE				
PART #	SIZE	HEIGHT	STYLE	SKIRT
7800007	2"	6"	Bolt Down, Watertight	Cast Iron
7801036	4"	6"	Bolt Down, Watertight	Aluminium
7800005	4"	10"	Bolt Down, Watertight	Cast Aluminium
7800034	5"	8 1/2"	Bolt Down, Watertight	Steel
7800032	6"	7 1/2"	Bolt Down, Watertight	Steel
7800036	6"	10"	Bolt Down, Watertight	Steel
7800008	6"	10"	Bolt Down, Watertight	Cast Aluminium
7801037	6"	12"	Bolt Down, Watertight	Aluminium
7800075	8"	8"	Bolt Down, Watertight	Galvanized
7800011	8"	10"	Bolt Down, Watertight	Cast Aluminium
7801027	8"	12"	Bolt Down, Watertight	Steel
7801026	8"	12"	Bolt Down, Watertight	Steel (Weld Lugs HD)
7800019	9"	7"	Bolt Down, Watertight	Cast Iron
7801175	12"	7"	Bolt Down, Watertight	Cast Iron
7801014	12"	8"	Bolt Down, Watertight	Steel
7801020	12"	12"	Bolt Down, Watertight	Galvanized
7801028	12"	12"	Bolt Down, Watertight	Steel (Weld Lugs HD)
7800052	18"	12"	Bolt Down, Watertight	Galvanized
7800056	18"	12"	Bolt Down, Watertight	Steel
7800053	18"	18"	Bolt Down, Watertight	Steel



## CAM LOCKING WATERTIGHT MANHOLES

Cam locking watertight manholes allow for easy, secure access, while eliminating the potential for stripped and cross threaded bolts. These manholes are solid cast iron for strength and feature built-in lock anchors and Buna-N rubber seals.

CAM LOCK, WATERTIGHT				
PART #	SIZE	HEIGHT	STYLE	SKIRT
7800018	4"	7 1/2"	Cam Lock, Watertight	Cast Iron
7800042	8"	7 1/2"	Cam Lock, Watertight	Cast Iron



## MONITORING WELL VAULTS



Hole Products offers a wide range of monitoring manhole vaults. Vaults allow access to monitoring/observation wells and/or tank hardware and monitoring equipment in roadways, driveways, and parking lots.

### Vaults

All vaults feature heavy duty diamond plate lids, 16 gauge steel skirts, and carry the H2O load rating.

Vaults are available with the following standard options:

- Sizes from 12" – 72"
- Heights from 9" – 48"
- Square, rectangular, and round models
- Lay-in, bolt down, and locking types
- Handles and lift assist options
- Custom models are available on request

Please contact your Hole Products representative for additional product specifications and ordering assistance.

## MONITORING WELL VAULTS

These vaults are available in lay-in, bolt down water resistant, and locking water resistant styles. Locking vaults feature 180° double hinged lids and lock access lids that are attached to the vault lid with an anti-theft chain.



MODEL A - MONITORING WELL VAULTS					
VENDOR PART #	SIZE	OVERALL HEIGHT	STYLE	LID WEIGHT	TOTAL WEIGHT
7801042	12" x 12"	12"	Locking, Water Resistant	18	38.1 lbs.
7801050	12" x 12"	18"	Locking, Water Resistant	18	42.5 lbs.
7801180	12" x 12"	24"	Locking, Water Resistant	18	38.1 lbs.
7801185	18" x 18"	18"	Bolt Down, Water Resistant	36	73.3 lbs.
7801190	18" x 18"	18"	Locking, Water Resistant	36	76.8 lbs.
77801195	18" x 18"	18"	Locking, Water Resistant, Lift Assist	36	77.3 lbs.
7801012	24" x 24"	24"	Bolt Down, Water Resistant, w/ Handle	65	119.8 lbs.
7801006	24" x 24"	24"	Locking, Water Resistant	65	121.5 lbs.
7801055	24" x 24"	24"	Locking, Water Resistant, Lift Assist	68	120.9 lbs.
7801200	30" x 30"	24"	Locking, Water Resistant	213	200.0 lbs.
7801060	30" x 30"	24"	Locking, Water Resistant, Lift Assist	213	200.0 lbs.
7801118	36" x 24"	24"	Locking, Water Resistant	165	265.0 lbs.
7801120	36" x 36"	24"	Locking, Water Resistant	165	285.0 lbs.
7800069	36" x 36"	36"	Locking, Water Resistant, Lift Assist	171	287.0 lbs.
7800038	48" x 24"	48"	Locking, Water Resistant, Lift Assist	171	273.0 lbs.
7800061	48" x 48"	24"	Locking, Water Resistant, Lift Assist	165	270.0 lbs.

Locking monitoring well vaults feature a recessed locking device with a bolted cover, which is designed to keep out dirt and debris. These vaults are offered in square and rectangle and are available in a watertight model, which includes a Buna-N gasket and bolt down cover.



MODEL B - MONITORING WELL VAULTS					
VENDOR PART #	SIZE	OVERALL HEIGHT	STYLE	LID WEIGHT	TOTAL WEIGHT
7801001	12" x 12"	24"	Locking	18	30 lbs.
7801008	16" x 16"	12"	Locking, Watertight	37	65 lbs.
7801038	16" x 16"	24"	Locking	37	70 lbs.
7800070	18" x 18"	18"	Hinged	50	125 lbs.
7800031	18" x 18"	18"	Locking	50	80 lbs.
7800046	18" x 18"	18"	Drop-in	45	60 lbs.
7801011	24" x 24"	24"	Locking	85	128 lbs.
7801018	24" x 36"	24"	Locking	110	165 lbs.
7800047	30" x 30"	24"	Locking, Watertight	108	195 lbs.
7801115	36" x 36"	18"	Locking	115	202 lbs.
7801121	36" x 36"	24"	Locking, Watertight, Lift Assist	108	195 lbs.
7801009	36" x 36"	48"	Locking, Hinged	115	310 lbs.

## LOCKING WELL PROTECTORS (PROTOPS)

Locking well protectors, typically called "above grade well cover", are installed over monitoring, remediation, or water wells to protect against damage and vandalism. Well protectors are available in a variety of sizes, lengths, styles, and from a variety of materials including aluminium, steel, and pvc.

Custom lengths and painted options are available on request.

Please call for additional details and ordering assistance.

## SQUARE WELL PROTECTORS

Square locking well protectors are available in a variety of materials including aluminium and zinc plated steel, and in sizes ranging from 4" - 12" and 5' lengths. Wide hinges secure the lid and align the tabs to make lock installation easy. Custom lengths are available.

SQUARE LOCKING WELL PROTECTORS - ALUMINIUM			
PART #	SIZE	LENGTH	WEIGHT
7950045	4" x 4"	5'	11 lbs.
7950036	6" x 6"	5'	23 lbs.
7950070	8" x 8"	5'	55 lbs.
7950000	12" X 12"	5'	85 lbs.

SQUARE LOCKING WELL PROTECTORS - ZINC PLATED			
PART #	SIZE	LENGTH	WEIGHT
7950025	4" x 4"	5'	30 lbs.
7950030	6" x 6"	5'	70 lbs.
7950044	8" x 8"	5'	93 lbs.
7950055	12" X 12"	5'	165 lbs.



## PVC ROUND WELL PROTECTORS

Hole Products offers PVC locking well protectors, designed with a custom aluminium shaft to allow for padlock installation. Custom lengths and sizes are available.

LOCKING WELL PROTECTORS - ROUND PVC			
PART #	SIZE	LENGTH	WEIGHT
7950060	6"	4'	16 lbs.
7950062	6"	5'	20 lbs.
7950065	6"	6'	24 lbs.



## WELL PROTECTORS

Round, steel well protectors are available in 5' and 7' lengths to allow for secure installation. Custom lengths, primered and painted options are available. Locking well protector caps are sold separately (see below for part numbers). One cap is needed for each well protector.

WELL PROTECTORS - ROUND STEEL			
PART #	O.D.	LENGTH	WALL THICKNESS
7950046	4.500"	5'	.120"
7950075	4.500"	5'	SCHEDULE 40
7950047	4.500"	7'	.120"
7950048	4.500"	7'	SCHEDULE 40
7950080	6.625"	5'	.135"
7950085	6.625"	5'	SCHEDULE 40
7950006	6.625"	7'	SCHEDULE 40
7950007	6.625"	7'	.135"



## LOCKING WELL PROTECTOR CAPS

Aluminium locking well protector caps are designed to prevent vandalism of monitoring/water wells. Cap rings secure onto casing with three allen head set screws.

Please contact your Hole Products representative for availability of additional sizes.



LOCKING WELL PROTECTOR CAPS	
PART #	CASING O.D.
8000024	4.500"
8000050	6.625"

## WELL CAPS

Hole Products offers a wide range of aluminium, cast iron and ABS well caps for use in any well installation.

Caps are available in a full range of sizes and styles including round, locking, watertight, and caps with a conduit neck.

Personalized caps, replacement o-rings, and gaskets are available.

WELL CAPS - ALUMINIUM LOCKING	
PART #	SIZE
8000021	2 3/8"
8000023	3 1/2"
8000024	4 1/2"
8000060	5 5/8"
8000050	6 5/8"
8000022	8 3/4"
8001017	10 3/4"
8000001	12 3/4"



## WELL SEALS

Hole Products offers a wide range of single and double pipe solid and split top well seals, as well as steel sanitary well seals. Well seals are offered in cast iron, steel, and ABS, and are available to fit casing I.D.s ranging from 2" - 12" and drop pipe sizes from 1" - 4".



WELL SEALS			
SEAL SIZE	DROP PIPE SIZE	CAST IRON SOLID	CAST IRON SPLIT TOP
2"	1"	8050002	8050045
4"	1"	8050030	8050060
5"	1"	8050015	8050016
6"	1 1/4"	8050035	8050050
6"	2"	8050040	8050065
8"	2"	8050070	8050055



## LOCKING WELL PLUGS

Hole Products offers a variety of locking plugs designed to provide a watertight, tamper proof seal at the top of monitoring or observations wells. Locking plugs fit the inside diameter of pvc or steel wells. As the wing nut is turned, a gasket seal expands, holding the plugs in place and sealing the well. For vandalism resistance, a standard padlock can be installed.

Additional size and styles are available on request.

Please contact your Hole Products representative for additional information and ordering assistance.

LOCKING WELL PLUGS		
PART #	FITS PIPE SIZE	SCHEDULE PIPE
7850008	1/2"	40
7850040		80
7850007	3/4"	40
7850032		80
7850006	1"	40/80
7850009	1 1/4"	40/80
7850004	1 1/2"	40/80
7850000	2"	40
7850012		80
7850001	2 1/2"	40/80
7850002	3"	40/80
7850003	4"	40
7850019		80
7850026	5"	40/80
7850030	6"	40/80

MORRISON BROS.® LOCKING WELL PLUGS*		
PART #	FITS PIPE SIZE	SCHEDULE PIPE
7850010	2"	40
7850015	4"	40
7850005	6"	40

\* Also fit schedule 5 or 10 stainless steel pipe.



# PADLOCKS

Hole Products offers a wide range of padlocks to provide vandalism protection for monitoring and remediation wells.

Locks are available in a number of sizes and styles and with a wide range of key numbers. All locks are available keyed-alike (same key will open multiple locks).

Please contact your Hole Products representative for ordering assistance.

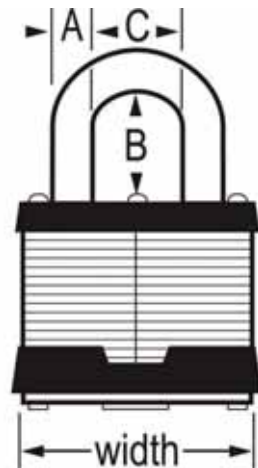
## MASTER LOCKS®



## DOLPHIN LOCKS®



PADLOCKS			
DESCRIPTION	SHACKLE DIMENSION		
	A	B	C
Master (3ka) - 1 9/16" (40mm) steel body	9/32"	3/4"	5/8"
Master (4ka) - 1 9/16" (40mm) brass body	9/32"	3/4"	5/8"
Master (1ka) - 1 3/4" (44mm) steel body	5/16"	15/16"	3/4"
Master (2ka) - 1 3/4" (44mm) brass body	5/16"	15/16"	3/4"
Master (5ka) - 2" (51mm) steel body	3/8"	1"	15/16"
Master (6ka) - 2" (51mm) brass body	3/8"	1"	15/16"
Dolphin Style - 35mm brass body	-----	----	----



## BUMPER POSTS

Hole Products offers 3" and 4" steel bumper posts in a variety of lengths for protecting wells from vehicle collisions.

Custom lengths, priming, and painting are available.

Please contact your Hole Products representative for additional details.

BUMPER POST		
PART #	PIPE SIZE	LENGTH
7750015	3"	5'
7750008	3"	5'3"
7750010	3"	6'
7750005	3"	7'
7750006	4"	5'
7750012	4"	5'3"
7750020	4"	6'
7750025	4"	7'





# LOW CARBON STEEL CASING & PITLESS ADAPTERS

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## LOW CARBON STEEL & PITLESS ADAPTERS



Hole Products offers a wide range of low carbon steel (LCS) casings and fittings in sizes from 1/4" – 36". Low carbon steel is easily weldable, making it the preferred choice for water well, monitoring well, and surface casings. In addition, we offer a complete line of low carbon steel accessories including drive shoes, welding clamps, and more.

In addition, we offer weld-on and clamp-on style pitless adapters in a wide range of sizes for use in all well types and for shallow or deep settings.

Pitless adapters provide the connection between the water pipe from the well pump to an underground discharge line.

Please contact your Hole Products representative for additional information and ordering assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles.  
Please contact your Hole Products representative for additional product offerings.*

# LOW CARBON STEEL CASING

Hole Products offers a complete line of low carbon steel casings in sizes from 1/4" - 36" +, with a variety of wall thicknesses, multiple lengths, and plain or threaded ends.

Carbon steel pipe is easily welded, machined, and drilled, making it a great choice for water wells, monitoring wells, and surface casings.

Our standard low carbon steel casing is manufactured according to ASTM A53B and electronic resistance welded. ASTM A53A (galvanized steel) and continuous welded pipe is available on request.

Please contact your Hole Products representative for availability of additional sizes and styles.

LOW CARBON STEEL CASING (A53B ERW)				
PART #	OD*	WALL THICKNESS*	LENGTH*	CONNECTION TYPE**
4551031	2 3/8"	0.154"	21'	PLAIN END
4451023	2 3/8"	0.154"	21'	THREADED & COUPLED
4551032	3 1/2"	0.226"	21'	PLAIN END
4551040	3 1/2"	0.226"	21'	THREADED & COUPLED
4450003	4 1/2"	0.237"	21'	PLAIN END
4450006	4 1/2"	0.237"	21'	THREADED & COUPLED
4450004	5 9/16"	0.258"	20'	PLAIN END
4450001	5 9/16"	0.258"	21'	PLAIN END
4450013	5 9/16"	0.258"	21'	THREADED & COUPLED
4451001	6 5/8"	0.280"	20'	PLAIN END
4450010	6 5/8"	0.280"	21'	PLAIN END
4451010	6 5/8"	0.280"	21'	THREADED & COUPLED
4450015	8 5/8"	0.322"	20'	PLAIN END
4451002	8 5/8"	0.322"	21'	PLAIN END
4551045	10 3/4"	0.250"	20'	PLAIN END
4450019	10 3/4"	0.250"	21'	PLAIN END
4450020	10 3/4"	0.365"	20'	PLAIN END
4450022	10 3/4"	0.365"	21'	PLAIN END
4451021	12 3/4"	0.250"	20'	PLAIN END
4551050	12 3/4"	0.250"	21'	PLAIN END
4551055	12 3/4"	0.375"	20'	PLAIN END
4450025	12 3/4"	0.375"	21'	PLAIN END
4551060	14"	0.375"	20'	PLAIN END
4551037	14"	0.375"	21'	PLAIN END
4551065	16"	0.375"	20'	PLAIN END
4450050	16"	0.375"	21'	PLAIN END
4551070	18"	0.375"	20'	PLAIN END
4450055	18"	0.375"	21'	PLAIN END
4551075	20"	0.375"	20'	PLAIN END
4550056	20"	0.375"	21'	PLAIN END

\*Additional sizes, wall thicknesses and lengths are available.

\*\*Additional connections are available.

## DRIVE SHOES

Drive shoes are designed to protect the pipe or casing from splitting during casing advancement.

Hole Products offers drive shoes ranging in sizes from 2" - 60", cable tool, and rotary styles for weld on or threaded applications.

Please contact your Hole Products representative for availability of additional sizes and styles.

### CABLE TOOL STYLE

Cable tool style drive shoes are standard design for cable tool drilling and often used in rotary drilling. The outer surface of the shoe is straight with the bevel on the inside edge.

CABLE TOOL STYLE - WELD ON*		
PART #	CASING O.D.	SHOE O.D.
4550037	4 1/2"	5"
4550040	5 9/16"	6 1/20"
4550005	6 5/8"	7 3/8"
4550000	6 5/8"	7 5/8"
4550045	7"	7 21/32"
4550050	8 5/8"	9 5/8"
4550060	10 3/4"	11 3/4"
4550065	12 3/4"	14"
4550067	14"	15"
4550070	16"	17"
4550072	18"	19"
4550074	20"	21"
4550078	24"	25"

\*Threaded cable tool style drive shoes available on request.

### ROTARY STYLE

Rotary style drive shoes have an outside bevel above the cutting edge to ensure a good seat where driving may not be possible.

ROTARY STYLE - WELD ON*		
PART #	CASING O.D.	SHOE O.D.
4550038	4 1/2"	5"
4550043	5 9/16"	6"
4550015	6 5/8"	7 3/8"
4550026	6 5/8"	7"
4550045	7"	8"
4550055	8 5/8"	9"
4550061	10 3/4"	11"
4550066	12 3/4"	14"
4550068	14"	15"
4550069	16"	17"
4550072	18"	19"
4550074	20"	21"
4550078	24"	25"

\*Threaded rotary style drive shoes available on request.





## DUAL ROTARY SHOES

Dual rotary shoes are designed for use on dual rotary drilling operations. They are welded to the bottom casing section and feature carbide studs to cut through the overburden.

DUAL ROTARY SHOES*		
PART #	CASING O.D.	SHOE O.D.
4850120	6 5/8"	7 5/8"
4850121	8 5/8"	9 5/8"
4850132	10 3/4"	11 3/4"
4850122	12 3/4"	13 5/8"
4850165	14"	15"
4850168	16"	16 5/8"



\*Dual rotary shoes have the same I.D. as the casing I.D.

## WELDING CLAMPS

Hole Products offers a wide range of quality welding clamps for use with a variety of pipe sizes. Welding clamps feature a ratcheting closure for fast and easy aligning of pipe and provide a secure hold on pipe ends.

Please contact your Hole Products representative for availability of additional sizes and styles.

WELDING CLAMP		
PART #	PIPE SIZE	APPROX. WT (LBS)
4950009	5"	32
4950013	6"	32
4950016	8"	33
4950024	11"	52
4950023	12"	53



## LOW CARBON STEEL FITTINGS

Hole Products offers a wide range of low carbon steel fittings including nipples, closed nipples, square and bar head plugs, reducer bushings, couplings, adapters, and elbows. Low carbon steel fittings are available in a variety of sizes to fit all requirements.

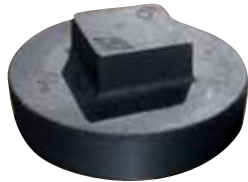
Please contact your Hole Products representative for ordering assistance and information regarding the availability of additional low carbon steel fittings and accessories.



OPEN NIPPLES



CLOSE NIPPLES



SQUARE HEAD PLUGS



BAR HEAD PLUGS



ELBOWS



REDUCER BUSHINGS

## PITLESS ADAPTER

Hole Products offers a wide range of weld-on and clamp-on pitless adapters for shallow or deep settings and high working pressures.

All pitless adapters feature durable cast steel housings, 304 stainless steel, and brass at all water contact points, tapered 8° slip fitting for easy installation, and removal of the brass insert and viton or teflon o-rings.

Please contact your Hole Products representative for availability of additional sizes, styles, and replacement parts.

### WELD ON PITLESS ADAPTER

Weld on models are designed for permanent installation and offer increased strength and durability.

WELD ON PITLESS ADAPTER					
PART #	DISCHARGE PIPE	DROP PIPE	CASING (I.D.)	WEIGHT (LBS)	WORKING LOAD (LBS)
4650005	1"	1"	4" - 5"	6.0	4,000
4650006	1 1/4"	1 1/4"	4" - 5"	7.0	5,000
4650007	1 1/2"	1 1/2"	4" - 5"	8.5	5,000
4650075	2"	2"	5"	12.0	6,000
4650010	1"	1"	6" - 8"+	6.0	4,000
4650015	1 1/4"	1 1/4"	6" - 8"+	7.0	5,000
4650020	1 1/2"	1 1/2"	6" - 8"+	8.5	5,000
4650025	2"	2"	6" - 8"+	12.0	6,000
4650080	2 1/2"	2 1/2"	6" - 8"+	18.0	8,000
4650085	3"	3"	8" - 12"+	32.0	10,000
4650090	4"	4"	10" - 14"+	50.0	15,000



### CLAMP ON PITLESS ADAPTER

Clamp on models are ideal for use on either plastic or steel well casings. They feature 304 stainless steel clamps and nuts and Buna-N rubber gaskets to seal the housing against the outside diameter of the well casing.

CLAMP ON PITLESS ADAPTER					
PART #	DISCHARGE PIPE	DROP PIPE	CASING (O.D.)	WEIGHT (LBS)	WORKING LOAD (LBS)
4650004	1"	1"	4 1/2"	11.0	4,000
4650095	1 1/4"	1 1/4"	4 1/2"	11.8	4,000
4650065	1"	1"	5 9/16"	11.0	4,000
4650100	1 1/4"	1 1/4"	5 9/16"	11.2	4,000
4650009	1"	1"	6 5/8"	11.8	4,000
4650011	1 1/4"	1 1/4"	6 5/8"	12.8	4,000
4650105	1"	1"	7"	12.0	4,000
4650110	1 1/4"	1 1/4"	7"	13.0	4,000





# GROUND COVER PROTECTION TABLE OF CONTENTS

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## GROUND COVER PROTECTION



Hole Products offers a complete line of AlturnaMATS® rugged ground cover protection mats, outrigger pads, and accessories.

Ground cover protection mats protect lawns and landscaped areas from damage caused by heavy vehicles and foot traffic and make getting stuck next to impossible. Mats are great for creating temporary roadways, walkways, and drilling platforms.

Outrigger Pads are lightweight and heavy duty and will not splinter, warp, or bend.

All ground cover protection products are available in a variety of sizes and styles to fit your specific application.

Please contact your Hole Products representative for additional details and ordering assistance.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

# ALTURNAMATS®

These rugged mats are virtually indestructible. They are made of 1/2" thick recycled polyethylene able to withstand vehicles weighing up to 60 tons.

- Easily supports 60 - ton loads
- Rugged 1/2" thick recycled polyethylene
- Bold cleat design for great traction
- Build a roadway or working platform in minutes
- Leave turf smooth, even in soft conditions
- No more splintered, warped, water logged plywood
- Simply hosing down leaves the mats clean
- Available in both black or white mats
- Mats can be locked together with Turn-A-Links forming a continuous roadway or workable platform
- Limited Lifetime Warranty



ALTURNAMATS®

CLEATED BOTH SIDES	
PART #	DESCRIPTION
3900045	2' X 4' - BLK
3900050	2' X 6' - BLK
3900020	2' X 8' - BLK
3900060	3' X 6' - BLK
3900015	3' X 8' - BLK
3900005	4' X 8' - BLK

SMOOTH BOTH SIDES	
PART #	DESCRIPTION
3900075	2' X 4' - BLK
3900080	2' X 6' - BLK
3900055	2' X 8' - BLK
3900085	3' X 6' - BLK
3900115	3' X 8' - BLK
3900120	4' X 8' - BLK

SMOOTH ONE SIDE	
PART #	DESCRIPTION
3900090	2' X 4' - BLK
3900095	2' X 6' - BLK
3900100	2' X 8' - BLK
3900105	3' X 6' - BLK
3900110	3' X 8' - BLK
3900004	4' X 8' - BLK

## VERSAMATS®

VersaMATS® offer a flat, slip-resistant tread which permits pedestrians to walk safely on the mats, yet they are as rugged as the original AlturnaMATS®. The reverse side has the same diamond plate tread as AlturnaMATS®, providing great traction for vehicles.

VersaMATS® are also available in white, making them ideal for safe use on walkways even in darkened conditions. They are also available smooth on one side.



- Leaves turf smooth, even in soft soil conditions
- Tough 1/2" thick recycled polyethylene
- Withstands 60 - ton loads
- Available in both black or white mats
- Available in cleated, smooth, and smooth on one side
- Build a temporary roadway or walkway in minutes
- Lock together with Turn-A-Links or EZ links
- Limited Lifetime Warranty

CLEATED BOTH SIDES	
PART #	DESCRIPTION
3900125	2' X 8' - BLK
3900040	3' X 8' - BLK
3900130	4' X 8' - BLK

SMOOTH BOTH SIDES	
PART #	DESCRIPTION
3900135	2' X 8' - BLK
3900140	3' X 8' - BLK
3900145	4' X 8' - BLK

SMOOTH ONE SIDE	
PART #	DESCRIPTION
3900150	2' X 8' - BLK
3900041	3' X 8' - BLK
3900155	4' X 8' - BLK



## OUTRIGGER PADS

Outrigger pads provide a stable and safe platform to prevent sinking or slipping into the ground. Pads can be used to stabilize outrigger legs, used on aerial equipment, mobile cranes, concrete pumps, and more.



- Safety textured
- No delamination
- Safety orange rope handles
- Lightweight
- No splinters
- Recovery memory
- No warping after bending

OUTRIGGER PADS			
PART #	SIZE (W X L X H)*	LOAD CAPACITY	
		VERTICAL	45° ANGLE
3900160	15" X 15" X 1"	45,000 lbs.	20,000 lbs.
3900042	18" X 18" X 1"	55,000 lbs.	30,000 lbs.
3900025	24" X 24" X 1"	60,000 lbs.	35,000 lbs.
3900030	24" X 24" X 2"	62,000 lbs.	40,000 lbs.

\*Additional sizes are available.



## MAT-PAKS

Hole Products offers Mat-Paks in both AtlurnaMats® and VersaMATs® options. Mat-Paks are a handy way to transport and store AlturnaMAT® products.

### Mat-Pak Contents:

- 12 - 4' x 8' or 3' x 8' Ground Protection Mats
- 1 - Turn-A-Rack Storage and Transportation Rack with four (4) way fork lift entry
- 20 - Turn-A-Links
- 2 - Handi-Hooks
- 2 - Nylon Ratchet Straps

Please contact your Hole Products representative for additional Mat-Pak details.



## ACCESSORIES

### TURN-A-LINKS

Turn-A-Links connect easily to create an instant portable roadway or working platform. Available in round and flat link styles.

TURN-A-LINKS		
PART #		DESCRIPTION
3900170	SINGLE	ROUND 1/2" DIAMETER
3900175	DOUBLE	
3900180	SINGLE	FLAT 1/4" X 3/4"
3900185	DOUBLE	



### E-Z LINK

E-Z Links are a quick and convenient linking system for AlturnaMATS® and VersaMATS®. The links are available in single or double and are suitable for pedestrian applications as well as movement of light, compact equipment.

E-Z LINKS	
PART #	DESCRIPTION
3900190	SINGLE
3900195	DOUBLE



### HANDI-HOOKS

Handi-Hooks make moving mats easier, even in wet areas. Made of steel rod, painted white.

HANDI-HOOKS	
PART #	DESCRIPTION
3900200	3"





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## SAFETY EQUIPMENT



Hole Products offers a complete line of safety equipment to keep job sites free from injury.

From gloves and safety glasses to hard hats and hearing protection, we have the safety equipment drilling contractors need to stay in compliance, and make sure all employees go home safely.




Please contact your Hole Products representative for product specific information and the availability of additional safety equipment needed for your next drilling project.

*Products listed in the catalog are representative of the most common industry sizes and styles. Please contact your Hole Products representative for additional product offerings.*

## HEAD PROTECTION

Hard hats dissipate the force of an impact from an object by spreading it over a greater area. Hole Products' hard hats feature load bearing points which help to stabilize and balance the hat during everyday wear. Hard hat shades, which attach easily to hats, are also available to shield outdoor workers from the sun.


Additional sizes, styles, and colors are available on request.

HEAD PROTECTION		
	PART #	DESCRIPTION
	6300040	WHITE FULL BRIM RATCHET • Meets ANSI Z89.1 Type 1, Class C, G, and E
	6300043	HARD HAT SHADE
	6300042	SAFETY CAP W/ LATERAL CONTOURS FOR OPTIONAL INTEGRAL HEARING PROTECTION • Meets ANSI Z89.1 2003 for Type 1





## EYE PROTECTION

Ensure OSHA compliance and protect employees' eyes with Hole Products' complete line of eye protection. We offer safety glasses and goggles in a variety of styles with multiple lens colors and options.

EYE PROTECTION		
	PART #	DESCRIPTION
	6250025	BLACK FRAME CLEAR LENS • Ansi Z871.1+, 99.9% UV Protection
	6250000	BLACK FRAME SMOKE LENS • Ansi Z871.1+, 99.9% UV Protection
	6250005	BLACK FRAME GRAY LENS • Ansi Z871.1+, 99.9% UV Protection
	6250015	BLACK FRAME BLUE MIRROR LENS • Ansi Z871.1+, 99.9% UV Protection
	6250010	SILVER FRAME SMOKE LENS • Ansi Z871.1+, 99.9% UV Protection
	6250020	CAMO FRAME GRAY LENS • Ansi Z871.1+, 99.9% UV Protection

## HEARING PROTECTION

Protect employee hearing with ear plugs and ear muffs from Hole Products. We offer disposable and reusable earplugs and ear muffs in multiple sizes and styles.

HEARING PROTECTION		
	PART #	DESCRIPTION
	6300025	FOAM EAR PLUGS • Noise reduction rate of 29dB • 200/Box
	6300026	OPTIME 98 EARMUFFS • Noise reduction rate of 23dB • Hard hat attachment



# HAND PROTECTION

Protect employees' hands with a large selection of gloves from Hole Products. We offer coated, dotted, latex, leather, nitrile, welding gloves, and more.

HAND PROTECTION		
	PART #	DESCRIPTION
	6150050	DOT COTTON CANVAS
	6150081	COTTON/POLYESTER GLOVE LINER ONE SIZE FITS ALL
	6150060	DOT KNIT
	6150040	VINYL COATED KNIT LINED SIZE 10
	6150039	VINYL COATED KNIT LINED SIZE 9
	6150080	MONKEY GRIP SIZE 10
	6150005	LATEX LARGE POWDER FREE 100/BOX
	6150010	LATEX X-LARGE POWDER FREE 100/BOX
	6150020	NITRILE LARGE POWDER FREE 100/BOX
	6150025	NITRILE X-LARGE POWDER FREE 100/BOX

## RESPIRATORS

Hole Products offers multiple sizes and styles of respirators to fit a variety of project requirements. Please contact your Hole Products representative for information on additional respirator options.

RESPIRATORS		
	PART #	DESCRIPTION
	6300079	HALF FACE RESPIRATOR, SMALL
	6300075	HALF FACE RESPIRATOR, MEDIUM
	6300077	HALF FACE RESPIRATOR, LARGE
	6300080	FILTER CARTRIDGE RESISTANCE TO ORGANIC VAPOR, 2 PK

## COVERALLS

Hole Products offers a variety flame resistant, Tychem® and Tyvek® coveralls for protection against a range of chemical and dry particulate hazards. Most coveralls are available in sizes ranging from small to 4XL.

Please contact your Hole Products representative for information on additional coverall options.




## TRAFFIC SAFETY

We offer cones, vests, barricades, light bars, and more. Hole Products offers the traffic safety equipment contractors need to keep job sites safe.

TRAFFIC SAFETY		
	PART #	DESCRIPTION
	6300050	MINI LIGHT BAR-MAGNETIC MOUNT 12V DC CONNECTOR
	6300000	SAFETY VEST L/XL
	6300001	SAFETY VEST ORANGE 2XL/3XL
	6300049	28" TRAFFIC CONE
	6300048	18" TRAFFIC CONE

## SAFETY STORAGE

Hole Products offers multiple sizes and styles of safety storage containers. Safely store gasoline and other flammable liquids and keep your workplace safe and in compliance.

SAFETY STORAGE		
	PART #	DESCRIPTION
	6300007	2 GALLON GAS CAN W/FUNNEL
	6300005	5 GALLON DIESEL CAN W/ FUNNEL



# REVERSE CIRCULATION DRILLING TABLE OF CONTENTS

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## REVERSE CIRCULATION DRILLING



Reverse Circulation drilling is recognized as a fast and cost efficient alternative to diamond core drilling. With continuous advancements, deep holes and fast penetration rates are possible in almost all ground conditions, making Reverse Circulation the preferred drilling method for initial exploration, ore body development and other exploratory drilling.

Reverse Circulation drilling utilizes dual wall drill rods made up of an outer rod and an inner tube. The inner tube is designed to provide a continuous path for the drill cutting to pass from the bit face to the surface. Air or fluids are forced down the annulus between the drill rods and inner tube to the drilling tool (Reverse Circulation hammer, Tricone, or Fixed Cutter Bit). The cuttings return to the surface inside the inner tubes of the rods, where they are directed to a cyclone for separation and sample collection.

Hole Products offers a complete line of quality Reverse Circulation tooling including rods, subs, hammers, bits, and accessories. In addition, our sales and support team has the knowledge and experience necessary to provide troubleshooting and onsite tooling solutions.

Please contact your Hole Products representative for additional details.

*Products listed in the catalog are representative of the most common industry sizes and styles.  
Please contact your Hole Products representative for additional product offerings.*

## REVERSE CIRCULATION DRILL RODS

Hole Products offers a complete line of premium quality reverse circulation, drill rods, in sizes from 3 1/2" to 10 3/4", and with a number of thread connections. All Reverse Circulation rods are manufactured using the most advanced technologies and specifically engineered to provide high strength, excellent wear resistance, and long life.

Reverse Circulation, dual wall drill rods are manufactured with an outer drill rod and an inner tube located inside the rod. When the drill rods are threaded together, the inner tubes seal together to provide a continuous route for cuttings to travel from the bit face to the surface for collection.

Please contact your Hole Products representative for additional details and ordering assistance.



REVERSE CIRCULATION DRILL ROD SPECIFICATIONS							
Thread Type	Remet	Remet	Remet	Metzke	Metzke	Matrix	Matrix
Rod O.D.	3 1/2"	4"	4 1/2"	4"	4 1/2"	4"	4 1/2"
Outer tube O.D.	88.9mm	101.7mm	114.3mm	101.7mm	114.3mm	101.7mm	114.3mm
Outer tube I.D.	81.8mm	94.6mm	107.2mm	94.6mm	107.2mm	94.6mm	107.2mm
Outer tube WT	5.3mm	7.1mm	7.1mm	7.1mm	7.1mm	7.1mm	7.1mm
Inner tube O.D.	38.1mm	50.8mm	63.5mm	50.8mm	63.5mm	50.8mm	63.5mm
Inner tube I.D.	32.6mm	45.3mm	58mm	45.3mm	58mm	45.3mm	58mm
Inner tube WT	5.5mm	5.5mm	5.5mm	5.5mm	5.5mm	5.5mm	5.5mm
Spanner Flat	90mm	90mm	90mm	90mm	90mm	90mm	90mm
Weight 3.0 m	75 kg.	75 kg.	95 kg.	75 kg.	95 kg.	75 kg.	95 kg.
Weight 6.0 m	120 kg.	150 kg.	168 kg.	150 kg.	168 kg.	150 kg.	168 kg.

## REVERSE CIRCULATION HAMMERS

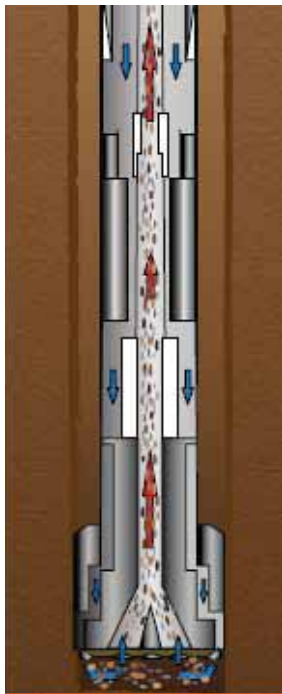
Hole Products offers a complete line of Reverse Circulation hammers and spare parts from the industry's leading manufacturers including Mincon® and Sandvik®. Hammers are available in a wide range of sizes and styles, to provide maximum performance and longevity on all RC drilling jobs.

Reverse Circulation hammers are designed with an inner sample tube that extends through the center and into the top of the hammer bit. The RC hammer exhausts the air between the bit splines and over the face of the bit. This forces the sample into the recovery holes in the face of the bit, through the center of the hammer and upward through the drill rod inner tubes to the surface for collection. The use of a shroud or collar is required when a RC hammer is used, to help direct the return air and cuttings up through the face of the bit.

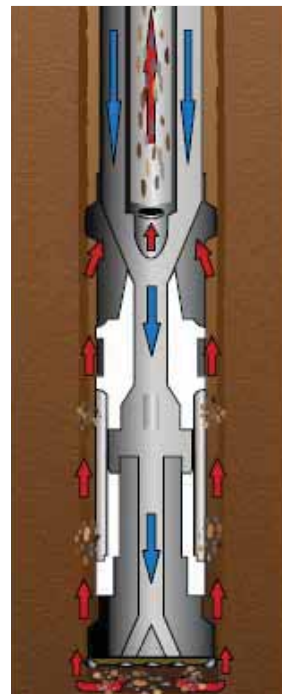
Conventional DTH hammers can also be used in RC drilling operations, but increase the potential for sample loss and contamination. A conventional DTH hammer is used in conjunction with a cross-over sub located between the hammer and drill rod. The sample travels from the face of the bit up the outside of the hammer and into the cross-over sub. The sub directs the sample up the center of the dual wall rods and to the surface.

Please contact your Hole Products representative for additional details.

**RC HAMMER**



**CONVENTIONAL HAMMER**





# MINCON® REVERSE CIRCULATION HAMMERS

Hole Products offers Mincon reverse circulation hammers and bits in a wide range of sizes and styles for use on all grade control and exploration projects. Mincon hammers are designed to provide trouble free performance in even the deepest holes and most demanding drilling conditions.



Mincon reverse circulation hammers offer a number of features and benefits including:

- Multiple chuck sleeve lengths for varying drilling conditions.
- Single piece, heat treated sample tubes, offering superior wear resistance.
- Metal sprayed chuck and wear sleeves to increase wear resistance.
- Ease of service, with no special tools required.

MINCON REVERSE CIRCULATION HAMMER MODEL		MR116	MR120	MR132	MX4044	MX4550	MX5053	MX5456
HAMMER OUTSIDE DIAMETER	METRIC	116mm	120mm	132mm	92mm	109mm	120mm	132mm
	IMPERIAL	4.57"	4.57"	5.2"	3.625"	4.290"	4.720"	5.20"
HAMMER LENGTH (Less Drill Bit)	METRIC	1143mm	1165mm	1165mm	1055mm	1165mm	1165mm	1165mm
	IMPERIAL	45.0"	45.9"	45.9"	41.5"	45.9"	45.9"	45.9"
BACKHEAD SPANNER FLAT SIZE	METRIC	94mm	94mm	94mm	76mm	94mm	100mm	100mm
	IMPERIAL	4"	4"	4"	3"	3.7"	4"	4"
DRILL BIT SHANK TYPE		MR116	MR120	MR132	MX4044	MX4550	MX5053	MX5456
BACKHEAD THREADS AVAILABLE		4" & 4 1/2" Metzke	4" & 4 1/2" Metzke	4 1/2" Metzke	3 1/2" Remet	4" Remet	4 1/2" Metzke	4 1/2" Remet
		4" & 4 1/2" Remet	4" & 4 1/2" Remet	4 1/2" Remet				
DRILL BIT SIZE RANGE	METRIC	121mm - 127mm	127mm - 143mm	137mm - 146mm	102mm - 114mm	114mm - 127mm	127mm - 137mm	140mm - 146mm
	IMPERIAL	4.75" - 5"	5" - 5.625"	5.4" - 5.75"	4.0" - 4.5"	4.5" - 5"	5" - 5.375"	5.5" - 5.75"
HAMMER WEIGHT (Less Bit)	METRIC	65 kgs.	70 kgs.	77 kgs.	46 kgs.	56 kgs.	70 kgs.	77 kgs.
	IMPERIAL	143 lbs.	154 lbs.	170 lbs.	101 lbs.	132 lbs.	154 lbs.	169 lbs.
PISTON WEIGHT	METRIC	14 kgs.	16 kgs.	19 kgs.	7.5 kgs.	12.3 kgs.	15 kgs.	18 kgs.
	IMPERIAL	30.9 lbs.	35.3 lbs.	41.9 lbs.	16.5 lbs.	27 lbs.	33 lbs.	40 lbs.
BACKHEAD STAND OFF	METRIC	0.75mm	0.75mm	0.75mm	0.9mm	0.9mm	0.75mm	0.75mm
	IMPERIAL	0.030"	0.030"	0.030"	0.036"	0.036"	0.030"	0.030"

## SANDVIK® REVERSE CIRCULATION HAMMERS

Hole Products offers a complete range of Sandvik reverse circulation hammers. These hammers feature a superior design, providing excellent performance and durability. Maximum energy output and minimum air consumption results in increased productivity and reduced costs.

Sandvik Reverse Circulation hammers provide feature a number of performance enhancing features including:

- Large bore sample tube to increase hammer life and sample return.
- Excellent performance with or without a booster.
- Metal sprayed shroud to increase longevity.



SANDVIK REVERSE CIRCULATION HAMMER MODEL		RE035	RE004	RE542	RE543	RE040	RE545	RE052	RE054
HAMMER OUTSIDE DIAMETER	METRIC	82mm	107mm	109mm	117mm	121mm	122mm	121mm	130mm
	IMPERIAL	3 4/16"	4 3/16"	4 5/16"	4 10/16"	4 12/16"	4 13/16"	5 6/16"	5 8/16"
HAMMER LENGTH (Less Drill Bit)	METRIC	885mm	1211mm	1204mm	1204mm	1210mm	1279mm	1226mm	1252mm
	IMPERIAL	34 13/16"	47 11/16"	47 6/16"	47 6/16"	47 10/16"	50 6/16"	48 4/16"	49 5/16"
BACKHEAD SPANNER FLAT SIZE	METRIC	70mm	90mm	96.5mm	96.5mm	94mm	96.5mm	94mm	100mm
	IMPERIAL	2 12/16"	3 9/19"	3 13/16"	3 13/16"	3 11/16"	3 13/16"	3 11/16"	3 15/16"
DRILL BIT SIZE RANGE	METRIC	86mm - 102mm	114mm - 127mm	121mm - 133mm	124mm - 133mm	127mm - 140mm	124mm - 140mm	133mm - 143mm	140mm - 146mm
	IMPERIAL	3 3/8" - 4"	4 1/2" - 5"	4 3/4" - 5 1/4"	4 7/8" - 5 1/4"	5" - 5 1/2"	4 7/8" - 5 1/2"	5 1/4" - 5 5/8"	5 1/2" - 5 3/4"
HAMMER WEIGHT (Less Bit)	METRIC	22 kgs.	52 kgs.	50 kgs.	50 kgs.	72 kgs.	63 kgs.	67 kgs.	76 kgs.
	IMPERIAL	48.4 lbs.	114.4 lbs.	110 lbs.	110 lbs.	158.4 lbs.	138.6 lbs.	147.4 lbs.	167.2 lbs.

## SANDVIK® REVERSE CIRCULATION BITS

Hole Products offers a complete range of Sandvik's unique Ultra Flow Reverse Circulation bits. These bits feature a system that is designed to direct air in a straight line to the bit face via 8 exhaust channels. Bits are available in a wide range of sizes to meet any requirement. To optimize performance and bit life in a variety of rock conditions, Sandvik bits are offered with drop center, cross flow, or hard formation face designs.

SANDVIK REVERSE CIRCULATION MODEL		RE035	RE004	RE542	RE543	RE040	RE545	RE052	RE054
BIT DIAMETER	METRIC	86 to 102	114 to 121	114 to 133	121 to 133	127 to 137	123 to 140	133 to 143	137 to 146
	IMPERIAL	3 3/8" to 4"	4 1/2" to 4 3/4"	4 1/2" to 5 1/4"	4 3/4" to 5 1/4"	5" to 5 3/8"	4 7/8" to 5 1/2"	5 1/4" to 5 5/8"	5 3/8" to 5 3/4"
WEIGHT	kgs	4 to 4.5	11 to 16	11 to 16	12 to 16	16 to 18	12 to 16	16 to 18	17 to 19
	lbs	9 to 10	24 to 33	24 to 35	26 to 35	35 to 39	26 to 35	35 to 39	37 to 41

# REVERSE CIRCULATION BITS

Hole Products offers a complete line of Reverse Circulation hammer bits, tricones, and pdc's for use in a variety of formations, and under a wide range of drilling parameters. Bits are available in a variety of sizes and styles and with a number of thread connections.

## HAMMER BITS

Reverse Circulation hammer bits are similar to conventional hammer bits, but feature sample recovery ports in the face and a large bore through the center to accept the hammer's inner tube. Deep channels on the outside of the drill bit head to allow the exhaust air to force the sample into the recovery ports in the bit face.



## TRICONE BITS

Reverse Circulation tricones are available for use in a variety of rock formations, and with open or sealed bearings. Reverse Circulation tricones are similar to conventional tricones, but feature a bored out center, to allow samples up the inner tube.



## PDC BITS

Reverse Circulation PDC bits are fully customizable to meet any drilling parameters, and for use in a variety of formation. Reverse Circulation PDC's are similar to conventional PDC bits, but feature an open center.



Please refer to the Drill Bits section of this catalog for more information on Tricone and PDC bits, or contact your Hole Products representative for ordering assistance.

## REVERSE CIRCULATION SUBS

Hole Products offers a wide range of reverse circulation subs. All subs are manufactured using premium alloys and the most advanced manufacturing techniques, to maximize performance and durability. Reverse Circulation subs are available in a variety of sizes and with all industry standard thread connections. Our standard sub offering includes saver subs, adapter subs, cross-over subs, and bit subs. Custom subs are also available to meet all Reverse Circulation system requirements.

### SAVER SUBS

Saver Subs are positioned at the top of the Reverse Circulation rod string, between the first rod and the top drive head assembly. The subs purpose is to protect the top drive head threads from the wear and tear of frequent make and break connections during the drilling cycle.

### CROSS-OVER SUBS

Cross-over Subs allow the use of conventional DTH hammer in Reverse Circulation drilling. When used in conjunction with a crossover sub mounted above the hammer, the cuttings move up from the bit face into the inner tube through the open slots located on the crossover sub. Crossover subs can also be used to adapt between the rod string and hammer if they are different thread patterns.

### ADAPTER SUBS

Adapter Subs are used to adapt between multiple tooling sizes and thread profiles. Adapter subs can be manufactured in a wide range of sizes and styles, and with any thread connection.

### BIT SUBS

Bit subs connect the Reverse Circulation rod string to the rock bit. Bit subs are available in two designs: one, as an adapter to connect the rod string to the bit for drilling in overburden, and two, as a sub with an inner tube designed to direct the sample up the inner tube of the rods, to the surface for collection.



## AIR SWIVELS

Hole Products offers a variety of air swivels for use on reverse circulation drilling operations. Reverse Circulation air swivels can be customized to connect any pin or box connection, and designed for use on any rig.

Air swivels attach to the top of the Reverse Circulation drill rods or tubing to form a connection with the compressor or pump to allow circulation of the drilling mud, air, or water. The swivel feeds air or fluids into the outer drill rod, while maintaining a sealed inner tube to allow the cuttings to flow to the surface. Reverse Circulation swivels allow the drill pipe to rotate, while the side port for the cuttings to be returned remains stationary.



## CYCLONES & SPLITTERS

As part of our complete Reverse Circulation product line, Hole Products offers cyclones and splitters for sample collection on reverse circulation drill rigs.

The cyclone is designed to reduce the speed of the sample stream, separate the sample from the air, allowing it to be collected. A quality cyclone will increase sample recovery, and help prevent sample contamination.

Splitters are used to give an accurate representation of the complete sample by separating the sample down to a smaller size. Riffle splitters are commonly used with dry samples, while rotating cone splitters are used for wet sampling.



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