



CORING TOOLS

MINERAL EXPLORATION
ENVIRONMENTAL
GEOTECHNICAL
GEOTHERMAL
ROTARY
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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.

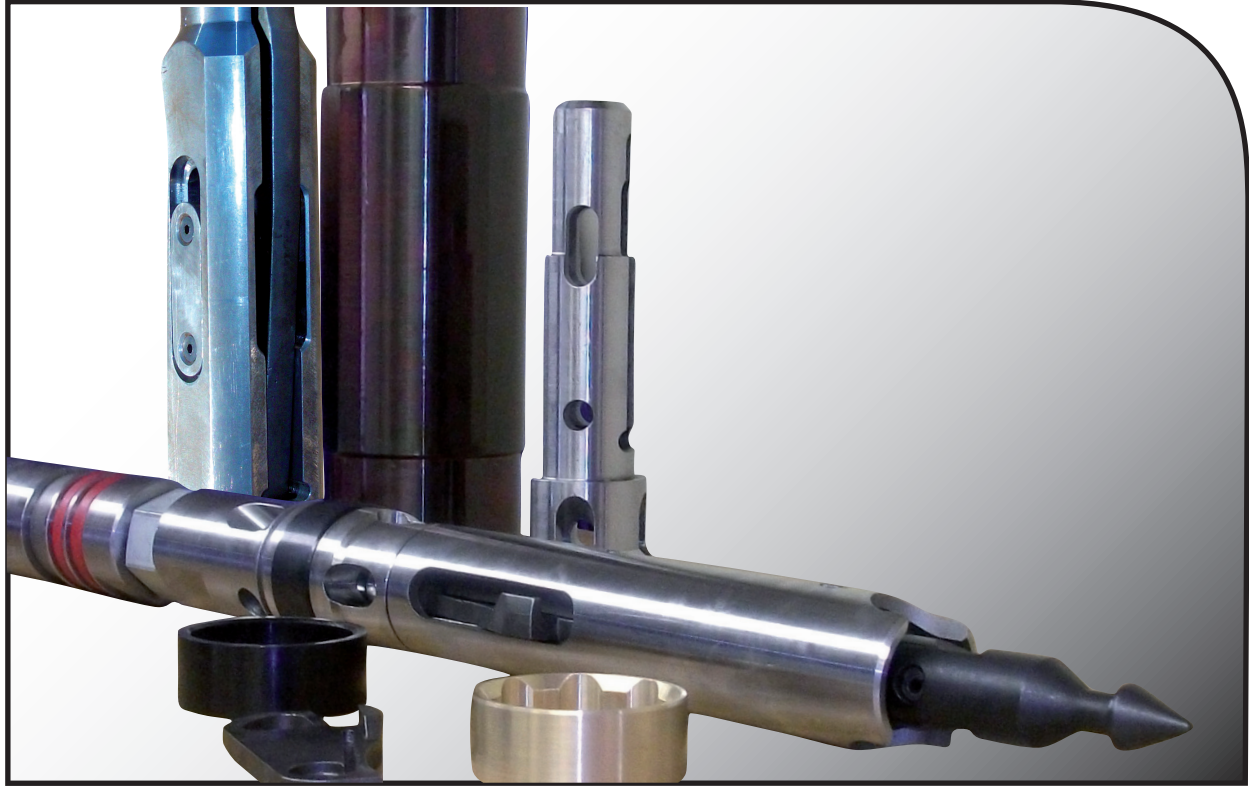
V-lock

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

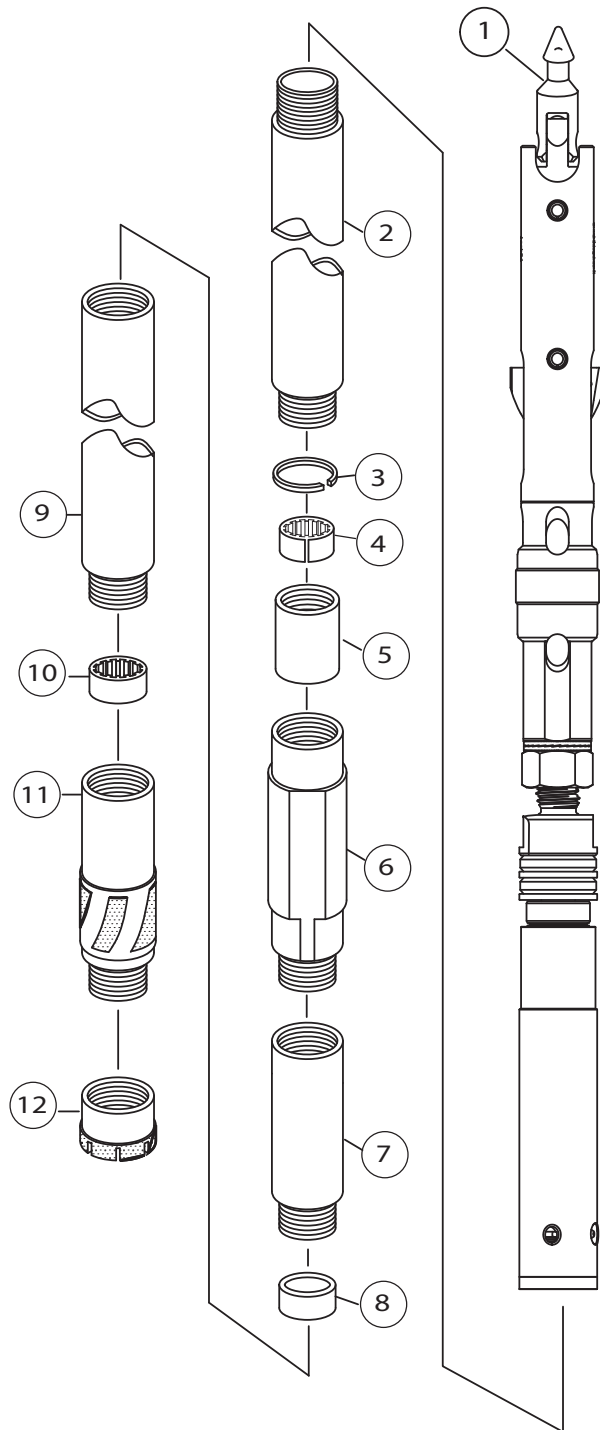
V-latch wireline head assemblies incorporate the proven technology of the spring latch head with wider and heavier latches. Wider and heavier latches mean less maintenance time and better locking strength. The mechanical latch retraction feature of the V-latch head assembly increases the power at which 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

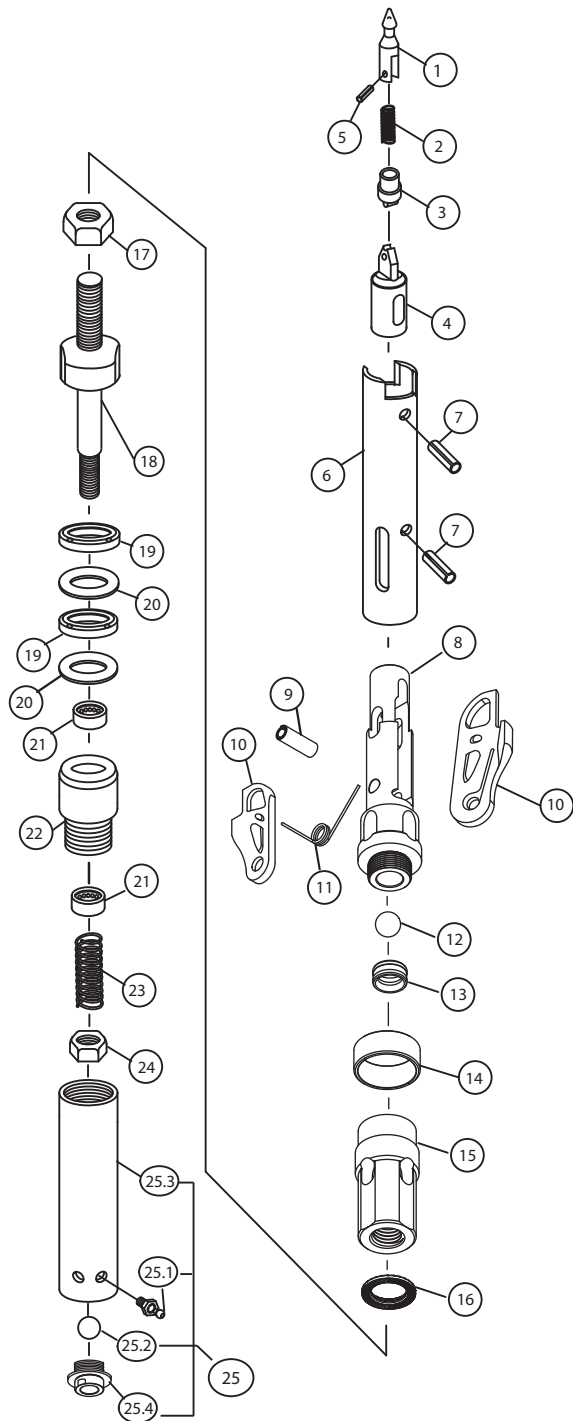
CORE BARREL PARTS		
ITEM	PART #	DESCRIPTION
1	1700052	HEAD ASSEMBLY
2	1700065	INNER TUBE 5FT
	1700070	INNER TUBE 10FT
	1700066	INNER TUBE 5FT CHROME PLATED
	1700071	INNER TUBE 10FT CHROME PLATED
3	1700025	STOP RING
4	1700015	CORE LIFTER, FLUTED*
5	1700020	CORE LIFTER CASE
6	1700045	LOCKING COUPLING, 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

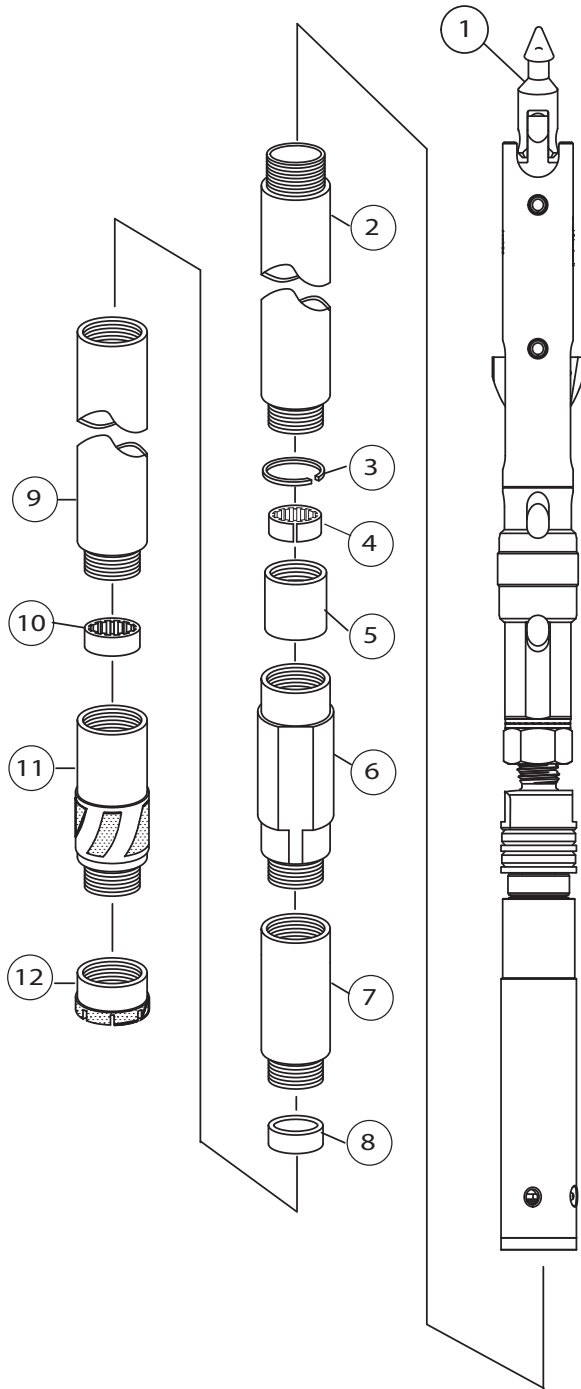


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-25	1700052	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1700100	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1700105	LATCH RETRACTING CASE
7	1700225	SPRING PIN, 3/8" X 1 3/4" (QTY. 2)
8	1700130	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****

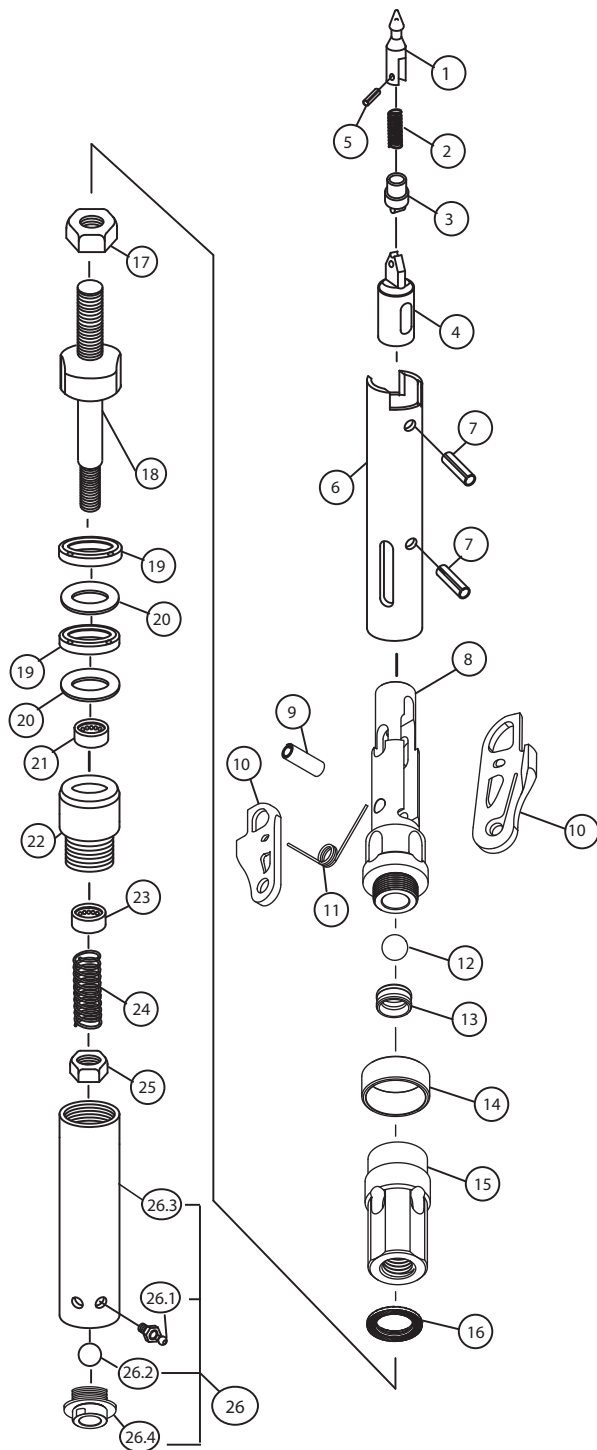
*Optional chrome plated inner tubes available.

**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

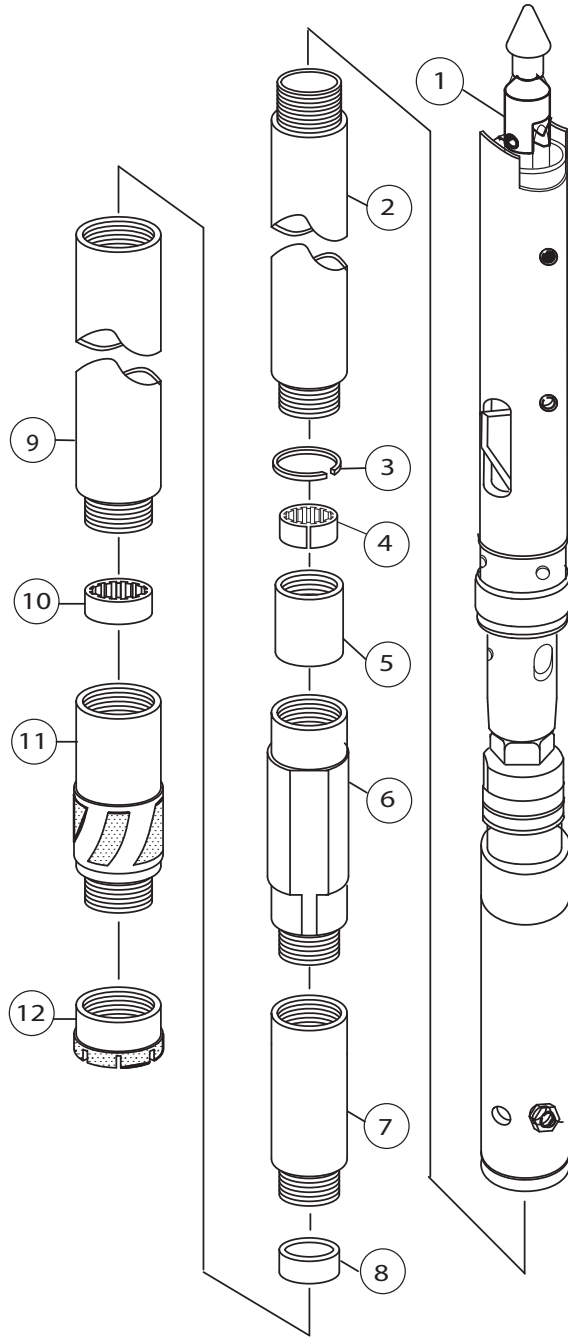


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1950143	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950310	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950315	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****

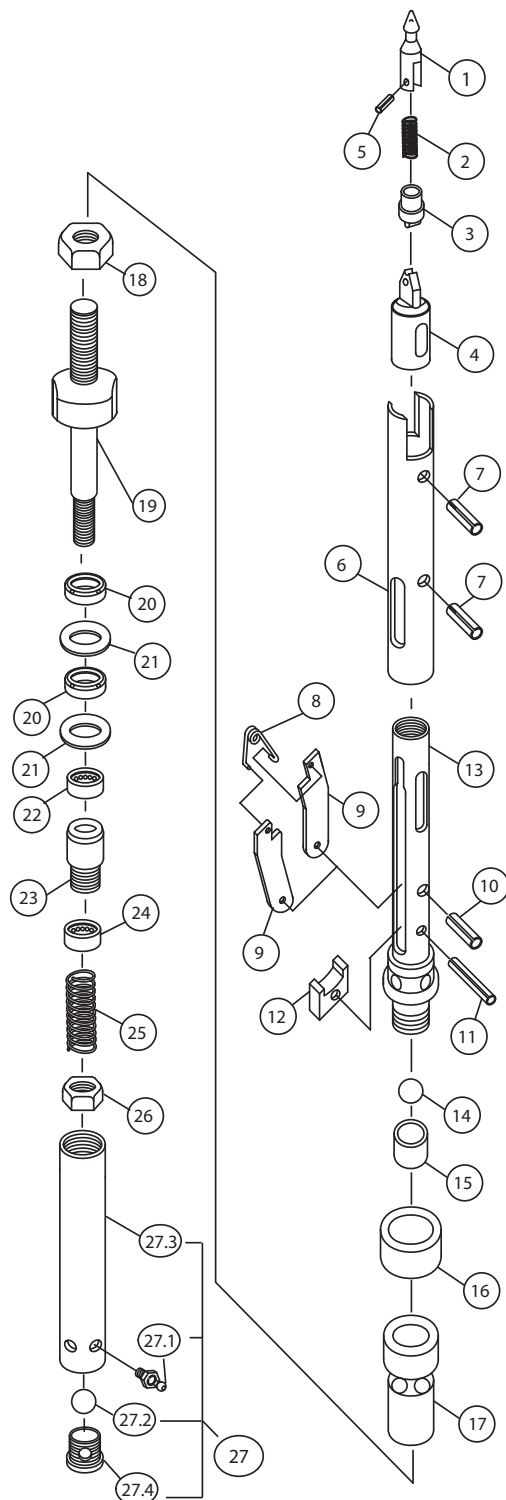
*Optional chrome plated inner tubes available.

**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

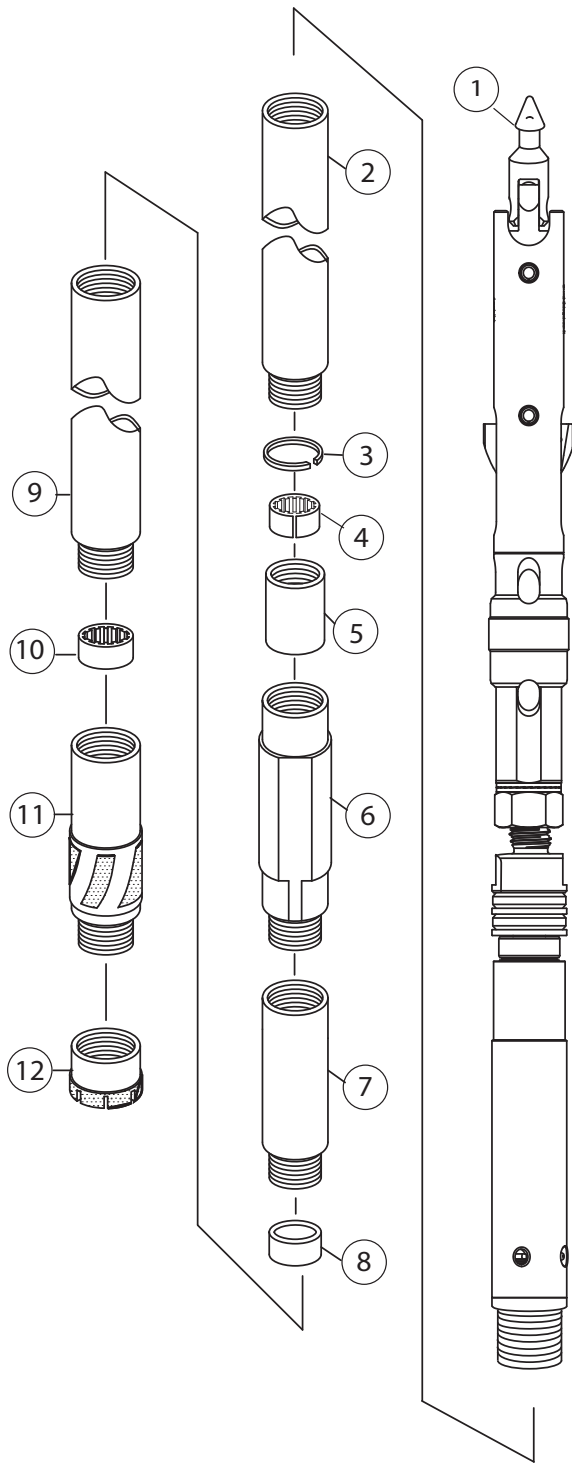


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1950140	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950195	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950205	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

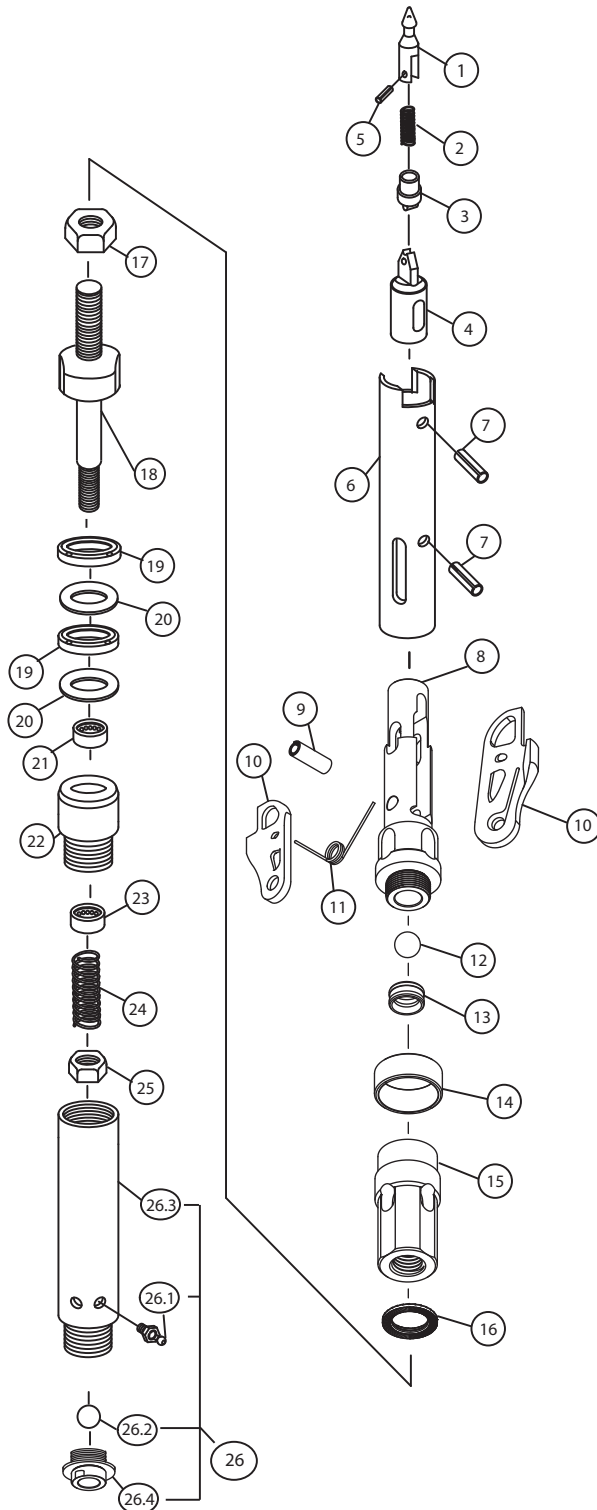
ITEM	PART #	DESCRIPTION
1	1850241	HEAD ASSEMBLY
2	1850100	INNER TUBE 5FT
	1850101	INNER TUBE 5FT CHROME PLATED
	1850105	INNER TUBE 10FT
	1850107	INNER TUBE 10FT CHROME PLATED
3	1850035	STOP RING
4	1850040	CORE LIFTER, FLUTED*
5	1850045	CORE LIFTER CASE
6	1950105	LOCKING COUPLING, FULL HOLE**
7	1950110	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

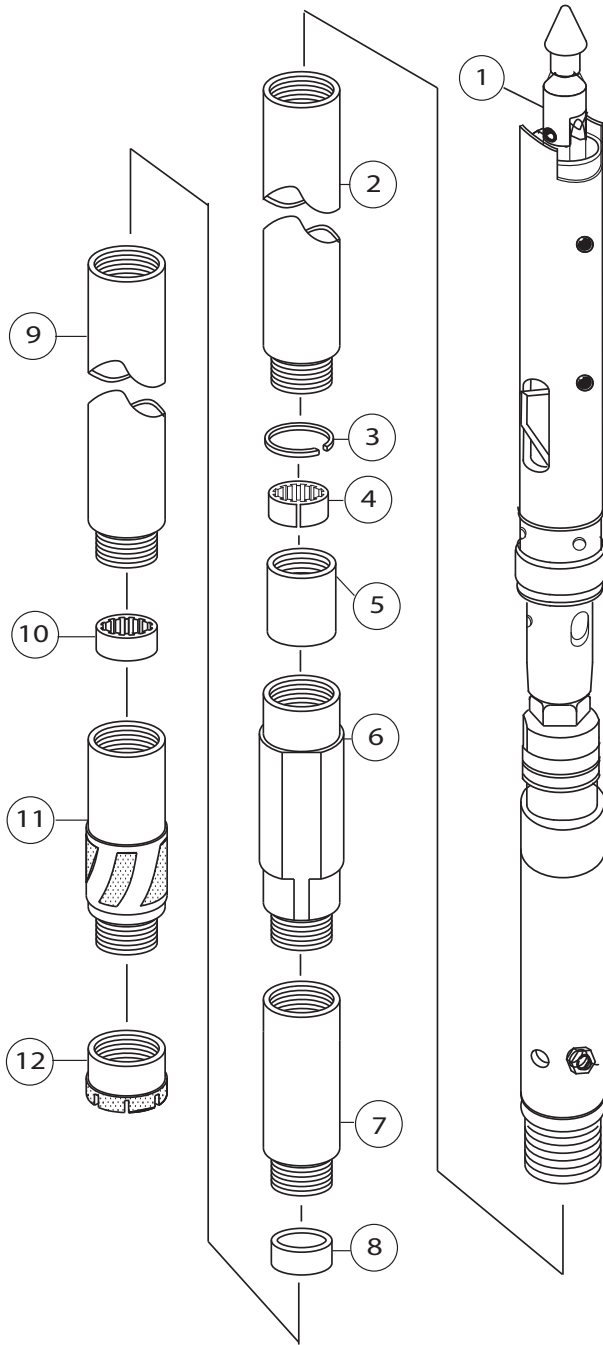


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1850241	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	BASE SPEARHEAD
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950310	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950315	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

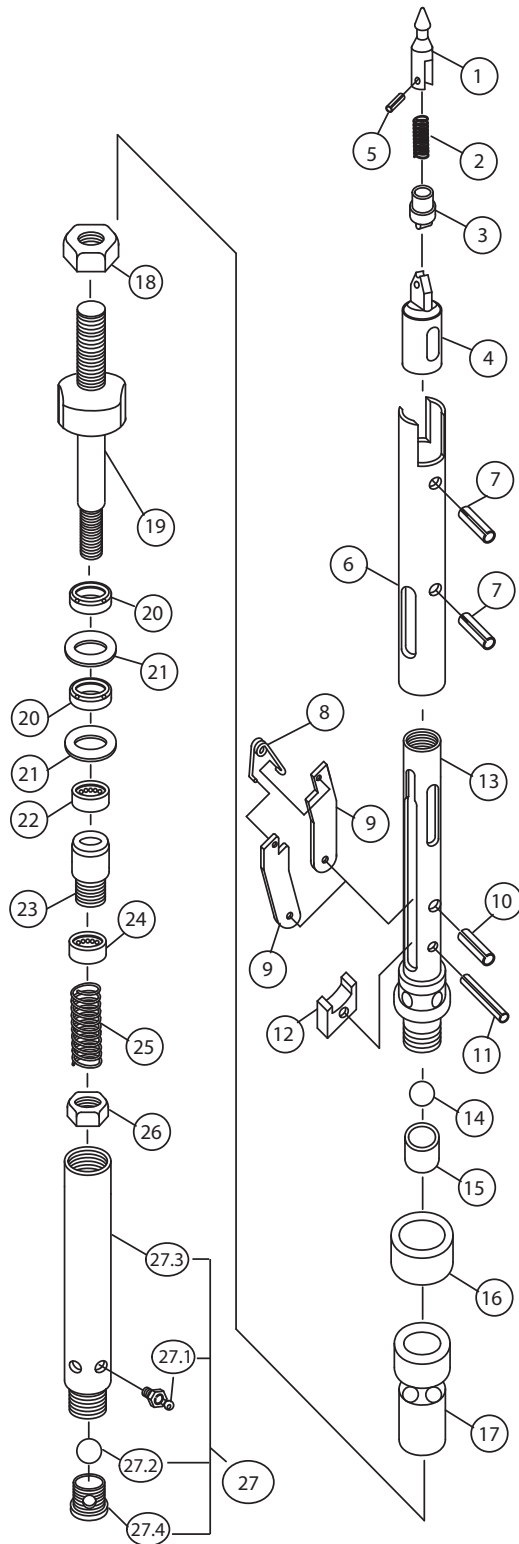
ITEM	PART #	DESCRIPTION
1	1850085	HEAD ASSEMBLY
2	1850100	INNER TUBE 5FT
	1850101	INNER TUBE 5FT CHROME PLATED
	1850105	INNER TUBE 10FT
	1850107	INNER TUBE 10FT CHROME PLATED
3	1850035	STOP RING
4	1850040	CORE LIFTER, FLUTED*
5	1850045	CORE LIFTER CASE
6	1950105	LOCKING COUPLING, FULL HOLE**
7	1950110	ADAPTER COUPLING
8	1850055	LANDING RING
	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 SPRING LATCH Head Assembly

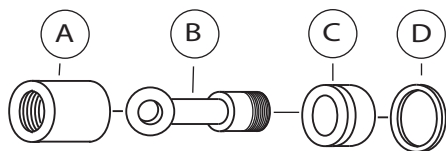
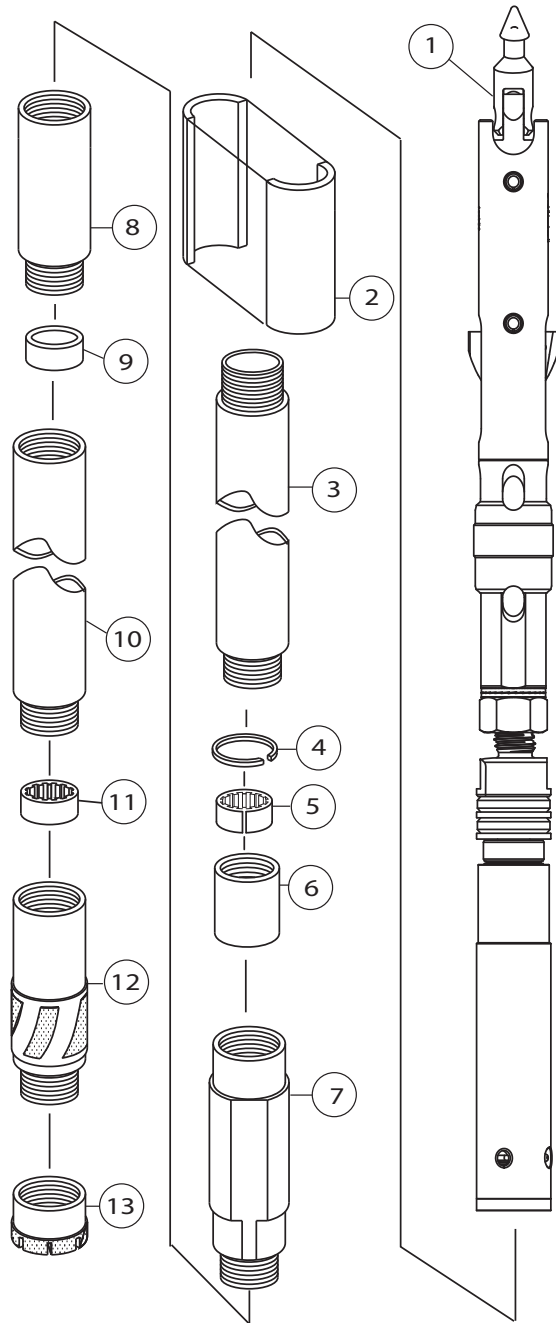


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1850085	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	BASE SPEARHEAD
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950195	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950205	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.

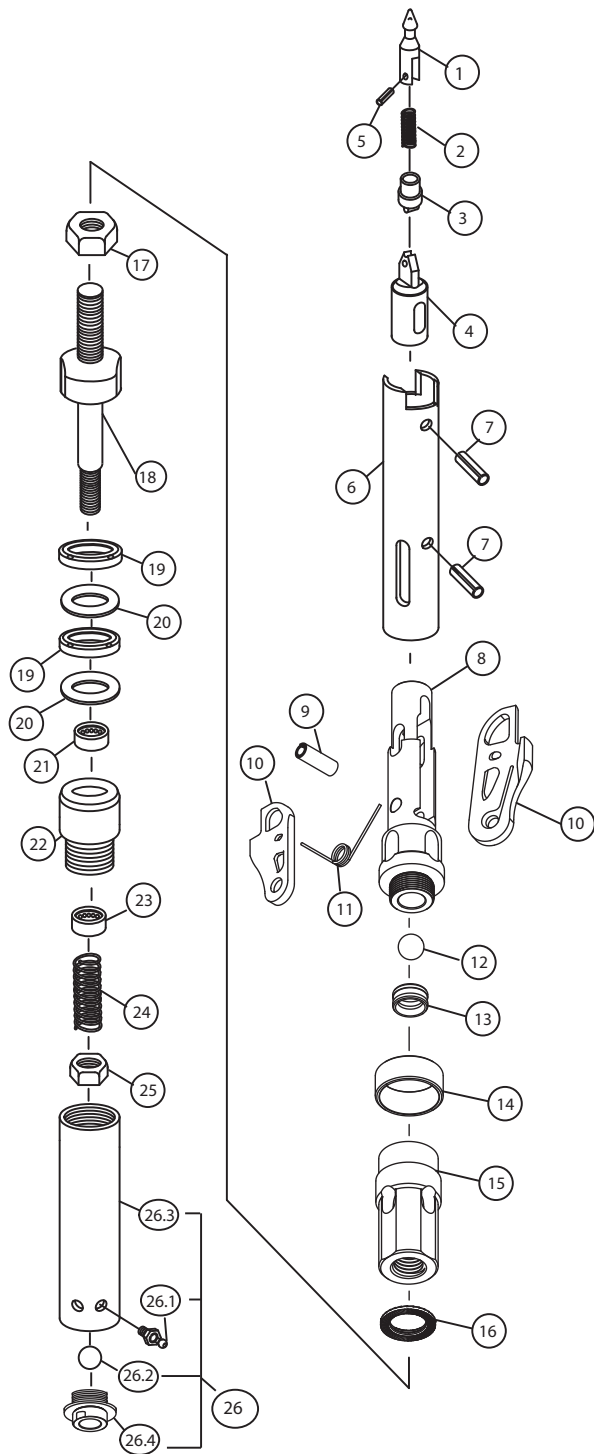
**Additional options available. Refer to page 58 for details.

*** 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

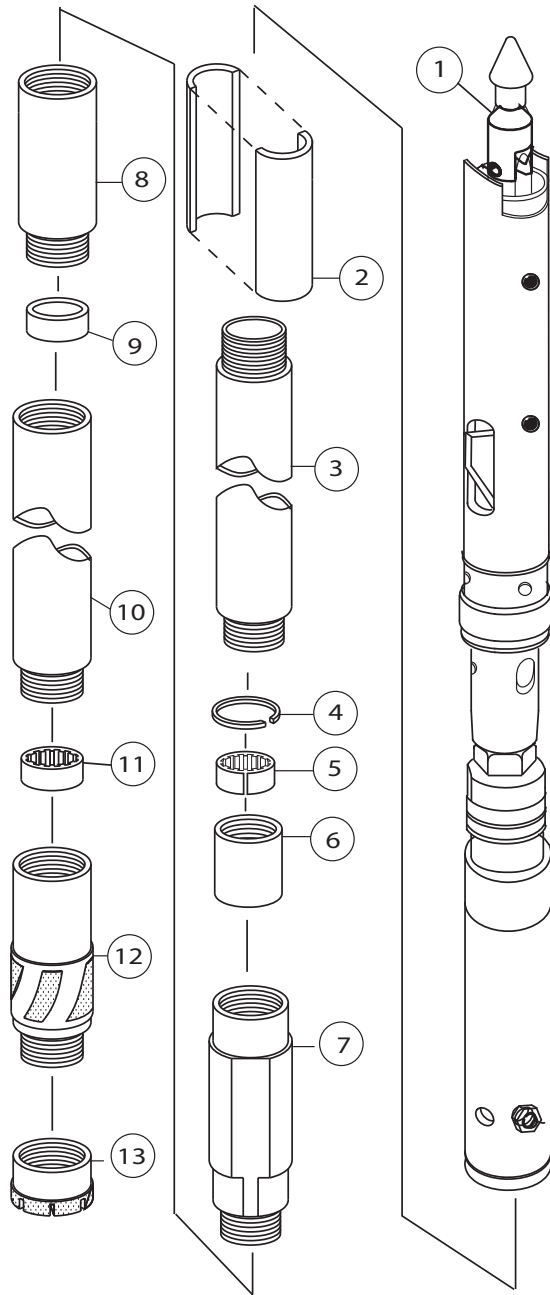


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1950143	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950310	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950315	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

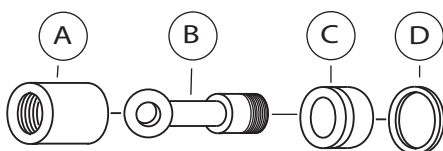
CORE BARREL PARTS

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.

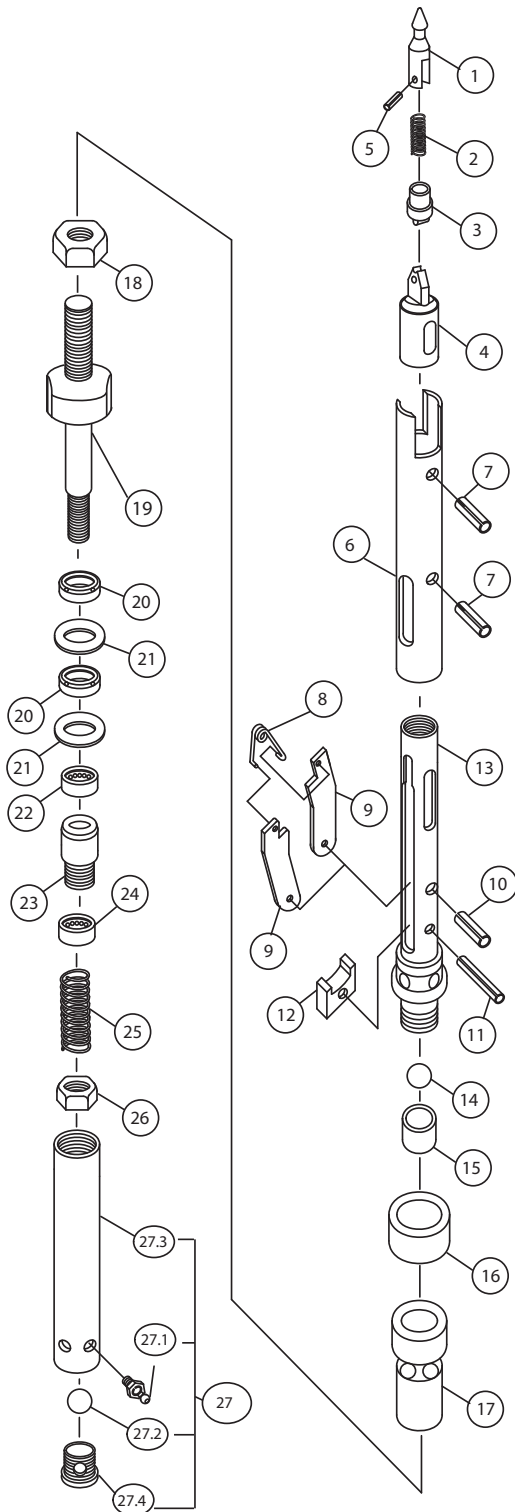
*** Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.



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

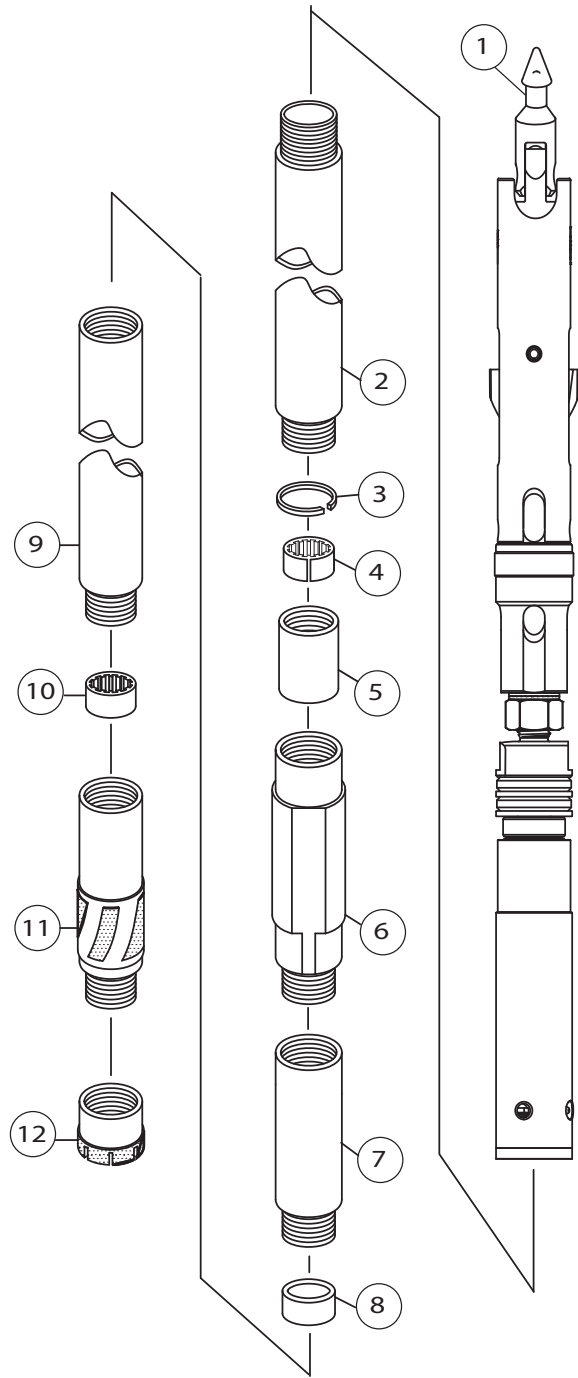


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1950140	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1950185	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1950195	LATCH RETRACTING CASE
7	1950200	SPRING PIN, 1/2" X 2" (QTY. 2)
8	1950205	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

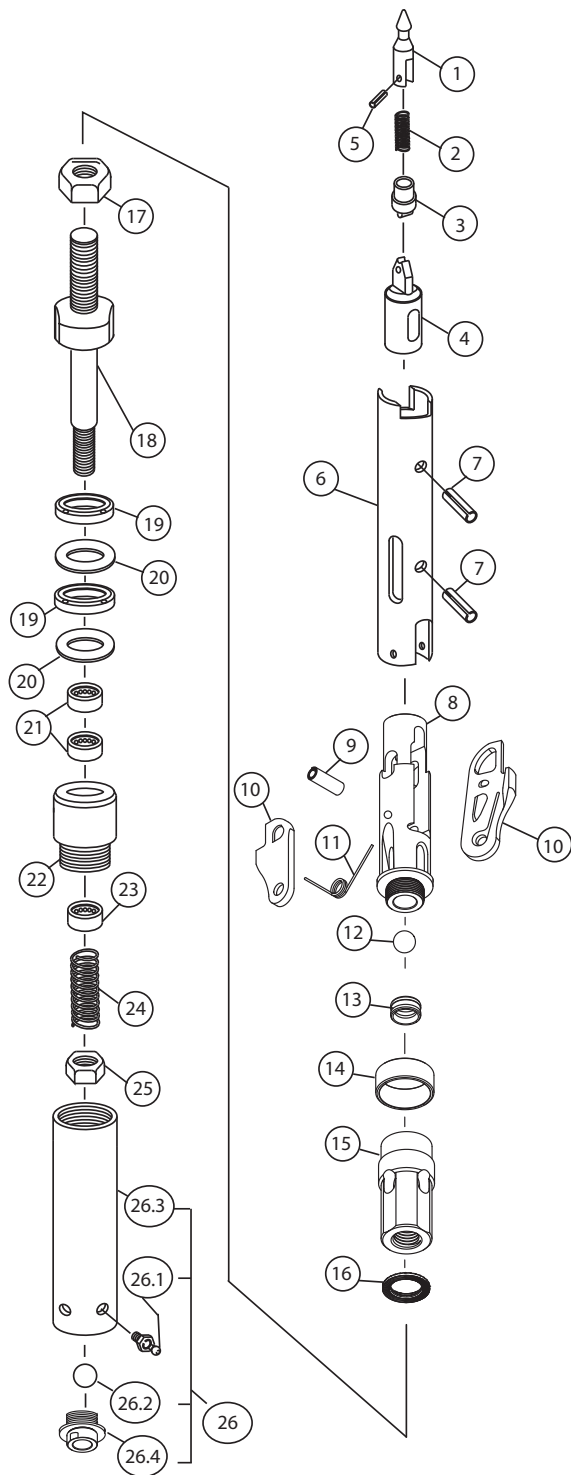
CORE BARREL PARTS		
ITEM	PART #	DESCRIPTION
1	1800183	HEAD ASSEMBLY
2	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
3	1800020	STOP RING
4	1800015	CORE LIFTER, FLUTED*
5	1800010	CORE LIFTER CASE
6	1800090	LOCKING COUPLING, FULL HOLE**
7	1800130	ADAPTER COUPLING
8	1800135	LANDING RING
9	1800030	OUTER 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

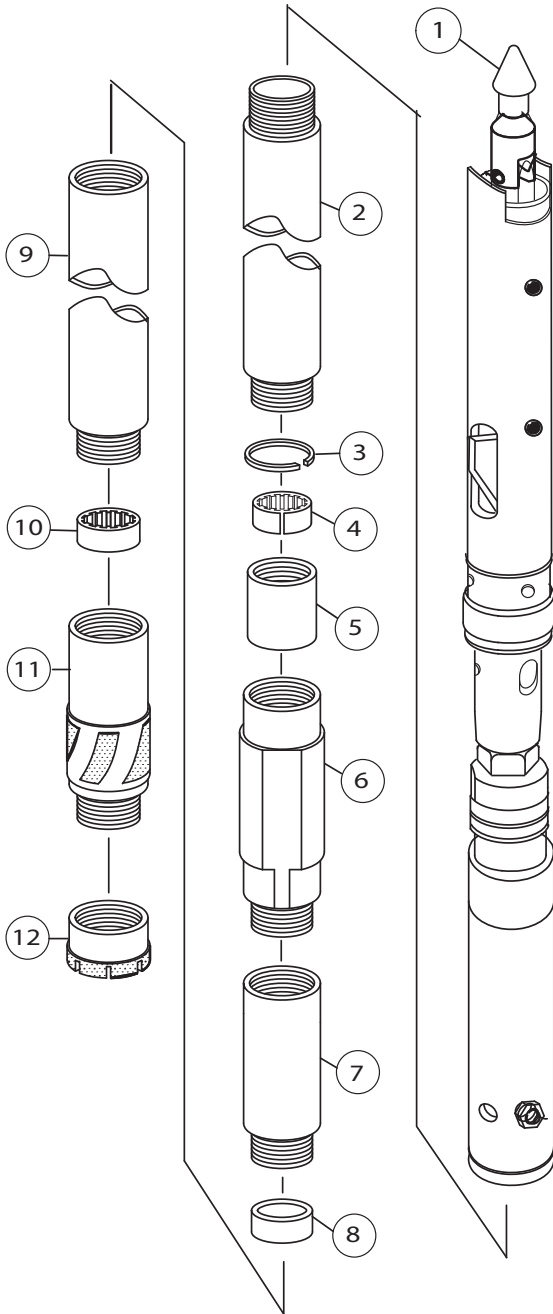


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1800183	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800300	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	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

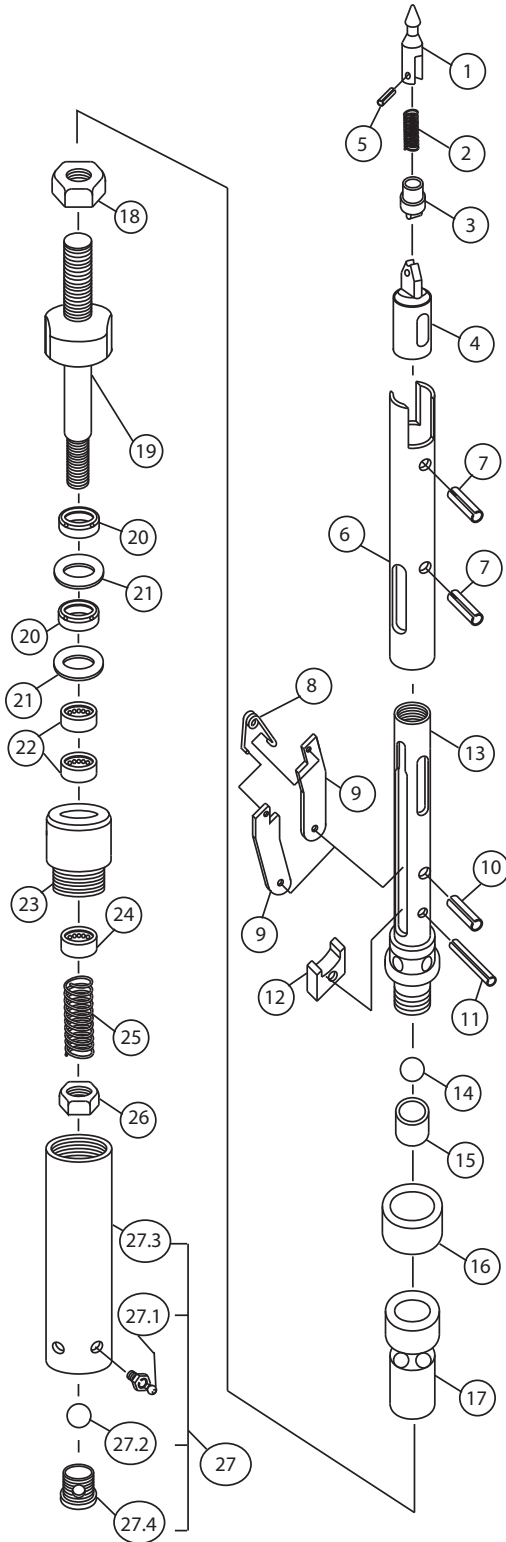
ITEM	PART #	DESCRIPTION
1	1800180	HEAD ASSEMBLY
2	1800005	INNER TUBE 5FT
	1800025	INNER TUBE 10FT
3	1800020	STOP RING
4	1800015	CORE LIFTER, FLUTED*
5	1800010	CORE LIFTER CASE
6	1800090	LOCKING COUPLING, FULL HOLE**
7	1800130	ADAPTER COUPLING
8	1800135	LANDING RING
9	1800030	OUTER TUBE 5FT
	1800035	OUTER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

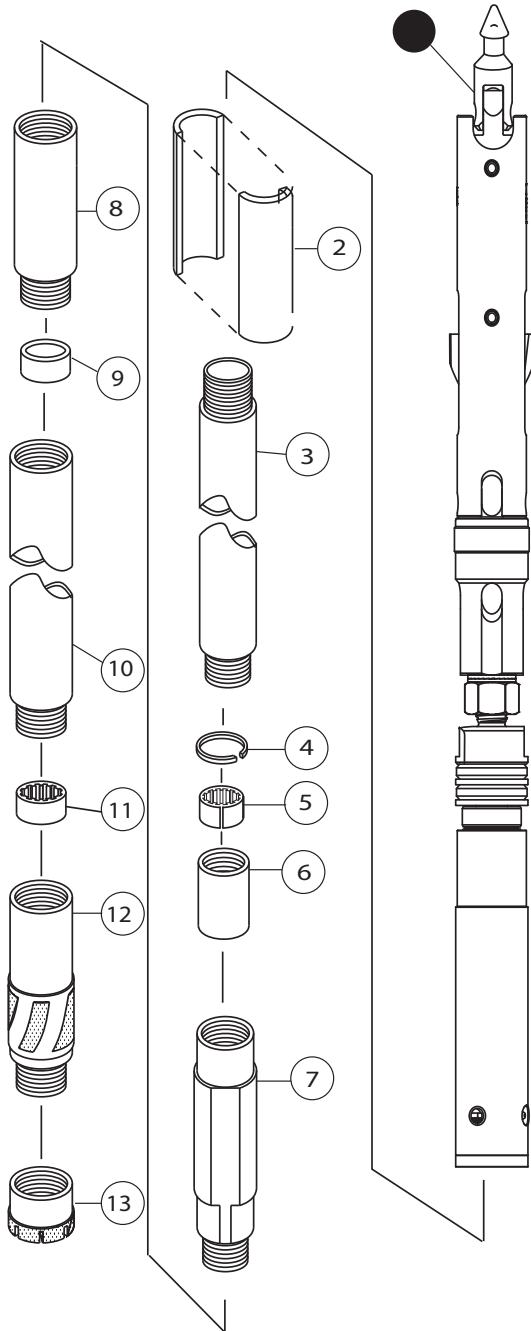


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1800180	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800210	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800220	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

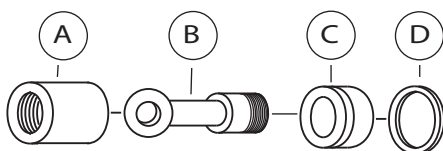
CORE BARREL PARTS

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.

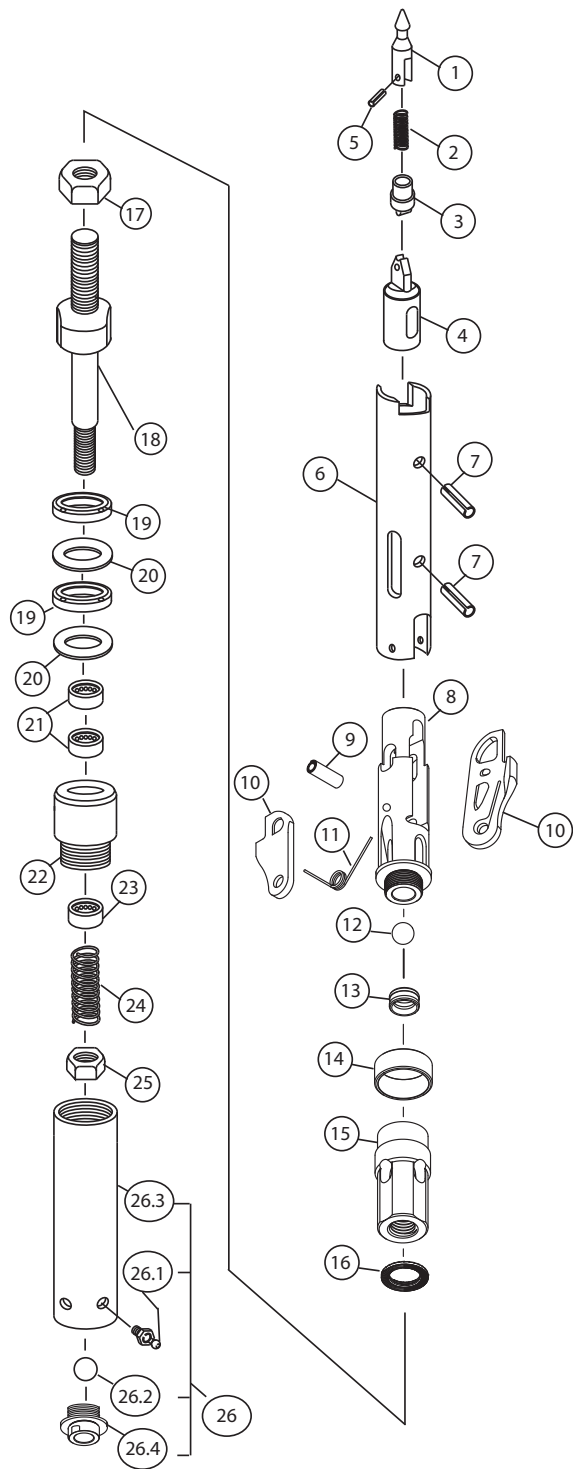
*** Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.



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

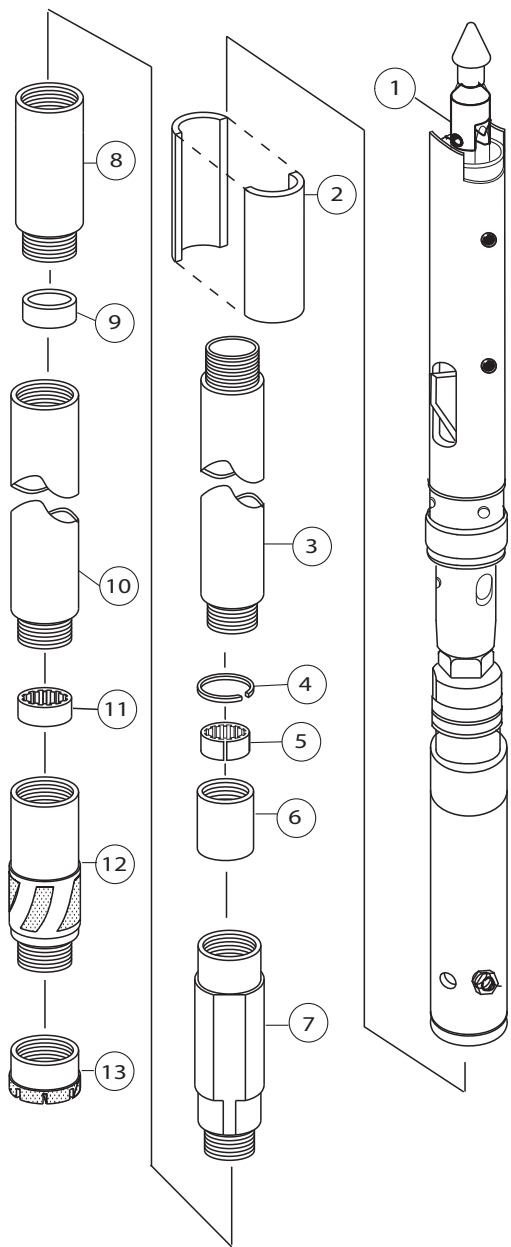


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-26	1800183	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800300	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	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

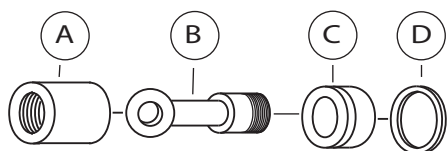
CORE BARREL PARTS

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.

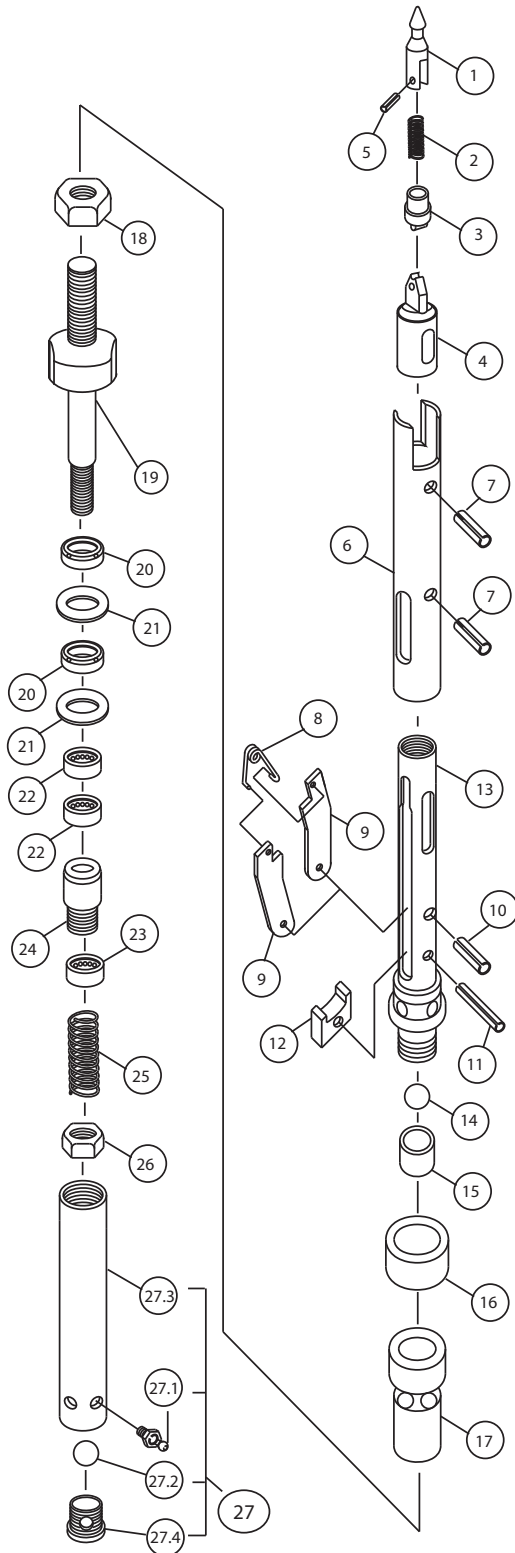
*** Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.



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

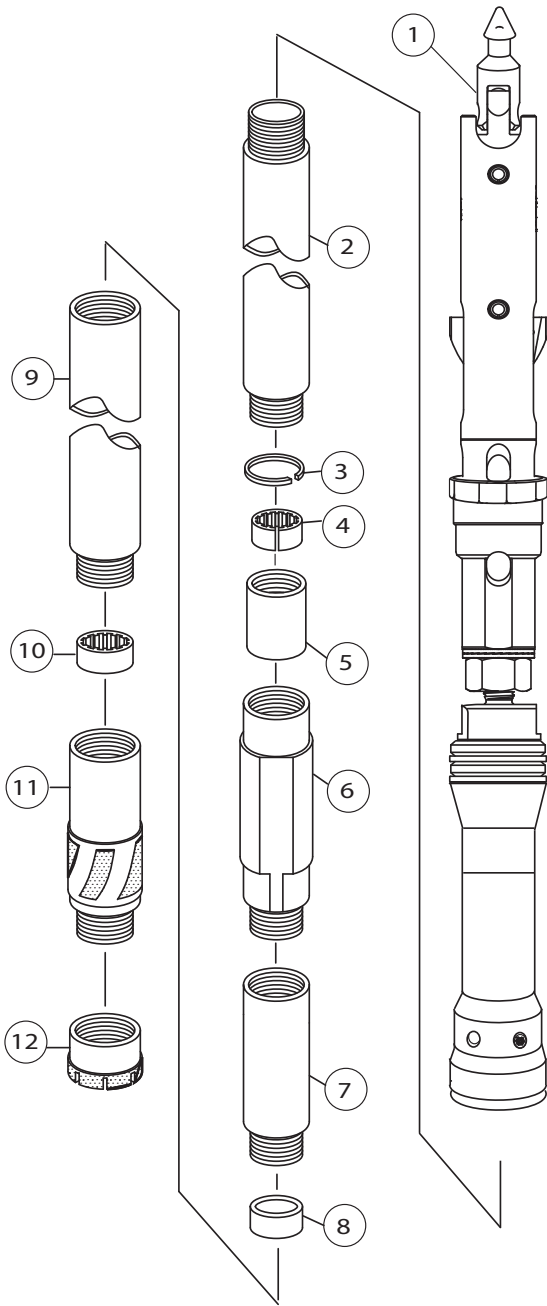


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-27	1800180	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	1800200	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	1800210	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800220	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

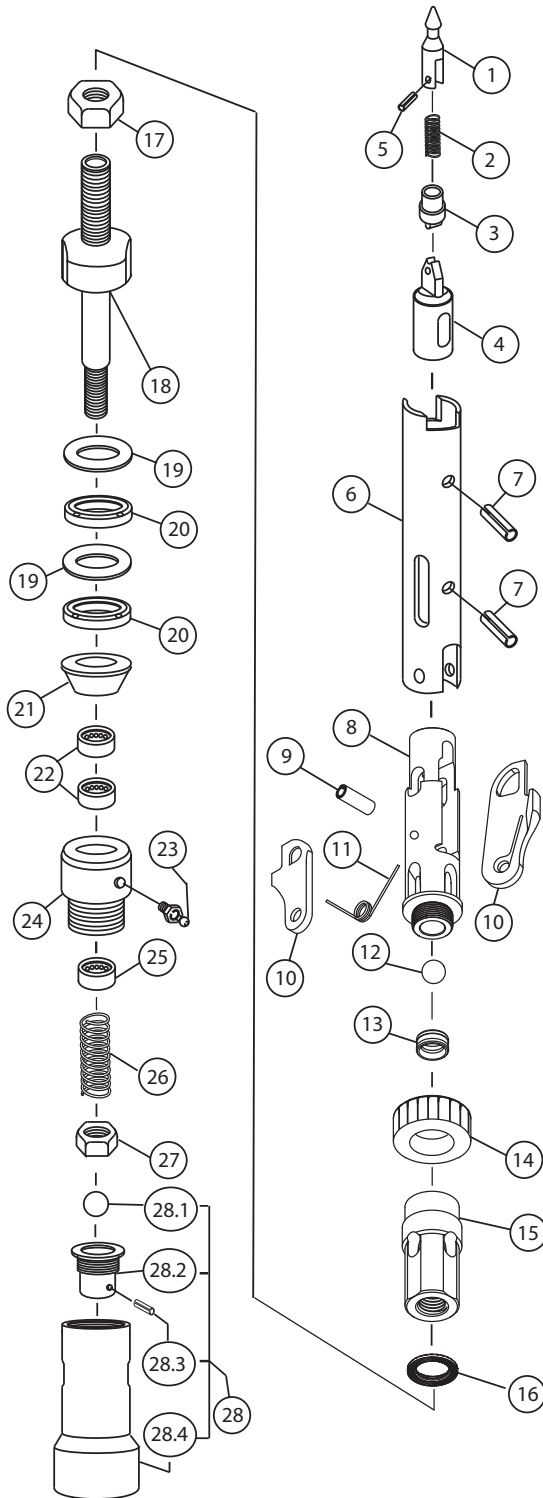
ITEM	PART #	DESCRIPTION
1	2000086	HEAD ASSEMBLY
2	2000004	INNER TUBE 5FT
	2000003	INNER TUBE 10FT
3	2000010	STOP RING
4	2000000	CORE LIFTER, FLUTED*
5	2000005	CORE LIFTER CASE
6	2000081	LOCKING COUPLING, FULL HOLE**
7	2000080	ADAPTER COUPLING
8	2000020	LANDING RING
9	2000007	OUTER TUBE 5FT
	2000026	OUTER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

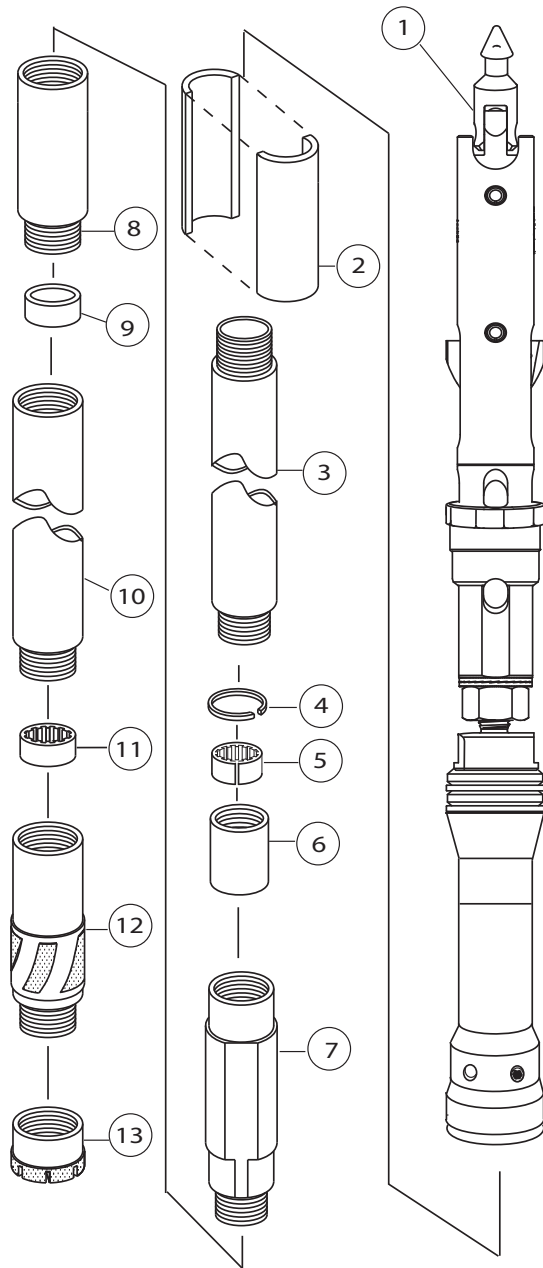


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-28	2000086	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	2000045	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	2000150	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	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	1800045	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

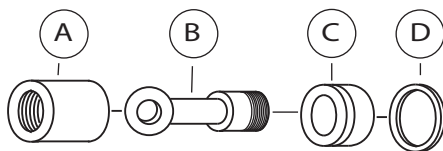
COMPLETE INNER TUBE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-6	2000335	INNER TUBE ASSEMBLY 5FT
1-6	2000330	INNER TUBE ASSEMBLY 10FT

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.

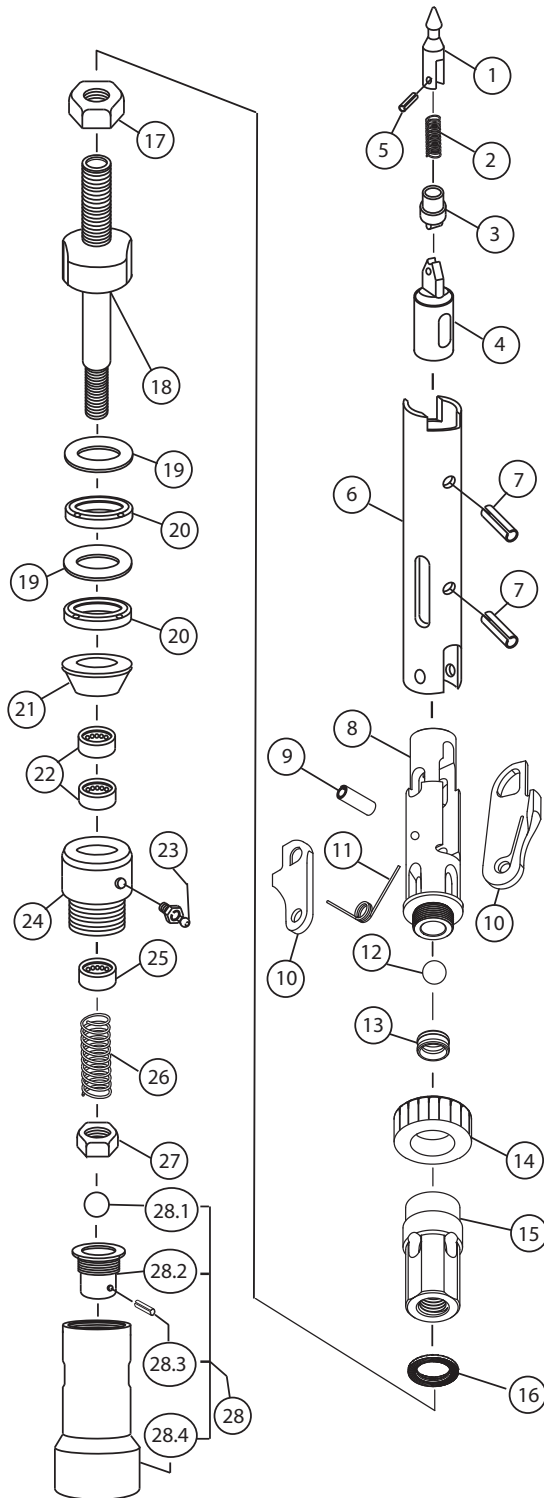
**Additional options available. Refer to page 58 for details.

***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

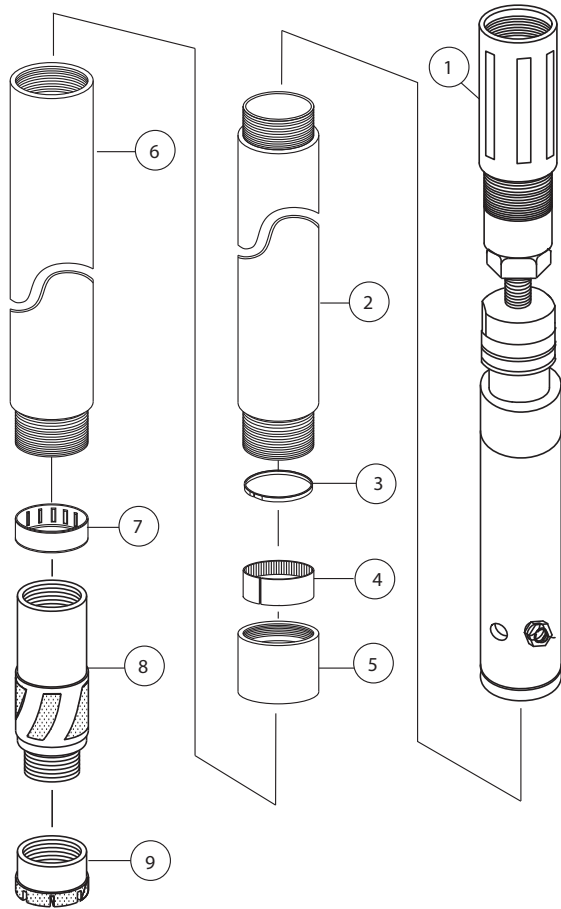


HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-28	2000086	HEAD ASSEMBLY
1	1800185	SPEARHEAD POINT
2	1950270	DETENT COMPRESSION SPRING
3	1800195	DETENT PLUNGER
4	2000045	SPEARHEAD BASE
5	1950190	SPIRAL PIN, 7/16" X 1"
6	2000150	LATCH RETRACTING CASE
7	1800215	SPRING PIN, 1/2" X 2 3/4" (QTY. 2)
8	1800295	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	1800045	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



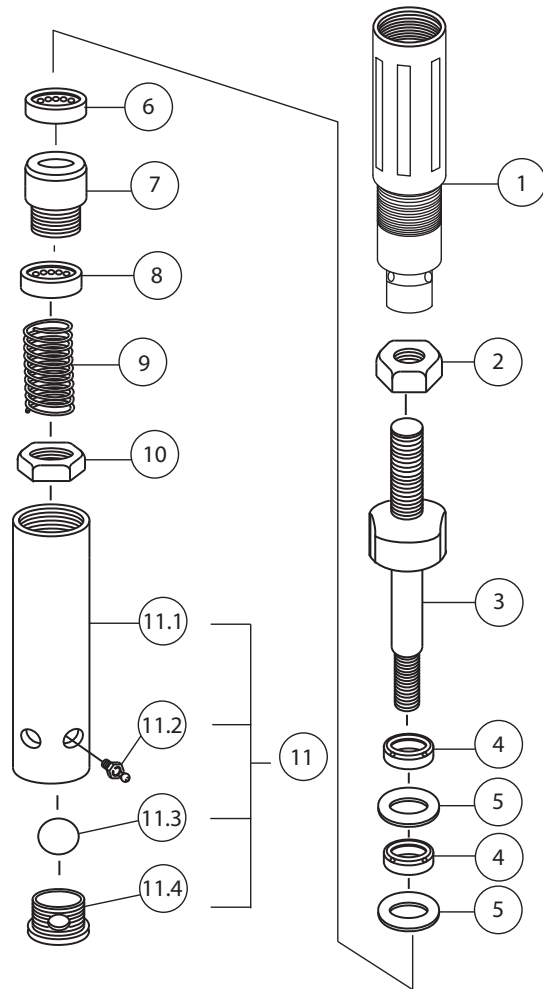
COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-7	1850150	CORE BARREL ASSEMBLY 5FT
	1850145	CORE BARREL ASSEMBLY 10FT

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.

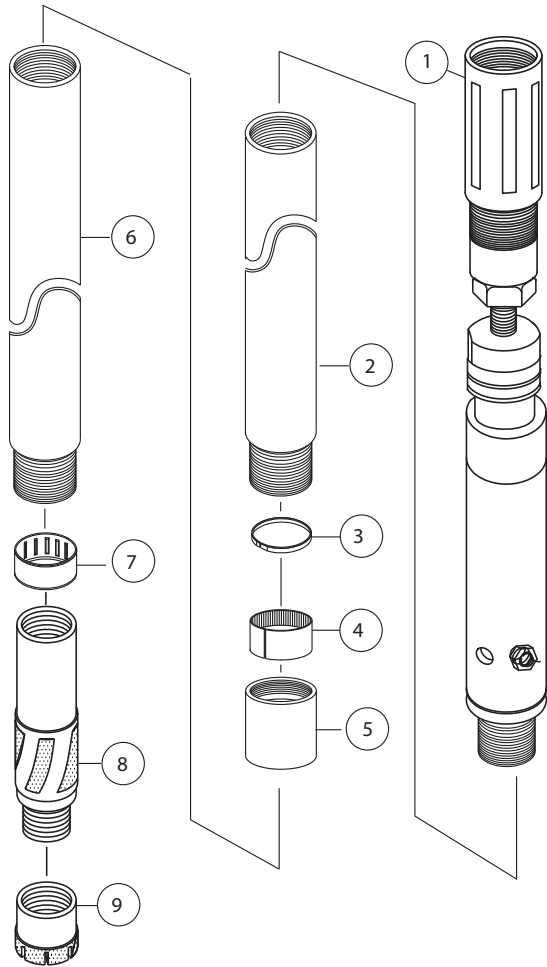
NV CONVENTIONAL Head Assembly



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

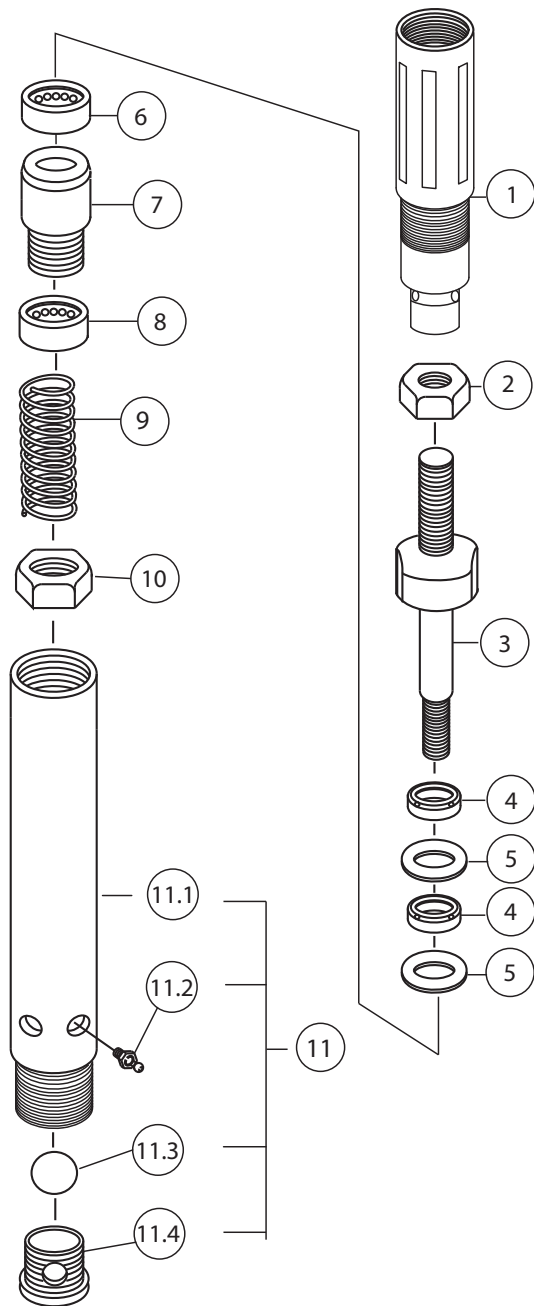
CORE BARREL PARTS		
ITEM	PART #	DESCRIPTION
1	2050195	HEAD ASSEMBLY
2	1850100	INNER TUBE 5FT
	1850101	INNER TUBE 5FT CHROME PLATED*
	1850105	INNER TUBE 10FT
	1850107	INNER TUBE 10FT CHROME PLATED*
3	1850035	STOP RING
4	1850040	CORE LIFTER, FLUTED**
5	1850045	CORE LIFTER CASE
	1950030	OUTER TUBE 5FT
6	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.

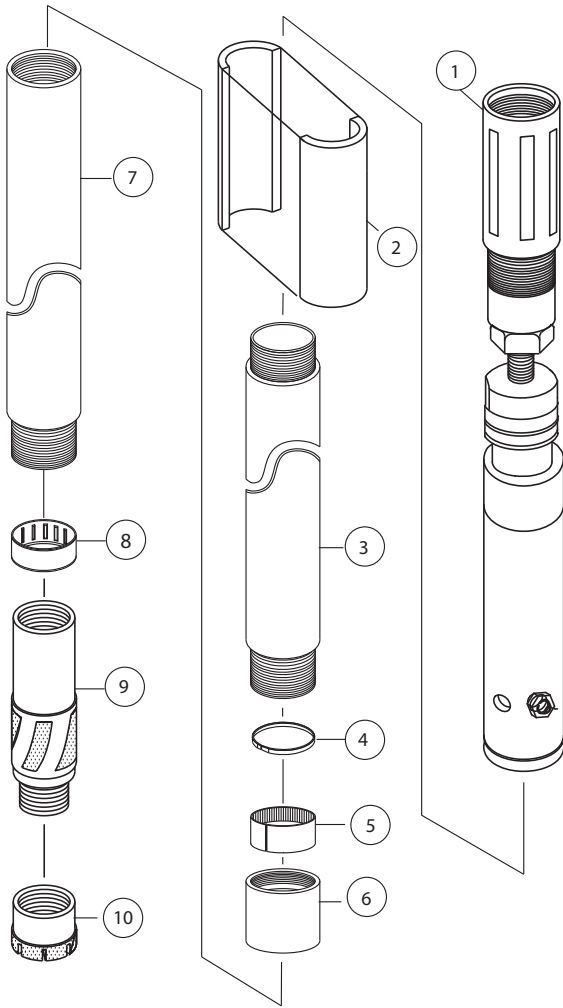
NV2 CONVENTIONAL Head Assembly



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

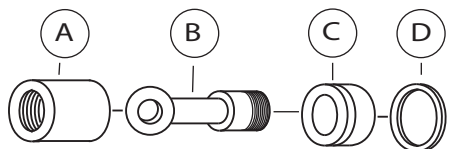


COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-8	1850170	CORE BARREL ASSEMBLY 5FT
	1850165	CORE BARREL ASSEMBLY 10FT

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**

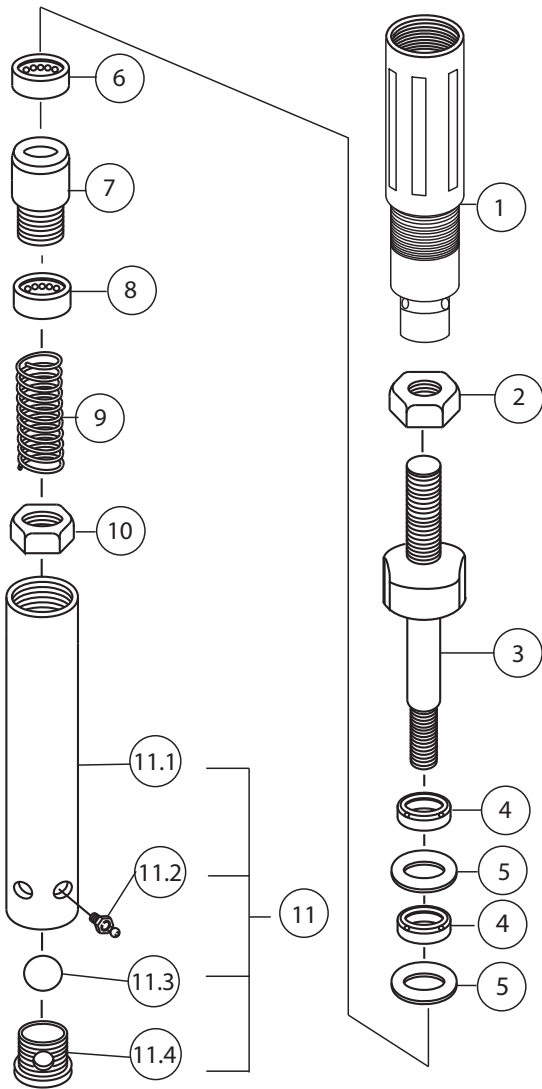
*Additional options available. Refer to page 57 for details.

**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

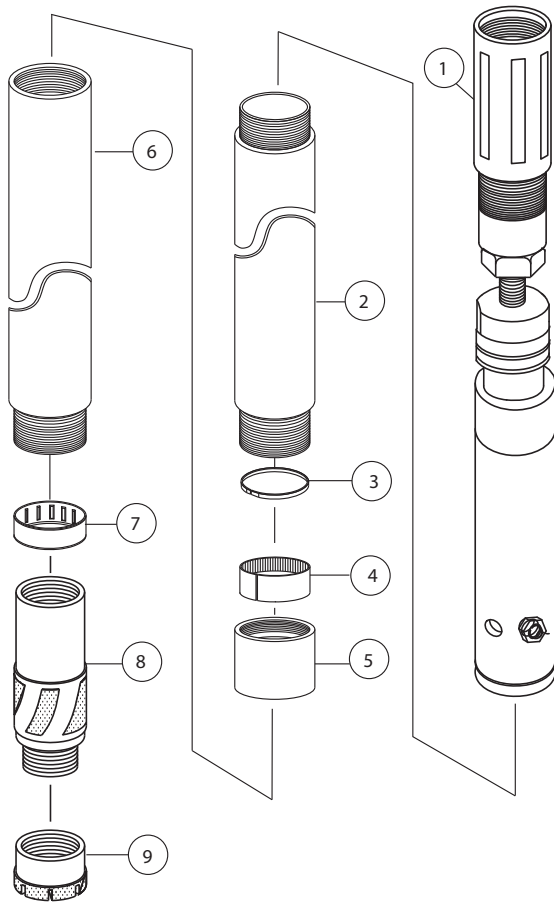
NV3 CONVENTIONAL Head Assembly



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



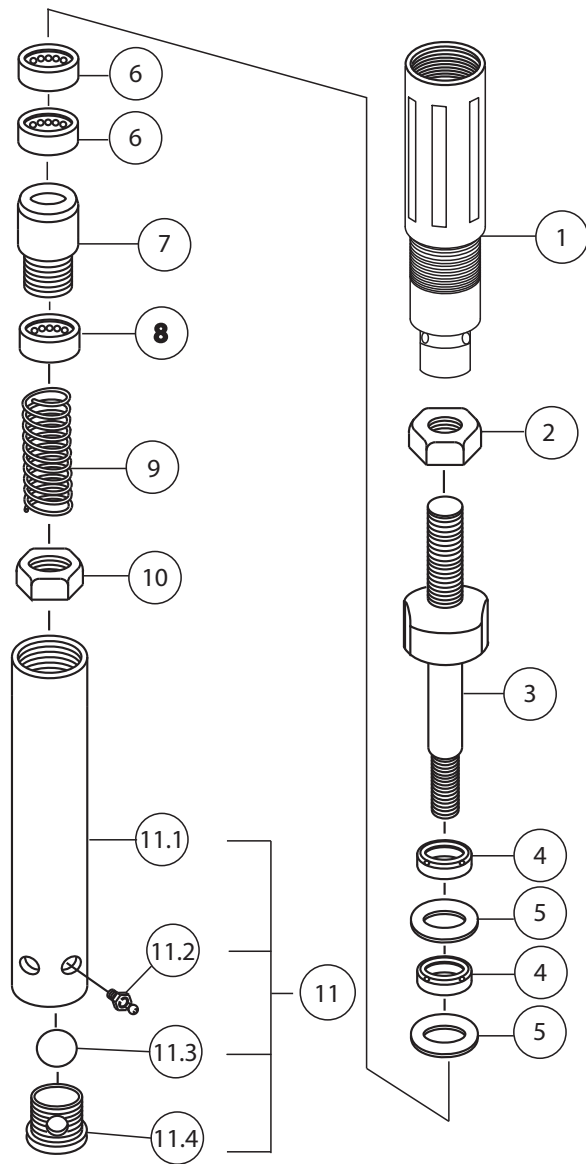
COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-7	1800168	CORE BARREL ASSEMBLY 5FT
	1800330	CORE BARREL ASSEMBLY 10FT

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.

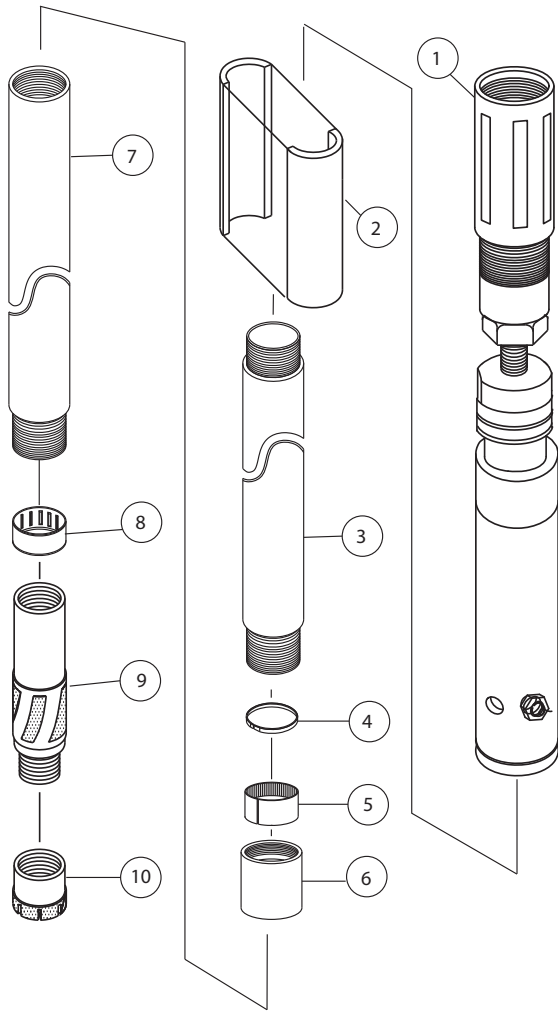
HV CONVENTIONAL Head Assembly



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

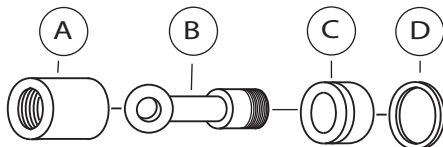
ITEM	PART #	DESCRIPTION
1-8	1800340	CORE BARREL ASSEMBLY 5FT
	1800335	CORE BARREL ASSEMBLY 10FT

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.

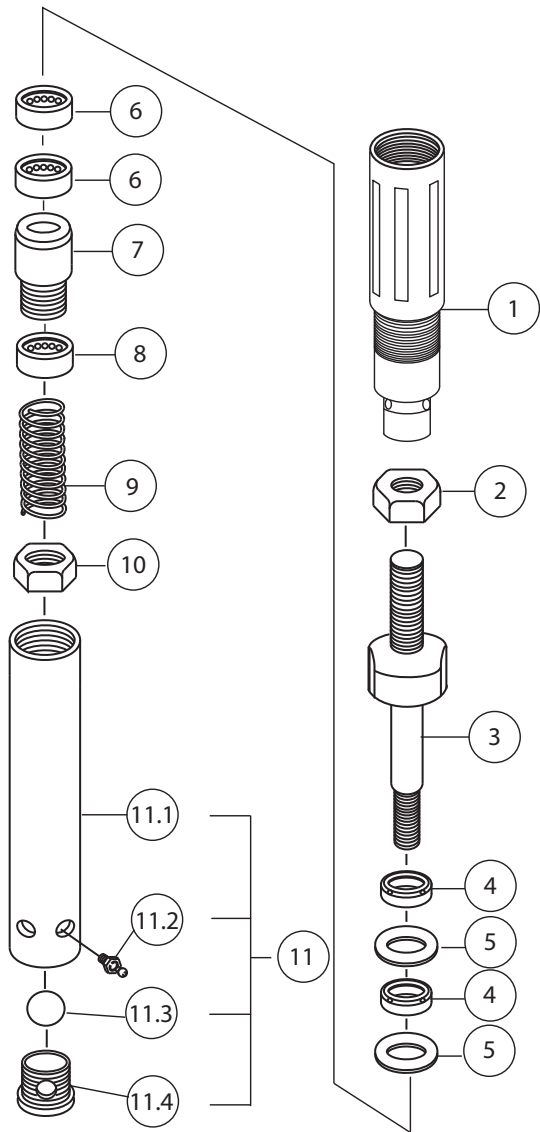
**Reaming shell and core bit not included in the core barrel assembly. Refer to Bits, Shoes, and Reaming Shells section for additional details.



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

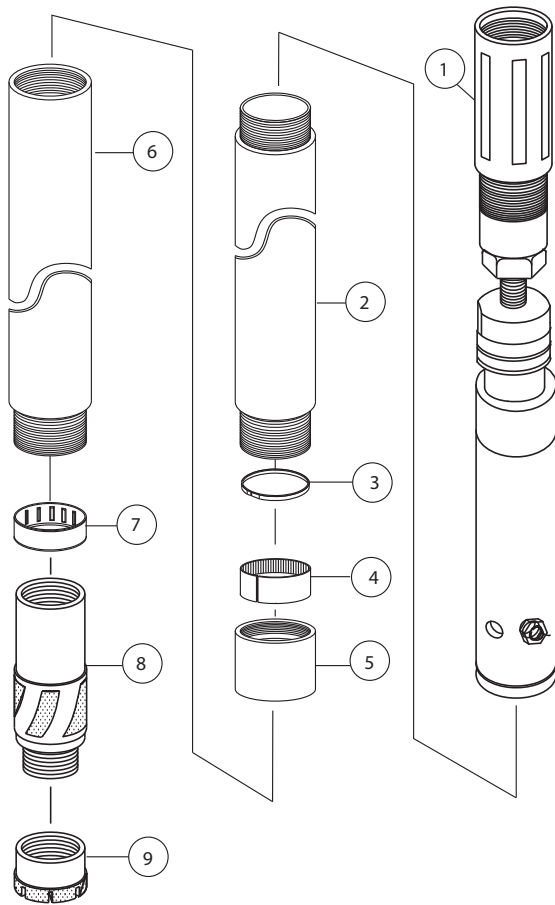
HV3 CONVENTIONAL Head Assembly



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



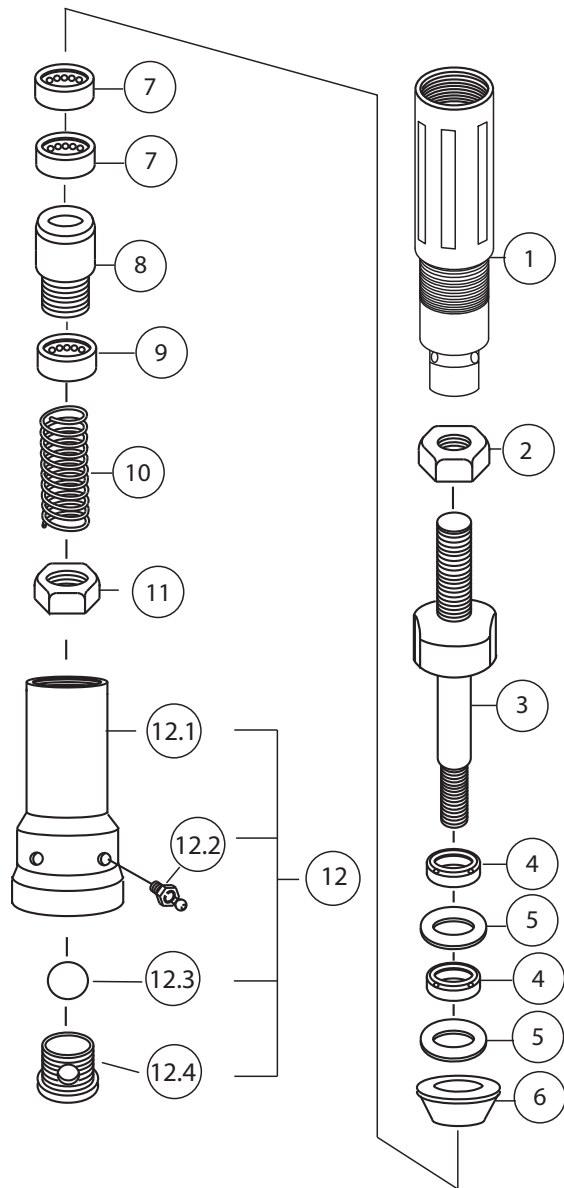
COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-7	2000295	CORE BARREL ASSEMBLY 5FT
	2000290	CORE BARREL ASSEMBLY 10FT

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.

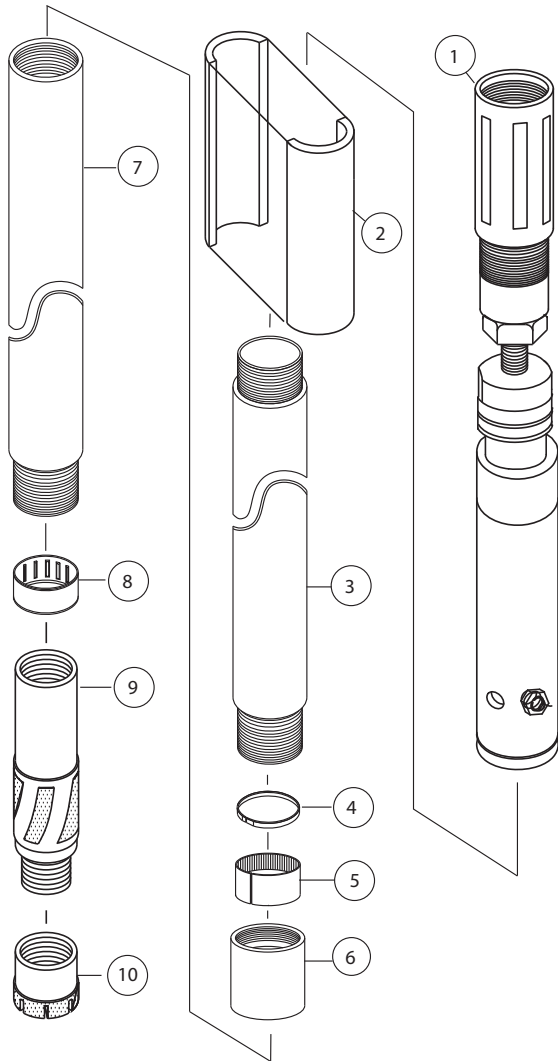
PV CONVENTIONAL Head Assembly



HEAD ASSEMBLY PARTS		
ITEM	PART #	DESCRIPTION
1-11	2000255	PV HEAD ASSEMBLY, 2 3/8" 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

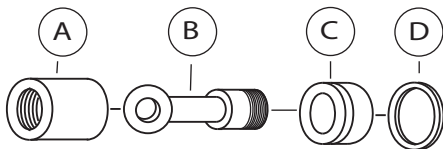


COMPLETE CORE BARREL ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-8	2000265	CORE BARREL ASSEMBLY 5FT
	2000260	CORE BARREL ASSEMBLY 10FT

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**

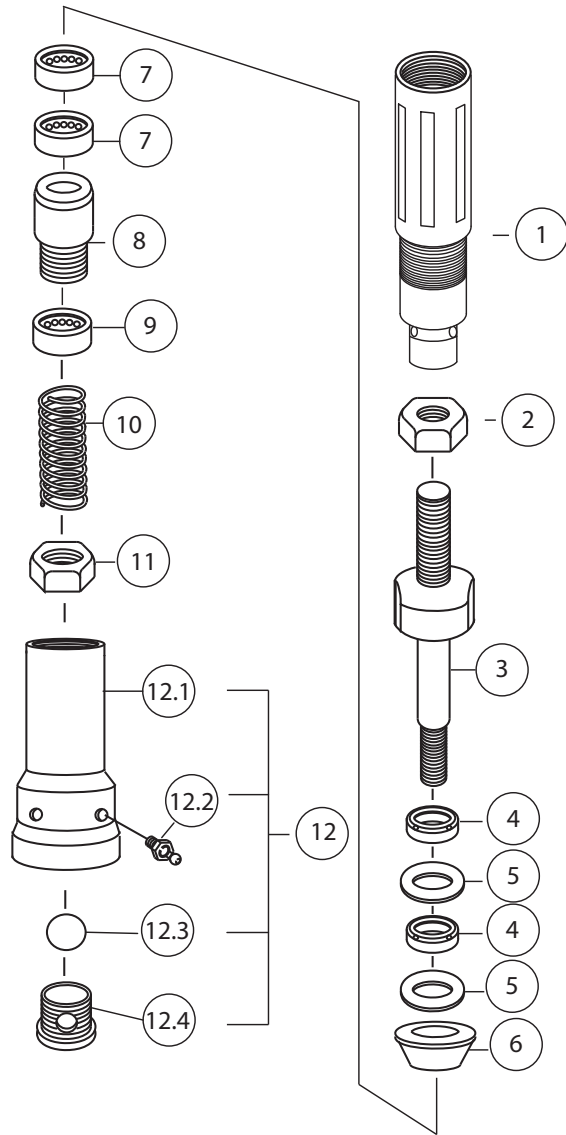
*Additional options available. Refer to page 57 for details.

**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 3/8" 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 overshot 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' overshots are offered in V-lock and standard styles, and available in all DCDMA sizes. Overshots work with all core barrel head assemblies within a size designation.

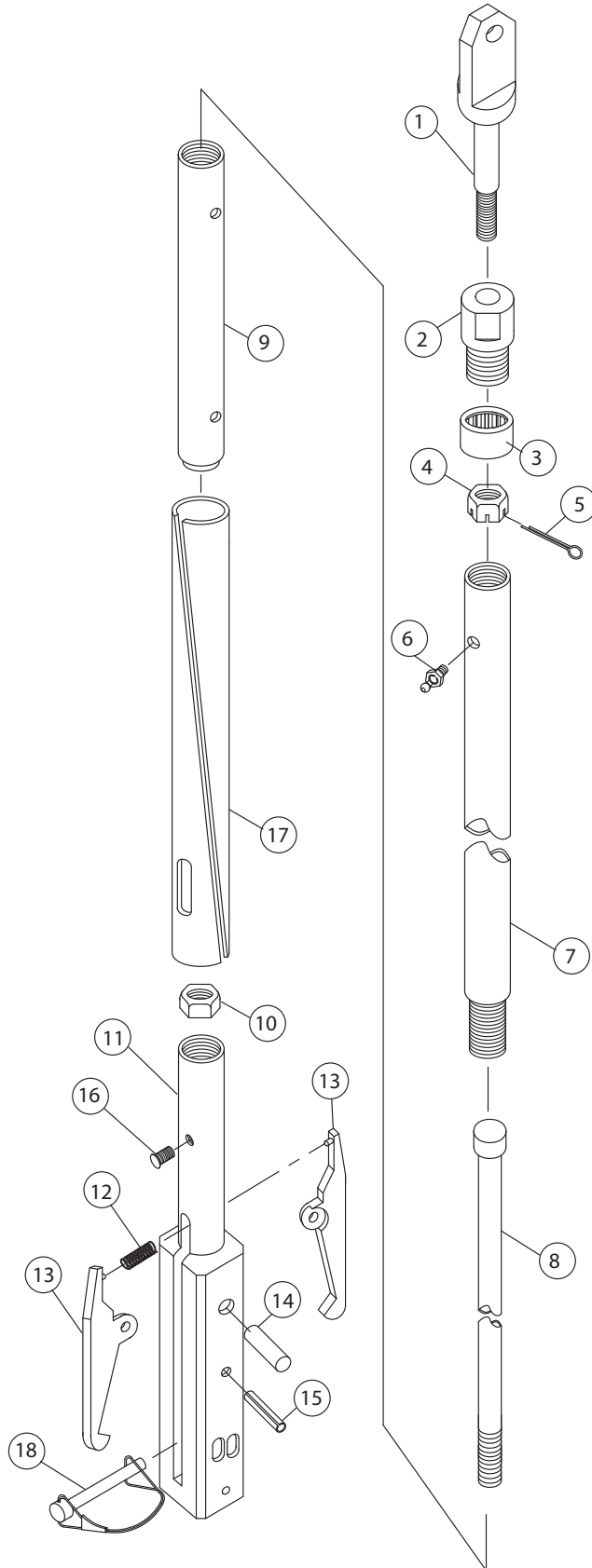
STANDARD

Hole Products' standard overshots 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 overshot 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 overshots 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



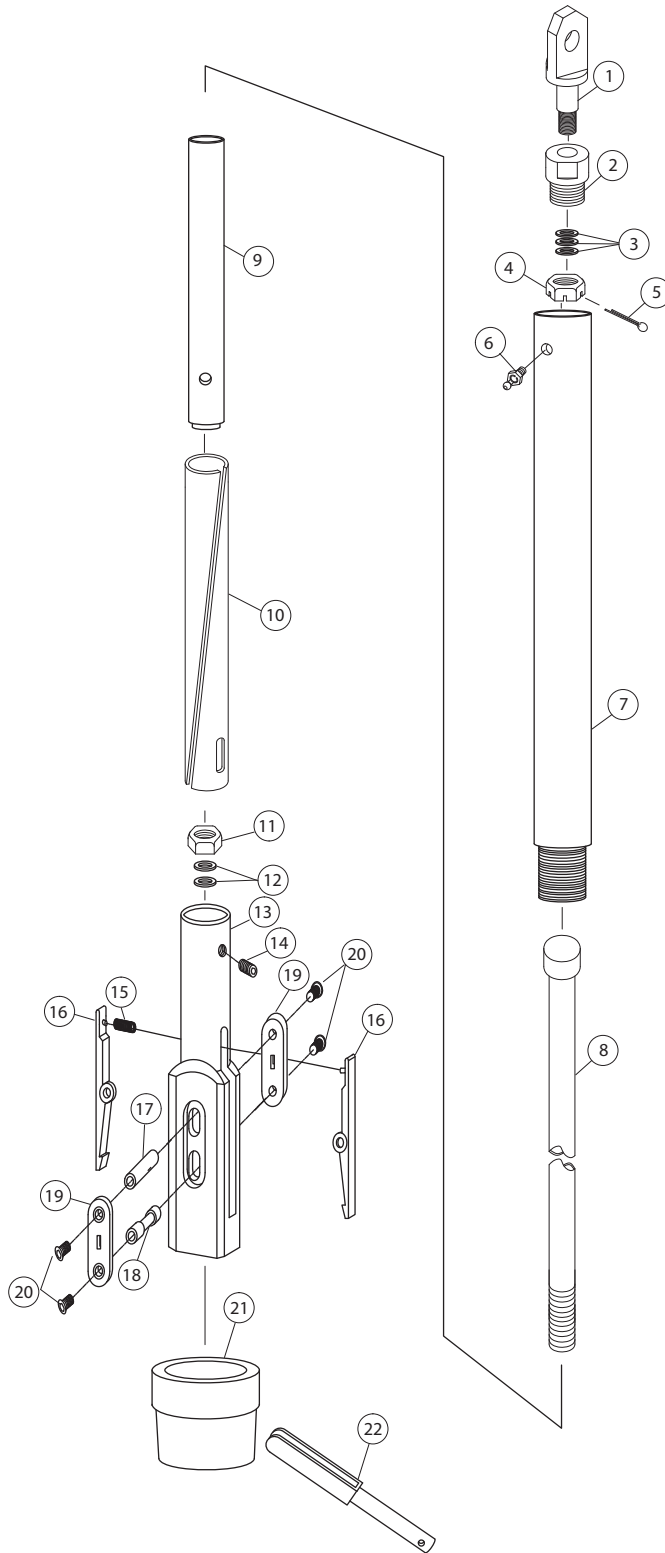
COMPLETE BWL OVERSHOT ASSEMBLY

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

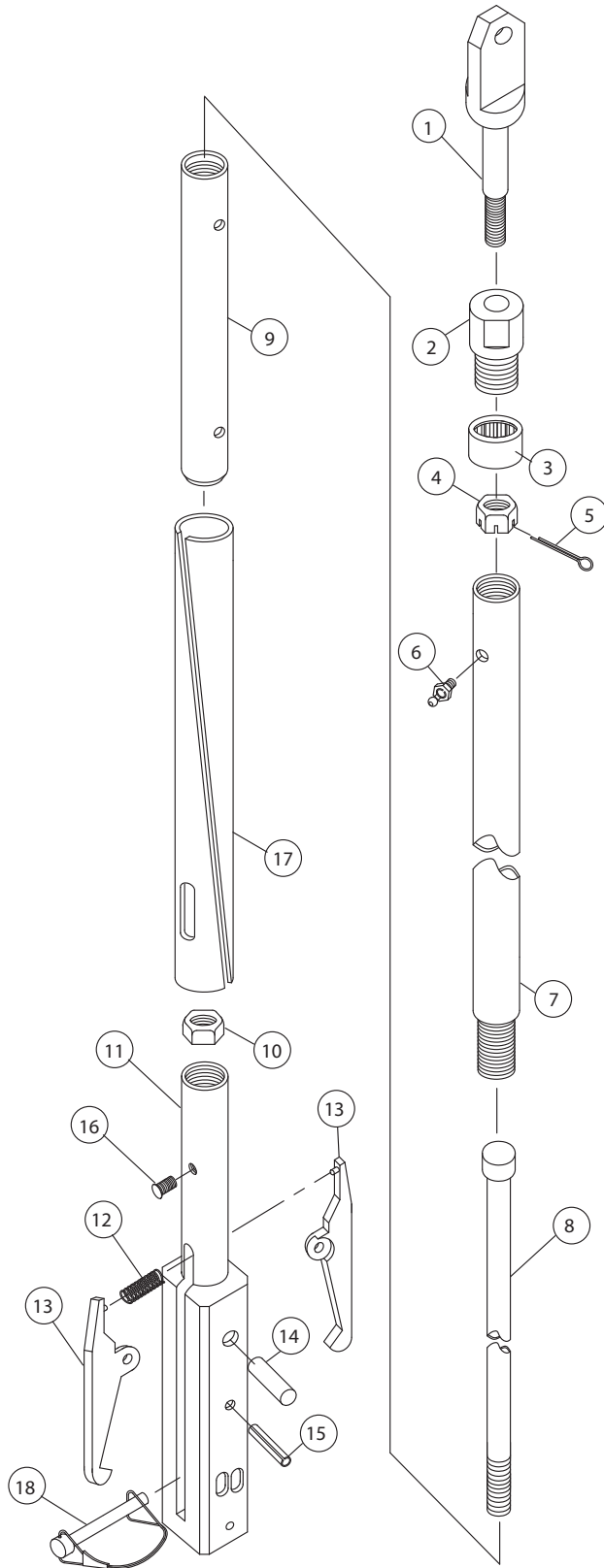
BWL V-LOCK OVERSHOT



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



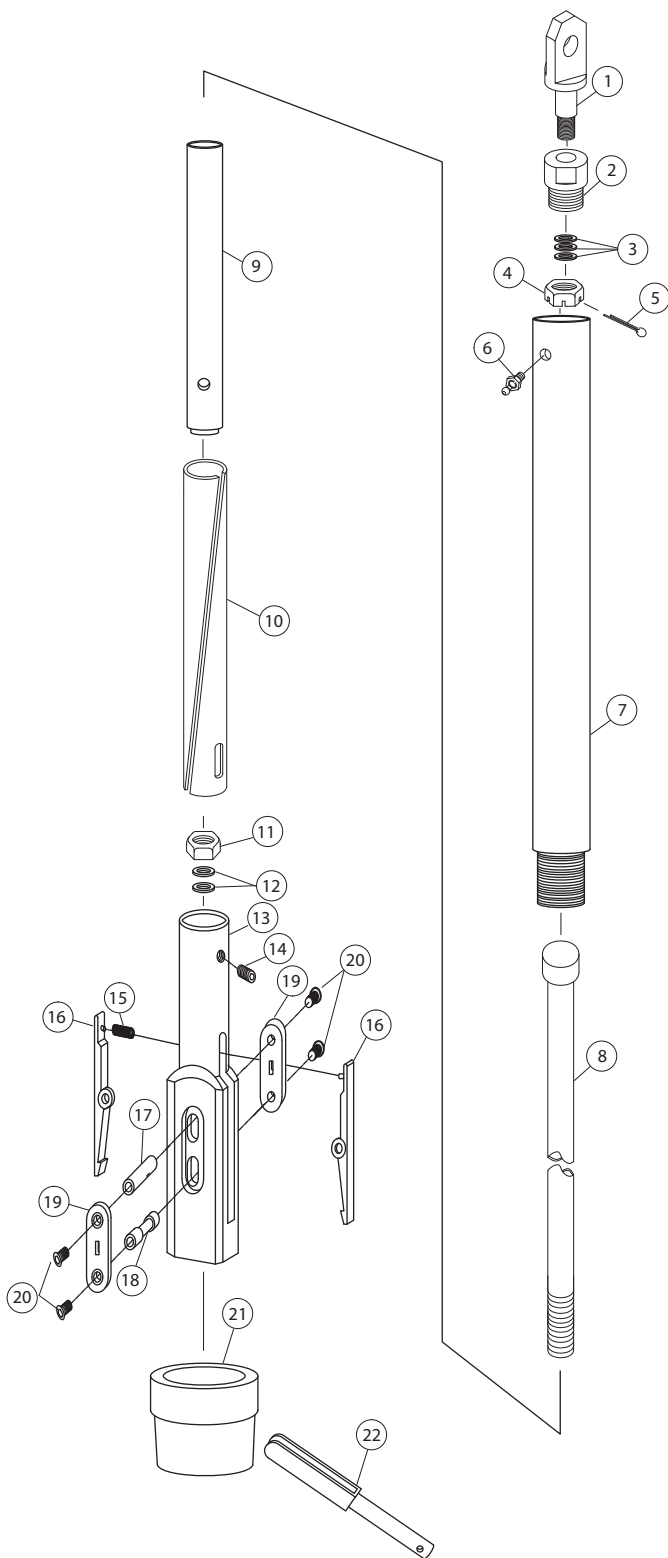
COMPLETE NWL OVERSHOT ASSEMBLY

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



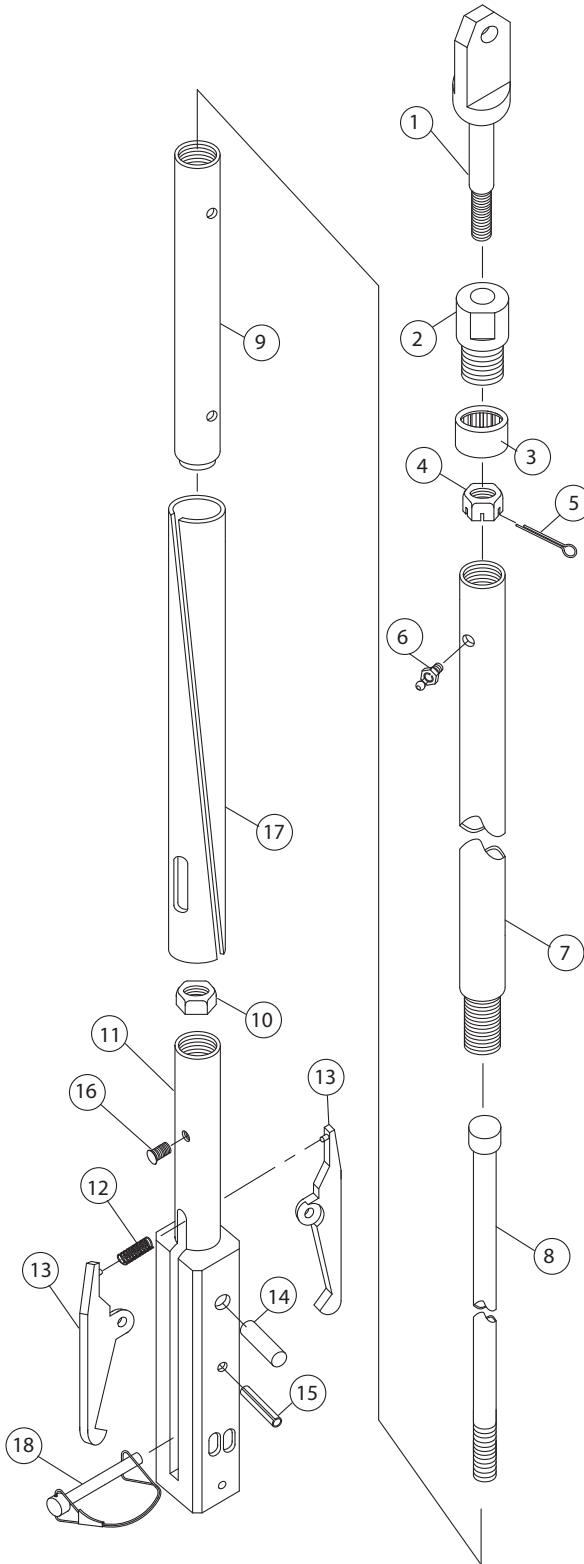
COMPLETE NWL V-LOCK OVERSHOT ASSEMBLY

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

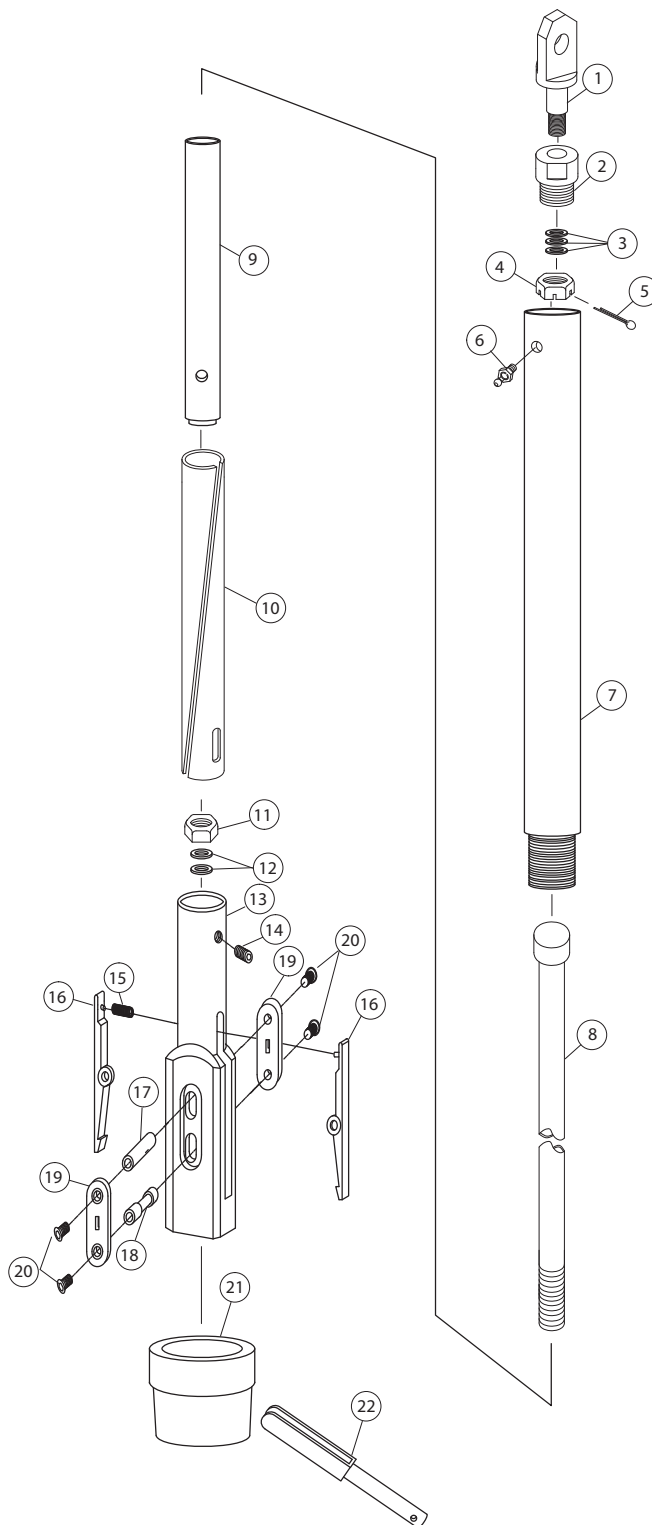
HWL STANDARD OVERSHOT



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

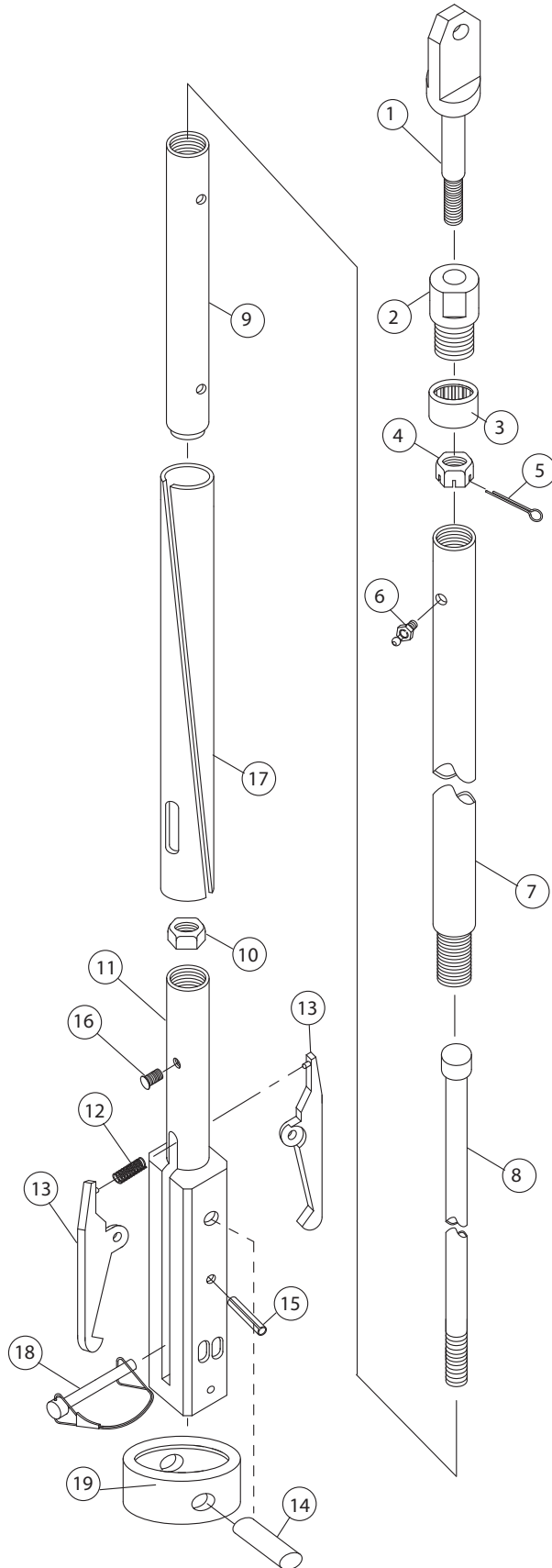
HWL V-LOCK OVERSHOT



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

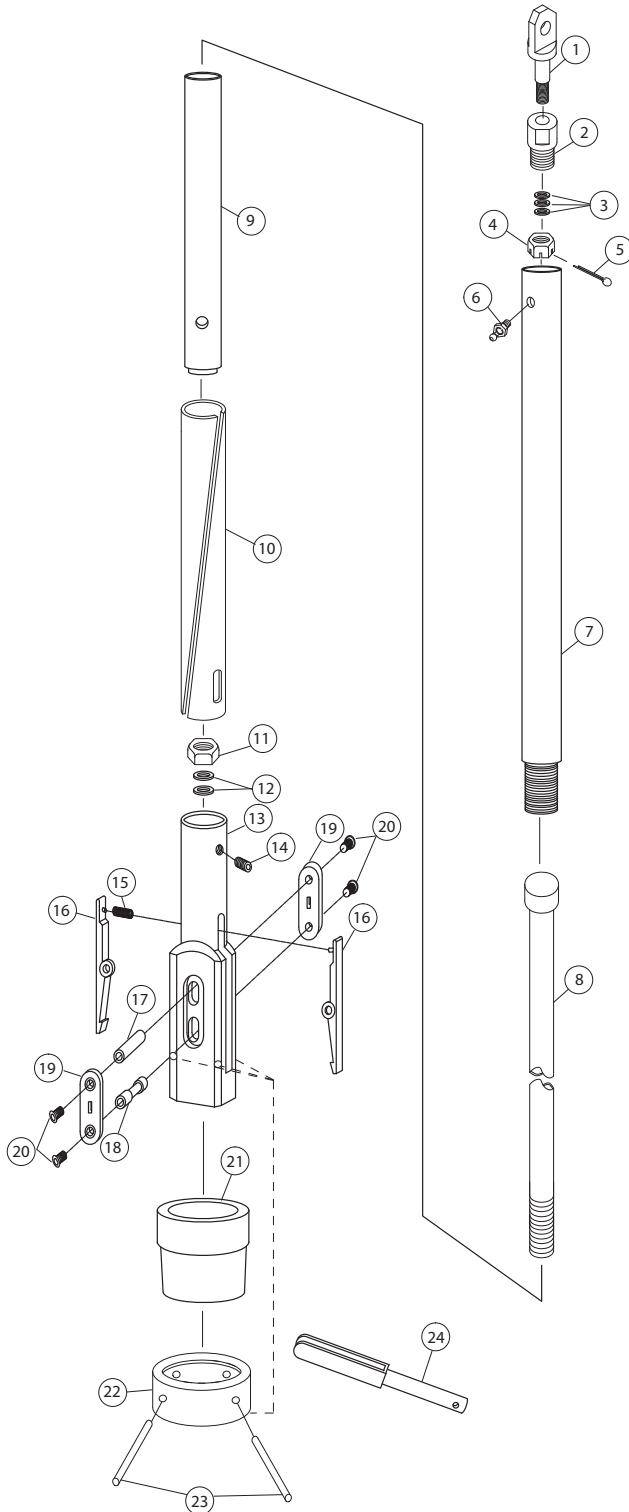
PWL STANDARD OVERSHOT



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

WIRELINE CASING ADVANCERS



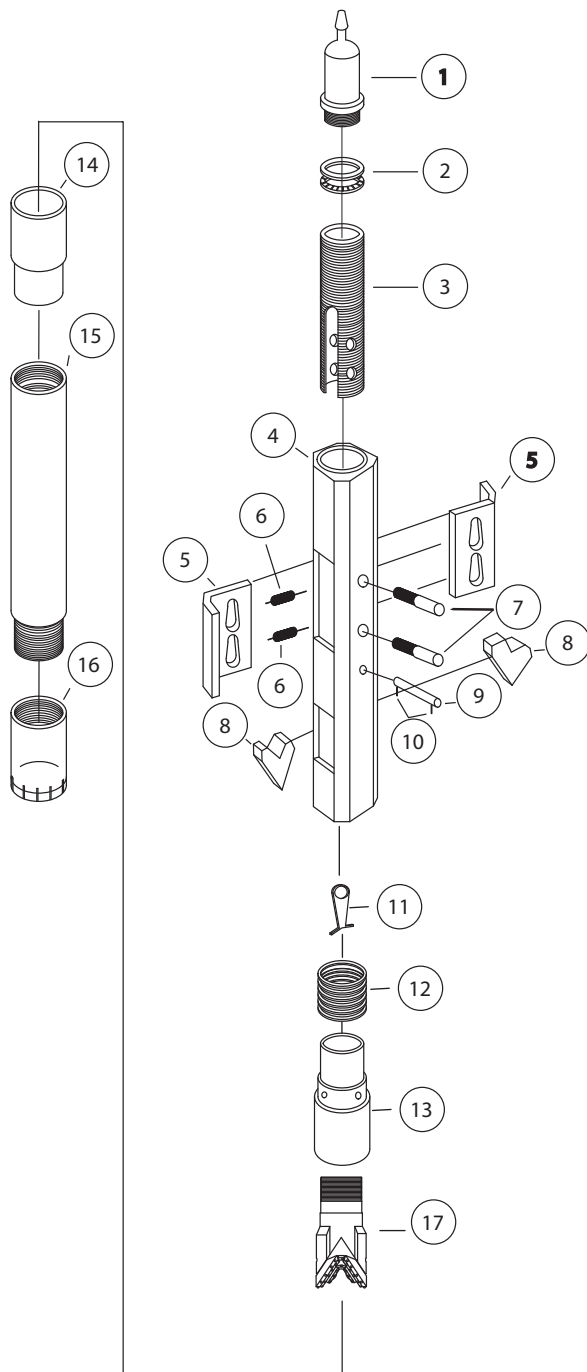
Hole Products offers a complete line of wireline casing advancers, in all standard industry sizes.

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



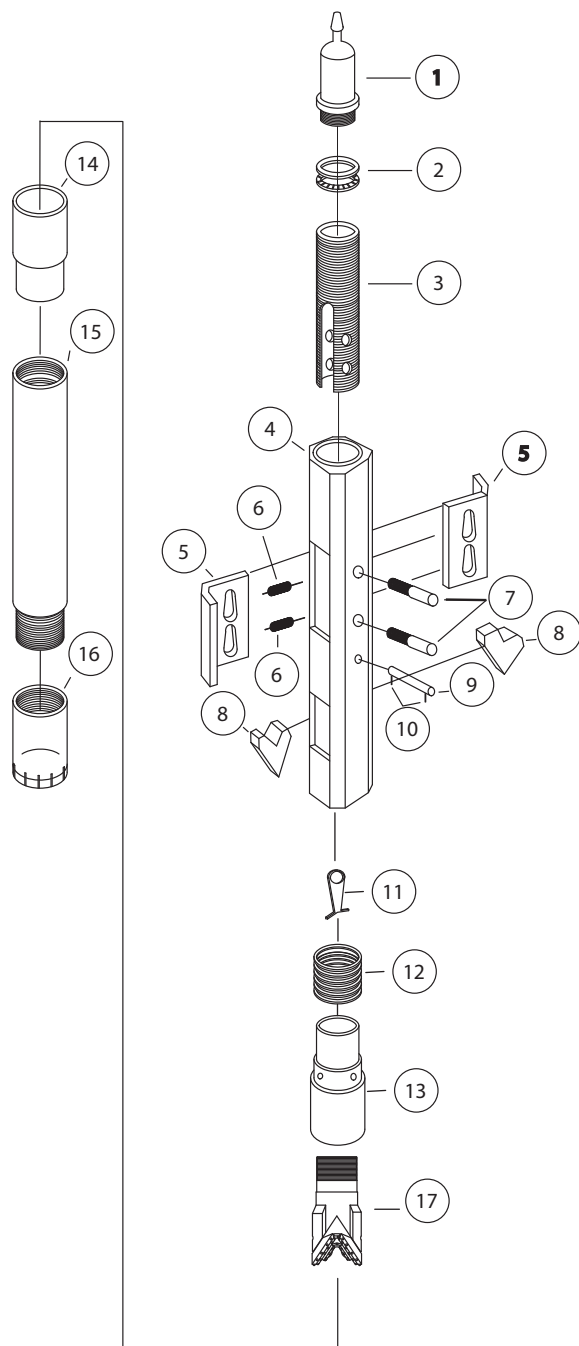
COMPLETE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-15	2110036	BW WIRESLINE CASING ADVANCER
1-15	2110410	NWL WIRESLINE CASING ADVANCER
1-13	2110029	BW/NWL CASING INNER ASSEMBLY

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



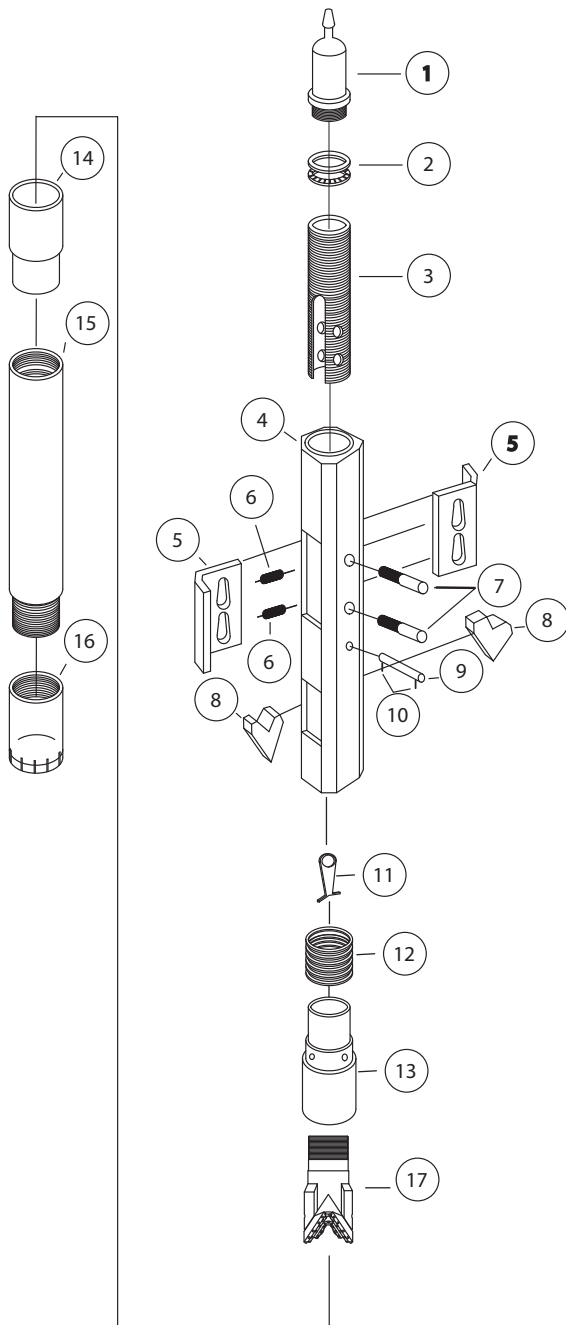
COMPLETE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-15	2110007	NW WIRELINE CASING ADVANCER
1-15	2110425	HWL WIRELINE CASING ADVANCER
1-13	2110025	NW/HWL CASING INNER ASSEMBLY

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



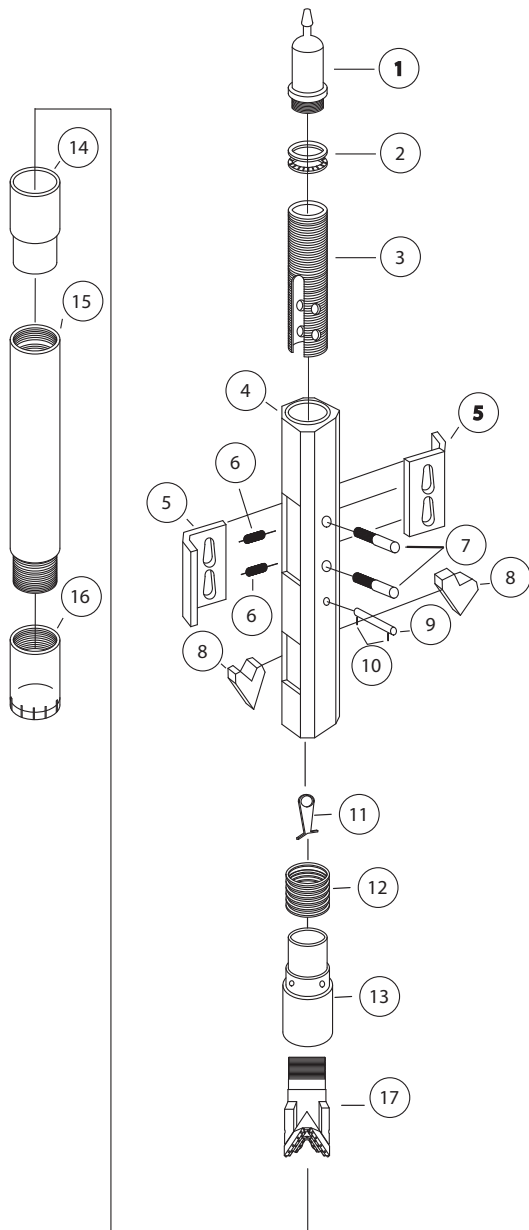
COMPLETE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-15	2110006	HW WIRELINE CASING ADVANCER
1-15	2110035	HWT WIRELINE CASING ADVANCER
1-13	2110003	HW/HWT CASING INNER ASSEMBLY

WIRELINE 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

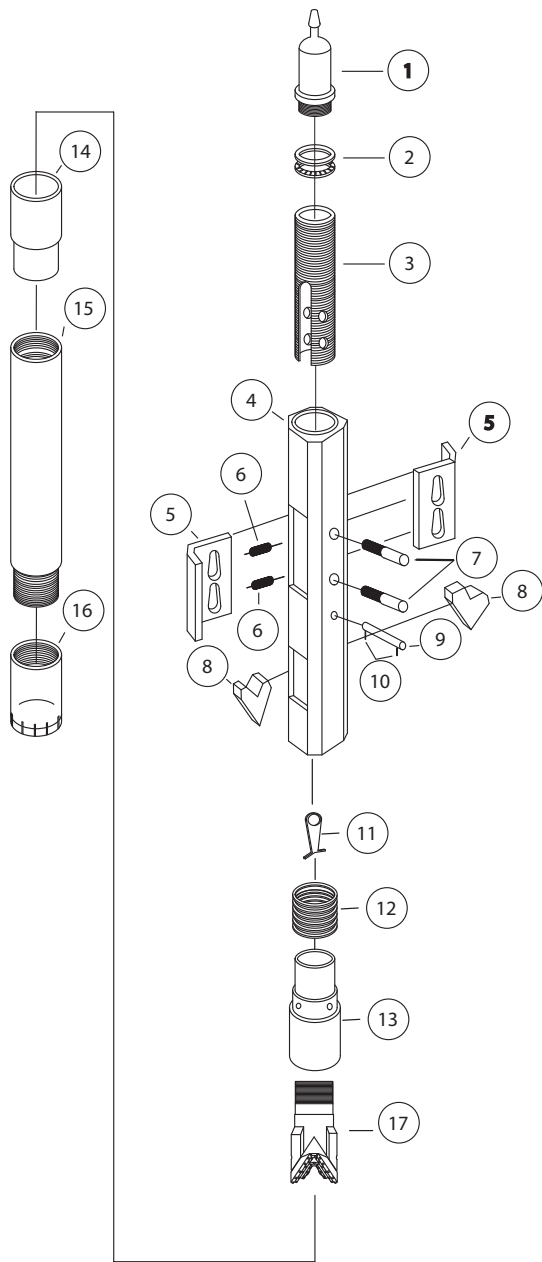
WIRELINE CASING ADVANCER

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.

WIRELINE 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.



WIRELINE 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

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
	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	160.0	72.6
SWT	6.625	168.2	6.00	152.4	2.5	160.0	72.6



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.

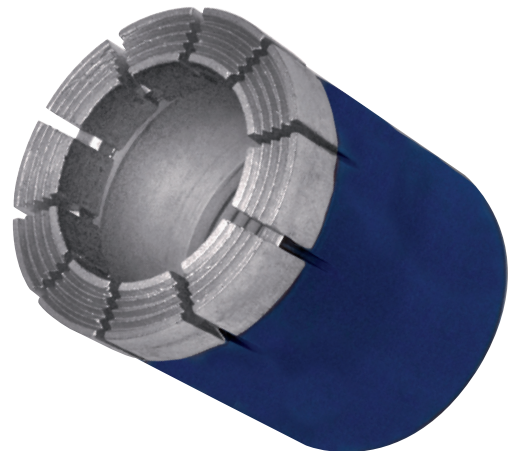
GT DIAMOND IMPREGNATED BITS

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.

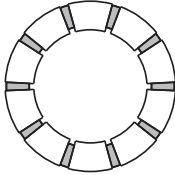
ROCK TYPE	APPROXIMATE HARDNESS	SERIES GUIDE						
		2	4	6	7	8	9	10+
Gypsum, Potash, Shale, Sandstone, Talc	Soft	↕						
Limestone, Weathered Granite, Marl, Peridotite, Sandstone, Serpentine, Hard Shale, Siltstone	Medium	↕	↕					
Diabase, Dolomite, Pegmatite, Sandstone, Schist	Medium Hard		↕	↕				
Andesite,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

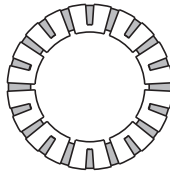
HOLE PRODUCTS' BIT SELECTION GUIDELINES			
ROCK TYPE	CHARACTERISTICS	DIAMOND IMPREGNATED BIT SERIES GUIDE	DIAMOND SURFACE SET STONES PER CARAT (SPC)
VERY SOFT Clay, Shale, Alluvium, Weathered Saprolite	Unconsolidated Very Abrasive Fine to Coarse Grained Highly Weathered	Not Recommended Use Surface Set Bits	10/15 SPC, 6/10 SPC
SOFT Gypsum, Potash, Shale, Sandstone, Talc	Abrasive Fine to Coarse 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

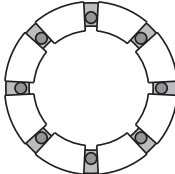
* For ultra hard non-abrasive formations series 12 and 14 are available.
Please contact your Hole Products representative for further assistance.

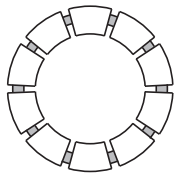
WATERWAY CONFIGURATIONS

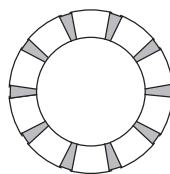
Hole Products' diamond bits are offered with multiple custom waterway configurations. Waterway selection should be determined based on the drilling conditions and adjusted appropriately to cool the bit, flush away cuttings, and maximize penetration rates.


STANDARD	
	<p>Standard waterways are recommended for most general purpose core jobs and offer great fluid circulation in a variety of conditions.</p>

TURBO	
	<p>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.</p>

FACE DISCHARGE	
	<p>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.</p>

DEEP I.D. WATERWAYS	
	<p>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.</p>

TAPERED WATERWAYS	
	<p>Recommended for soft and broken formations when standard waterways may become blocked. The taper flushes cuttings to help keep the waterways clear.</p>

SPIRAL	
	<p>Recommended for drilling in broken formations. Specifically angled waterways allow for greater fluid ejection. Available in surface set bits only.</p>

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

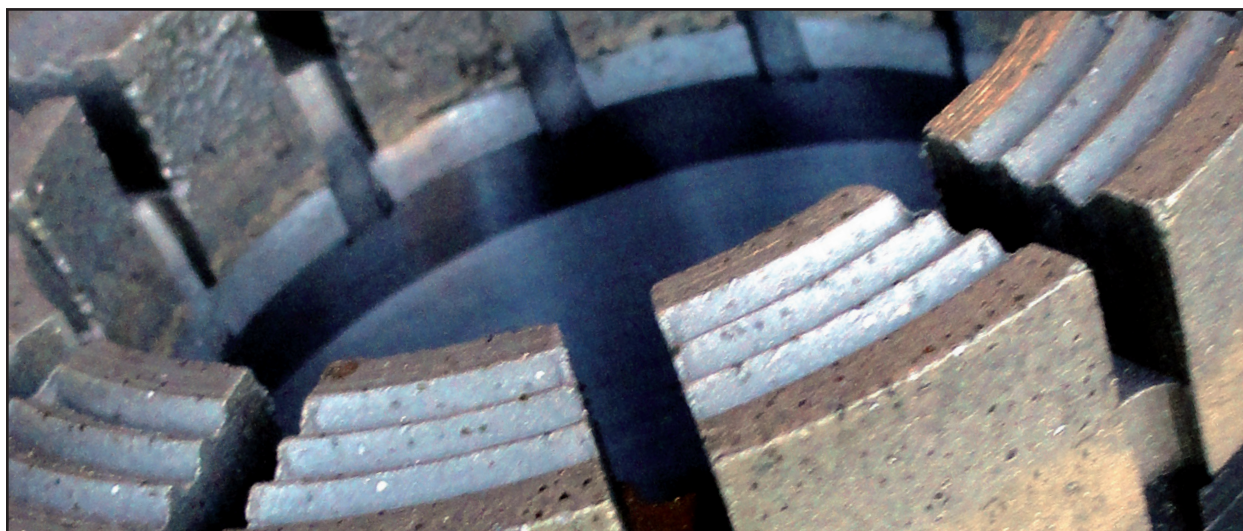
IMPREGNATED BIT ORDERING GUIDELINES

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.

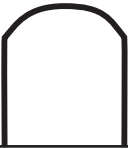

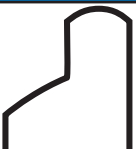
SURFACE SET DIAMOND BITS

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.

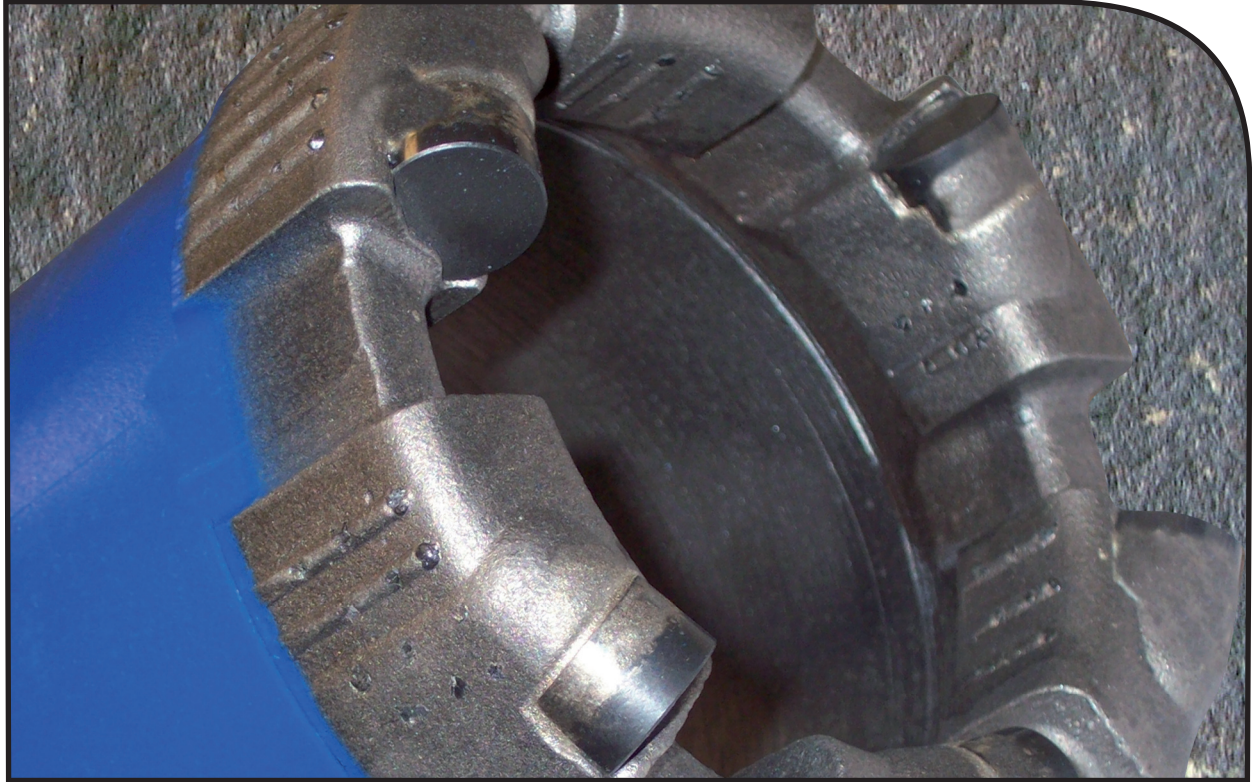
Options include multiple waterway options, diamond sizes, diamond grades, and crown profiles.

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")

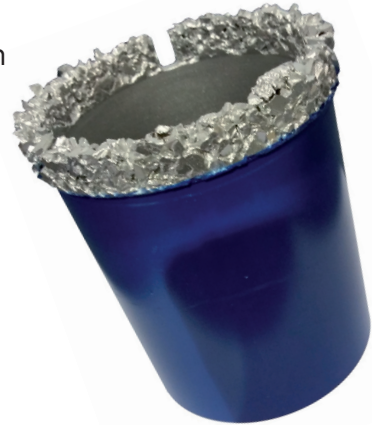
Custom oversized shoes available. Please contact your Hole Products representative for details.

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.

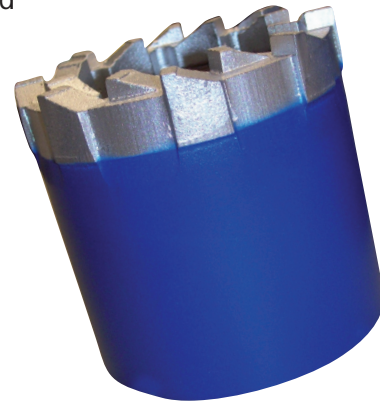


CARBIDE CHIP BITS		
SIZE	PART #	GAUGE
BWL	2300175	RSG
BWL	2300180	OS (2.55")
NWL	2400705	RSG
NWL	2400710	OS (3.032")
HWL	2350065	RSG
HWL	2200039	OS (3.75")
PWL	2450325	RSG
PWL	2450330	OS (4.75")

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

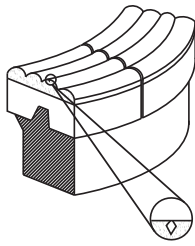
SURFACE SET BIT RUNNING PARAMETERS

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.



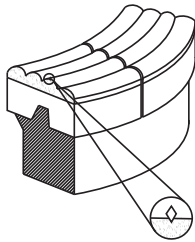
IMPREGNATED BIT WEAR PATTERN GUIDE



Face Glazed

Causes: Bit series is too low.

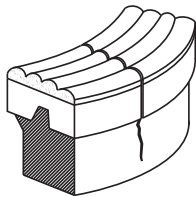
Recommendation: Change to a higher series bit.



Excessive Diamond Exposure

Causes: Overfeeding.

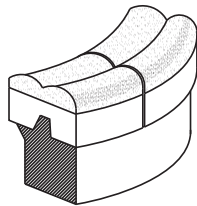
Recommendation: Increase RPI (RPC); Change to a lower series bit.



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

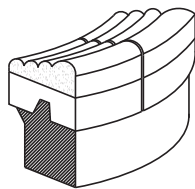
ROP - Rate Of Penetration

RPI - Rotations Per Inch

RPC - Rotations Per Centimeter



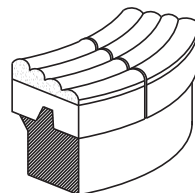
IMPREGNATED BIT WEAR PATTERN GUIDE



Concave Face Wear

Causes: RPI (RPC) too low; Over drilling.

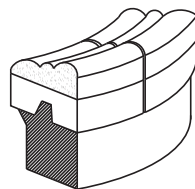
Recommendation: Reduce RPM or ROP.



Convex Face Wear

Causes: Lack of water/fluids.

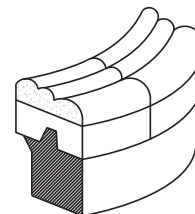
Recommendation: Check for pump and rod string leaks; Increase pump output.



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.

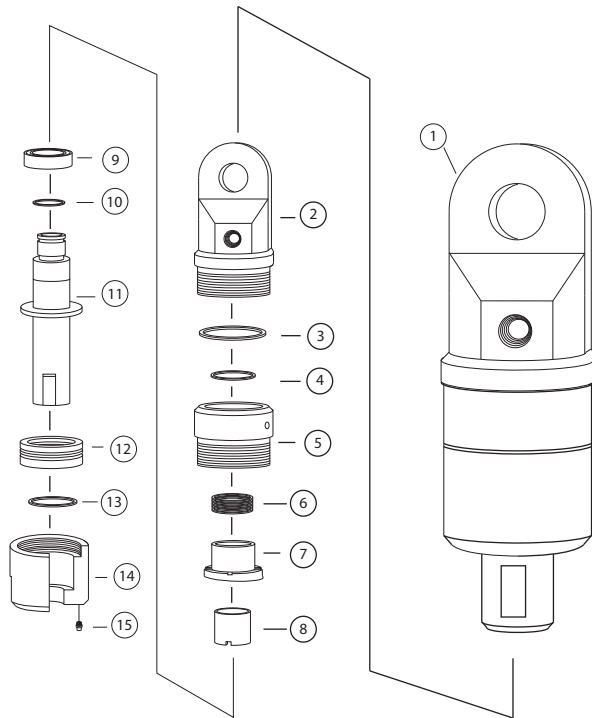
In addition, we offer a complete line of replacement parts for quick and easy field repairs. Hole Products offers quality Universal and Compact Plus water swivels and a full selection of adapter subs for use with all industry standard sized rods and casing.

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



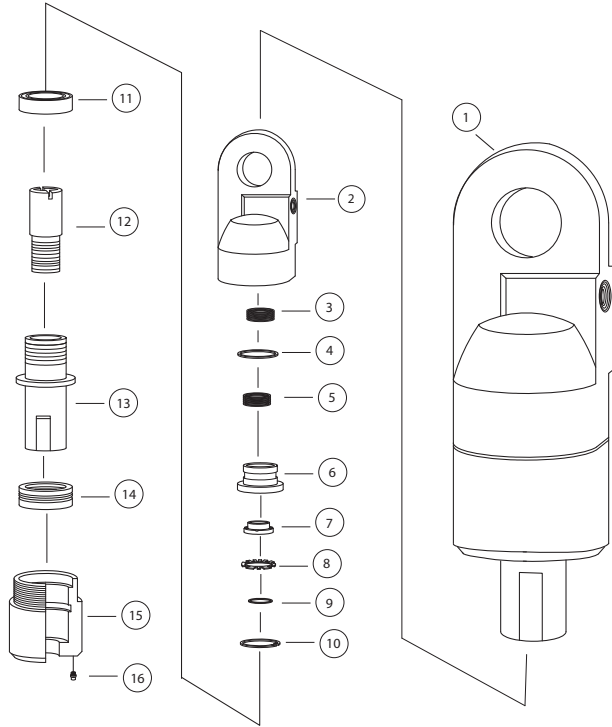
COMPACT PLUS CAPACITY	
ROTATING CAPACITY	10,000 LBS / 4,536 kg
STATIC CAPACITY	20,000 LBS / 9,072 kg

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	7700017	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.

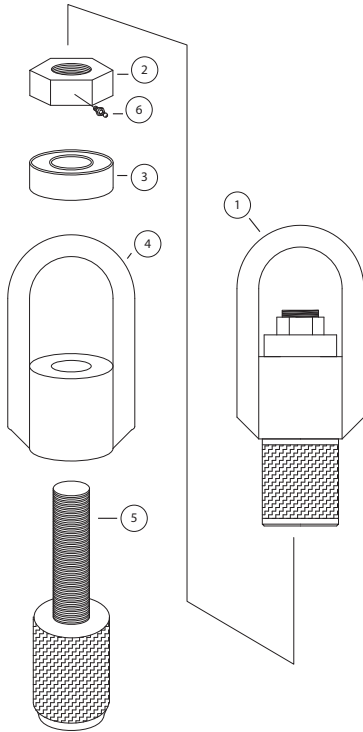
Hole Products offers a wide range of hoisting plugs for use on wireline and conventional coring operations. All hoisting plugs are constructed with premium quality components, ensuring excellent performance and durability.

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

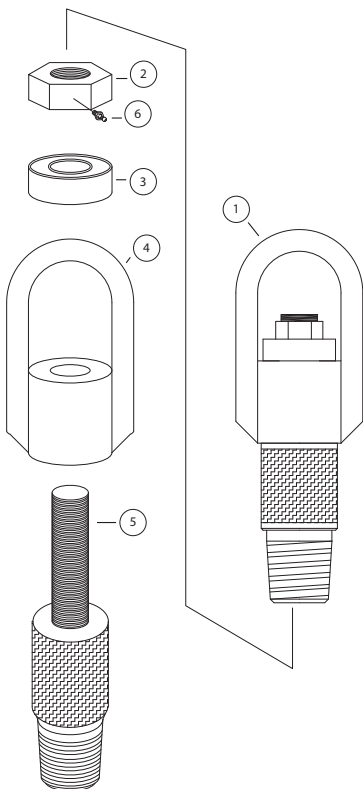
NW ROD BOX



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

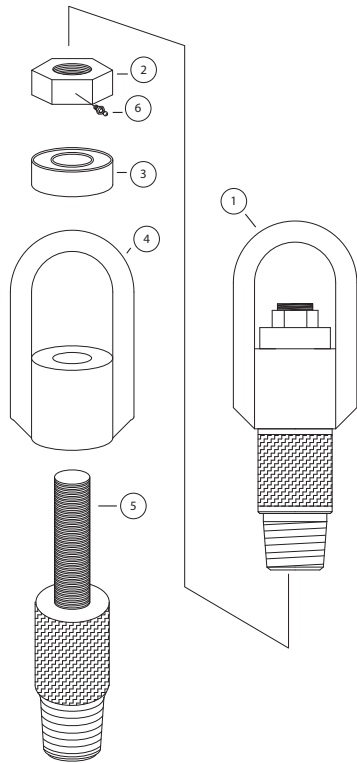


NWJ PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NWJ	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

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

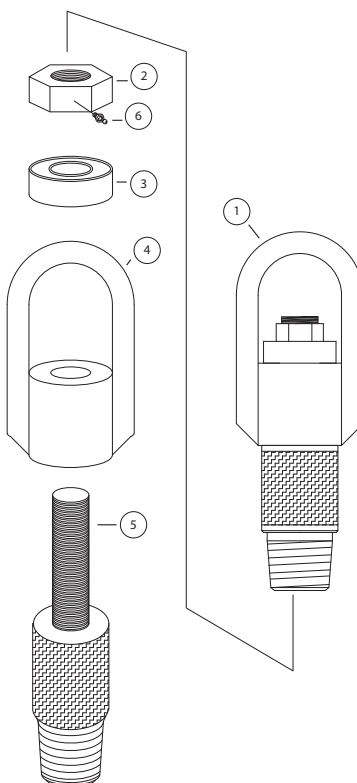
BWL PIN



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

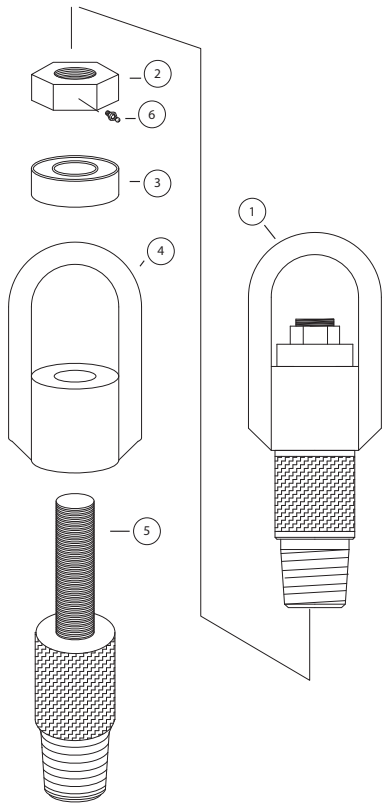


NWL PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
NWL	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

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

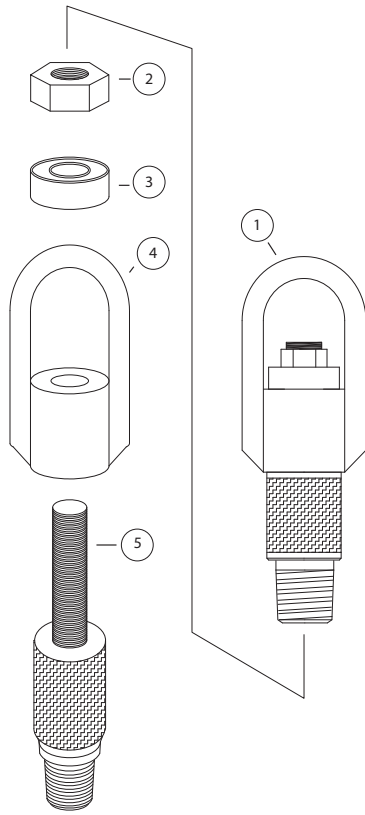


HWL PIN HOISTING PLUG CAPACITY		
SIZE	ROTATING	STATIC
HWL	21,400 lbs / 9,707 kg	43,600 lbs / 19,777 kg

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

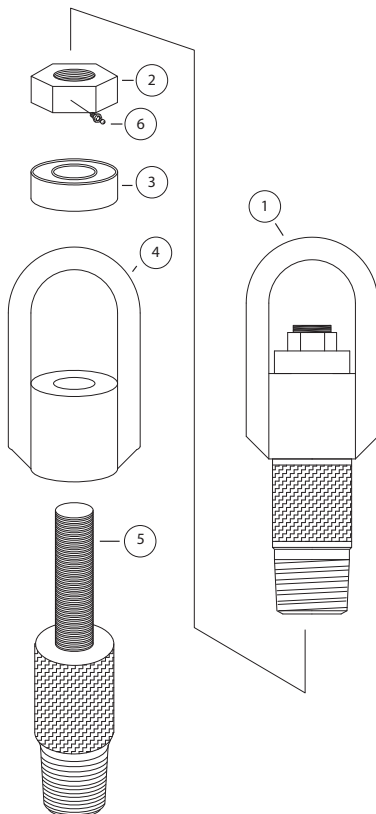
NW CASING PIN



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

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

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

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

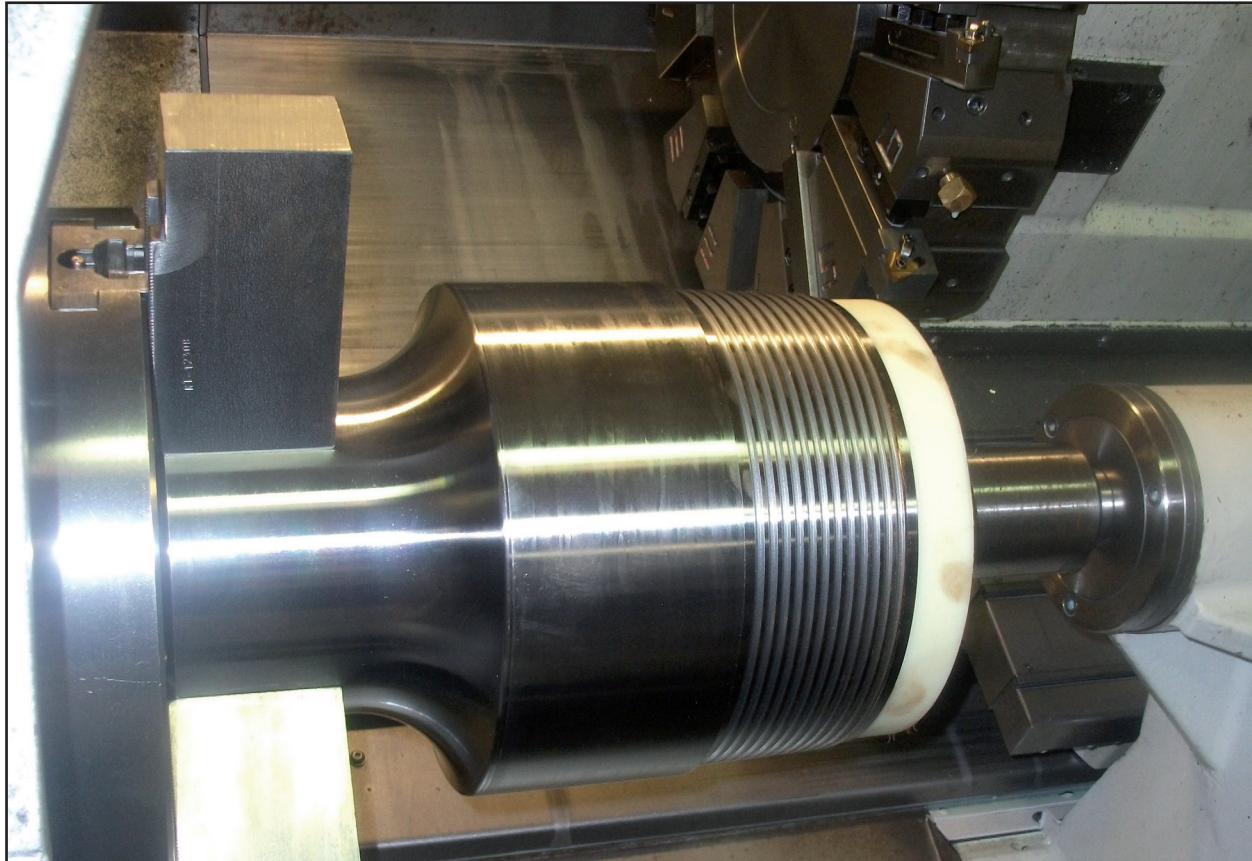


CUSTOM SUBS

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.

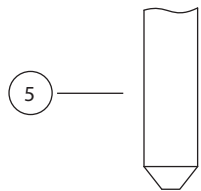
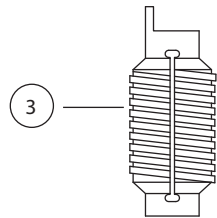
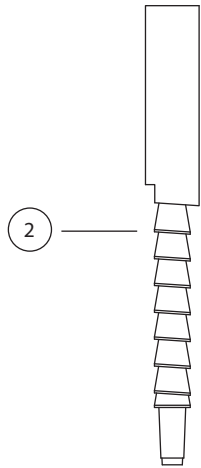
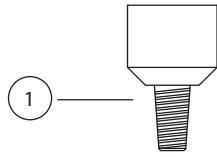
Available in all standard industry sizes, our recovery taps, spears, and magnets are made from premium quality materials, ensuring performance and longevity.

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.

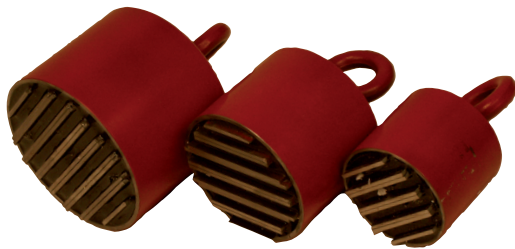
WIRELINE ROD TAPER TAPS			
PART #	DESCRIPTION	CONNECTION	FISHING USE
3850150	BWL ROD TAP	BWL BOX	BWL ROD
3850001	NWL ROD TAP	NWL BOX	NWL ROD
3850096	HWL ROD TAP	HWL BOX	HWL ROD
3850095	HWL ROD TAP	NWJ BOX	HWL ROD
3850132	HWT ROD TAP*	NWJ BOX	HWT ROD

* 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.



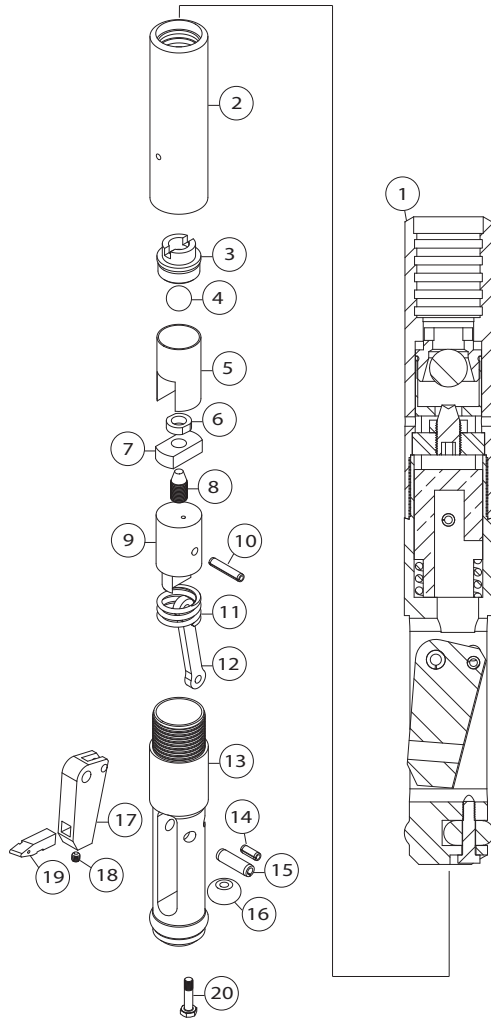
MAGNETS	
PART #	DESCRIPTION
3850015	3 1/2" OD
3850020	4 1/2" OD
3850025	5 1/2" OD

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

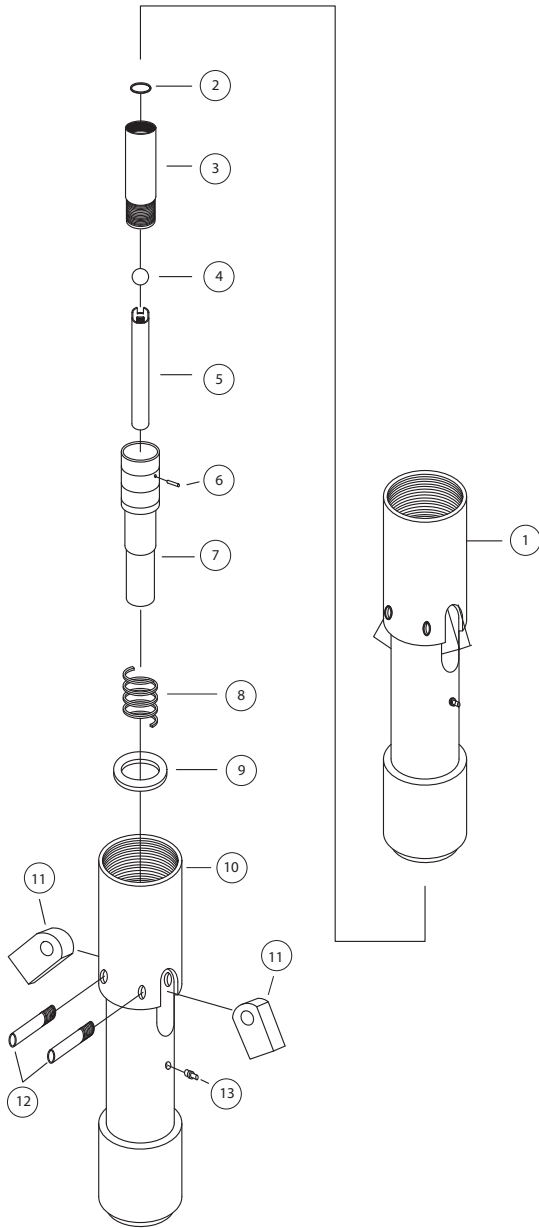
REPLACEMENT CUTTER SINGLE BLADE	
PART #	DESCRIPTION
2050945	REPLACEMENT CUTTER BW CASING/NWL ROD
2050950	REPLACEMENT CUTTER NW CASING/HWL ROD
2050955	REPLACEMENT CUTTER HW CASING/HWT ROD

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



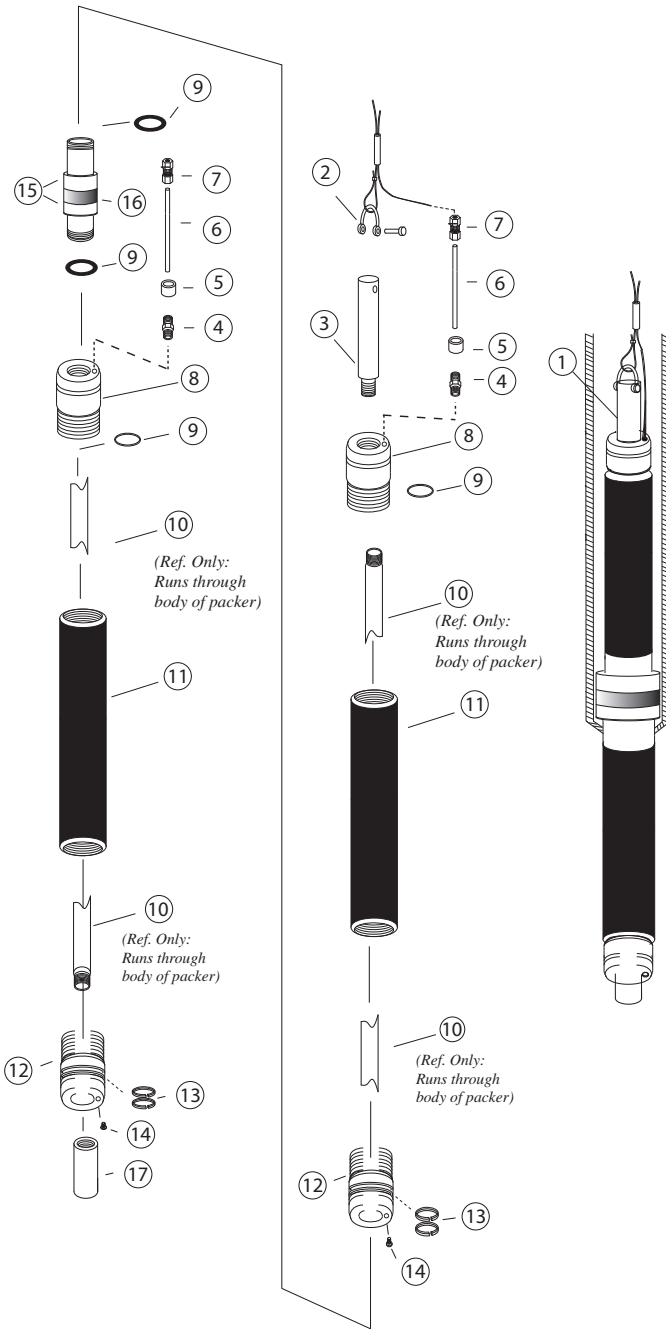
Hole Products offers a complete range of inflatable wireline packers and accessories for standard core barrel sizes N, H, and P.

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



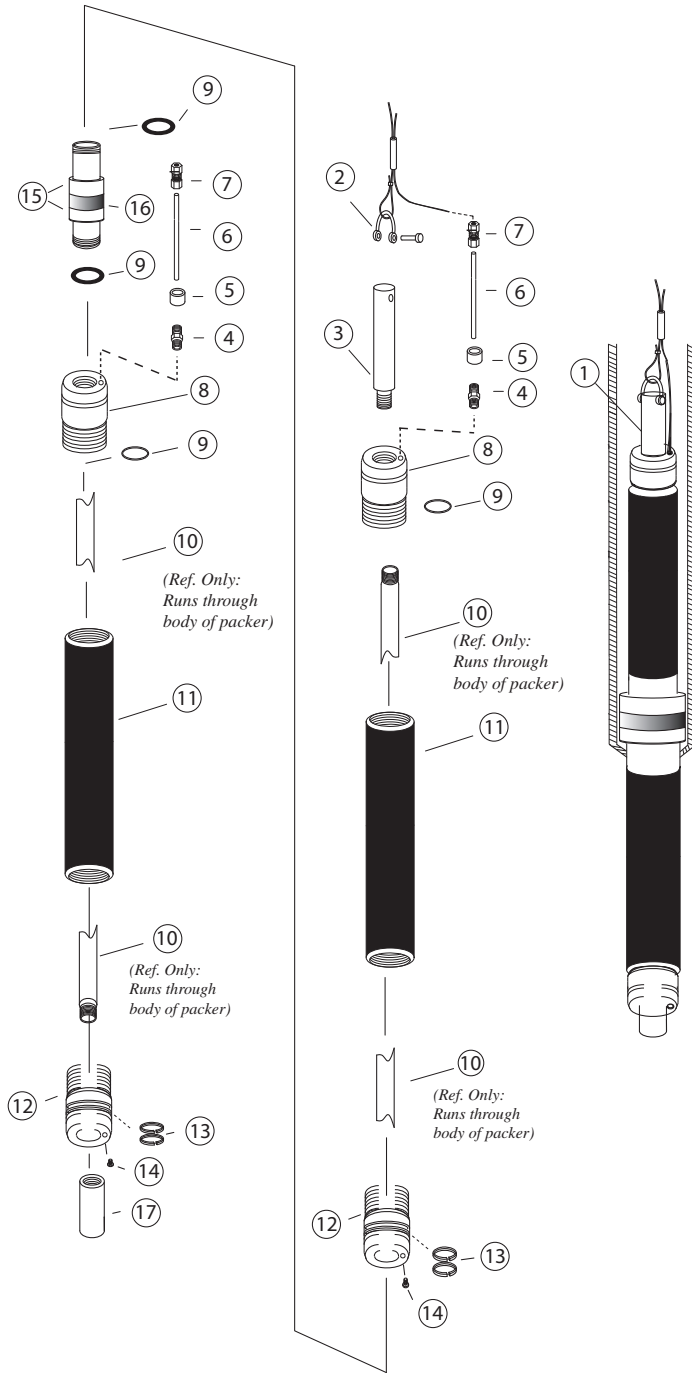
NWL WIRELINE PACKER		
ITEM	PART #	DESCRIPTION
1	2050045	NWL PACKER ASSEMBLY (ITEMS: 2-17)
2	2050595	SHACKLE
3	2050600	RISER TUBE
4	2050042	ADAPTER - NWL
5	2050865	EXTERNAL FERRULE
6	2050850	INFLATION TUBE
7	2050870	UNION
8	2050605	FIXED HEAD
9	2050107	O-RING (4 REQ)
10	2050615	CENTER TUBE
11	2050610	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 PACKERS

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

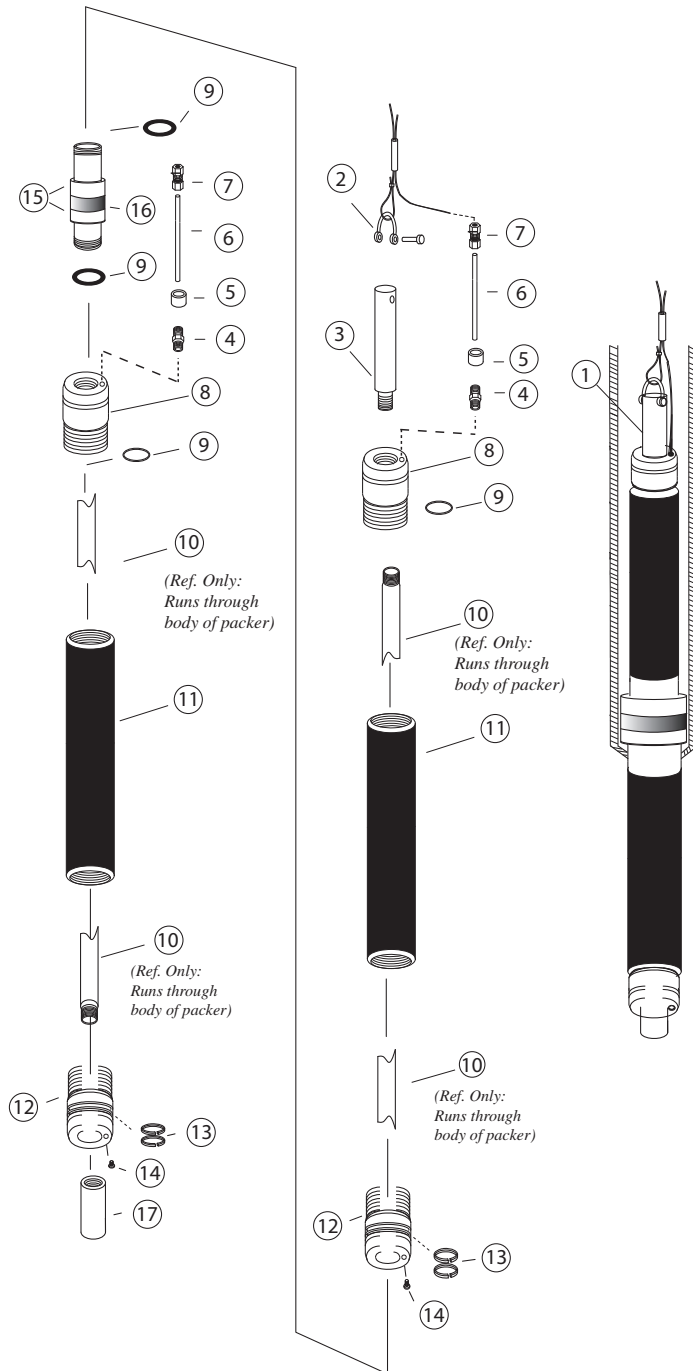


HWL WIRELINE PACKER		
ITEM	PART #	DESCRIPTION
1	2050070	HWL PACKER ASSEMBLY (ITEMS: 2-17)
2	2050595	SHACKLE
3	2050640	RISER TUBE
4	2050042	ADAPTER
5	2050880	EXTERNAL FERRULE
6	2050850	INFLATION TUBE
7	2050885	UNION
8	2050645	FIXED HEAD
9	2050650	O-RING (4 REQ)
10	2050660	CENTER TUBE
11	2050655	GLAND 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

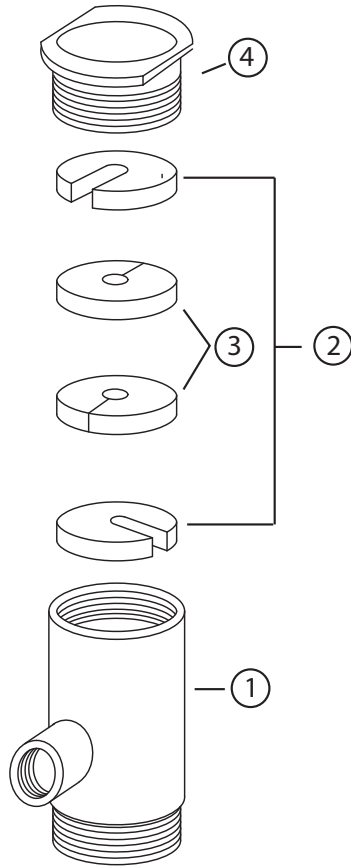


PWL WIRELINE PACKER		
ITEM	PART #	DESCRIPTION
1	2050685	PWL PACKER ASSEMBLY (ITEMS: 2-17)
2	2050595	SHACKLE
3	2050695	RISER TUBE
4	2050042	ADAPTER
5	2050895	EXTERNAL FERRULE
6	2050850	INFLATION TUBE
7	2050900	UNION
8	2050700	FIXED HEAD
9	2050705	O-RING (4 REQ)
10	2050715	CENTER TUBE
11	2050710	GLAND 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

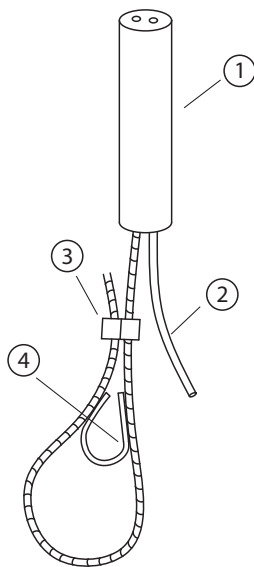


NWL SEAL TEE ASSEMBLY		
ITEM	PART #	DESCRIPTION
1-4	2050052	NWL SEAL TEES
1	2050740	BODY W/NWL PIN
2	2050745	WASHER
3	2050750	SEAL - RUBBER
4	2050755	CAP - COMPRESSION

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

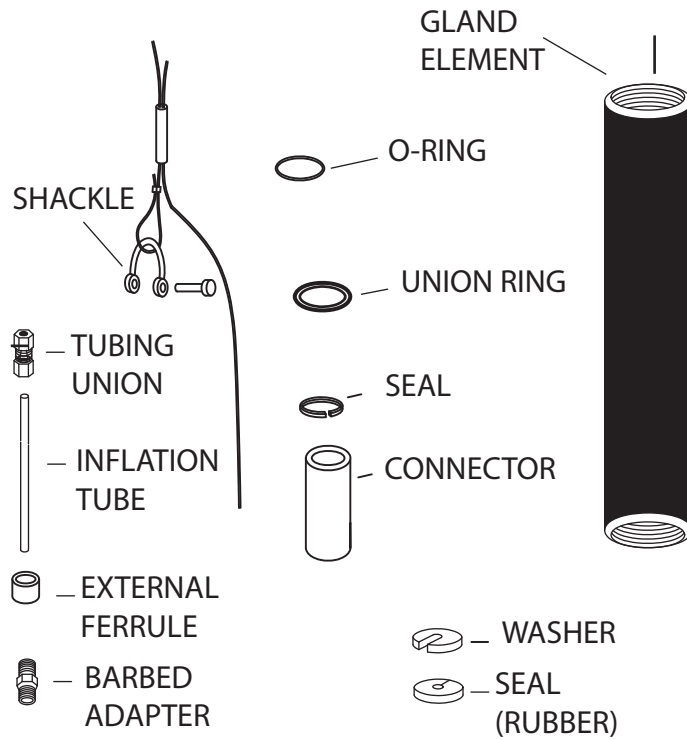
**Items can only be purchased as a kit and are not sold individually.*

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

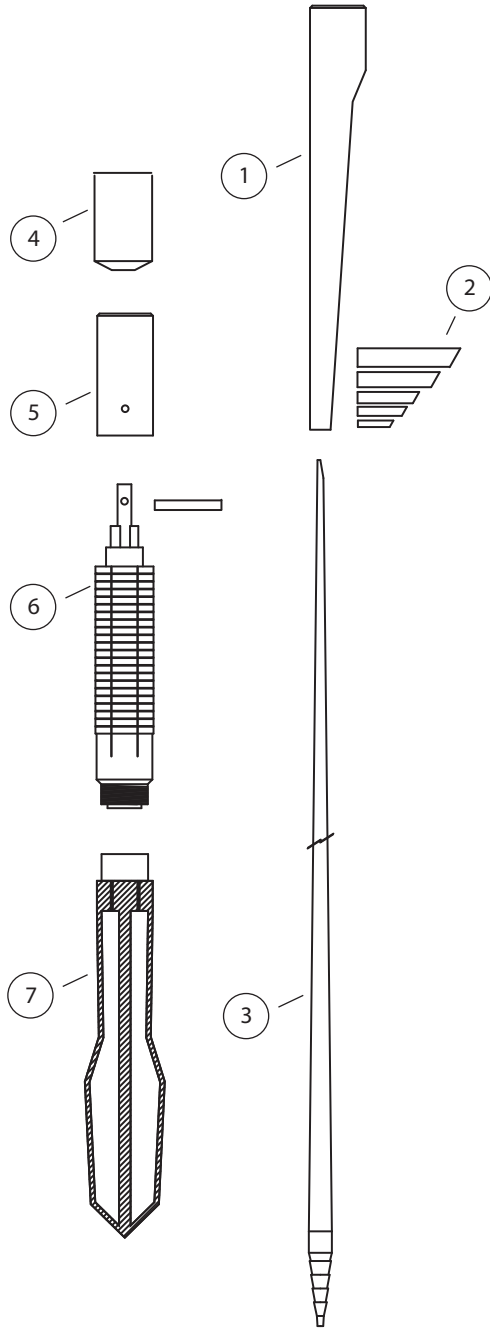
SAFETY BRIDGE PLUGS



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

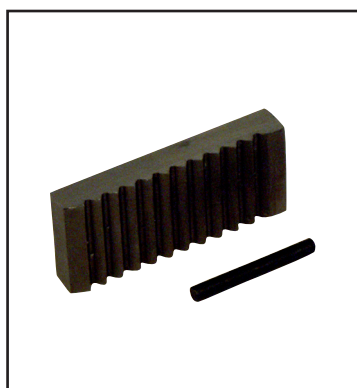
PART #	NOMINAL SIZE	PIPE CAPACITY	WEIGHT (LB)
5150003	10"	1 1/2"	1 3/4
5150042	12"	2"	2 3/4
5150240	14"	2"	3 1/2
5150016	18"	2 1/2"	5 3/4
5150045	24"	3"	9 3/4
5150040	36"	5"	19
5150035	48"	6"	34 1/4
5150030	60"	8"	51 1/4

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

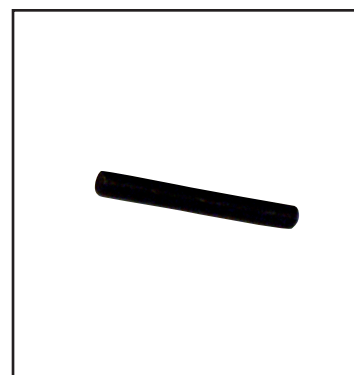
HEEL JAW AND PIN



JAW HOOK



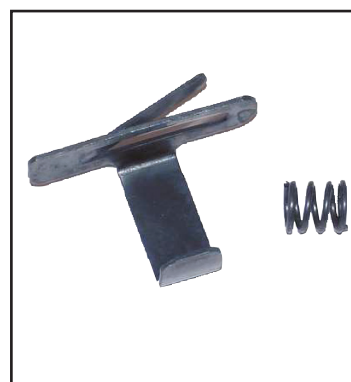
JAW PIN



NUT



COIL AND FLAT SPRING ASSEMBLY

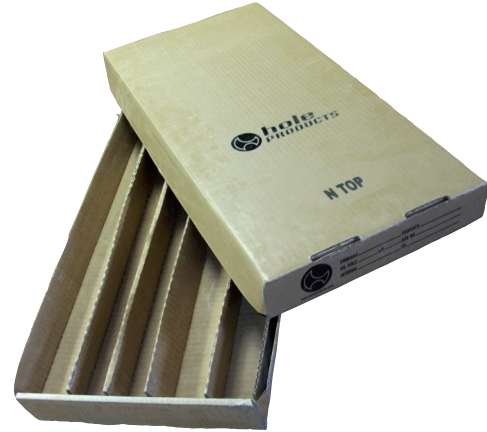


CORE BOXES

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"

