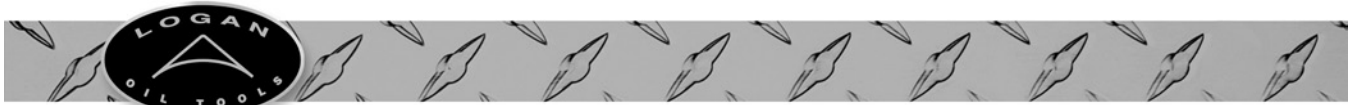




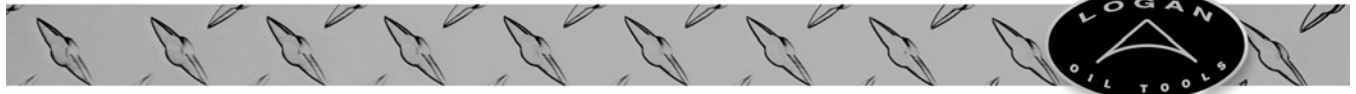
Superior Hydraulic Fishing Jar



Contents

- General Description.....2
- Application.....2
 - Fishing, Milling, and Washover.....2
 - Formation Testing.....2
 - Coring.....2
- Rig Up.....3
- Jarring.....3
 - Jarring Procedure.....3
- Troubleshooting.....3
- Rig Down and Rig Floor Maintenance.....3
- Dressing Area Maintenance.....3
 - Overview.....3
 - Equipment Required.....3
- Disassembly.....4
- Inspection of Parts.....4
- Inspection of Critical Parts.....5
 - Pressure Body.....5
 - Piston Assembly.....5
 - Impact Surfaces.....5
 - Splines.....5
- Assembly.....5
 - Preparation.....5
- Filling the Jar with Oil.....6
- Testing the Jar.....6
- Illustrations of Metal Parts.....7
- Illustrations of Polypaks and Seals.....8 – 9
- Complete Assemblies and Parts Lists.....10 – 15
- Strength Data.....16 – 17
 - Chart A – Specifications.....16 – 17
 - Chart B – Strength and Test Data.....16 – 17
 - Chart C – Recommended Tightening Torques.....16 – 17
- Jar Service Kit.....18 – 19

Logan Oil Tools reserves the right to change or discontinue designs without notice.



Superior Hydraulic Fishing Jar

GENERAL DESCRIPTION

The Logan Superior Hydraulic Fishing Jar is a straight pull, up only, jarring tool that utilizes a special valve section to meter oil from one side of the piston to the other side. This allows for controlled jarring action during a stuck fish recovery. The straight pull load being applied by the operator controls the intensity of the jarring blow. A lighter pull load provides a lighter jarring blow, while a heavier pull load provides a heavier jarring blow. The jarring blow is infinitely adjustable down hole during the jarring operation without any rig floor adjustments being required prior to the run. Simply vary the pull load to change the jarring blow. During the re-cocking cycle of the Jar, a very light load is required since no metering of oil is done during the re-cocking. Oil is returned through large ports during the re-cocking which requires only enough load to overcome friction. This light re-cocking load allows the operator to hit a series of very rapid blows if needed to free the stuck fish.

The Jar's operating chambers are both sealed and isolated from each other to prevent contamination of the metering section of the Jar. The impact section of the Jar utilizes a heavy anti-galling grease to lubricate the splines and impact faces. The metering section utilizes special grade hydraulic oil (viscosity @ 40°C, CsT 22.00) for metering and lubrication of the tool. The sealed chambers prevent well contamination in these areas. Logan Superior Hydraulic Fishing Jars are hydrostatically pressure balanced and provide maximum inside diameters for passage of wireline tools.

APPLICATION

A Logan Superior Energizer should be installed in the string when maximum jarring impact and impulse are needed. This is especially true in shallow, deviated, or directional holes.

CAUTION: *The Superior Energizer should be located above all concentrated mass (drill collars, heavy weight drill pipe, etc.) that is immediately above the Jar. This concentrated mass is used to provide the impact and impulse at the stuck point while jarring. The working string above the Superior Energizer should not have a "weight per foot" change for at least 1,000 feet of string directly above the Superior Energizer. The only exception is for a lighter joint screwed directly into the Superior Energizer for flexibility when needed for bending. No mass above the Superior Energizer improves the jarring results at the stuck point. Concentrated weight mass above the Superior Energizer can cause the impact to occur and result in damage to the Superior Energizer, Jar, BHA components, or the fish. In deviated, directional, or oversized holes, any Jar and Energizer should be isolated from stiffer sections by a more flexible joint of string. This will protect tools and other string components from excessive bending loads that can result in fatigue failure.*

It is recommended that not less than two (2) joints of drill collars and not less than four (4) joints of heavyweight drill pipe be run between the Logan Superior Hydraulic Fishing Jar and the Superior Energizer or between the Jar and the working string. However, if this is absolutely necessary or desired, care should be taken to avoid excessively high impact loads.

Fishing, Milling, and Washover

For fishing operations, the Logan Superior Hydraulic Fishing Jar should be placed immediately below a string of concentrated mass (drill collars, heavyweight drill pipe, etc.).

The Logan Superior Hydraulic Fishing Jar is well suited to milling and washover due to its larger integral mandrel design.

Formation Testing

The Logan Superior Hydraulic Fishing Jar is ideal for use in drill stem testing. This will not interfere with the test equipment and does not cause the test to be lost when jarring becomes necessary. The seals used in the Logan Superior Hydraulic Fishing Jar will handle much higher pressures than are normally encountered in drill stem testing.

The Logan Superior Hydraulics Fishing Jar is ideal for freeing open-hole or hook-wall packers if they become stuck enough to require jarring. One or two jarring blows will usually free the packer. The hook-wall packer sticks less often than the open-hole type, but requires higher jarring to free it.

Coring

Breaking a core without a Jar in the string can require considerable pull load on the drill pipe. When a Jar is used, only a comparatively moderate pull is usually required to deliver an impact sufficient to break the core.



Superior Hydraulic Fishing Jar

OPERATION

Preparation

Carefully examine the Logan Superior Hydraulic Fishing Jar before use to ensure it has been properly assembled and filled with jar oil. The tool should be tested in a jar tester prior to field use. Check all connections to ensure they are tightened to the proper torque. (See *Chart C — Recommended Tightening Torques on pages 16 – 17.*)

RIG UP

WARNING: *The Logan Superior Hydraulic Fishing Jar is shipped in the closed or cocked position. When closed, the Jar should not be left suspended from the elevator, especially with any appreciable weight suspended below it. When in this position, the Jar can fire causing damage to the rig or bodily harm.*

The Logan Superior Hydraulic Fishing Jar should be carefully opened and assembled in the string below the concentrated mass (drill collars, heavy-weight drill pipe, etc.).

It is recommended that a Logan Superior Energizer be run with the Superior Hydraulic Fishing Jar for maximum effectiveness.

JARRING

Before use, carefully examine the Jar to ensure it has been properly assembled and is filled with jar oil. The tool should be tested in a jar tester prior to field use.

Check all connections to ensure that they are tightened to the proper torque. (See *Chart C — Recommended Tightening Torques on pages 16 and 17.*)

WARNING: *At no time during the pull cycle of the fishing jar should the maximum recommended load be exceeded. (See Chart B — Strength and Test Data on pages 16 and 17 for pull loads).*

It is recommended that a low initial pull load of 30% to 50% of the maximum load be used so the operator can see the effects of the jarring action before increasing the jarring load.

If a Superior Energizer is being used, the minimum applied pull load should be per the minimum pull required (above weight of string and collars) to obtain effective blows per strength data chart in the Logan Superior Energizer instruction manual.

Jarring Procedure

1. To strike the initial blow, set the string down to ensure the Jar is fully closed. Raise the string, applying the desired over-pull at the Jar.
2. Set the brake and wait for the Jar to strike its blow. The first blow could take from a few seconds to several minutes due to hole conditions such as temperature, depth, amount of stretch in string, and the amount of over-pull.
3. Close the Jar and repeat the process. Increase the load as required to free the stuck fish.

WARNING: *Do not exceed the published maximum load for the tool.*

TROUBLESHOOTING

Operation difficulties are sometimes encountered by operators, some of which are listed below along with corrective procedures.

If unable to strike the initial blow:

1. Make sure the Jar is fully closed or cocked.
 - a. Lower the string further to apply more closing force before applying pull load.
 - b. If the pumps are running, the pump pressure will be exerting an opening force on the Jar. To calculate the additional force required to close the Jar, multiply the pump pressure x the pump

open area (See *Chart A — specifications on pages 16 and 17*) and apply additional force.

- c. If additional weight can not be applied and the Jar is still not cocked, it may be necessary to temporarily reduce the pump pressure to get the Jar to cock.

RIG DOWN AND RIG FLOOR MAINTENANCE

The Logan Superior Hydraulic Fishing Jar will usually come out of the hole in the open position.

CAUTION: *If the Jar comes out of the hole in the closed or cocked position. It should not be left hanging from the elevators, especially with any amount of weight hanging off the tool. If the jar is allowed to fall the length of its free stroke, bodily harm or damage to the rig or working string could occur.*

To prevent corrosion, all exposed seal surfaces should be cleaned and greased prior to closing the Jar for storage. All balance ports should be flushed out along with the I.D. and the area around the washpipe and floater inside the washpipe body. Wash the tool joints and coat with a good anti-gall tool joint grease. Replace the thread protectors before racking the tools.

DRESSING AREA MAINTENANCE

Overview

After prolonged field service, the Logan Superior Hydraulic Fishing Jar should be disassembled, cleaned, inspected, and redressed.

Equipment Required

The following is a list of equipment that will be required to dress the Jar.

1. A suitable vise and tong or equivalent device of suitable size.
2. Overhead crane with 2,000 lb. minimum capacity.



Superior Hydraulic Fishing Jar

3. Pipe wrenches of suitable sizes for outside diameters of body parts and for all internal parts.
4. Chain wrenches of suitable sizes for all threaded parts.
5. A suitable belt pulley assembly that can be suspended from a hoist for rotating threaded parts during make up or break out.
6. Nylon lift straps suitable for lifting heavy parts during disassembly or assembly.
7. A suitable jar tester for tool diameter and length.
8. Logan Fishing Jar Service Kit.
9. The required packing assembly sleeves for the size tool being dressed.
10. Floater positioning tool for the size tool being dressed.
11. A required spare parts, packing sets and o-rings for the size tool being dressed.

CAUTION: The Jar could contain residual well pressure. Care should be taken when draining oil from the tool to avoid bodily harm.

DISASSEMBLY

NOTE: The Jar should always be in the open position prior to disassembly. This will place the piston assembly in the relief area of the stroking assembly.

1. Position the Jar in a floor vise with the connector body centered in the vise. Support the mandrel end of the Jar with a support stand.
2. Loosen the pressure body and back off the connection, place an oil catch bucket below the connection, to catch the oil in the pressure chamber. Exercise care at this point of disassembly since residual well pressure could be trapped inside. Allow the oil to drain from the pressure body.
3. Remove the pressure body, floater body and washpipe body as an assembly and lay aside for later disassembly. Remember to use the pulley belt assembly to support the parts as they are being removed. Not supporting the parts properly can cause thread galling or other damage.
4. Unscrew and remove the washpipe, and lay it on a pallet.
5. Remove the seal body, piston assembly, and by-pass body and protect these part by wrapping them in soft rags. Lay them on the workbench.
6. Reposition the Jar in the vise; clamp it in the vise on the spline body. Support the Jar at the balance body with a support stand.
7. Remove the connector body and place it on a pallet.
8. Remove the installation rings and store for later use. Remove the mandrel extension and lay it on a pallet.
9. Remove the impact sleeve, if so equipped, and lay it on a pallet.
10. Remove the mandrel from the spline body and lay it on a pallet.
11. Remove the spline body from the vise.
12. Now position the pressure body, floater body and washpipe body in the vise, clamping on the floater body.
13. Remove the washpipe body taking care to catch any oil that might have migrated into the washpipe body when the assembly was removed. Lay it on a pallet.
14. Remove the pressure body taking care to catch any oil that might still be trapped inside. Lay it on a pallet.
15. Remove the floater from the floater body by tapping it out with a brass drift. Set it on the workbench.
16. Remove the floater body from the vise and place it on a pallet. The disassembly is now complete.

INSPECTION OF PARTS

All parts should be cleaned prior to inspection. If steam cleaning or high-pressure washing is available this is the best type of cleaning to be applied to the parts.

Inspect all seals as they are removed for unusual wear patterns. Noting seal wear can help pinpoint other areas of wear that could cause premature seal failure.

NOTE: Seals are always replaced at a major redress when the tool is at a repair facility.

CAUTION: Magnetic particle inspection of all parts is strongly recommended for locating fatigue cracks that could lead to catastrophic failure down hole. Inspect all parts for signs of wear on seal surfaces, splines, bores, bearing faces at each connection, 15° shoulders at each connection, and impact surfaces. Inspect all outside body parts for rotational wear, especially if the tools have been used for heavy milling jobs.



Superior Hydraulic Fishing Jar

INSPECTION OF CRITICAL PARTS

Pressure Body

Examine the pull bore of the pressure body for galling or pitting. If severe damage is noted, the parts will have to be replaced or reworked by grinding and chrome plating. This procedure cannot be done in the oil field facility. Return it to the manufacturing facility for repair.

Piston Assembly

Inspect the O.D. of the piston for abrasion or galling.

NOTE: All pistons will show some signs of wear due to the interference fit between it and the pressure body so some light marking is acceptable. If the marking is so pronounced that it can be felt with the fingers, it probably needs to be replaced. Inspect the back of the piston for wear or pitting, this is a sealing surface and must have at least a 16 rms finish to be acceptable. Inspect the seal body for pitting or scratches on the sealing surface, the side with the groove, minor pitting is acceptable. Insure that the oil passage groove is clean and clear of obstructions.

Impact Surfaces

The impact loads are taken on the male end of the spline body and the Impact sleeve large O.D. end face, if equipped or on the end of the mandrel extension. These areas should be inspected for upsets due to high impact loads. Any upsets can be removed with a file or handheld die grinder and the proper cutting bit. Also inspect for visual signs of cracking or damage.

CAUTION: Care should be taken when using power tools. Always wear protective eyewear and gloves to prevent metal particles from getting in your eyes and hands.

Splines

Inspect the splines in the spline body and the splines on the mandrel for any type of unusual damage such as heavy spline wear on the sides of the splines from heavy milling jobs. Look for burrs on the edges of the splines from normal use. Remove burrs with a file or hand-held grinder.

CAUTION: Care should be taken when using power tools. Always wear protective eye-wear and gloves to prevent metal particles from getting in your eyes and hands.

ASSEMBLY

Preparation

Make sure all parts have been cleaned and inspected. Prior to assembly, install all seals in their proper location by observing their location and direction on pages 8 and 9. Some seals have special non-extrusion devices and care should be taken to assure their proper assembly. All seals should be lubricated with jar oil prior to assembly.

1. Place the spline body in the vise and clamp it down. Apply a good anti-galling grease to the inside of the splines and inside the top end of the spline body past the mandrel seals.
 2. Install the mandrel through the spline body. Take care to ensure the splines on the mandrel are lined up with the splines in the spline body. Grease the splines on the mandrel before assembly.
 3. Install the mandrel extension onto the end of the mandrel and torque it to the specified torque found in the strength data chart. (See *Chart C — Recommended Tightening Torques on pages 16 and 17.*) Some Jars require an impact sleeve. If the Jar you are working on requires the sleeve, install it
4. Install the balance body onto the spline body with balance holes pointed away from spline body. Coat the threads with thread compound. Install seal installation sleeve or split rings on or in the mandrel extension grooves or shoulder area as noted on page 7. Install split rings or installation sleeve with largest end toward balance body.
 5. Install connector body onto mandrel extension with the low-pressure seal end, O-ring on O.D. only, pointed toward balance body. Make sure the entire length of the mandrel extension is lubricated with jar oil to ease assembly. Screw threaded end into balance body and tighten. Remove the split ring or sleeve-type seal installation rings from the grooves on the mandrel extension.
 6. Install the by-pass body with the larger diameter shoulder end pointed toward the connector body. The 4-3/4" O.D. x 2-1/4" I.D. Jar uses a combination by-pass body/piston retainer ring. This is a split ring and requires it be seated in the grooves and the piston pushed on over its smaller diameter end during assembly with the counter-bored end pointed toward the connector body.



Superior Hydraulic Fishing Jar

7. Install the piston with the recessed or counter-bored end pointed toward the connector body.
8. Install the seal body with the groove pointed toward the piston seal surface.
9. Install the washpipe. Make sure to apply thread compound to the threads of the mandrel extension. Torque to specified torque. (See *Chart C — Recommended Tightening Torques on pages 16 and 17 for ft-lbs.*)
10. Remove any excess thread compound from the washpipe, mandrel extension, and the connector body pin O.D. (below the O.D. polypak seals). Apply clean jar lube on the cone and seal body assembly.
11. Install the pressure body.

NOTE: The pressure body is stenciled with "Connector Body End" and "Floater Body End." Please make note and assemble in the proper direction. Make sure that the threads on the connector body are coated with thread compound.

12. Install the floater body. Make sure the threads are coated with thread compound. Do not use excessive amounts. This could contaminate the jar lube.
13. Coat the O.D. and the I.D. of the floater with clean jar lube. Install the floater and position it at the distance from the end of the floater body specified in the technical specifications chart. (See *Chart A — Specifications on pages 16 and 17.*)
14. Install the washpipe body. Make sure the threads are coated with thread compound.
15. Tighten all outside body joints to the recommended tightening torque specified on the strength data chart. (See *Chart C — Recommended Tightening Torques on pages 16 and 17 for ft-lbs.*)

FILLING THE JAR WITH OIL

NOTE: After the Logan Superior Hydraulic Fishing Jar has been assembled, it should remain fully open with the mandrel extended until it has been filled with oil. After the filling operation and testing the washpipe body should be removed and the floater position checked prior to racking the Jar for future service.

All Logan Fishing Jars fill in the same manner so no special precautions are required.

1. Place the Jar in the vise with the mandrel end approximately 24" lower than the floater body where the fill plugs are located.
2. Attach the fill plug adapters that are provided with the Logan Jar Service Kit.
3. Attach the volume pump oil supply hose to the lower or bottom fill plug hole in the floater body.
4. Attach the oil return hose to the upper or top fill plug hole.
5. Fill the Jar with oil. Watch the return line to see when the air bubbles disappear.

NOTE: It may take several minutes before oil is seen in the return line. The main oil chamber will have to fill before air can be purged from the system.

6. When you start to see oil in the return line, slowly elevate the low or mandrel end of the Jar to aid in the purging process. Raise the jar approximately six (6) inches at a time. Pause the pumping action occasionally to allow the air to bleed out through the return line. Continue the process until the jar is approximately horizontal to the floor and no more air bubbles appear in the return line.

7. When the Jar is full of oil, install the fill plug in the top or upper fill plug hole first. Then rotate the Jar 180° and install the other fill plug.

TESTING THE JAR

NOTE: Prior to testing the Jar make sure you have all the necessary technical data and test loads. Refer to Chart B — Strength and Test Data on pages 16 and 17.

1. Install the proper jar tester subs onto the Jar and lift it into the jar tester using an appropriate hoist.
2. Set the jar tester at the proper loads for the tool being tested.
3. Conduct the low-load test first, recording the time for each pull-through. Typically the Jar is stroked one (1) time at low-load and five (5) times at high-load settings.
4. Re-adjust the jar tester for a high-load test and conduct the test recording the pull-through times on each test.
5. It is recommended that the low-load test be repeated after the high-load test. The reason for this is to ensure the low-load pulls are the same after the Jar is at maximum operating temperature.

CAUTION: The first one or two pulls during the low-test pull can be very slow and take several minutes to complete due to the Jar being cool. As the Jar is stroked it will gradually warm up causing the oil to thin even more and the pull through times will get faster.

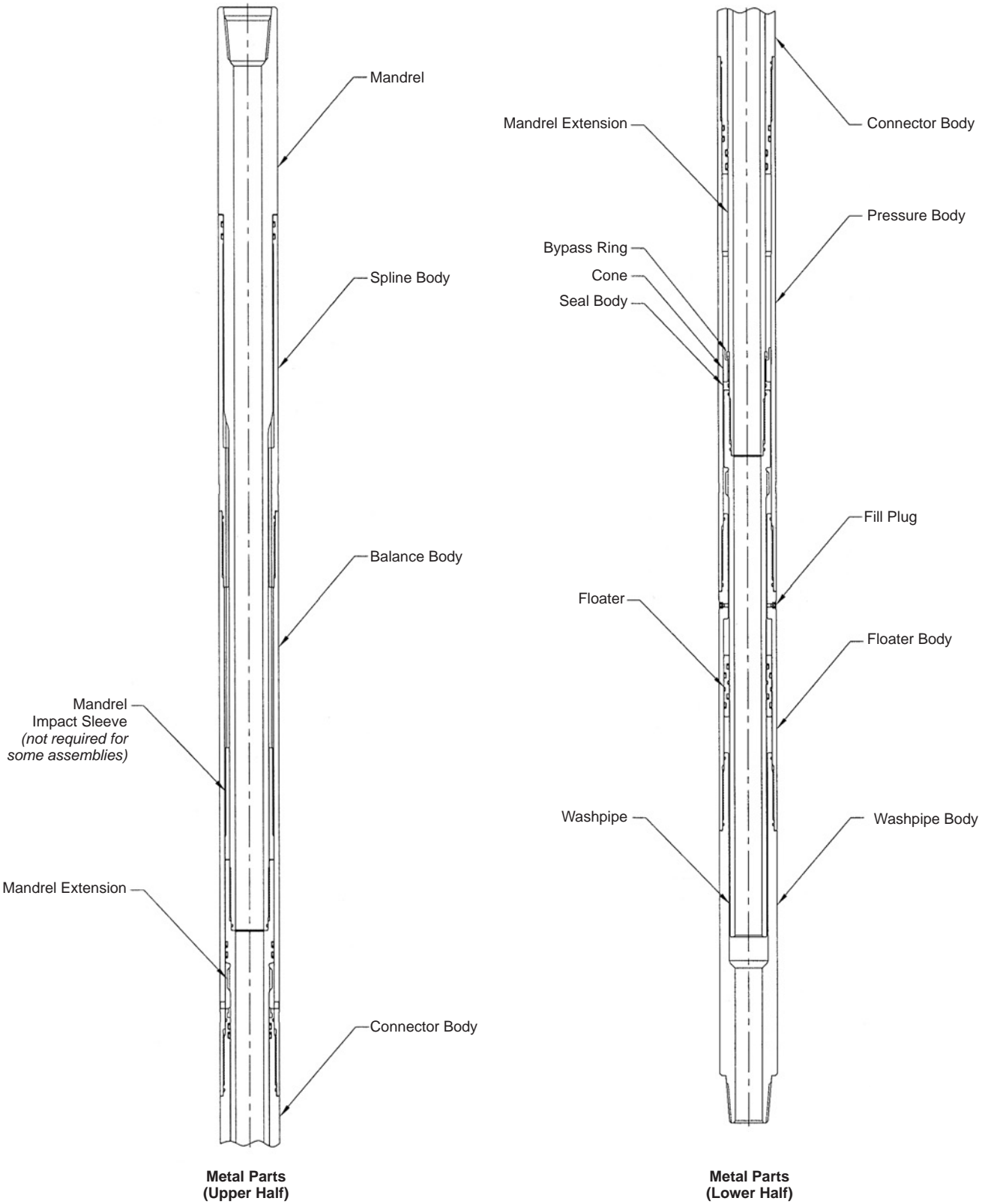
ORDERING INFORMATION

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection

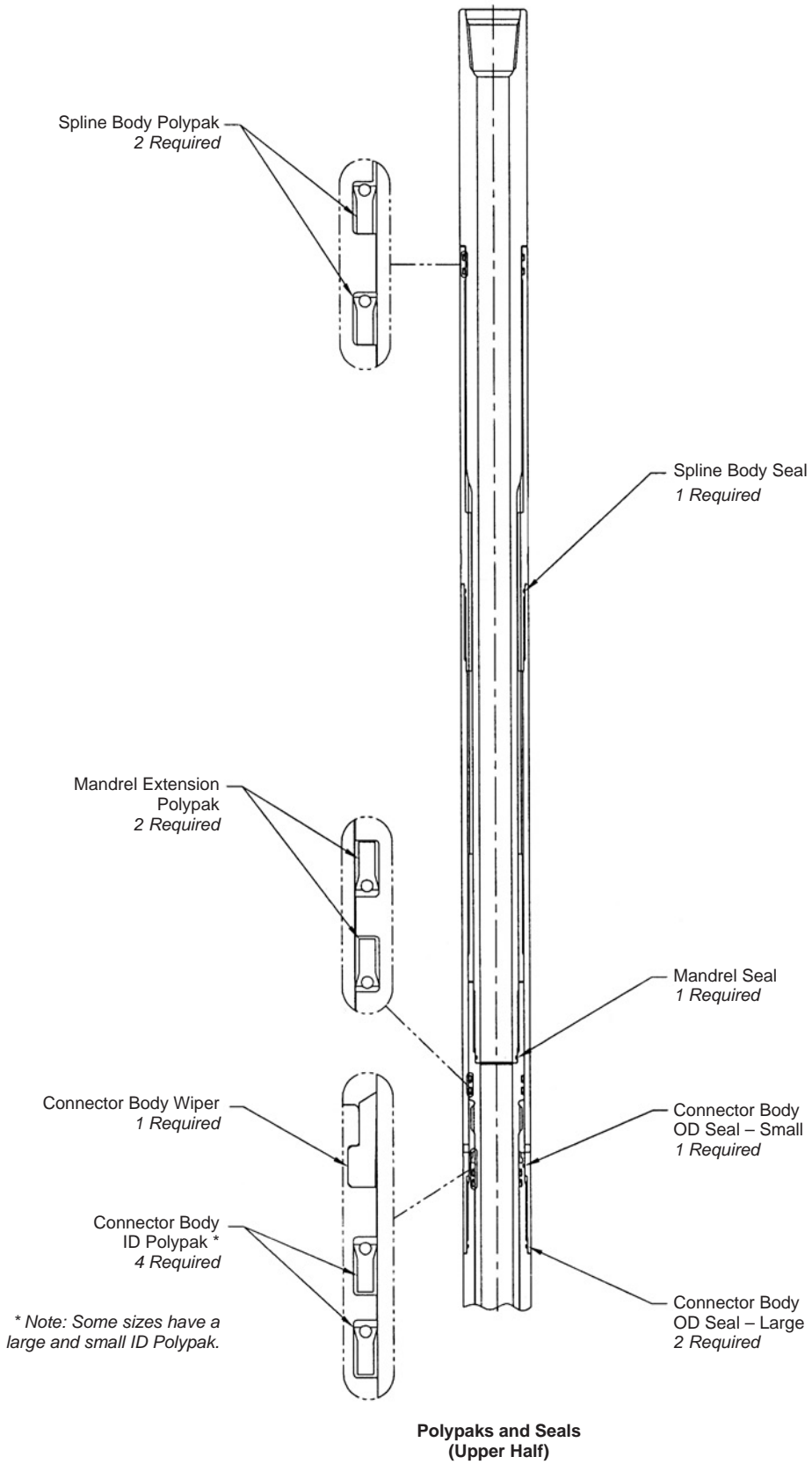


Superior Hydraulic Fishing Jar



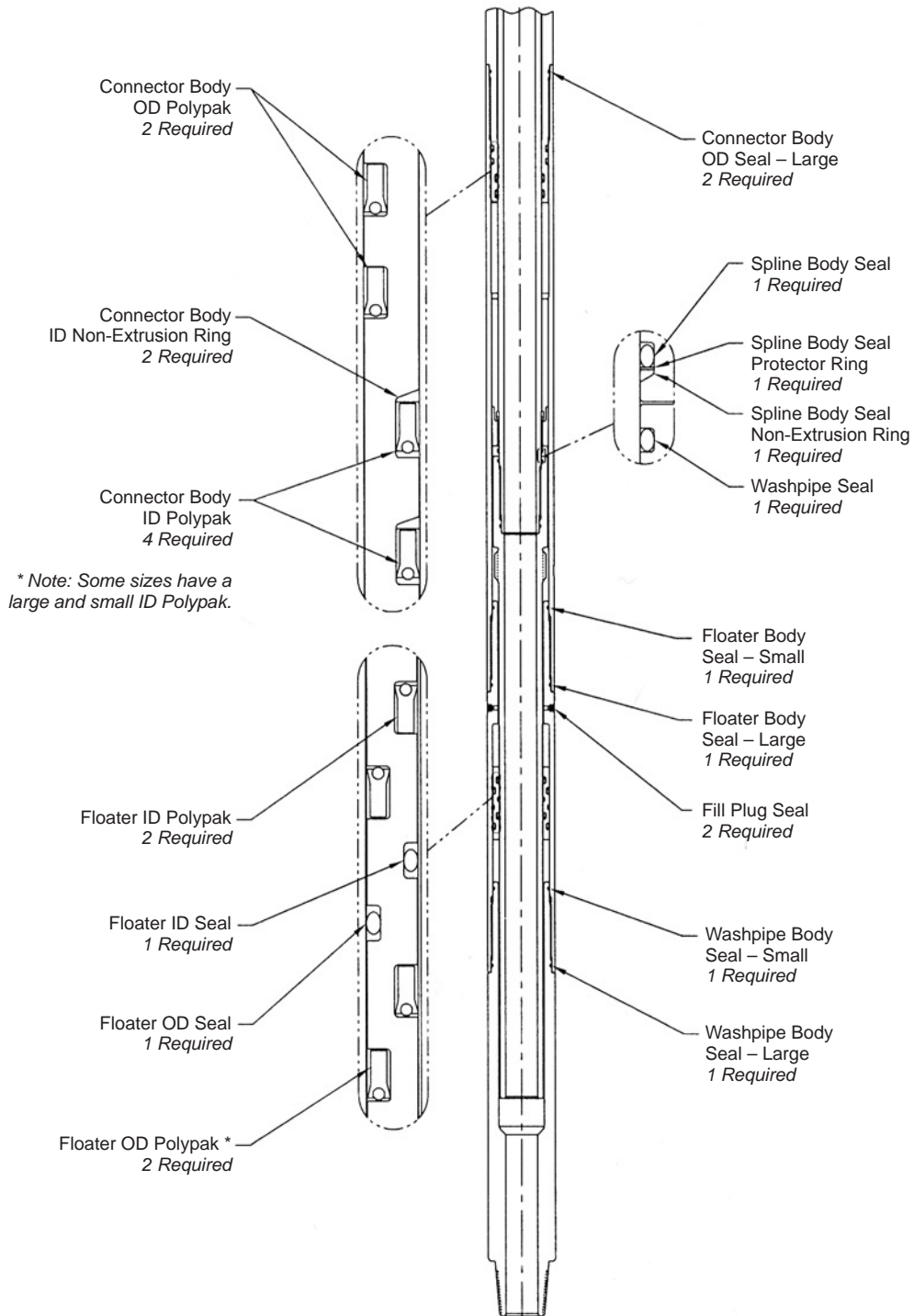


Superior Hydraulic Fishing Jar





Superior Hydraulic Fishing Jar



**Polypaks and Seals
(Lower Half)**



Superior Hydraulic Fishing Jar

TOOL JOINT CONNECTION		2-3/8 API EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 API IF	2-7/8 API REG	2-3/8 API EUE	2-7/8 API IF
OUTSIDE DIAMETER — INCHES		3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4	4-1/4
INSIDE DIAMETER — INCHES		1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8	2
COMPLETE ASSEMBLY Logan Part No.		611-306	611-312	611-313	611-375	611-377	611-376	611-425
COMPONENTS								
MANDREL	Logan Part No.	BD15	BD10	BD15	BD11	BD11	BD18	BD16
MANDREL SEAL	Logan Part No.	...	...	...	568-225	568-225	...	568-229
	No. Req'd.	...	...	...	1	1	...	1
MANDREL EXTENSION	Logan Part No.	BD25	BD20	BD25	BD21	BD21	BD28	BD26
MANDREL	Logan Part No.	568-225	568-224	568-225	...	...	568-229	...
EXTENSION SEAL	No. Req'd.	1	1	1	...	...	1	...
MANDREL EXTENSION	Logan Part No.	BD205-2	BD205-2	BD205-2	BD201-2	BD201-2	AQ29003	BX144-3
POLYPAK	No. Req'd.	1	2	1	2	2	2	2
MANDREL EXTENSION	Logan Part No.	...	...	...	...	...	...	...
WIPER	No. Req'd.	...	...	...	...	...	...	...
MANDREL IMPACT	Logan Part No.	BD35	BD30	BD35	...	...	...	...
SLEEVE								
SPLINE BODY	Logan Part No.	BD45	BD40	BD45	BD41	BD41	BD48	BD46
SPLINE BODY SEAL	Logan Part No.	568-230	568-230	568-230	568-234	568-234	568-235	568-238
	No. Req'd.	1	1	1	1	1	1	1
SPLINE BODY	Logan Part No.	BD205-1	BD205-1	BD205-1	BD202-3	BD202-3	BX144-3	BD202-2
POLYPAK	No. Req'd.	2	2	2	2	2	2	2
BALANCE BODY	Logan Part No.	BD55	BD50	BD55	BD51	BD51	BD58	BD56
CONNECTOR BODY	Logan Part No.	BD65	BD60	BD65	BD61	BD61	BD68	BD66
CONNECTOR BODY	Logan Part No.	568-230	568-230	568-230	568-234	568-234	568-235	568-238
SEAL (LARGE)	No. Req'd.	2	2	2	2	2	2	2
CONNECTOR BODY	Logan Part No.	568-228	568-228	568-228	568-232	568-232	568-233	568-236
SEAL (SMALL)	No. Req'd.	2	2	2	1	1	1	1
CONNECTOR BODY	Logan Part No.	...	...	...	BD71	BD71	BD78	BD76
WIPER								
CONNECTOR BODY	Logan Part No.	BD205-3	BD200-3	BD205-3	BD201-3	BD201-3	BD208-3	AQ29003
ID POLYPAK (SMALL)	No. Req'd.	3	3	3	4	4	4	4
CONNECTOR BODY	Logan Part No.	...	...	...	...	...	...	...
ID POLYPAK (LARGE)	No. Req'd.	...	...	...	...	...	...	...
CONNECTOR BODY	Logan Part No.	...	...	...	AQ29003	AQ29003	AQ29003	BX144-3
OD POLYPAK	No. Req'd.	...	...	...	2	2	2	2
CONNECTOR BODY	Logan Part No.	8-228	8-228	8-228	L375-34	L375-34	L375-36	...
SEAL PROTECTOR RING	No. Req'd.	2	2	2	2	2	2	...
CONNECTOR BODY ID	Logan Part No.	L365-32	L365-30	L365-32	BD231	BD231	L365-36	BD236
NON-EXTRUSION RING	No. Req'd.	1	2	1	2	2	2	2
CONNECTOR BODY ID								
NON-EXTRUSION RING	Logan Part No.	**	AG1000-30.13	**	**	**	**	**
SETTING TOOL								
CONNECTOR BODY OD	Logan Part No.	...	BD240	...	...	...	...	...
NON-EXTRUSION RING	No. Req'd.	...	1	...	...	...	...	...
(LARGE)								
CONNECTOR BODY OD	Logan Part No.	L366-33.5	BD250	L366-33.5	...	...	...	...
NON-EXTRUSION RING	No. Req'd.	2	1	2	...	...	...	...
(SMALL)								
PRESSURE BODY	Logan Part No.	BD-85	BD80	BD85	BD81	BD81	BD88	BD86



Superior Hydraulic Fishing Jar

TOOL JOINT CONNECTION		2-3/8 API EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 API IF	2-7/8 API REG	2-3/8 API EUE	2-7/8 API IF
OUTSIDE DIAMETER — INCHES		3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4	4-1/4
INSIDE DIAMETER — INCHES		1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8	2
COMPLETE ASSEMBLY Logan Part No.		611-306	611-312	611-313	611-375	611-377	611-376	611-425
COMPONENTS								
FLOATER BODY	Logan Part No.	BD95	BD90	BD95	BD91	BD91	BD98	BD96
FLOATER BODY SEAL (LARGE)	Logan Part No. No. Req'd.	568-230 1	568-230 1	568-230 1	568-234 1	568-234 1	568-235 1	568-238 1
FLOATER BODY SEAL (SMALL)	Logan Part No. No. Req'd.	568-228 1	568-228 1	568-228 1	568-232 1	568-232 1	568-233 1	568-236 1
FLOATER BODY FILL PLUG	Logan Part No. No. Req'd.	AG10002 2	AG10002 2	AG10002 2	AG10002 2	AG10002 2	AG10002 2	AG10002 2
FLOATER BODY FILL PLUG SEAL	Logan Part No. No. Req'd.	568-006 2	568-006 2	568-006 2	568-006 2	568-006 2	568-006 2	568-006 2
FLOATER SEAL (LARGE)	Logan Part No. No. Req'd.	BD115 3	BD110 1	BD115 3	BD111 1	BD111 1	BD118 1	BD116 1
FLOATER SEAL (SMALL)	Logan Part No. No. Req'd.	568-228 3	568-228 1	568-228 3	568-232 1	568-232 1	568-233 1	568-236 1
FLOATER OD POLYPAK	Logan Part No. No. Req'd.	568-226 3	568-224 1	568-226 3	568-228 1	568-230 1	568-230 1	568-232 1
FLOATER ID POLYPAK	Logan Part No. No. Req'd.	...	BD200-4 2	...	BD201-2 2	BD201-2 2	AQ29003 2	BX144-3 2
FLOATER OD PARBAK RING	Logan Part No. No. Req'd.	...	BD200-3 2	...	BD201-3 2	BD201-3 2	BD208-3 2	AQ29003 2
FLOATER ID PARBAK RING	Logan Part No. No. Req'd.	...	...	...	8-232 1	8-232 1	...	...
FLOATER POSITIONING TOOL SEAL BODY	Logan Part No. No. Req'd.	8-226 3	...	8-226 3	8-228 1	8-228 1	...	...
FLOATER SEAL BODY	Logan Part No.	BD295	BD290	BD295	BD291	BD291	BD298	BD296
SEAL BODY SEAL	Logan Part No. No. Req'd.	BD125 1	BD120 1	BD125 1	BD121 1	BD121 1	BD128 1	BD126 1
NON-EXTRUSION RING	Logan Part No. No. Req'd.	568-225 1	568-130 1	568-225 1	568-227 1	568-227 1	568-143 1	568-231 1
SEAL PROTECTOR RING	Logan Part No. No. Req'd.	L365-30.25 1	BD260 1	L365-30.25 1	L370-5 1	L370-5 1	BD268 1	L370-9 1
SETTING TOOL	Logan Part No.	L375-30.25	8-130	L375-30.25	8-227	8-227	8-143	L376-9
CONE	Logan Part No.	AG1000-30.25	AG1000-29.25	AG1000-30.25	AG1000-33.5	AG1000-33.5	AG1000-35.5	AG1000-37
BYPASS RING	Logan Part No.	BD135	BD130	BD135	BD131	BD131	BD138	BD136
WASHPIPE	Logan Part No.	BD155	BD150	BD155	BD151	BD151	BD158	BD156
WASHPIPE SEAL (LARGE)	Logan Part No. No. Req'd.	BD165 ...	BD160 568-130	BD165 ...	BD161 568-227	BD161 568-227	BD168 568-143	BD166 568-231
WASHPIPE SEAL (SMALL)	Logan Part No. No. Req'd.	... 1	1	... 1	1	1	1	1
WASHPIPE BODY	Logan Part No.	568-224	568-221	568-224	568-225	568-225	568-228	568-229
WASHPIPE BODY SEAL (LARGE)	Logan Part No. No. Req'd.	BD175 1	BD170 1	BD175 1	BD171 1	BD171 1	BD178 1	BD176 1
WASHPIPE BODY SEAL (SMALL)	Logan Part No. No. Req'd.	568-230 1	568-230 1	568-230 1	568-234 1	568-234 1	568-235 1	568-238 1
WASHPIPE SEAL (SMALL)	Logan Part No. No. Req'd.	568-228 1	568-228 1	568-228 1	568-232 1	568-232 1	568-233 1	568-236 1



Superior Hydraulic Fishing Jar

TOOL JOINT CONNECTION		2-3/8 API EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 API IF	2-7/8 API REG	2-3/8 API EUE	2-7/8 API IF
OUTSIDE DIAMETER — INCHES		3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4	4-1/4
INSIDE DIAMETER — INCHES		1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8	2
COMPLETE ASSEMBLY	Logan Part No.	611-306	611-312	611-313	611-375	611-377	611-376	611-425
COMPONENTS								
REDRESS KITS *	Logan Part No.	BD185	BD180	BD185	BD181	BD181	BD188	BD186
COMPLETE O-RING KIT	Logan Part No.	BD195	BD190	BD195	BD191	BD191	BD198	BD196
COMPLETE POLYPAK KIT	Logan Part No.	BD205	BD200	BD205	BD201	BD201	BD208	BD206
<i>Consists of:</i>								
SPLINE BODY POLYPAK	Logan Part No. No. Req'd.	BD205-1 2	BD205-1 2	BD205-1 2	BD202-3 2	BD202-3 2	BX144-3 2	BD202-2 2
MANDREL EXTENSION POLYPAK	Logan Part No. No. Req'd.	BD205-2 1	BD205-2 2	BD205-2 1	BD201-2 2	BD201-2 2	AQ29003 2	BX144-3 2
CONNECTOR BODY ID POLYPAK (SMALL)	Logan Part No. No. Req'd.	BD205-3 3	BD200-3 3	BD205-3 3	BD201-3 4	BD201-3 4	BD208-3 4	AQ29003 4
CONNECTOR BODY ID POLYPAK (LARGE)	Logan Part No. No. Req'd.	...	...	...	...	...	...	...
CONNECTOR BODY OD POLYPAK	Logan Part No. No. Req'd.	...	...	...	AQ29003 2	AQ29003 2	AQ29003 2	BX144-3 2
FLOATER OD POLYPAK	Logan Part No. No. Req'd.	...	BD200-4 2	...	BD201-2 2	BD201-2 2	AQ29003 2	BX144-3 2
FLOATER ID POLYPAK	Logan Part No. No. Req'd.	...	BD200-3 2	...	BD201-3 2	BD201-3 2	BD208-3 2	AQ29003 2
MANDREL EXTENSION ASSEMBLY SLEEVE †	Logan Part No. No. Req'd.	BD205-6 1	BD200-6 1	BD205-6 1	BD201-6 1	BD201-6 1	BD208-6 1	BD206-6 1
JAR LUBE	Logan Part No. Bowen No.	49842-A 49842-A 1 Gallon	49842-B 49842-B 5 Gallons	49842-C 49842-C 20 Gallons	49842-D 49842-D 55 Gallons			

* Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers

** To be advised by engineering

† Mandrel Extension Assembly Sleeve is not included in the Redress Kit. Must be purchased separately.



Superior Hydraulic Fishing Jar

TOOL JOINT CONNECTION		2-7/8	3-1/2	4-1/2	5-1/2	6-5/8		
		API EUE	API IF	API IF	API REG	API REG		
OUTSIDE DIAMETER — INCHES		4-1/2	4-3/4	6-1/4	6-3/4	7-3/4		
INSIDE DIAMETER — INCHES		2-3/8	2-1/4	2-1/4	2-3/4	3-1/16		
COMPLETE ASSEMBLY Logan Part No.		611-450	611-475	611-625	611-675	611-775		
COMPONENTS								
MANDREL	Logan Part No.	BD19	BD12	BD13	BD17	BD14		
MANDREL SEAL	Logan Part No.	568-238	568-232	568-236	**	568-348		
	No. Req'd.	1	1	1	...	1		
MANDREL EXTENSION	Logan Part No.	BD29	BD22	BD23	BD27	BD24		
MANDREL	Logan Part No.	...	...	568-234	**	568-341		
EXTENSION SEAL	No. Req'd.	...	...	1	...	1		
MANDREL EXTENSION	Logan Part No.	BD209-2	BD202-2	BD203-2	**	BD204-2		
POLYPAK	No. Req'd.	2	2	2	...	2		
MANDREL EXTENSION	Logan Part No.	...	...	BD223	**	BD224		
WIPER	No. Req'd.	...	...	...	...	1		
MANDREL IMPACT SLEEVE	Logan Part No.	...	BD32	...	BD37	...		
SPLINE BODY	Logan Part No.	BD49	BD42	BD43	BD47	BD44		
SPLINE BODY SEAL	Logan Part No.	568-240	568-242	568-250	**	568-362		
	No. Req'd.	1	1	1	...	1		
SPLINE BODY	Logan Part No.	BD209-1	BD202-1	BD203-1	**	BD204-1		
POLYPAK	No. Req'd.	2	2	2	...	2		
BALANCE BODY	Logan Part No.	BD59	BD52	BD53	BD57	BD54		
CONNECTOR BODY	Logan Part No.	BD69	BD62	BD63	BD67	BD64		
CONNECTOR BODY	Logan Part No.	568-240	568-242	568-253	**	568-362		
SEAL (LARGE)	No. Req'd.	2	2	2	...	2		
CONNECTOR BODY	Logan Part No.	568-239	568-239	568-250	**	568-361		
SEAL (SMALL)	No. Req'd.	1	1	1	...	1		
CONNECTOR BODY	Logan Part No.	BD79	BD72	BD73	BD77	BD74		
WIPER								
CONNECTOR BODY ID	Logan Part No.	BX144-3	BD202-3	BD203-3	**	...		
POLYPAK (SMALL)	No. Req'd.	4	2	4	...	...
CONNECTOR BODY ID	Logan Part No.	...	BD202-4	...	**	BD204-3		
POLYPAK (LARGE)	No. Req'd.	...	2	...	...	4		
CONNECTOR BODY	Logan Part No.	BD209-4	BD202-5	BD203-5	**	BD204-2		
OD POLYPAK	No. Req'd.	2	2	2	...	2		
CONNECTOR BODY	Logan Part No.	L375-41	...	BD273	**	BD274		
SEAL PROTECTOR RING	No. Req'd.	2	...	2	...	2		
CONNECTOR BODY ID	Logan Part No.	L365-41	BD232	BD233	**	BD234		
NON-EXTRUSION RING	No. Req'd.	2	2	2	...	2		
CONNECTOR BODY ID	Logan Part No.	**	AG1000-40	**	**	AG1000-52		
RING SETTING TOOL								
CONNECTOR BODY	Logan Part No.**	...	...	...	**	...
OD NON-EXTRUSION RING (LARGE)	No. Req'd.	...	...	...	...	...
CONNECTOR BODY	Logan Part No.**	...	...	...	**	...
OD NON-EXTRUSION RING (SMALL)	No. Req'd.	...	...	...	...	...
PRESSURE BODY	Logan Part No.	BD89	BD82	BD83	BD87	BD84		
FLOATER BODY	Logan Part No.	BD99	BD92	BD93	BD97	BD94		



Superior Hydraulic Fishing Jar

TOOL JOINT CONNECTION		2-7/8	3-1/2	4-1/2	5-1/2	6-5/8		
		API EUE	API IF	API IF	API REG	API REG		
OUTSIDE DIAMETER — INCHES		4-1/2	4-3/4	6-1/4	6-3/4	7-3/4		
INSIDE DIAMETER — INCHES		2-3/8	2-1/4	2-1/4	2-3/4	3-1/16		
COMPLETE ASSEMBLY Logan Part No.		611-450	611-475	611-625	611-675	611-775		
COMPONENTS								
FLOATER BODY	Logan Part No.	568-240	568-242	568-253	**	568-362		
SEAL (LARGE)	No. Req'd.	1	1	1	...	1		
FLOATER BODY	Logan Part No.	569-238	568-239	568-250	**	568-361		
SEAL (SMALL)	No. Req'd.	1	1	1	...	1		
FLOATER BODY	Logan Part No.	AG10002	AG10002	AG10002	**	AG10002		
FILL PLUG	No. Req'd.	2	2	2	...	2		
FLOATER BODY	Logan Part No.	568-006	568-006	568-006	**	568-006		
FILL PLUG SEAL	No. Req'd.	2	2	2	...	2		
FLOATER	Logan Part No.	BD119	BD112	BD113	BD117	BD114		
FLOATER SEAL (LARGE)	Logan Part No.	568-238	568-341	568-351	**	568-361		
	No. Req'd.	1	1	1	...	1		
FLOATER SEAL (SMALL)	Logan Part No.	568-235	568-337	268-343	**	568-349		
	No. Req'd.	1	1	1	...	1		
FLOATER OD POLYPAK	Logan Part No.	BD209-2	BD202-2	BD203-2	**	BD204-4		
	No. Req'd.	2	2	2	...	2		
FLOATER ID POLYPAK	Logan Part No.	BX144-3	BD202-3	BD203-3	**	BD204-3		
	No. Req'd.	2	2	2	...	2		
FLOATER OD PARBAK RING	Logan Part No.**	...	...	...	**	...
	No. Req'd.	...	...	...	...	...
FLOATER ID PARBAK RING	Logan Part No.**	...	...	...	**	...
	No. Req'd.	...	...	...	...	...
FLOATER POSITIONING TOOL	Logan Part No.	BD299	BD292	BD293	BD297	BD294		
SEAL BODY	Logan Part No.	BD129	BD122	BD123	BD127	BD124		
SEAL BODY SEAL	Logan Part No.	568-234	568-234	568-341	**	568-347		
	No. Req'd.	1	1	...	1	1		
NON-EXTRUSION RING	Logan Part No.	L370-12	L370-12	L365-44	**	BD264		
	No. Req'd.	1	1	...	1	1		
SEAL PROTECTOR RING	Logan Part No.	L376-12	L388-12	L375-44	**	BD284		
	No. Req'd.	1	1	1	...	1		
SETTING TOOL	Logan Part No.	AG1000-38	AG1000-40	AG1000-44	**	AG1000-50		
CONE	Logan Part No.	BD139	BD132	BD133	BD137	BD134		
BYPASS RING	Logan Part No.	BD159	BD152	BD153	BD157	BD154		
WASHPIPE	Logan Part No.	BD169	BD162	BD163	BD167	BD164		
WASHPIPE SEAL (LARGE)	Logan Part No.	568-234	568-234	568-238	**	568-347		
	No. Req'd.	1	1	1	...	1		
WASHPIPE SEAL (SMALL)	Logan Part No.	569-232	568-232	...	**	...		
	No. Req'd.	1	1	...	...	...
WASHPIPE BODY	Logan Part No.	BD179	BD172	BD173	BD177	BD174		
WASHPIPE BODY SEAL (LARGE)	Logan Part No.	568-240	568-242	568-253	**	568-362		
	No. Req'd.	1	1	1	...	1		
WASHPIPE BODY SEAL (SMALL)	Logan Part No.	568-238	568-239	568-250	**	568-361		
	No. Req'd.	1	1	1	...	1		
REDRESS KITS *	Logan Part No.	BD189	BD182	BD183	BD187	BD184		
COMPLETE O-RING KIT	Logan Part No.	BD199	BD192	BD193	BD197	BD194		

* Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers

** To be advised by engineering



Superior Hydraulic Fishing Jar

TOOL JOINT CONNECTION	2-7/8 EUE API REG	3-1/2 API IF	4-1/2 API IF	5-1/2 API REG	6-5/8 API REG		
OUTSIDE DIAMETER — INCHES	4-1/2	4-3/4	6-1/4	6-3/4	7-3/4		
INSIDE DIAMETER — INCHES	2-3/8	2-1/4	2-1/4	2-3/4	3-1/16		
COMPLETE ASSEMBLY Logan Part No.	611-450	611-475	611-625	611-675	611-775		

COMPONENTS

COMPLETE POLYPAK KIT	Logan Part No.	BD209	BD202	BD203	BD207	BD204		
<i>Consists of:</i>								
SPLINE BODY POLYPAK	Logan Part No. No. Req'd.	BD209-1 2	BD202-1 2	BD203-1 2	** ...	BD204-1 2		
MANDREL EXTENSION POLYPAK	Logan Part No. No. Req'd.	BD209-2 2	BD202-2 2	BD203-2 2	** ...	BD204-2 2		
CONNECTOR BODY ID POLYPAK (SMALL)	Logan Part No. No. Req'd.	BX144-3 4	BD202-3 2	BD203-3 4	** ...	BD204-3 4		
CONNECTOR BODY ID POLYPAK (LARGE)	Logan Part No. No. Req'd.	...	BD202-4 2	...	**** ...	...	
CONNECTOR BODY OD POLYPAK	Logan Part No. No. Req'd.	BD209-4 2	BD202-5 2	BD203-5 2	** ...	BD204-2 2		
FLOATER OD POLYPAK	Logan Part No. No. Req'd.	BD209-2 2	BD202-2 2	BD203-2 2	** ...	BD204-4 2		
FLOATER ID POLYPAK	Logan Part No. No. Req'd.	BX144-3 2	BD202-3 2	BD203-3 2	** ...	BD204-3 2		
MANDREL EXTENSION ASSEMBLY SLEEVE †	Logan Part No. No. Req'd.	BD209-6 1	BD202-6 2	BD203-6 1	** ...	BD204-6 1		

JAR LUBE	Logan Part No.	49842-A	49842-B	49842-C	49842-D		
	Bowen No.	49842-A	49842-B	49842-C	49842-D		
		1 Gallon	5 Gallons	20 Gallons	55 Gallons		

** To be advised by engineering

† Mandrel Extension Assembly Sleeve is not included in the Redress Kit. Must be purchased separately.



Superior Hydraulic Fishing Jar Strength Data

CHART A — SPECIFICATIONS

COMPLETE ASSEMBLY	611-306	611-312	611-313	611-375	611-377	611-376
OUTSIDE DIAMETER (INCHES)	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAMETER (INCHES)	1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8
CONNECTION	2-3/8 API EUE	2-3/8 API REG	2-7/8 PAC	2-3/8 API IF	2-7/8 API REG	2-3/8 API EUE
LENGTH (FEET & INCHES)	10' - 0"	10' - 0"	10' - 0"	12' - 8"	12' - 8"	12' - 8"
STROKE (INCHES)	10	10	10	10	10	10
FLOATER POSITION (INCHES)	MEASURED DISTANCE FROM FLOATER TO END OF FLOATER BODY					
STANDARD TEMPERATURE	8	8	8	9	9	8-3/4
HIGH TEMPERATURE	9-3/4	9-3/4	9-3/4	11	11	10-3/4
DRILL COLLAR WEIGHT RANGE (LBS)	300 – 4,000	300 – 4,000	300 – 4,000	400 – 6,000	400 – 6,000	400 – 6,000
PUMP OPEN AREA (SQ IN)	3	3	3	4	4	4

CHART B — STRENGTH AND TEST DATA

COMPLETE ASSEMBLY	611-306	611-312	611-313	611-375	611-377	611-376
JAR TESTER LOW TEST PULL LOAD MINIMUM / MAXIMUM (LBS)	7,000/12,000	9,000/12,000	7,000/12,000	12,000/16,000	12,000/16,000	12,000/16,000
JAR TESTER STANDARD PULL TEST (LBS)	18,000	30,000	18,000	35,000	35,000	35,000
FIELD LOAD — MAX PULL LOAD	36,000	55,000	36,000	72,000	72,000	51,000
LIFT LOAD AFTER JARRING JAR FULLY EXTENDED	185,000	253,000	185,000	330,000	330,000	285,000
TENSILE @ YIELD (LBS)						
TORQUE @ YIELD (FT-LBS)	4,200	7,500	4,200	14,500	14,500	9,650

CHART C — RECOMMENDED TIGHTENING TORQUES (FT-LBS)

COMPLETE ASSEMBLY	611-306	611-312	611-313	611-375	611-377	611-376
SPLINE BODY TO BALANCE BODY	2,100	2,700	2,100	3,500	3,650	3,500
BALANCE BODY TO CONNECTOR BODY	2,100	2,700	2,100	3,500	3,650	3,500
CONNECTOR BODY TO PRESSURE BODY	2,100	2,700	2,100	3,500	3,650	3,500
MANDREL TO MANDREL EXTENSION	500	600	500	700	700	700
PRESSURE BODY TO FLOATER BODY	2,100	2,700	2,100	3,500	3,650	3,500
MANDREL EXTENSION TO WASHPIPE	500	600	500	700	700	700
FLOATER BODY TO WASHPIPE BODY	2,100	2,700	2,100	3,500	3,650	3,500



Superior Hydraulic Fishing Jar Strength Data

CHART A — SPECIFICATIONS

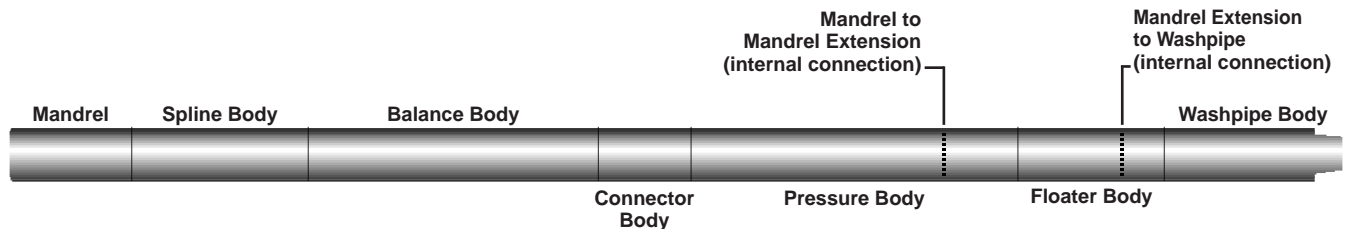
COMPLETE ASSEMBLY	611-425	611-450	611-475	611-625	611-775
OUTSIDE DIAMETER (INCHES)	4-1/4	4-1/2	4-3/4	6-1/4	7-3/4
INSIDE DIAMETER (INCHES)	2	2-3/8	2-1/4	2-1/4	3
CONNECTION	2-7/8 API IF	2-7/8 API EUE	3-1/2 API IF	4-1/2 API IF	6-5/8 API REG
LENGTH (FEET & INCHES)	13' - 6"	13' - 6"	13' - 6"	13' - 6"	15' - 0"
STROKE (INCHES)	12	12	12	12	12
FLOATER POSITION (INCHES)	MEASURED DISTANCE FROM FLOATER TO END OF FLOATER BODY				
STANDARD TEMPERATURE	9	9	10-3/4	10-3/4	11
HIGH TEMPERATURE	11	11	11-1/2	11-1/2	12-1/2
DRILL COLLAR WEIGHT RANGE (LBS)	400 – 6,000	400 – 6,000	500 – 8000	8,500 – 15,000	12,200 – 21,000
PUMP OPEN AREA (SQ IN)	6	7-1/2	7	11	16

CHART B — STRENGTH AND TEST DATA

COMPLETE ASSEMBLY	611-425	611-450	611-475	611-625	611-775
JAR TESTER LOW TEST PULL LOAD MINIMUM / MAXIMUM (LBS)	12,000/16,000	12,000/16,000	15,000/20,000	18,000/26,000	18,000/26,000
JAR TESTER STANDARD PULL TEST (LBS)	35,000	30,000	50,000	100,000	100,000
FIELD LOAD — MAX PULL LOAD	75,000	60,000	100,000	200,000	275,000
LIFT LOAD AFTER JARRING					
JAR FULLY EXTENDED TENSILE @ YIELD (LBS)	375,000	360,000	505,000	1,000,000	1,600,000
TORQUE @ YIELD (FT-LBS)	18,500	12,000	18,100	40,800	79,000

CHART C — RECOMMENDED TIGHTENING TORQUES (FT-LBS)

COMPLETE ASSEMBLY	611-425	611-450	611-475	611-625	611-775
SPLINE BODY TO BALANCE BODY	5,000	5,000	9,090	20,000	39,000
BALANCE BODY TO CONNECTOR BODY	5,000	5,000	9,090	20,000	39,000
CONNECTOR BODY TO PRESSURE BODY	5,000	5,000	9,090	20,000	39,000
MANDREL TO MANDREL EXTENSION	1,500	1,500	1,800	7,000	12,500
PRESSURE BODY TO FLOATER BODY	5,000	5,000	9,090	20,000	39,000
MANDREL EXTENSION TO WASHPIPE	1,500	1,500	1,000	4,800	10,500
FLOATER BODY TO WASHPIPE BODY	5,000	5,000	9,090	20,000	39,000





Jar Service Kit *Note: Photos of parts are not actual size.*



J1045-001
3/8" Fill Plug
Adapter



J1046-001
7/16" Fill Plug
Adapter



J1224-001
5/8" Fill Plug
Adapter



J1086
1/4" Female Couplers



J1374
Hex Bushing



J1373
Box Coupler



J1376
Hose Fitting



J1085
1/4" Male Couplers



J1078
1/4" x 1" Pipe Nipple



J1073
Installation Tool



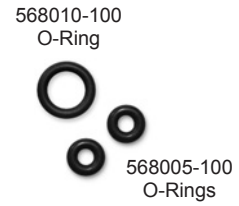
J1074
O-Ring Installation Tool



J1077
Fill Plug Wrench



J1075
Torx Head
Fill Plug Wrench



568010-100
O-Ring
568005-100
O-Rings



J1080
Line Filter



Jar Service Kit



Pump Hose



J1072
6 Ft. Exhaust Hose



J1069
Volume Pump



J1070
Metal Box

COMPLETE ASSEMBLY	Logan Part No.	26000-055
<i>Consists of:</i>	Bowen No.	145213
SEAL PROTECTOR RING	Logan Part No.	J1073
INSTALLATION TOOL	Bowen No.	625
O-RING	Logan Part No.	J1074
INSTALLATION TOOL	Bowen No.	626
FILL PLUG WRENCH — T30 TORX HEAD	Logan Part No.	J1075
	Bowen No.	359T
FILL PLUG WRENCH — ALLEN HEAD	Logan Part No.	J1077
	Bowen No.	620A
1/4" x 1" PIPE NIPPLE	Logan Part No.	J1078
	Bowen No.	36953
LINE FILTER	Logan Part No.	J1080
	Bowen No.	56565
1/4" MALE COUPLER	Logan Part No.	J1085
	Bowen No.	656
1/4" FEMALE COUPLER	Logan Part No.	J1086
	Bowen No.	655
3/8" BOX x 1/4" GALVANIZED BOX COUPLER	Logan Part No.	J1373
	Bowen No.	...
1/8" BOX x 1/4" PIN HEX BUSHING	Logan Part No.	J1374
	Bowen No.	...

1/4" 19 NPT PIN HOSE FITTING	Logan Part No.	J1376
	Bowen No.	...
6 FT. EXHAUST HOSE	Logan Part No.	J1072
	Bowen No.	33435
PUMP HOSE	Logan Part No.	...
	Bowen No.	2581
VOLUME PUMP	Logan Part No.	J1069
	Bowen No.	2580
METAL BOX	Logan Part No.	J1070
	Bowen No.	1995
5/8" FILL PLUG ADAPTER	Logan Part No.	J1224-001
	Bowen No.	...
7/16" 20 NF FILL PLUG ADAPTER	Logan Part No.	J1046-001
	Bowen No.	...
3/8" 24 NF FILL PLUG ADAPTER	Logan Part No.	J1045-001
	Bowen No.	...
O-RING	Logan Part No.	568010-100
	Bowen No.	568010
O-RING — 70 DURO NITRILE	Logan Part No.	568005-100
	Bowen No.	568005

When ordering, please specify:
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Notes

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