

ASW (WIRELINE SET) RETRIEVABLE BRIDGE PLUG

RIGHT-HAND SET / RIGHT-HAND RELEASE 8-5/8" W/ 3-1/2" EUE Manual No: **DL-724-8625-499**

Revision: **B**

Revision Date: **02/10/2020**

Approved by: K.Riggs

A) DESCRIPTION

The ASW Retrievable Bridge Plug is a high pressure plug for multiple zone and selective single zone operations such as acidizing, fracturing, cementing and testing. It features a large internal by-pass to reduce swabbing when running and retrieving. The by-pass closes during the setting of the plug and opens prior to releasing the upper slips to equalize pressure when unsetting. The by-pass is located directly below the upper slips to help wash debris when the by-pass is open.

This tool is a version of the AS Retrievable Bridge Plug that allows the plug to be set on wireline or with a hydraulic setting tool, and retrieved with tubing. It cannot be reset in the wellbore once it is unset, but it can be pulled, re-dressed and run again. A Wireline Adapter Kit is required for this version.

CAUTION₁: When running this tool with a packer, make sure the J-slots in the plug, running/ retrieving tool, and packer are all compatible.

NOTE₁: This packer requires at least a 30 second burn on the wireline setting tool to ensure a proper set. A burn time less than 30 seconds may shear the setting tool from the packer before fully setting the packer.

B) RELATED TOOLS (sold separately)

- B-1) 8-5/8" to 14" Wireline Adapter Kit (WLAK) (P/N 72385) refer to Technical Manual DL-723-8625-547.
- B-2) 8-5/8" X 3-1/2" Spring Loaded Retrieving Tool (P/N 57785) refer to Technical Manual DL-577-8625-295.

C) SPECIFICATION GUIDE

| | CASING | | | | |
|------------------|--------------------|--------------------------------------|---------------------|----------------------------|---|
| SIZE (INCHES) | WEIGHT (LBS/FT) | RECOMMENDED HOLE SIZE (INCHES) | GAGE OD (INCHES) | THREAD CONNECTION PIN DOWN | PART NUMBER |
| 8-5/8 | 20.0 – 28.0 | 8.017 – 8.191 | 7.750 | 3-1/2 EUE | 72481RR 72481RRH ¹ 72481RRV ² |
| | 24.0 – 40.0 | 7.725 – 8.097 | 7.500 | 3-1/2 EUE | 72485RR 72485RRH ¹ 72485RRV ² |

Elastomer Trim Options: ¹HSN, ²Viton

NOTE2: Tool listed is right-hand set / right-hand release. Additional J-slot designs are available.

| DIFFERENTIAL | HANGING WEIGHT | TENSILE LOAD | TORQUE |
|--------------|--------------------------|--------------|--------------|
| PRESSURE | ON SET TOOL | THRU TOOL | THRU TOOL |
| (MAX) | (MAX) | (MAX) | (MAX) |
| 8,000 PSI | 106,200 LBS [†] | 106,200 LBS | 2,000 FT-LBS |

[†]Casing must be cemented for this load rating.

D & L OIL TOOLS

P.O. BOX 52220 TULSA, OK 74152

PHONE: (800) 441-3504 <u>www.dloiltools.com</u>



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D) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION2: D&L ships tool connections made-up HAND TIGHT—labeled with hand-tight tape on the tool (Fig. 1) unless stated otherwise. Tighten/torque all connections properly before operating tool.



| GENERAL THREAD CONNECTION TORQUE RECOMMENDATIONS | | | | | |
|--|------------------|---------------------|--|--|--|
| STUB ACME / | INTERNAL TAPI | ERED TUBING THREADS | PREMIUM THREADS | | |
| ACME THREADS | UP TO 2-3/8" | GREATER THAN 2-3/8" | | | |
| 600 – 800 FT-LBS | 600 – 800 FT-LBS | 800 – 1,200 FT-LBS | Consult thread manufacturer's recommendations. | | |

| GENERAL SCREW TORQUE RECOMMENDATIONS | | | | | | | | | |
|--------------------------------------|-------|---------|---------|---------|---------|----------|-----------|-----------|-------------------|
| SCREW SIZE (INCHES) | #6 | #8 | #10 | 1/4 | 5/16 | 3/8 | 7/16 | 1/2 | 5/8 and larger |
| TORQUE RANGE (INCH-POUNDS) | 5 – 8 | 10 – 15 | 18 – 25 | 25 – 40 | 50 - 80 | 90 – 135 | 160 – 210 | 250 – 330 | 450 - 650 |

Before first use, D&L recommends disassembly and inspection of the tool unless stated otherwise. Ensure parts have not been damaged during shipping. Replace damaged parts with D&L replacement parts. Contact D&L sales for replacement part information.

Re-assemble the tool after inspection. Install parts in the correct order and orientation. Properly tighten connections.

Before re-using the tool, D&L recommends disassembly and inspection of the tool. Clean parts and ensure parts are in good working condition. Replace worn or damaged parts with D&L replacement parts.

When redressing the tool, D&L recommends replacement of all seals, elements, o-rings, shear screws, etc. Contact D&L sales for redress kit and/or other replacement part information.

E) SETTING PROCEDURES

CAUTION₃: Do not run the tool without properly tightening

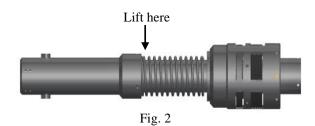
connections. Running the tool with loose connections may damage the tool and cause

malfunction.

CAUTION₄: Lift the AS Retrievable Bridge Plug by placing

the sling or chain just below the pulling head. **DO NOT** lift the bridge plug by the upper slip body

assembly (Fig. 2).



The 8-5/8" ASW Retrievable Bridge Plug is attached to a wireline setting tool (Size #20 Baker E-4 Wireline Setting Assembly or similar) via a Wireline Adapter Kit (WLAK). When attaching the inner adapter to the ASW Bridge Plug, Driv-Lok pins should be used to ensure proper setting.

Once the setting tool and ASW Retrievable Bridge Plug are run to setting depth, the setting tool is activated. The ASW Retrievable Bridge Plug will set and the adapter kit will shear loose.

NOTE₃: This packer requires at least a 30 second burn on the wireline setting tool to ensure a proper set. A burn time less than 30 seconds may shear the setting tool from the packer before fully setting the packer.

When set with a hydraulic setting tool, the ASW Retrievable Bridge Plug is also attached with an adapter kit to the setting tool. Pressure, or pressure and tension, are used to set the plug and shear loose.



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F) RELEASING PROCEDURES

Lower work string until the retrieving tool automatically latches to the ASW Retrievable Bridge Plug. Sand may be washed from the upper slip by circulating through the upper portion of the plug. Slack off weight, hold right-hand torque pick up to open the by-pass valve, and wait until differential pressure has equalized. Continue upward movement to release upper slips, relax packing elements and re-latch. The ASW Retrievable Bridge Plug may now be removed or re-located.

F-1) EMERGENCY RELEASE

If the plug will not release conventionally, slack off re-set, then pick straight up to shear J-pins and release the plug (standard J-pins will shear at 50,000 lbs each – refer to Parts List for J-pins with other shear values) Once the J-pins are sheared, the tool cannot be moved down hole.

NOTE₄: Contact D&L Engineering if running tool equipped with lower than standard value shear J-pins.

G) STORAGE RECOMMENDATIONS

When preparing the tool for storage, follow the Pre-Installation Inspection Procedures. Re-assemble the tool with connections hand-tight only and in running position if applicable. Elements should be in a relaxed state—free from tension, compression, and other stresses that could cause deformation.

Store the tool, if possible, in an enclosed, temperature and humidity controlled environment. Avoid excessively high temperatures over long periods of time. Shield elastomeric parts from ultraviolet light sources. Keep tool dry and protected from condensation. Do not store in contact with or near volatile or corrosive chemicals. Do not store near ozone generating equipment or operations such as welding.

H) PRESSURE AFFECTED AREA GUIDE

When set downhole, the packer mandrel is subjected to a force created by differential pressure above or below the packer that acts on the pressure affected area (i.e., the piston effect). Depending on the tubing size and weight and the seal area of the packer the force created by differential pressure acts upwards or downwards on the packer mandrel. An upward force, designated as a negative (-) value, acts to push the packer mandrel up hole and must be accounted for when releasing the packer. A downward force, designated as a positive value, acts to push the packer mandrel down hole and must be accounted for when releasing the packer. Other factors (e.g., tubing movement due to temperature change) must be considered separately to determine all the forces acting on the packer.

| PACKER SIZE | PRESSURE AFFECTED AREA (SQ. INCHES) | | | |
|-------------|--|-------------|--|--|
| (INCHES) | ABOVE | BELOW | | |
| 8-5/8 | 8.295 (DOWN) | -8.295 (UP) | | |

Example: Consider a 8-5/8" ASW Bridge Plug set on tubing with a differential pressure of 3,000 psi in the annulus around the tubing above the packer. What is the force acting on the seal area of the mandrel?

To calculate the force (lbs) acting on the seal area of the mandrel, refer to the Pressure Affected Area Guide for a 8-5/8" ASW Bridge Plug. In this example, the differential pressure from above the packer acts on the seal area of the packer mandrel across a pressure affected area of 8.295 in². Multiplying the differential pressure (3,000 psi) by the pressure affected area (8.295 in²) results in a force of 24,885 lbs. The piston effect on the packer mandrel is a downward force of 24,885 lbs.



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I) ELASTOMER TRIM TEMPERATURE GUIDE

| NITRILE (STD) | | | | |
|---------------|-------------------|--------|-----|--|
| TEMPERATURE | DUROMETER | | | |
| RANGE (F°) | END | MIDDLE | END | |
| 40° - 125° | 80 | 70 | 80 | |
| 125° - 250° | 90 | 70 | 90 | |
| 150° - 250° | 90 | 80 | 90 | |
| 250° + | Contact D&L Sales | | | |

| RUBBER TYPE | TEMPERATURE RANGE |
|----------------|----------------------|
| NITRILE | 40° - 250°F |
| HSN (HNBR) | 70° - 300°F |
| VITON | 100° - 350°F |

J) RECOMMENDED HAND TOOLS

- VISE
- GLOVES
- ALLEN WRENCHES
- TAPE MEASURE
- O-RING PICK
- BAR
 - 1/2-INCH
 - 3/4-INCH

- PAINT BRUSH, 2-INCH
- PIPE WRENCH, 3-FT (2 EA)
- "CHEATER" PIPE, 4-FT LONG
- ADJUSTABLE WRENCH, 12-INCH
- CORDLESS DRILL, 18V
- SNAP RING SPREADER PLIERS
- ALIGNING PUNCH

- SCREWDRIVER SET, FLAT-TIPPED
- SOCKET SETS
 - 3/8-INCH DRIVE
 - 1/2-INCH DRIVE
- HAMMERS
 - SLEDGE
 - BALL PEEN
 - DEAD BLOW

K) DISASSEMBLY

NOTE5: Ensure vise is capable of handling weight of tool.

NOTE₆: Support tool during disassembly and assembly with jack stands as necessary.

K-1) Clamp upper cone (9) in vise.

K-1.1) Rotate and move J-slot mandrel (20) upwards to move J-pins (3) to lower landing in slot on J-slot mandrel

CAUTION₅: Compression spring (4) is compressed with spring tension against upper slip body assembly.

- K-1.2) Unscrew and remove set screws (36) from lower end of body extension (28).
- K-1.3) Unscrew and separate body extension (28) from J-pin body (23) (NOTE₇: Left-hand threads).

NOTE₈: Drag block body assembly must be free to rotate.

- K-1.4) Remove J-pins (3) from J-pin body (23).
- K-1.5) Remove J-pin body (23) from J-slot mandrel (20).
- K-1.6) Unscrew and remove shear screws (22) from body extension (28).
- K-1.7) Unscrew and remove set screws (37) from drag block body (18). Rotate drag block retainer (21) as needed.
- K-1.8) Unscrew and remove body extension (28) from drag block body (18) (NOTE7: Left-hand threads).
- K-1.9) Unscrew and remove rubber mandrel cap (19) from lower rubber mandrel (31).
- K-1.10) Unscrew and remove set screws (36) from J-slot mandrel (20).
- K-1.11) Unscrew and remove J-slot mandrel (20) from sealing mandrel (27).
- K-1.12) Wedge lower slips (17) outward (if needed). Remove drag block body assembly and disassemble:
 - K-1.12.1) Remove drag block retainer (21) from drag block body (18).
 - K-1.12.2) Remove wedges (if needed). Remove lower slips (17) and lower slip springs (25) from drag block body (18).
- K-1.13) Unscrew and remove set screws (37) from lower rubber mandrel (31).



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K) DISASSEMBLY (cont'd)

- K-1.14) Unscrew and remove lower rubber mandrel (31) from rubber mandrel (11).
- K-1.15) Unscrew rubber mandrel (11) from center coupling (10).
- K-1.16) Remove rubber mandrel assembly and disassemble:
 - K-1.16.1) Remove elements (13, 14), rubber spacers (12), and lower cone (16) from rubber mandrel (11).
 - K-1.16.2) Remove o-ring (34) from rubber mandrel (11).
- K-1.17) Unscrew and remove gage ring (29) from center coupling (10).
- K-1.18) Moving to upper end of tool, unscrew and remove set screws (36) from pulling head (1).
- K-1.19) Unscrew and remove pulling head (1) from upper mandrel (2).
- K-1.20) Remove compression spring (4) from upper mandrel (2).
- K-1.21) Unscrew and remove shear screws (22) from upper slip body (6).
- K-1.22) Remove upper slip body assembly and disassemble:
 - K-1.22.1) Wedge releasing slips (7) and upper slips (8) outward (if needed). Unscrew and remove upper slip support (15) from upper slip body (6).
 - K-1.22.2) Remove wedges (if needed). Remove releasing slips (7), upper slips (8) and upper slip springs (26) from upper slip body (6).
- K-1.23) Unscrew and remove set screws (37) from upper mandrel (2).
- K-1.24) Unscrew and remove upper mandrel (2) from sealing mandrel (27).
- K-1.25) Remove plug (5) from sealing mandrel (27).
 - K-1.25.1) Remove o-ring (33) from plug (5).
- K-1.26) Remove sealing mandrel (27) from center coupling (10).
- K-1.27) Unscrew and remove set screws (38) from upper cone (9).
- K-1.28) Unscrew and remove center coupling (10) from upper cone (9).
 - K-1.28.1) Remove bonded seals (24), and o-ring (35) from center coupling (10).
 - K-1.28.1.1) Remove o-rings (32) from bonded seals (24).
- K-1.29) Remove seal retaining ring (30) from upper cone (9).
- K-2) Unclamp upper cone (9) and remove from vise.

NOTE9: To redress tool assembly, follow disassembly instructions. It is recommended by D&L Oil Tools to replace all bonded seals, elements, o-rings, shear screws, etc. when redressing tool.

L) ASSEMBLY

NOTE₁₀: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

CAUTION₆: To ensure tool operates properly, install o-rings in o-ring grooves **NOT** thread reliefs unless stated otherwise (Fig. 3).

NOTE₅: Ensure vise is capable of handling weight of tool.

NOTE₆: Support tool during disassembly and assembly with jack stands as necessary.

- L-1) Clamp upper cone (9) in vise.
 - L-1.1) Install seal retaining ring (30) into upper cone (9).
 - L-1.2) Install o-ring (35) in o-ring groove in center coupling (10).
 - L-1.3) Install o-rings (32) in o-ring grooves in bonded seals (24).

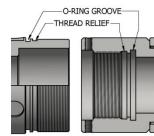


Fig. 3



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L) ASSEMBLY (cont'd)

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- L-1.4) Install bonded seals (24) in center coupling (10).
 - **CAUTION**₇: Do not rip or tear o-rings during installation.
- L-1.5) Screw center coupling (10) into upper cone (9).
- L-1.6) Screw set screws (38) into upper cone (9).
- L-1.7) Screw gage ring (29) onto center coupling (10).
- L-1.8) Install sealing mandrel (27) into center coupling (10).
 - **CAUTION**₈: Do not damage bonded seals during installation.
- L-1.9) Install o-ring (33) in o-ring groove in plug (5).
- L-1.10) Install plug (5) into sealing mandrel (27).
 - CAUTION₇: Do not rip or tear o-ring during installation.
- L-1.11) Screw upper mandrel (2) onto sealing mandrel (27).
- L-1.12) Screw set screws (37) into upper mandrel (2).
- L-1.13) Assemble upper slip body assembly and install:
 - L-1.13.1) Install upper slip springs (26), releasing slips (7), and upper slips (8) into upper slip body (6). Wedge slips outward.
 - **NOTE**₁₁: Install two (2 ea) springs per slip (Fig. 4).
 - L-1.13.2) Screw upper slip support (15) into upper slip body (6). Remove wedges.
 - L-1.13.3) Install upper slip body assembly onto upper mandrel (2).
 - L-1.13.4) Align threaded holes in upper slip body (6) with groove in upper cone (9). Screw shear screws (22) into upper slip body (6). Tighten until shear screws (22) contact upper cone (9). Back shear screws (22) out 1/4 turn.
- L-1.14) Install compression spring (4) onto upper mandrel (2).
- L-1.15) Screw pulling head (1) onto upper mandrel (2).
- L-1.16) Screw set screws (36) into pulling head (1).
- L-1.17) Assemble rubber mandrel assembly and install:
 - L-1.17.1) Install o-ring (34) in o-ring groove in rubber mandrel (11).
 - $L-1.17.2) \quad Install \ lower \ cone \ (16), \ elements \ (13, \ 14), \ and \ rubber \ spacers \ (12) \ onto \ rubber \ mandrel \ (11).$
 - CAUTION₇: Do not rip or tear o-ring during installation.
 - L-1.17.3) Install rubber mandrel assembly onto sealing mandrel (27). Screw rubber mandrel (11) into center coupling (10).
 - CAUTION7: Do not rip or tear o-ring during installation.
- L-1.18) Screw lower rubber mandrel (31) onto rubber mandrel (11).
- L-1.19) Screw set screws (37) into lower rubber mandrel (31).
- L-1.20) Screw J-slot mandrel (20) onto sealing mandrel (27).
- L-1.21) Screw set screws (36) into J-slot mandrel (20).
- L-1.22) Assemble drag block body assembly and install:
 - L-1.22.1) Install lower slips (17) and lower slip springs (25) into drag block body (18). Wedge lower slips (17) outward.
 - NOTE₁₂: Install two (2ea) springs per slip (Fig. 5).
 - L-1.22.2) Install drag block retainer (21) onto drag block body (18).
 - L-1.22.3) Install drag block body assembly onto lower rubber mandrel (31). Remove wedges.



Fig. 4

Fig. 5



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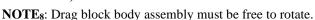
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L) ASSEMBLY (cont'd)

- L-1.23) Screw rubber mandrel cap (19) onto lower rubber mandrel (31).
- L-1.24) Screw body extension (28) into drag block body (18) (NOTE₇: Left-hand threads).
- L-1.25) Screw set screws (37) into drag block body (18). Move drag block retainer (21) to access threaded holes as necessary.
- L-1.26) Move body extension (28) and drag block body assembly up and out-ofthe-way temporarily.
- L-1.27) Install J-pin body (23) onto J-slot mandrel (20).
- L-1.28) Align holes in J-pin body (23) with lower landing in slot in J-slot mandrel (20). Install J-pins (3) into J-pin body (23) (Fig. 6).
- L-1.29) Slide drag block body assembly and body extension (28) down to J-pin body (23). Screw body extension (28) onto J-pin body (23) (NOTE₇: Lefthand threads).



L-1.30) Screw set screws (36) into body extension (28).



Fig. 6

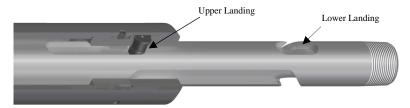


Fig. 7

- L-1.31) Move J-pins (3) to upper landing in slot on J-slot mandrel (20) (Fig. 7). Rotate and move J-slot mandrel (20) downwards as necessary.
 - CAUTION₅: Compression spring (4) will be compressed with spring tension against upper slip body assembly.
- L-1.32) Align threaded holes in body extension (28) with groove in rubber mandrel cap (19). Screw shear screws (22) into body extension (28). Tighten until shear screws (22) contact rubber mandrel cap (19). Back shear screws (22) out 1/4 turn.
- L-2) Unclamp upper cone (9) from vise and remove assembled tool.

M) PARTS LIST

| ITEM | QTY | DESCRIPTION | MATERIAL | 20.0 – 28.0# P/N 72481RR | 24.0 – 40.0# P/N 72485RR |
|------|-----|---|----------|-----------------------------|-----------------------------|
| 1 | 1 | PULLING HEAD | DLMS110 | 72485715 | |
| 2 | 1 | UPPER MANDREL | DLMS110 | 72585210 | |
| | | | | 72585870-15 (15,000#) | |
| 3 | 2 | 2 NOTE ₁₃ : Shear value is stamped on J-pin. | DLMS110 | 72585870-25 (25,000#) | |
| | | | | 72585870 (STD 50,000#) | |
| 4 | 1 | COMPRESSION SPRING | DLMCRSP | 60373 | 3920 |
| 5 | 1 | PLUG | DLMS110 | 72585 | 5216 |



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|------|-----|----------------------------|-----------------|-----------------------------|-----------------------------|
| 6 | 1 | UPPER SLIP BODY | DLMS80 | 72485320 | |
| 7 | 2 | RELEASING SLIP | DLMS110 | 61985125 | |
| 8 | 3 | UPPER SLIP W/ CARBIDE | DLMS110 | 61985 | 5115C |
| 9 | 1 | UPPER CONE | DLMS110 | 7248 | 5410 |
| 10 | 1 | CENTER COUPLING | DLMS110 | 7258 | 5620 |
| 11 | 1 | RUBBER MANDREL | DLMS110 | 7258 | 5220 |
| 12 | 2 | RUBBER SPACER | DLMS35 | 60281840 | 60285840 |
| 13 | 1 | ELEMENT | 70 DURO NITRILE | 60281511 | 60285511 |
| 14 | 2 | ELEMENT | 90 DURO NITRILE | 60281513 | 60285513 |
| 15 | 1 | UPPER SLIP SUPPORT | DLMS110 | 7248 | 5348 |
| 16 | 1 | LOWER CONE | DLMS110 | 72581420 | 72585420 |
| 17 | 4 | LOWER SLIP W/ CARBIDE | DLMS110 | 60081135C | 60082135C |
| 18 | 1 | DRAG BLOCK BODY | DLMS80 | 60382335 | |
| 19 | 1 | RUBBER MANDREL CAP | DLMS110 | 72485230 | |
| 20 | 1 | J-SLOT MANDREL | DLMS110 | 72585230 | |
| 21 | 1 | DRAG BLOCK RETAINER | DLMS35 | 60381910 6038291 | |
| 22 | 16 | SHEAR SCREW (2375#) | DLM360BRS | 60100990 | |
| 23 | 1 | J-PIN BODY | DLMS110 | 7258 | 5875 |
| 24 | 2 | BONDED SEAL | 90 DURO NITRILE | 6007 | 0520 |
| 25 | 8 | LOWER SLIP SPRING | - | 7170 | 9901 |
| 26 | 10 | UPPER SLIP SPRING | DLMINC625 | DL94 | 4830 |
| 27 | 1 | SEALING MANDREL | DLMS110 | 7258 | 5214 |
| 28 | 1 | BODY EXTENSION | DLMS110 | 7248 | 5370 |
| 29 | 1 | GAGE RING | DLMS80 | 60281830 | 60282830 |
| 30 | 1 | SEAL RETAINING RING | DLMS35 | 7258 | 5225 |
| 31 | 1 | LOWER RUBBER MANDREL | DLMS110 | 72585221 | |
| 32 | 2 | 153 O-RING | NITRILE | 90153 | |
| 33 | 1 | 228 O-RING | NITRILE | 90228 | |
| 34 | 1 | 254 O-RING | NITRILE | 90254 | |
| 35 | 1 | 355 O-RING | NITRILE | 903 | 355 |
| 36 | 9 | SET SCREW 3/8-16 UNC X 1/2 | STEEL | SSS03 | 7C050 |



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| ITEM | QTY | DESCRIPTION | MATERIAL | 20.0 – 28.0# P/N 72481RR | 24.0 – 40.0# P/N 72485RR |
|------|-----|----------------------------------|----------|-----------------------------|-----------------------------|
| 37 | 9 | SET SCREW 3/8-16 UNC X 3/8 | STEEL | SSS037 | 7C037 |
| 38 | 3 | SET SCREW 5/16-18 UNC X 7/16 | STEEL | SSS031C043 | |
| 39 | 10 | DRIV-LOK PIN (4800# EA) 5/16 X 1 | 4140 | DLP03 | 1100* |

*Refer to WLAK tech manual for placement.

| REDRESS KIT (RDK) | 72481050 | 72485050 |
|-------------------|----------|----------|
| ASSEMBLED WEIGHT | 526 LBS | 519 LBS |

M-1) ELASTOMER TRIM OPTIONS

NOTE₁₄: For temperature range, refer to Elastomer Trim Temperature Guide.

M-1.1) HSN

| ITEM | QTY | DESCRIPTION | MATERIAL | 20.0 – 28.0# P/N 72481RRH | 24.0 – 40.0# P/N 72485RRH |
|------|-----|-------------|-------------|------------------------------|------------------------------|
| 13 | 1 | ELEMENT | 70 DURO HSN | 60281511H | 60285511H |
| 14 | 2 | ELEMENT | 90 DURO HSN | 60281513H | 60285513H |
| 24 | 2 | BONDED SEAL | 90 DURO HSN | 60070520H | |
| 32 | 2 | 153 O-RING | 90 DURO HSN | 90153H | |
| 33 | 1 | 228 O-RING | 90 DURO HSN | 90228H | |
| 34 | 1 | 254 O-RING | 90 DURO HSN | 90254Н | |
| 35 | 1 | 355 O-RING | 90 DURO HSN | 90355H | |

| REDRESS KIT (RDK) | 72481050H | 72485050H |
|-------------------|-----------|-----------|
|-------------------|-----------|-----------|

M-1.2) VITON

| ITEM | QTY | DESCRIPTION | MATERIAL | 20.0 – 28.0# P/N 72481RRV | 24.0 – 40.0# P/N 72485RRV |
|------|-----|-------------|---------------|------------------------------|------------------------------|
| 13 | 1 | ELEMENT | 70 DURO VITON | 60281511V | 60285511V |
| 14 | 2 | ELEMENT | 90 DURO VITON | 60281513V | 60285513V |
| 24 | 2 | BONDED SEAL | 90 DURO VITON | 60070520V | |
| 32 | 2 | 153 O-RING | 90 DURO VITON | 90153V | |
| 33 | 1 | 228 O-RING | 90 DURO VITON | 90228V | |
| 34 | 1 | 254 O-RING | 90 DURO VITON | 90254V | |
| 35 | 1 | 355 O-RING | 90 DURO VITON | 90355V | |

| REDRESS KIT (RDK) | 72481050V | 72485050V |
|-------------------|-----------|-----------|



ASW (WIRELINE SET) RETRIEVABLE BRIDGE PLUG

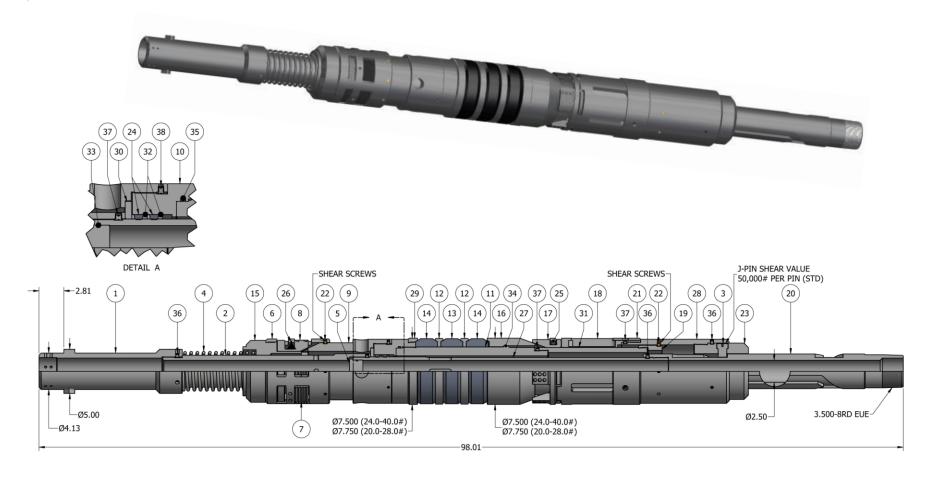
RIGHT-HAND SET / RIGHT-HAND RELEASE 8-5/8" W/ 3-1/2" EUE Manual No: **DL-724-8625-499**

Revision: B

Revision Date: **02/10/2020**

Approved by: K.Riggs

N) TECHNICAL ILLUSTRATION





ASW (WIRELINE SET) RETRIEVABLE BRIDGE PLUG

RIGHT-HAND SET / RIGHT-HAND RELEASE 8-5/8" W/ 3-1/2" EUE Manual No: **DL-724-8625-499**

Revision: **B**

Revision Date: **02/10/2020**

Approved by: K.Riggs

O) REVISION HISTORY

| DATE | REVISION | DESCRIPTION OF CHANGES | REVISED BY | APPROVED BY |
|------------|----------|--|------------|-------------|
| 02/10/2020 | В | Revised Elastomer Trim Temp. Guide nitrile rating, P/N DL94830 qty was 5 | J.Anderson | N.Banker |
| 08/01/2016 | A | Create new tech manual | - | - |