	<h1>HD RETRIEVABLE PACKER</h1> <h2>RIGHT-HAND AUTO</h2> <h3>9-5/8” X 4-1/2”</h3>	Manual No: DL-613-9625-036
		Revision: M
		Revision Date: 05/30/2019
Authored by: S.White		Approved by: B.Oligschlaeger

A) DESCRIPTION

The HD Retrievable Packer is a heavy duty service packer ideally suited for all types of squeeze cementing, formation fracturing, high pressure acidizing, etc. It is a large opening compression set packer with hydraulic button-type hold down. This packer withstands high pressure from above or below and uses a 3-element packing system, J-slot, and a drag block mechanism for easy setting. This packer has a built-in unloader which circulates across the hydraulic hold down buttons to improve retrievability and run in performance.

B) SPECIFICATION GUIDE

CASING			TOOL		THREAD CONNECTIONS BOX UP / PIN DOWN	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)	GAGE OD (INCHES)	NOMINAL ID (INCHES)		
9-5/8	32.3 - 43.5	8.775 - 9.001	8.500	4.00	4-1/2 EUE	61396RS 61396RSH ¹ 61396RSV ²
	43.5 - 53.5	8.535 - 8.755	8.250	4.00	4-1/2 EUE	61395RS 61395RSH ¹ 61395RSV ²

Elastomer Trim Options: ¹HSN, ²Viton

NOTE₁: Tools listed are right-hand auto set / straight pick-up.

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU UNSET TOOL (MAX)	HANGING WEIGHT ON SET TOOL (MAX)*	TORQUE THRU TOOL (MAX)
8,000 PSI	214,500 LBS	214,500 LBS*	2,000 FT-LBS

*Casing must be cemented for this load rating.

CAUTION₁: Before running the tool, check the pressure affected areas chart and consider other effects to be certain that the unloader will remain closed during operation.

CAUTION₂: If the HD Packer is run with a retrievable bridge plug, make sure the bridge plug J-slot is compatible with the J-slot on the packer. Whichever direction you set the plug, the packer should set in the **opposite** direction.

C) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION₃: D&L ships tool connections made-up hand-tight—labeled with hand-tight tape on the tool—unless stated otherwise. Properly tighten connections before operating tool (Fig. 1).



Fig. 1

GENERAL THREAD CONNECTION TORQUE RECOMMENDATIONS			
STUB ACME / ACME THREADS	INTERNAL TAPERED TUBING THREADS		PREMIUM 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.

D & L OIL TOOLS
P.O. BOX 52220 TULSA, OK 74152
PHONE: (800) 441-3504 www.dloiltools.com

This document is uncontrolled when printed. For the current revision, refer to the electronic copy in the Vault database.



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

C) PRE-INSTALLATION INSPECTION PROCEDURES (cont'd)

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

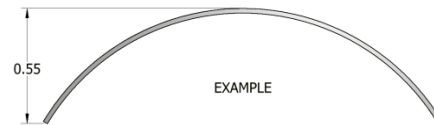
Before first use, D&L recommends disassembly and inspection of the tool unless stated otherwise. Ensure parts have not been damaged during shipping. Replace damaged parts with D&L replacement parts. Contact D&L sales for replacement part information.

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.

DRAG BLOCK SPRING (MIN HEIGHT)	HOLD DOWN BUTTON SPRING (MIN HEIGHT)
0.55 INCHES	0.55 INCHES

Fig. 8



NOTE₁₆: Before assembly, measure height of drag block springs and hold down button springs. Refer to spring height table – if height of an individual spring is less than the minimum height, replace spring(s).

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.

D) SETTING PROCEDURES

CAUTION₄: Do not run the tool without properly tightening connections. Running the tool with loose connections may damage the tool and cause malfunction.

Run to setting depth. The unloader remains open while running in. Pick up the work string and rotate 1/4 left-hand turn at the packer. Slack off weight and set down on the packer to set the slips, close the unloader and compress the packing elements. A minimum weight of 20,000 lbs. at the packer is required to pack off the elements.

CAUTION₅: Run the tool slowly, as with any hold down type packer, to help prevent dulling of the hydraulic buttons.

E) RELEASING PROCEDURES

Pick up on the work string to open the unloader, allowing time for the tubing and casing pressure to equalize. Refer to Pressure Affected Area Guide to determine weight in addition to pipe weight required to pick up on packer. Continued upward movement of the work string unsets the slips, relaxes the packing elements and re-jays the packer. The tool may now be moved and reset, or pulled from the well.

F) 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. Elastomers 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.



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

G) 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 to ensure that the packer remains set. 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 (IN)	TUBING TO PACKER			PRESSURE AFFECTED AREA (IN ²)	
	SIZE (IN)	WEIGHT (LB/FT)	ID (IN)	ABOVE	BELOW
9-5/8"	1.900*	2.40	1.650	12.749 (DOWN)	2.348 (DOWN)
		2.90	1.610	12.749 (DOWN)	2.245 (DOWN)
	2.375*	4.00	2.041	11.154 (DOWN)	3.481 (DOWN)
		4.70	1.995	11.154 (DOWN)	3.335 (DOWN)
		5.95	1.867	11.154 (DOWN)	2.947 (DOWN)
	2.875*	6.50	2.441	9.093 (DOWN)	4.889 (DOWN)
		7.90	2.323	9.093 (DOWN)	4.448 (DOWN)
		8.70	2.259	9.093 (DOWN)	4.217 (DOWN)
	3.500	7.70	3.068	5.963 (DOWN)	7.602 (DOWN)
		9.30	2.992	5.963 (DOWN)	7.240 (DOWN)
		10.20	2.922	5.963 (DOWN)	6.915 (DOWN)
		12.95	2.750	5.963 (DOWN)	6.149 (DOWN)
	4.000	9.50	3.548	3.018 (DOWN)	10.096 (DOWN)
		11.00	3.476	3.018 (DOWN)	9.699 (DOWN)
	4.500	12.75	3.958	-0.320 (UP)	12.513 (DOWN)

*Tubing sizes not recommended.

Example: Consider a 9-5/8" X 4-1/2" HD Packer set on 4.500", 12.75 lbs/ft 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 9-5/8" X 4-1/2" HD Packer run on 4.500", 12.75 lbs/ft tubing. 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 -0.320 in². Multiplying the differential pressure (3,000 PSI) by the pressure affected area (-0.320 in²) results in a force of -960 lbs. The piston effect on the packer mandrel is an upward force of 960 lbs.



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

H) ELASTOMER TRIM TEMPERATURE GUIDE

NITRILE (STD)			
TEMPERATURE RANGE (F°)	DUROMETER		
	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 (F°)
NITRILE	40° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°F

I) RECOMMENDED TOOLS

I-1) 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
- JACK STANDS

I-2) SPECIAL TOOLS

ITEM	QTY	DESCRIPTION	PART NUMBER
T1	1	DRAG BLOCK ASSEMBLY TOOL	AT010110
T2	1	BUTTON REMOVAL TOOL	AT-BRT000
T3	1 GAL	KOPR-KOTE® ANTI-SEIZE LUBRICANT	DL-KOPR-KOTE-1G

J) DISASSEMBLY

NOTE₂: Ensure vise is capable of handling weight of tool.

NOTE₃: Support tool during disassembly and assembly with jack stands as necessary.

J-1) Clamp top sub (1) in vise.

J-1.1) Unscrew and remove set screws (37) from J-pin bottom sub (23). Move J-body (20) as needed to access set screws (37).

J-1.2) Unscrew and remove J-pin bottom sub (23) from inner mandrel (2).

NOTE₄: Drag block body assembly must be free to rotate.

J-1.2.1) Remove o-ring (44) from J-pin bottom sub (23).

J-1.3) Compress drag blocks (22) with drag block assembly tool (T1).

J-1.4) Rotate drag block retainer (21) as needed to access set screws (38). Unscrew and remove set screws (38) from drag block body (18).

J-1.5) Unscrew and remove J-body (20) from drag block body (18) (**NOTE₅:** Left-hand threads).

J-1.5.1) Remove retaining ring (31) from J-body (20).

J-1.6) Remove drag block retainer (21) from drag block body (18).

J-1.7) Release drag blocks (22). Remove drag blocks (22) and drag block springs (3) from drag block body (18).



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

J) DISASSEMBLY (cont'd)

J-1.8) Unscrew and remove rubber mandrel cap (19) from rubber mandrel (11).

NOTE: For added leverage, insert a rod through lower cone (16) and rubber mandrel (11) as needed.

J-1.9) Remove drag block body assembly and disassemble:

J-1.9.1) Unscrew and remove cap screws (36) from drag block body (18).

J-1.9.2) Wedge lower slips (17) outward (if needed). Remove lower slip support sleeve (32) from drag block body (18).

J-1.9.3) Remove wedges (if needed). Remove lower slips (17) and lower slip springs (25) from drag block body (18).

J-1.10) Unscrew and remove lower cone (16) from rubber retainer (15).

J-1.11) Unscrew rubber mandrel (11) from valve body (28).

J-1.12) Remove rubber mandrel assembly and disassemble:

J-1.12.1) Remove elements (13, 14), rubber spacers (12) and rubber retainer (15) from secondary rubber mandrel (34).

J-1.12.2) Remove secondary rubber mandrel (34) from rubber mandrel (11).

J-1.12.3) Remove o-ring (41) from secondary rubber mandrel (34).

J-1.13) Unscrew and remove gage ring (28) from valve body (28).

J-1.14) Unscrew and remove valve body (28) from central body (10).

J-1.14.1) Remove o-ring (39) from valve body (28).

J-1.15) Unscrew and remove central body (10) from hold down body (6).

J-2) Unclamp and remove top sub (1) from vise. Clamp lower end of inner mandrel (2) in vise.

CAUTION: Do NOT wrench or clamp on seal surface.

J-2.1) Unscrew and remove set screws (38) from top sub (1).

J-2.2) Unscrew and remove top sub (1) from inner mandrel (2).

J-2.2.1) Remove o-ring (45) from top sub (1).

J-2.3) Unscrew and remove hold down extension (33) from hold down body (6).

J-2.3.1) Remove o-ring (46) from hold down extension (33).

J-2.4) Unscrew and remove hold down cap (4) from hold down body (6).

J-2.5) Unscrew and remove flat head cap screws (35) from hold down body (6).

J-2.6) Remove hold down straps (7) from hold down body (6).

J-2.7) Remove hold down button springs (26) from hold down buttons (30).

J-2.8) Remove hold down buttons (30) from hold down body (6) with button removal tool (T2).

J-2.8.1) Remove o-rings (43) from hold down buttons (30).

J-2.9) Remove hold down body (6) from inner mandrel (2).

J-2.9.1) Remove o-rings (48, 49) from hold down body (6).

J-2.10) Unscrew and remove compensating mandrel (8) from seal receptacle (5).

J-2.11) Remove compensating piston (9) from compensating mandrel (8).

J-2.11.1) Remove o-rings (47, 49) from compensating piston (9).

J-3) Unclamp and remove inner mandrel (2) from vise.

J-3.1) Remove seal receptacle (5) from inner mandrel (2).

J-3.1.1) Unscrew and remove seal retainer (27) from seal receptacle (5).

J-3.1.2) Remove o-rings (40, 42) and quad seal (24) from seal receptacle (5).



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

K) ASSEMBLY

NOTE7: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, orientation and tighten/torque all connections properly.

CAUTION7: To ensure tool operates properly, install o-rings in o-ring grooves **NOT** thread reliefs (Fig. 2).

NOTE8: Apply KOPR-KOTE® anti-seize lubricant (T3) on STUB ACME and drill pipe connections when making up connections.

NOTE9: Ensure vise is capable of handling weight of tool.

NOTE10: Support tool during disassembly and assembly with jack stands as necessary.

K-1) Assemble seal receptacle assembly and install:

K-1.1) Install o-rings (40, 42) into o-ring grooves in seal receptacle (5).

K-1.2) Install seal (24) in place on seal receptacle (5).

K-1.3) Screw seal retainer (27) onto seal receptacle (5).

CAUTION8: Do not rip or tear o-rings or seal during installation.

K-1.4) Install seal receptacle (5) and assembly onto inner mandrel (2).

K-2) Clamp lower part of inner mandrel (2) in vise.

CAUTION6: Do **NOT** wrench or clamp on seal surface.

K-2.1) Assemble compensating mandrel assembly and install:

K-2.1.1) Install o-rings (47, 49) into o-ring grooves in compensating piston (9).

K-2.1.2) Install compensating piston (9) onto compensating mandrel (8).

NOTE11: Compensating piston **MUST** be installed in correct direction (Fig. 3).

CAUTION9: Do not rip or tear o-ring during installation.

K-2.1.3) Screw compensating mandrel (8) into seal receptacle (5).

K-2.2) Install o-rings (48, 49) into o-ring grooves in hold down body (6).

K-2.3) Install o-ring (46) into o-ring groove in hold down extension (33).

K-2.4) Screw hold down extension (33) into hold down body (6).

K-2.5) Install hold down body (6) onto inner mandrel (2).

K-2.6) Assemble hold down buttons and install:

K-2.6.1) Install o-rings (43) into o-ring grooves in hold down buttons (30).

K-2.6.2) Install hold down buttons (30) into hold down body (6) (Fig. 4).

CAUTION9: Do not rip or tear o-rings during installation.

K-2.6.3) Align slot in hold down buttons (30) with slot in hold down body (6). Install hold down button springs (26) into hold down buttons (30).

NOTE12: Install two (2ea) hold down button springs (26) per hold down button (Fig. 5).

K-2.6.4) Set hold down straps (7) in slots in hold down buttons (30) and hold down body (6).

K-2.6.5) Screw flat head cap screws (35) into hold down body (6) securing hold down straps (7) (Fig. 5).

K-2.7) Screw hold down cap (4) onto hold down body (6) capturing ends of hold down straps (7).

K-2.8) Install o-ring (45) into o-ring groove in top sub (1).

K-2.9) Screw top sub (1) onto inner mandrel (2).

CAUTION9: Do not rip or tear o-rings during installation.

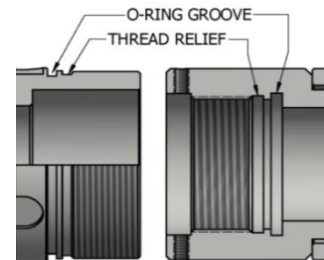


Fig. 2

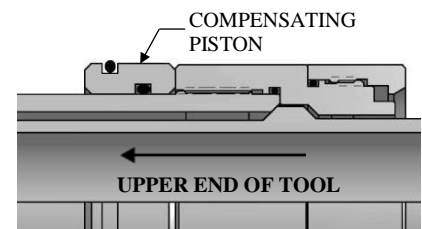


Fig. 3



Fig. 4



Fig. 5



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

K) ASSEMBLY (cont'd)

K-2.10) Screw set screws (38) into top sub (1).

K-3) Unclamp and remove inner mandrel (2) from vise. Clamp top sub (1) in vise.

K-3.1) Screw central body (10) onto hold down body (6).

CAUTION: Do not rip or tear o-rings during installation.

K-3.2) Install o-ring (39) into o-ring groove in valve body (28).

K-3.3) Screw valve body (28) into central body (10).

K-3.4) Screw gage ring (29) onto valve body (28).

K-3.5) Assemble rubber mandrel assembly:

K-3.5.1) Install o-ring (41) into o-ring groove in rubber mandrel (11).

K-3.5.2) Install secondary rubber mandrel (34) onto rubber mandrel (11).

CAUTION: Do not rip or tear o-rings during installation.

K-3.5.3) Install rubber retainer (15), rubber spacers (12), and elements (13, 14) onto secondary rubber mandrel (34).

K-3.5.4) Screw rubber mandrel (11) into valve body (28).

CAUTION: Do not rip or tear o-ring during installation.

K-3.6) Screw lower cone (16) into rubber retainer (15).

K-3.7) Assemble drag block body assembly and install:

K-3.7.1) Install lower slips (17) and lower slip springs (25) into drag block body (18). Wedge lower slips (17) outward.

NOTE₁₃: Install two (2ea) springs per slip (Fig. 6).

K-3.7.2) Install lower slip support (32) into drag block body (18). Align holes in lower slip support (32) with threaded holes in drag block body (18).

K-3.7.3) Screw cap screws (36) into drag block body (18). Remove wedges.

K-3.7.4) Install drag block body (18) and assembly onto rubber mandrel (11). Slide temporarily upwards out of the way.

K-3.8) Screw rubber mandrel cap (19) onto rubber mandrel (11).

K-3.9) Install drag blocks (22) and drag block springs (3) into drag block body (18). Compress drag blocks (22) with drag block assembly tool (T1).

NOTE₁₄: Install six (6ea) drag block springs per drag block (Fig. 7).

K-3.10) Install drag block retainer (21) capturing ends of drag blocks (22).

K-3.11) Install retaining ring (31) onto J-body (20).

K-3.12) Screw J-body (20) into drag block body (18) (**NOTE:** Left-hand threads).

K-3.13) Screw set screws (38) into drag block body (18). Rotate drag block retainer (21) as needed to access threaded holes in drag block body (18). Release drag blocks (22).

K-3.14) Install o-ring (44) into o-ring groove in J-pin bottom sub (23).

K-3.15) Screw J-pin bottom sub (23) onto inner mandrel (2).

NOTE₄: Drag block body assembly must be free to rotate.

CAUTION: Do not rip or tear o-ring during installation.

K-3.16) Screw set screws (37) into J-pin bottom sub (23). Move J-body (20) as needed to access threaded holes in J-pin bottom sub (23).

K-4) Unclamp top sub (1) from vise and remove assembled tool.

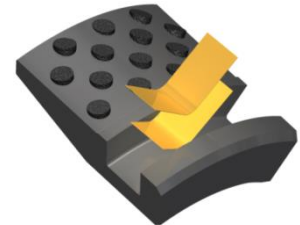


Fig. 6

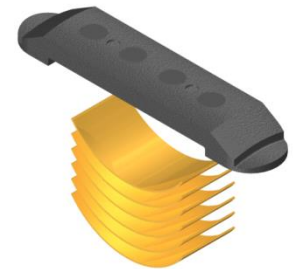


Fig. 7



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

L) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	32.3 - 43.5# P/N 61396RS	43.5 - 53.5# P/N 61395RS
1	1	TOP SUB	DLMS110	61395610	
2	1	INNER MANDREL	DLMS110	61395215	
3	36	DRAG BLOCK SPRING	-	9101900	
4	1	HOLD DOWN CAP	DLMS110	61396370	61395370
5	1	SEAL RECEPTACLE	DLMS110	61395730	
6	1	HOLD DOWN BODY	DLMS110	61395320	
7	4	HOLD DOWN STRAP	DLMSFB4	61395361	
8	1	COMPENSATING MANDREL	DLMS110	61395240	
9	1	COMPENSATING PISTON	DLMS110	61395715	
10	1	CENTRAL BODY	DLMS110	61395385	
11	1	RUBBER MANDREL	DLMS110	60313220HT	
12	2	RUBBER SPACER	DLMS35	60296840S	60295840S
13	1	ELEMENT	80 DURO NITRILE	60296512S	60295512S
14	2	ELEMENT	90 DURO NITRILE	60296513S	60295513S
15	1	RUBBER RETAINER	DLMS110	60296850SHT	60295850SHT
16	1	LOWER CONE	DLMS110	60395420SHT	
17	4	LOWER SLIP W/ CARBIDE	DLMS110	60095135C	
18	1	DRAG BLOCK BODY	DLMS110	60395335HT	
19	1	RUBBER MANDREL CAP	DLMS80	60095230	
20	1	J-BODY	DLMS110	61395340	
21	1	DRAG BLOCK RETAINER	DLMS60	60395910	
22	6	DRAG BLOCK W/ CARBIDE	DLMSDB4	9080900C	
23	1	J-PIN BOTTOM SUB	DLMS110	61395630	
24	1	QUAD SEAL	90 DURO NITRILE	61395520	
25	8	LOWER SLIP SPRING	-	7170901	
26	16	HOLD DOWN BUTTON SPRING	INCONEL	9101900	
27	1	SEAL RETAINER	DLMS110	61395530	
28	1	VALVE BODY	DLMS110	61395350	
29	1	GAGE RING	DLMS110	60296830HT	60295830HT
30	8	HYDRAULIC HOLD DOWN BUTTON W/ CARBIDE	DLMS110	61396974	
31	1	RETAINING RING	DLMS35	60095911	
32	1	LOWER SLIP SUPPORT	DLMS110	60395912HT	
33	1	HOLD DOWN EXTENSION	DLMS110	61395310	
34	1	SECONDARY RUBBER MANDREL	DLMS110	60095221HT	
35	12	FLAT HEAD SOCKET CAP SCREW 3/8-16 UNC X 5/8	STEEL	FHSC037C062	
36	1	SOCKET CAP SCREW 1/2-13 UNC X 3/4	STEEL	SCS050C075	
37	2	SOCKET SET SCREW 3/8-16 UNC X 3/8	STEEL	SSS037C037	



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

L) PARTS LIST (cont'd)

ITEM	QTY	DESCRIPTION	MATERIAL	32.3 - 43.5# P/N 61396RS	43.5 - 53.5# P/N 61395RS
38	6	SOCKET SET SCREW 3/8-16 UNC X 1/2	STEEL	SSS037C050	
39	1	160 O-RING	90 DURO NITRILE	90160	
40	1	253 O-RING	90 DURO NITRILE	90253	
41	1	254 O-RING	90 DURO NITRILE	90254	
42	1	256 O-RING	90 DURO NITRILE	90256	
43	8	338 O-RING	90 DURO NITRILE	90338	
44	1	348 O-RING	90 DURO NITRILE	90348	
45	1	350 O-RING	90 DURO NITRILE	90350	
46	1	351 O-RING	90 DURO NITRILE	90351	
47	1	356 O-RING	90 DURO NITRILE	90356	
48	1	357 O-RING	90 DURO NITRILE	90357	
49	2	363 O-RING	90 DURO NITRILE	90363	

REDRESS KIT (RDK)		61396050H	61395050H
ASSEMBLED WEIGHT		573 LBS	567 LBS

L-1) ELASTOMER TRIM OPTIONS

NOTE₁₅: For temperature range, refer to Elastomer Trim Temperature Guide.

L-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	32.3 - 43.5# P/N 61396RSH	43.5 - 53.5# P/N 61395RSH
13	1	ELEMENT	80 DURO HSN	60296512SH	60295512SH
14	2	ELEMENT	90 DURO HSN	60296513SH	60295513SH
24	1	QUAD SEAL	90 DURO HSN	61395520H	
39	1	160 O-RING	90 DURO HSN	90160H	
40	1	253 O-RING	90 DURO HSN	90253H	
41	1	254 O-RING	90 DURO HSN	90254H	
42	1	256 O-RING	90 DURO HSN	90256H	
43	8	338 O-RING	90 DURO HSN	90338H	
44	1	348 O-RING	90 DURO HSN	90348H	
45	1	350 O-RING	90 DURO HSN	90350H	
46	1	351 O-RING	90 DURO HSN	90351H	
47	1	356 O-RING	90 DURO HSN	90356H	
48	1	357 O-RING	90 DURO HSN	90357H	
49	2	363 O-RING	90 DURO HSN	90363H	

REDRESS KIT (RDK)		61396050H	61395050H
-------------------	--	-----------	-----------



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

Revision: **M**

Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

L) PARTS LIST (cont'd)

L-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	32.3 - 43.5# P/N 61396RSV	43.5 - 53.5# P/N 61395RSV
13	1	ELEMENT	80 DURO VITON	60296512SV	60295512SV
14	2	ELEMENT	90 DURO VITON	60296513SV	60295513SV
24	1	QUAD SEAL	90 DURO VITON	61395520V	
39	1	160 O-RING	90 DURO VITON	90160V	
40	1	253 O-RING	90 DURO VITON	90253V	
41	1	254 O-RING	90 DURO VITON	90254V	
42	1	256 O-RING	90 DURO VITON	90256V	
43	8	338 O-RING	90 DURO VITON	90338V	
44	1	348 O-RING	90 DURO VITON	90348V	
45	1	350 O-RING	90 DURO VITON	90350V	
46	1	351 O-RING	90 DURO VITON	90351V	
47	1	356 O-RING	90 DURO VITON	90356V	
48	1	357 O-RING	90 DURO VITON	90357V	
49	2	363 O-RING	90 DURO VITON	90363V	
REDRESS KIT (RDK)				61396050V	61395050V



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

9-5/8" X 4-1/2"

Manual No:
DL-613-9625-036

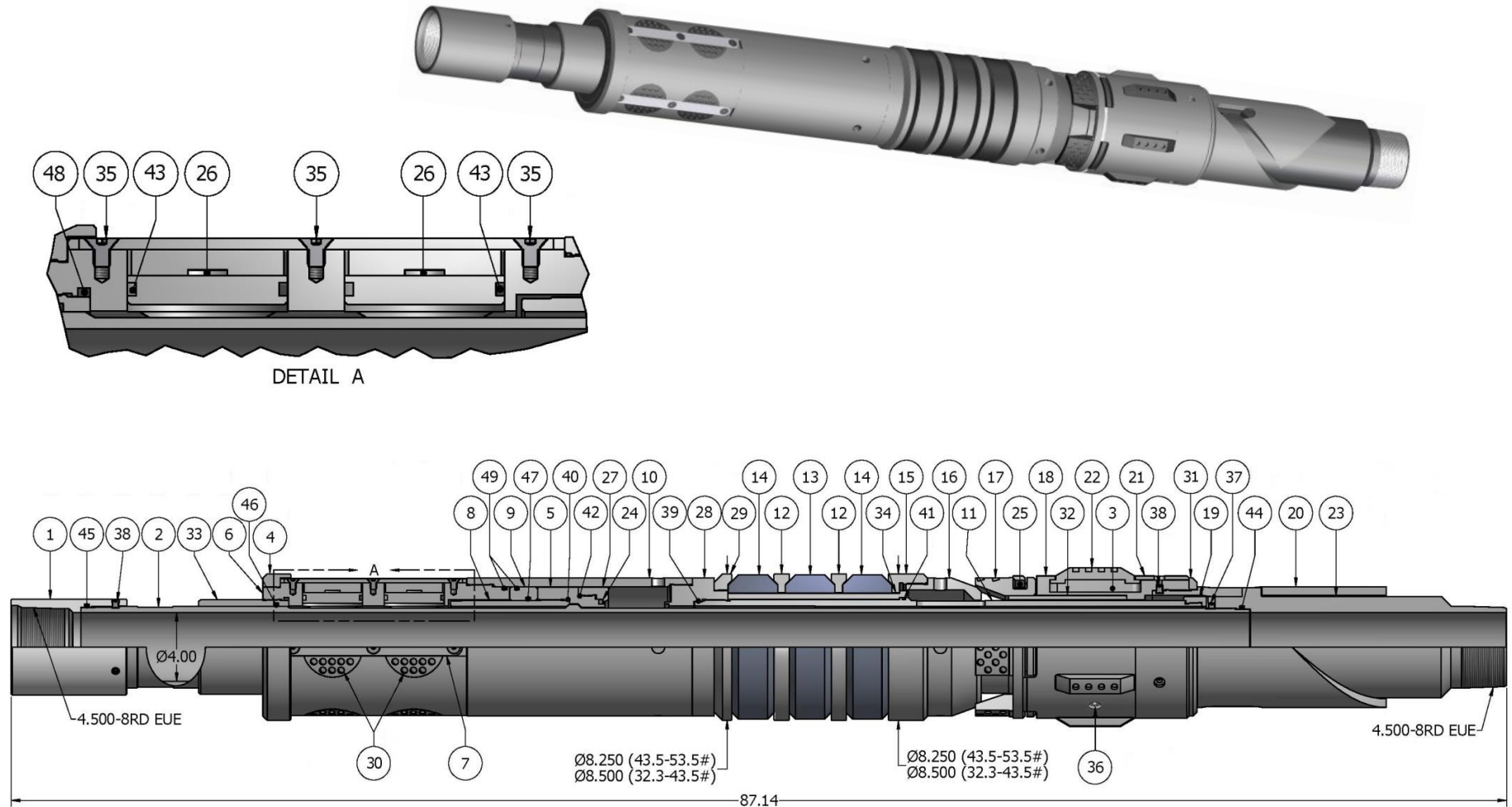
Revision: **M**


Revision Date:
05/30/2019

Authored by: S.White

Approved by: B.Oligschlaeger

M) TECHNICAL ILLUSTRATION



	HD RETRIEVABLE PACKER RIGHT-HAND AUTO 9-5/8” X 4-1/2”	Manual No: DL-613-9625-036
		Revision: M
		Revision Date: 05/30/2019
Authored by: S.White		Approved by: B.Oligschlaeger

N) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
05/30/2019	M	Added General Screw Torque Recommendations, spring height inspection dimensions; Revised Elastomer Trim Temp. Guide nitrile rating.	J.Anderson	J.Johnson
12/09/2015	L	Added: Jack stands to RECOMMENDED TOOLS; Revised: Elastomer Durometer Temperatures – Nitrile (90/80/90 Duro) was 250° - 300°F, Nitrile (Contact D&L Sales) was 300°F +, Rubber Type Temperature Ranges – Nitrile was 70° - 300°F, HSN was 70° - 325°F	B.Mathis	B.Oligschlaeger
10/22/2015	K	Added: SPECIFICATION GUIDE – “Elastomer Trim Options:” Revised: Tensile Load was 214,000 LBS, Hanging Weight was 214,000 LBS, Rubber retainer - P/N 60296850SHT was 60296850S; Removed: Tool Drift ID	B.Mathis	K.Riggs
08/10/2015	J	Added: HSN and Viton options, tool Drift ID, tool tolerances, Pre-Installation Inspection and Storage Procedures, recommended hand tools; Revised: Pressure Affected Area Guide, P/N 60296512S was 60296511S	J.Anderson	T.Myerley