



HD RETRIEVABLE PACKER

RIGHT-HAND AUTO

8-5/8" X 3-1/2"

Manual No:
DL-613-8625-598

Revision: **C**

Revision Date:
12/09/2015

Authored by: J.Anderson

Approved by: D.Hushbeck

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			
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)	GAGE OD (INCHES)	NOMINAL ID (INCHES)	THREAD CONNECTIONS BOX UP / PIN DOWN	PART NUMBER
8-5/8	20.0 – 28.0	8.017 – 8.191	7.750	3.00	3-1/2 EUE	61385RS 61385RSH ¹ 61385RSV ²
	24.0 – 40.0	7.725- 8.097	7.500 7.504*	3.00	3-1/2 EUE	61387RS 61387RSH ¹ 61387RSV ²

Elastomer Trim Options: ¹HSN, ²Viton

* Max OD across retracted drag blocks.

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)
10,000 PSI	136,000 LBS	136,000 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.

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



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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.

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.

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 18,000 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.



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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 (LBS/FT)	ID (IN)	ABOVE	BELOW
8-5/8	1.900	2.40	1.650	6.922 (DOWN)	3.350 (DOWN)
		2.90	1.610	6.922 (DOWN)	3.247 (DOWN)
	2.375	4.00	2.041	5.327 (DOWN)	4.483 (DOWN)
		4.70	1.995	5.327 (DOWN)	4.337 (DOWN)
		5.95	1.867	5.327 (DOWN)	3.949 (DOWN)
	2.875	6.50	2.441	3.265 (DOWN)	5.891 (DOWN)
		7.90	2.323	3.265 (DOWN)	5.450 (DOWN)
		8.70	2.259	3.265 (DOWN)	5.219 (DOWN)
	3.500	7.70	3.068	0.136 (DOWN)	8.604 (DOWN)
		9.30	2.992	0.136 (DOWN)	8.242 (DOWN)
		10.20	2.922	0.136 (DOWN)	7.917 (DOWN)
		12.95	2.750	0.136 (DOWN)	7.151 (DOWN)
	4.000	9.50	3.548	-2.809 (UP)	11.098 (DOWN)
		11.00	3.476	-2.809 (UP)	10.701 (DOWN)
	4.500	12.75	3.958	-6.147 (UP)	13.515 (DOWN)

Example: Consider a 8-5/8" X 3-1/2" HD Packer set on 3.500" (10.20 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 8-5/8" X 3-1/2" HD Packer run on 3.500" (10.20 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 0.136 in². Multiplying the differential pressure (3,000 PSI) by the pressure affected area (0.136 in²) results in a force of 408 lbs. The piston effect on the packer mandrel is a downward force of 480 lbs.



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H) ELASTOMER TRIM TEMPERATURE GUIDE

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

RUBBER TYPE	TEMPERATURE RANGE
NITRILE	70° - 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	AT095110
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 (34) from J-pin bottom sub (23). Move J-body (20) as needed to access set screws (34).

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 (40) from J-pin bottom sub (23).

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

J-1.4) Unscrew and remove set screws (36) from J-body (20).

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

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).

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

NOTE₆: For added leverage, insert a rod through rubber retainer (15) and rubber mandrel (11) as needed.



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J) DISASSEMBLY (cont'd)

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

J-1.9.1) Unscrew and remove cap screws (38) from drag block body (18).

J-1.9.2) Wedge lower slips (17) outward (if needed). Remove lower slip support (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 rubber mandrel (11).

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 (42) 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 (35) from top sub (1).

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

J-2.2.1) Remove o-ring (41) 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-rings (45) from hold down extension (33).

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

J-2.5) Move strap retainer (31) downwards temporarily out of way.

J-2.6) Unscrew and remove flat head cap screws (37) from hold down body (6).

J-2.7) Remove hold down straps (7) from hold down body (6).

J-2.8) Remove hold down button springs (26) from hold down buttons (30).

J-2.9) Remove hold down buttons (30) from hold down body (6) with button removal tool (T2).

J-2.9.1) Remove o-rings (39) from hold down buttons (30).

J-2.10) Remove hold down body (6) from inner mandrel (2).

J-2.10.1) Remove o-rings (43, 47) from hold down body (6).

J-2.11) Remove strap retainer (31) from inner mandrel (2).

J-2.12) Unscrew and remove compensating mandrel (8) from seal receptacle (5).

J-2.13) Remove compensating piston (9) from compensating mandrel (8).

J-2.13.1) Remove o-rings (46, 47) 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 (43, 44) and quad seal (24) from seal receptacle (5).



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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 (43, 44) 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 (46, 47) 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 strap retainer (31) onto inner mandrel (2). Move strap retainer (31) downwards temporarily out of way.

K-2.3) Install o-rings (43, 47) into o-ring grooves in hold down body (6).

K-2.4) Install o-rings (45) into o-ring grooves in hold down extension (33).

K-2.5) Screw hold down extension (33) into hold down body (6).

K-2.6) Install hold down body (6) onto inner mandrel (2).

K-2.7) Assemble hold down buttons and install:

K-2.7.1) Install o-rings (39) into o-ring grooves in hold down buttons (30).



Fig. 4



Fig. 5

K-2.7.2) Install hold down buttons (30) into hold down body (6) (Fig. 4).

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

K-2.7.3) 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).

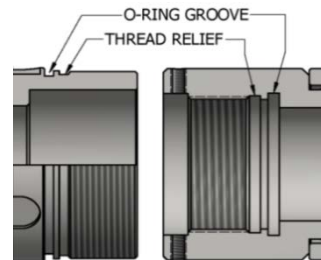


Fig. 2

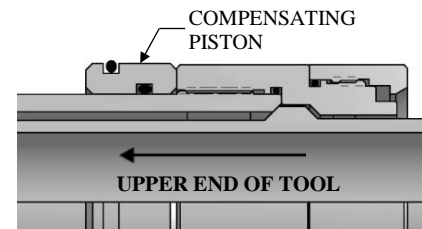


Fig. 3



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K) ASSEMBLY (cont'd)

K-2.7.4) Set hold down straps (7) in slots in hold down buttons (30) and hold down body (6).

K-2.7.5) Screw flat head cap screws (37) into hold down body (6) securing hold down straps (7).

K-2.8) Screw hold down cap (4) onto hold down body (6) capturing ends of hold down straps (7).

K-2.9) Install strap retainer (31) onto hold down body (6) capturing ends of hold down straps (7).

K-2.10) Install o-ring (41) into o-ring groove in top sub (1).

K-2.11) Screw top sub (1) onto inner mandrel (2).

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

K-2.12) Screw set screws (35) 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).

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

K-3.2) Install o-ring (42) 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 and install:

K-3.5.1) Install rubber retainer (15), rubber spacers (12), and elements (13, 14) onto rubber mandrel (11).

K-3.5.2) Screw rubber mandrel (11) into valve body (28).

CAUTION₉: 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 (38) into drag block body (18). Remove wedges.

K-3.7.4) Install drag block body (18) and assembly onto rubber mandrel (11).

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) Screw J-body (20) onto drag block body (18) (**NOTE₅:** Left-hand threads).

K-3.12) Screw set screws (36) into J-body (20). Release drag blocks (22).

K-3.13) Install o-ring (40) into o-ring groove in J-pin bottom sub (23).

K-3.14) Screw J-pin bottom sub (23) onto inner mandrel (2).

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

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

K-3.15) Screw set screws (34) 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.

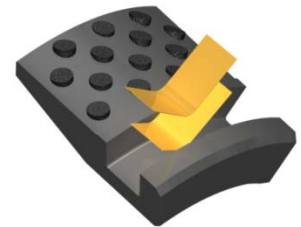


Fig. 6

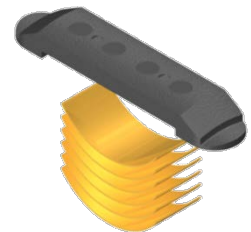


Fig. 7



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L) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	(20.0 - 28.0#) P/N 61385RS	(24.0 - 40.0#) P/N 61387RS
1	1	TOP SUB	DLMS110	61387615	
2	1	INNER MANDREL	P-110	61387215	
3	36	DRAG BLOCK SPRING	-	9101900	
4	1	HOLD DOWN CAP	DLMS110	61385370	61387370
5	1	SEAL RECEPTACLE	P-110	61387730	
6	1	HOLD DOWN BODY	P-110	61387320	
7	3	HOLD DOWN STRAP	DLMS110	61370360	
8	1	COMPENSATING MANDREL	P-110	61387240	
9	1	COMPENSATING PISTON	DLMS110	61387715	
10	1	CENTRAL BODY	P-110	61387385	
11	1	RUBBER MANDREL	DLMS110	61387220	
12	2	RUBBER SPACER	DLMS35	60281840	60285840
13	1	ELEMENT	80 DURO NITRILE	60281512	60285512
14	2	ELEMENT	90 DURO NITRILE	60281513	60285513
15	1	RUBBER RETAINER	DLMS35	61385850	60285850
16	1	LOWER CONE	DLMS110	60387420HT	
17	4	LOWER SLIP W/ CARBIDE	P-110	61385135C	60085135C
18	1	DRAG BLOCK BODY	DLMS35	61385335	60087335
19	1	RUBBER MANDREL CAP	DLMS35	60073230	
20	1	J-BODY	P-110	61387340	
21	1	DRAG BLOCK RETAINER	DLMS35	61385910	60387910
22	6	DRAG BLOCK W/ CARBIDE	4140	9070900C	
23	1	J-PIN BOTTOM SUB	DLMS110	61387630	
24	1	QUAD SEAL	90 DURO NITRILE	61387520	
25	8	LOWER SLIP SPRING	-	7170901	
26	12	HOLD DOWN BUTTON SPRING	-	61370975	
27	1	SEAL RETAINER	DLMS110	61387530	
28	1	VALVE BODY	DLMS110	61387350	
29	1	UPPER GAGE RING	DLMS35	61385830	60287830



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L) PARTS LIST (cont'd)

ITEM	QTY	DESCRIPTION	MATERIAL	(20.0 - 28.0#) P/N 61385RS	(24.0 - 40.0#) P/N 61387RS
31	1	STRAP RETAINER	DLMS110	61385650	61387650
32	1	LOWER SLIP SUPPORT	DLMS35	61385912	60387912
33	1	HOLD DOWN EXTENSION	DLMS110	61387310	
34	2	SET SCREW 1/4-20 UNC X 7/16	STEEL	SSS025C043	
35	2	SET SCREW 3/8-16 UNC X 1/2	STEEL	SSS037C050	
36	2	SET SCREW 3/8-16 UNC X 3/8	STEEL	SSS037C037	
37	3	FLAT HEAD SOCKET CAP SCREW 5/16-18 UNC X 1/2	STEEL	FHSC031C050	
38	2	SOCKET CAP SCREW 5/8-11 UNC X 1"	STEEL	SCS062C100	
39	6	230 O-RING	90 DURO NITRILE	90230	
40	1	237 O-RING	90 DURO NITRILE	90237	
41	1	239 O-RING	90 DURO NITRILE	90239	
42	1	243 O-RING	90 DURO NITRILE	90243	
43	2	245 O-RING	90 DURO NITRILE	90245	
44	1	248 O-RING	90 DURO NITRILE	90248	
45	2	343 O-RING	90 DURO NITRILE	90343	
46	1	348 O-RING	90 DURO NITRILE	90348	
47	2	356 O-RING	90 DURO NITRILE	90356	
REDRESS KIT (RDK)				61385050	61387050
ASSEMBLED WEIGHT				451 LBS	443 LBS



HD RETRIEVABLE PACKER RIGHT-HAND AUTO 8-5/8" X 3-1/2"

Manual No:
DL-613-8625-598

Revision: **C**

Revision Date:
12/09/2015

Authored by: J.Anderson

Approved by: D.Hushbeck

L) PARTS LIST (cont'd)

L-1) ELASTOMER TRIM OPTIONS

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

L-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	(20.0 - 28.0#) P/N 61385RSH	(20.0 - 28.0#) P/N 61387RSH
13	1	ELEMENT	80 DURO HSN	60281512H	60285512H
14	2	ELEMENT	90 DURO HSN	60281513H	60285513H
24	1	QUAD SEAL	90 DURO HSN	61387520H	
39	6	230 O-RING	90 DURO HSN	90230H	
40	1	237 O-RING	90 DURO HSN	90237H	
41	1	239 O-RING	90 DURO HSN	90239H	
42	1	243 O-RING	90 DURO HSN	90243H	
43	2	245 O-RING	90 DURO HSN	90245H	
44	1	248 O-RING	90 DURO HSN	90248H	
45	2	343 O-RING	90 DURO HSN	90343H	
46	1	348 O-RING	90 DURO HSN	90348H	
47	2	356 O-RING	90 DURO HSN	90356H	
REDRESS KIT (RDK)				61385050H	61387050H

L-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	(20.0 - 28.0#) P/N 61385RSV	(20.0 - 28.0#) P/N 61387RSV
13	1	ELEMENT	80 DURO VITON	60281512V	60285512V
14	2	ELEMENT	90 DURO VITON	60281513V	60285513V
24	1	QUAD SEAL	90 DURO VITON	61387520V	
39	6	230 O-RING	90 DURO VITON	90230V	
40	1	237 O-RING	90 DURO VITON	90237V	
41	1	239 O-RING	90 DURO VITON	90239V	
42	1	243 O-RING	90 DURO VITON	90243V	
43	2	245 O-RING	90 DURO VITON	90245V	
44	1	248 O-RING	90 DURO VITON	90248V	
45	2	343 O-RING	90 DURO VITON	90343V	
46	1	348 O-RING	90 DURO VITON	90348V	
47	2	356 O-RING	90 DURO VITON	90356V	
REDRESS KIT (RDK)				61385050V	61387050V



HD RETRIEVABLE PACKER RIGHT-HAND AUTO 8-5/8" X 3-1/2"

Manual No:
DL-613-8625-598

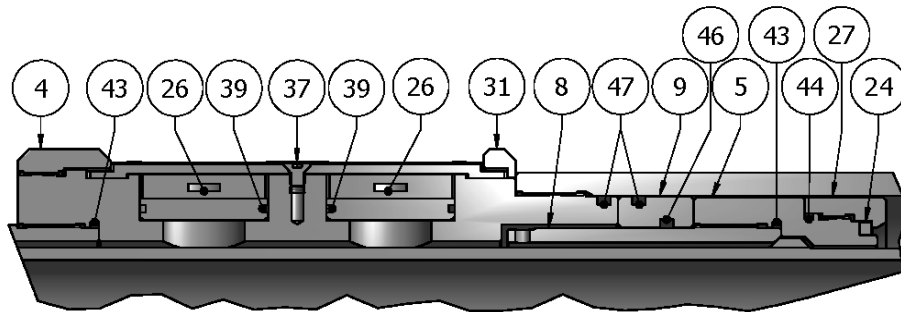
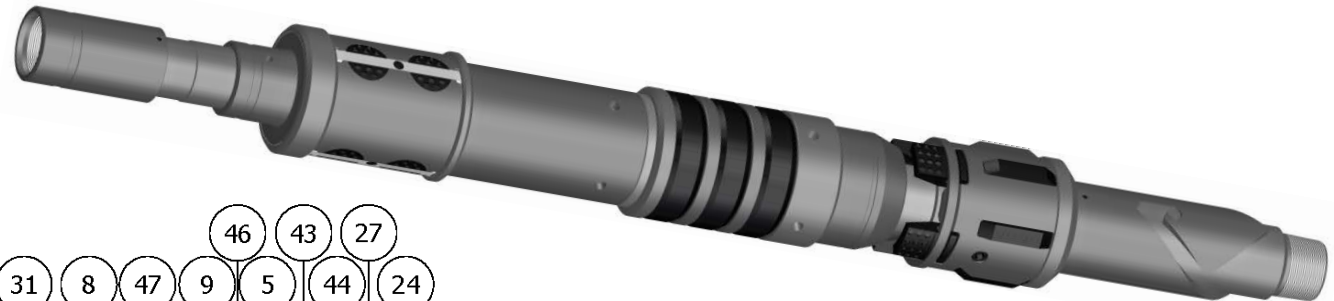
Revision: C

Revision Date:
12/09/2015

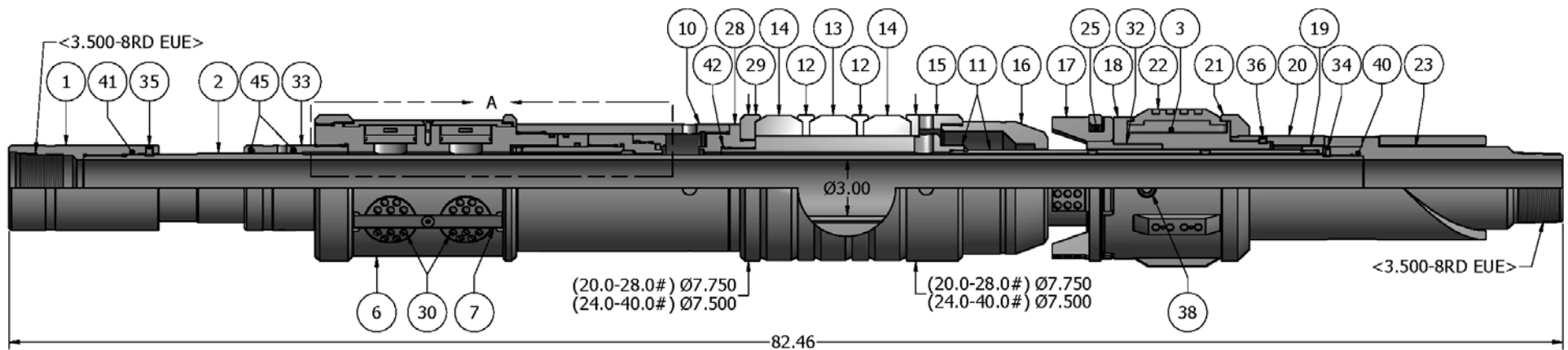
Authored by: J.Anderson


Approved by: D.Hushbeck

M) TECHNICAL ILLUSTRATION



DETAIL A



	<div><div>HD RETRIEVABLE PACKER</div><div>RIGHT-HAND AUTO</div><div>8-5/8" X 3-1/2"</div></div>	Manual No: DL-613-8625-598
		Revision: C
		Revision Date: 12/09/2015
Authored by: J.Anderson		Approved by: D.Hushbeck

N) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
12/09/2015	C	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
11/18/2015	B	Added: P/N 61385RS (20.0-28.0#) and data, * Max OD across retracted drag blocks, Elastomer trim options (HSN, Viton) and note, Hanging Weight, “*Casing must be cemented for this load rating.”, PRE-INSTALLATION INSPECTION PROCEDURES, Caution4, STORAGE RECOMMENDATIONS, SPECIAL TOOLS – T3, Note2, Note3, Caution7, Note8, Note9, Note10, Fig. 2, Fig. 3, PARTS LIST – part numbers for P/N 61385RS; Revised: Title, Gage OD was Tool OD, Nominal ID was Tool ID, PRESSURE AFFECTED AREA GUIDE, ELASTOMER TRIM TEMPERATURE GUIDE was ELEMENT SELECTION GUIDE, Disassembly instructions, Assembly instructions, Note7, Fig. 5, Fig. 6;	B.Mathis	K.Riggs
08/30/2013	A	Created new manual;	-	-