



DL TENSION PACKER

6-5/8" X 2-7/8"

Manual No:
DL-401-6625-863

Revision: **A**

Revision Date:
05/21/2015

Authored by: *J.Anderson*

Approved by: *K.Riggs*

A) DESCRIPTION

The DL Tension Packer is an economical, compact tool for injection, pumping, medium range treating and production applications. This packer is set by 1/4 right-hand rotation of the work string and then pull tension. To release the packer, slack off the work string and the packer will automatically re-jay into the release position. The packer is released with right-hand rotation to retrieve the work string.

The DL Tension Packer can be run in tension or compression. When the packer is run in compression, the right-hand release option cannot be utilized.

The DL Shear Tension Packer is also available which features an adjustable straight pull safety shear release. It is not designed to be run in compression.

B) SPECIFICATION GUIDE

CASING			TOOL			THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)	GAGE OD (INCHES)	NOMINAL ID (INCHES)	DRIFT ID (INCHES)		
6-5/8	17.0 – 24.0	5.921 – 6.135	5.750	2.44	2.347	2-7/8 EUE	40166 40166H ¹ 40166V ²
	24.0 – 32.0	5.675 – 5.921	5.500	2.44	2.347	2-7/8 EUE	40165 40165H ¹ 40165V ²
	20.0 – 28.0	5.791 – 6.049	5.625	2.44	2.347	2-7/8 EUE	40164 40164H ¹ 40164V ²

Elastomer Trim Options: ¹HSN, ²Viton

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
5,000 PSI	60,000 LBS

C) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION: 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.



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.

D & L OIL TOOLS
 P.O. BOX 52220 TULSA, OK 74152
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C) PRE-INSTALLATION INSPECTION PROCEDURES (cont'd)

Re-assemble the tool after inspection. Install parts in the correct order and orientation. Properly tighten connections (Fig. 1).

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

CAUTION₂: 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. Set down on work string and rotate 1/4 turn to the right at the packer. Pull tension on the packer to set the slips and compress the packing elements. A minimum pull of 14,000 lbs. at the packer is required to pack off the elements.

E) RELEASING PROCEDURES

Set down on work string to unset the slips, relax the packing elements and re-jay the packer. The tool may now be moved and reset, or pulled from the well.

If this does not un-set the packer, torque the work string to the right until the secondary release threads break loose. Rotate 12 to 15 additional turns to the right at the tool and trip out with the work string. When released in this manner, the packer will remain downhole.

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. 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.

G) ELASTOMER TRIM TEMPERATURE GUIDE

RUBBER TYPE	TEMPERATURE RANGE
NITRILE	70° - 300°F
HSN (HNBR)	70° - 325°F
VITON	100° - 350°F



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H) 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

I) DISASSEMBLY

I-1) Clamp top coupling (1) in vise.

I-1.1) Unscrew and remove bottom sub (8) from mandrel (2).

I-1.2) Remove element (7) and cone (6) from mandrel (2).

I-1.3) Unscrew and remove button head cap screws (11, 12) from cage ring (3).

I-1.4) Remove drag springs (4) from J-body (5).

I-1.5) Wedge slips (9) outwards (if needed). Remove J-body (5) from mandrel (2) and disassemble:

I-1.5.1) Remove wedges (if needed). Remove slips (9) and slip springs (10) from J-body (5).

I-1.6) Unscrew and remove mandrel (2) from top coupling (1) (**NOTE₂**: Left-hand threads).

I-1.6.1) Remove cage ring (3) from mandrel (2).

I-2) Unclamp and remove top coupling (1) from vise.

J) ASSEMBLY

NOTE₁: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

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

J-1.1) Install cage ring (3) onto mandrel (2).

J-1.2) Screw mandrel (2) into top coupling (1) (**NOTE₂**: Left-hand threads).

J-1.3) Install slips (9) and slip springs (10) into J-body (5). Wedge slips outwards.

NOTE₃: Install one (1ea) spring per slip (Fig. 2).

J-1.4) Install J-body (5) onto mandrel (2). Rotate and slide J-body assembly as needed to align slots in J-body with pins on mandrel (2). Remove wedges.

J-1.5) Set drag springs (4) in place on J-body (5). Capture lower ends of drag springs (4) under lip on J-body (5).

NOTE₄: For P/Ns 40164 and 40165, install drag springs in sets of two (2ea). For P/N 40166, install in sets of three (3ea).

J-1.6) Align holes in drag springs (4) with holes in J-body (5) and with threaded holes in cage ring (3). Screw button head cap screws (11, 12) into cage ring (3).

J-1.7) Install cone (6) and element (7) onto mandrel (2).

J-1.8) Screw bottom sub (8) onto lower mandrel (4).

J-2) Unclamp top coupling (1) from vise and remove assembled tool.

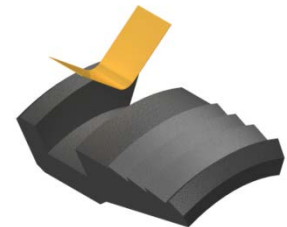


Fig. 2



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K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	17.0 – 24.0# P/N 40166	24.0 - 32.0# P/N 40165	20.0 – 28.0# P/N 40164
1	1	TOP COUPLING	1026	40070620		
2	1	MANDREL WELDMENT	1026 CD / 8620	40170210		
3	1	CAGE RING	1026	41070325		
4	-	DRAG SPRING	.062 T-301	12 EA	40070920 8 EA	
5	1	J-BODY	1026	41070310	41065310	
6	1	CONE	1026	40071410	40065410	40064410
7	1	ELEMENT	80 DURO NITRILE	40566512	40565512	40564512
8	1	BOTTOM SUB	DLMS35 / 1018	40066610	40065610	40064610
9	4	SLIP	1026	40070110	60070135	40064110
10	8	SLIP SPRING	.062 T-301	7170901		
11	6	BUTTON HEAD CAP SCREW 5/16-18 UNC X 1/2	STEEL	BHSC031C050		
12	8	BUTTON HEAD CAP SCREW 5/16-18 UNC X 5/8	STEEL	BHSC031C062		
REDRESS KIT (RDK)				40166050	40165050	40164050
ASSEMBLED WEIGHT				67 LBS	63 LBS	63 LBS

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K-1) OPTION PARTS LIST

K-1.1) HSN

NOTE₅: For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	17.0 – 24.0# P/N 40166H	24.0 - 32.0# P/N 40165H	20.0 – 28.0# P/N 40164H
7	1	ELEMENT	80 DURO HSN	40566512H	40565512H	40564512H

REDRESS KIT (RDK)		40166050H	40165050H	40164050H
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K-1.2) VITON

NOTE₅: For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	17.0 – 24.0# P/N 40166V	24.0 - 32.0# P/N 40165V	20.0 – 28.0# P/N 40164V
7	1	ELEMENT	80 DURO VITON	40566512V	40565512V	40564512V

REDRESS KIT (RDK)		40166050V	40165050V	40164050V
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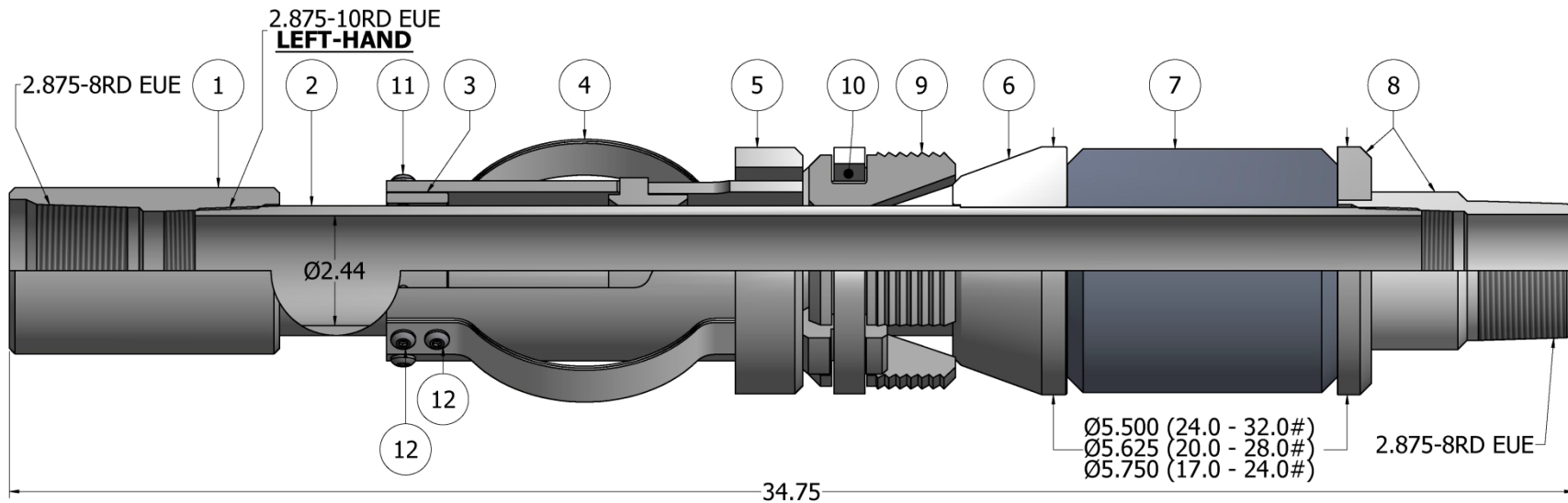
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L) TECHNICAL ILLUSTRATION



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M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
05/21/2015	A	Created new manual	-	-