



DL TENSION PACKER

7" X 2-7/8"

Manual No:
DL-401-7000-340

Revision: **B**

Revision Date:
12/15/2022

Written by: *B.Mathis*

Approved by: *D.Hushbeck*

A) DESCRIPTION

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

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

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)		
7	17.0 – 29.0	6.184 – 6.538	6.000	2.44	2-7/8 EUE	40170 40170H ¹ 40170V ² 40170C ³ 40170HC ⁴ 40170VC ⁵

Tool Options: ¹HSN, ²Viton, ³Nitrile, Carbide, ⁴HSN, Carbide, ⁵Viton, Carbide

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
5,000 PSI	45,000 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.

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.

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 (cont'd)

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

CAUTION: 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 the tubing 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 the tubing 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.

E-1) EMERGENCY RELEASE

If the packer is not un-setting, torque the tubing 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 production tubing. When released in this manner, the packer remains 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	40° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°F

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



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I) DISASSEMBLY

- I-1) Clamp top coupling (1) in vise.
 - I-1.1) Unscrew and remove bottom sub assy (8) from mandrel (2).
 - I-1.2) Slide element (7) and cone (6) off of mandrel (2).
 - I-1.3) Unscrew and remove button head cap screws (12) from J-body assy (5).
 - I-1.4) Unscrew and remove button head cap screws (11, 12) from cage ring (3).
 - I-1.5) Remove drag springs (4) from J-body assy (5).
 - I-1.6) Wedge slips (9) outwards. Rotate and slide J-body assembly as needed to remove it from mandrel (2) and disassemble:
 - I-1.6.1) Remove wedges. Remove slips (9) and slip springs (10) from J-body assy (5).
 - I-1.7) Unscrew and remove mandrel (2) from top coupling (1) (**NOTE₂**: Left-hand threads).
 - I-1.7.1) Slide cage ring (3) off of mandrel (2).
- I-2) 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) Slide 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 assy (5). Wedge slips outwards.
 - NOTE₃**: Install six (6 ea) springs per slip.
 - J-1.4) Rotate and slide J-body assembly as needed so slots align with J-pins - slide onto mandrel (2).
 - J-1.5) Set drag springs (4) in place on J-body assy (5). Be sure lower ends of drag springs (4) are captured under lip on J-body assy (5).
 - J-1.6) Align holes in J-body assy (5) with threaded holes in cage ring (3). Screw button head cap screws (11, 12) into cage ring (3).
 - J-1.7) Remove wedges.
 - J-1.8) Align holes in drag springs (4) with threaded holes in J-body assy (5). Screw button head cap screws (12) into cage ring (3) and J-body (5).
 - J-1.9) Slide cone (6) and element (7) onto mandrel (2).
 - J-1.10) Screw bottom assy (8) onto lower mandrel (4).
- J-2) Unclamp top coupling (1) from vise and remove tool assembly.



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K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 40170
1	1	TOP COUPLING	DLMS60	40070620
2	1	MANDREL	1018/8620	40170210
3	1	CAGE RING	DLMS60	41070325
4	12	DRAG SPRING	STAINLESS STEEL	40070920
5	1	J-BODY ASSY	1018	41070310
6	1	CONE	DLMS35	40070410
7	1	ELEMENT	80 DURO NITRILE	40570512
8	1	BOTTOM SUB	DLMS35/DLMS60	40070610
9	4	SLIP	DLMS35	40070110
10	24	SLIP SPRING	-	7170901
11	6	BUTTON HEAD CAP SCREW 5/16-18 X 1/2	STEEL	BHSC031C050
12	8	BUTTON HEAD CAP SCREW 5/16-18 X 5/8	STEEL	BHSC031C062

REDRESS KIT (RDK)	40170050
ASSEMBLED WEIGHT	70 LBS

K-1) ELASTOMER TRIM OPTIONS

NOTE4: For temperature range, refer to Elastomer Trim Temperature Guide.

K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 40170H
7	1	ELEMENT	80 DURO HSN	40570512H

REDRESS KIT (RDK)	40170050H
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K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 40170V
7	1	ELEMENT	80 DURO VITON	40570512V

REDRESS KIT (RDK)	40170050V
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K-2) CARBIDE OPTION

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 40170C
9	4	CARBIDE SLIP	DLMS110	40070110C



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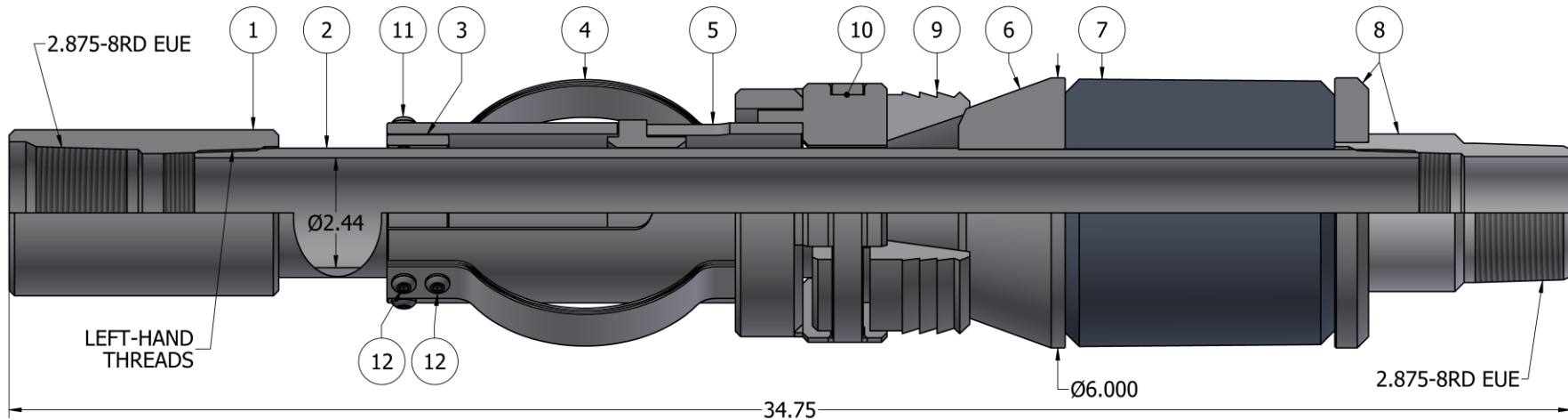
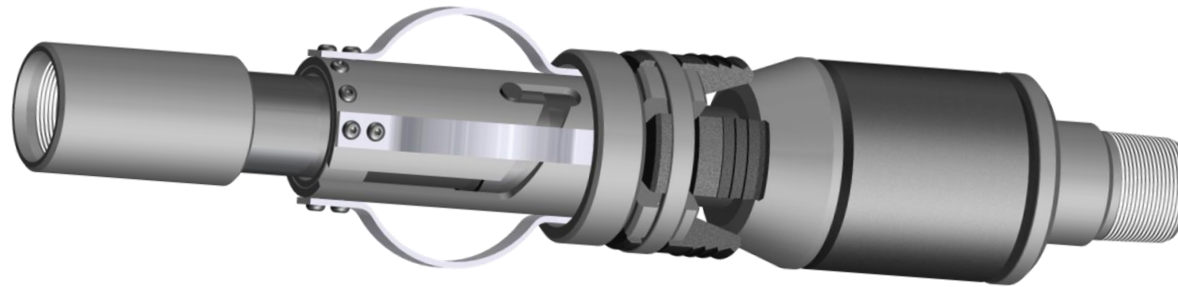
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L) TECHNICAL ILLUSTRATION



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M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
12/15/2022	B	Revised entire manual	J.Anderson	E.Visaez