



# DL SHEAR TENSION PACKER, RIGHT-HAND MANUAL

## 4-1/2" X 2-3/8"

Manual No:  
**DL-412-4500-173**

Revision: **B**

Revision Date:  
**11/08/2023**

Written by: J.Anderson

Approved by: K.Plunkett

### A) DESCRIPTION

The DL Shear Tension Packer is an economical, compact tool used for injection, pumping, medium range treating and production applications.

The DL Shear Tension Packer features an adjustable, straight-pull, safety shear release. It has a right-hand rotation release allowing retrieval of the tubing string. It is not made to be run in compression.

**CAUTION<sub>1</sub>:** Prior to installing these optional shear pins, contact D&L Oil Tools for recommendation on maximum shear value allowed for tool.

### B) SPECIFICATION GUIDE

CASING			TOOL OD (INCHES)	TOOL ID (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)				
4-1/2	15.1 – 16.6	3.754 – 3.826	3.500	1.94	2-3/8 EUE	41244RM 41244RMH <sup>1</sup> 41244RMV <sup>2</sup> 41244RMC <sup>3</sup> 41244RMHC <sup>4</sup> 41244RMVC <sup>5</sup>

Tool Options: <sup>1</sup>HSN, <sup>2</sup>Viton, <sup>3</sup>Nitrile, Carbide, <sup>4</sup>HSN, Carbide, <sup>5</sup>Viton, Carbide

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
5,000 PSI	32,000 LBS

### C) PRE-INSTALLATION INSPECTION PROCEDURES

**CAUTION<sub>2</sub>:** 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.

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



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### 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.

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.

Before running the packer, check the safety shear release to see that the desired quantities of shear screws are installed. Each shear screw shears at 5,000#.

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 10,000 lbs. at the packer is required to pack off the elements.

**NOTE:** Take care not to pull more than two-thirds (2/3) of the safety shear setting.

### E) RELEASING PROCEDURES

Set down the tubing to unset the slips, relax the packing elements. Rotate 1/4 turn to the left at the packer to re-jay the packer. The packer may now be moved and reset or pulled from the well.

If this does not un-set the packer, pull to shear the safety shear release. Once it shears, the tool must be tripped out. If the safety shear release will not shear, torque the tubing to the right until the secondary release threads break loose. Rotate 12-15 additional turns to the right at the tool and trip out.

### 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.



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## 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

## I) DISASSEMBLY

I-1) Clamp top coupling (6) in vise.

I-1.1) Unscrew and remove crossover (4) from mandrel assy (1).

I-1.2) Unscrew and remove shear screws (5) from shear ring (8).

I-1.3) Remove shear ring (8), element (3) and cone (2) from mandrel assy (1).

I-1.4) Unscrew and remove button head cap screws (9) from slips (11); remove slips (11).

I-1.5) Unscrew and remove button head cap screws (9) from mandrel assy (1); remove slip arms (7) and drag springs (10).

I-1.6) Unscrew and remove mandrel assy (1) from top coupling (6) (**NOTE**<sub>2</sub>: Left-hand threads).

**CAUTION**<sub>4</sub>: Do **NOT** wrench or clamp on seal surface.

I-2) Remove top coupling (6) from vise.

## J) ASSEMBLY

**NOTE**<sub>3</sub>: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order and orientation.

J-1) Clamp top coupling (6) in vise.

J-1.1) Screw mandrel assy (1) into top coupling (6) (**NOTE**<sub>2</sub>: Left-hand threads).

**CAUTION**<sub>4</sub>: Do **NOT** wrench or clamp on seal surfaces.

J-1.2) Set slip arms (7) in place on mandrel assy (1). Align holes in slip arms (7) with threaded holes in mandrel assy (1). Screw button head cap screws (9) into mandrel assy (1).

J-1.3) Set drag springs (10) in place on mandrel assy (1). Align holes in drag springs (10) with threaded holes in mandrel assy (1). Screw button head cap screws (9) into mandrel assy (1).

J-1.4) Set slips (11) in place below slip arms (7). Align threaded holes in slips (11) with holes in slip arms (7). Screw button head cap screws (11) into slips (11).

J-1.5) Install cone (2), element (3), and shear ring (8) onto mandrel assy (1)



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### J) ASSEMBLY (cont'd)

J-1.6) Align threaded holes in shear ring (8) with pocket holes in mandrel assy (1). Screw shear screws (5) into shear ring (8). Tighten until shear screws (5) contacts mandrel assy (1). Back shear screws (5) out 1/4 turn.

J-1.7) Screw crossover (4) onto mandrel assy (1).

J-2) Unclamp top coupling (6) from vise and remove assembled tool.

### K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 41244RM
1	1	MANDREL ASSY	DLMS60	41244211
2	1	CONE	DLMS60	41244410
3	1	ELEMENT	80 DURO NITRILE	41244512
4	1	CROSSOVER	DLMS60	CH2375N2375E
5	6	SHEAR SCREW (5000#) .625-18 UNF X .45	DLM360BRS	32045910
6	1	TOP COUPLING	DLMS60	CP2375NLH2375E
7	3	SLIP ARM	STAINLESS STEEL	44000910
8	1	SHEAR RING	DLMS110	41244850
9	18	BUTTON HEAD SOCKET CAP SCREW 5/16-18 UNC X 5/16	STEEL	BHSC031C031
10	3	DRAG SPRING	DLMSSP301	44070910
11	3	SLIP	DLMS35	44035110

REDRESS KIT (RDK)	41244050
ASSEMBLED WEIGHT	38 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 41244RMH
3	1	ELEMENT	80 DURO HSN	41244512H

REDRESS KIT (RDK)	41244050H
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##### K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 41244RMV
3	1	ELEMENT	80 DURO VITON	41244512V

REDRESS KIT (RDK)	41244050V
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#### K-2) CARBIDE OPTION

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 41244RMC
11	3	CARBIDE SLIP	DLMS110	44035110C



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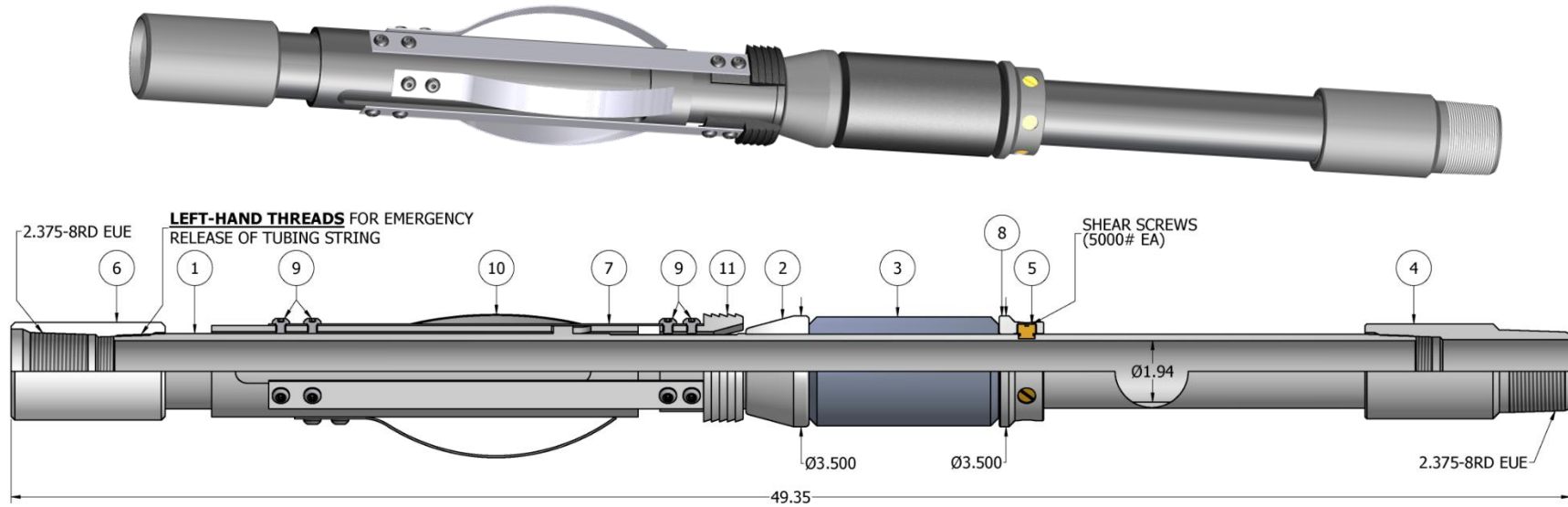
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## L) TECHNICAL ILLUSTRATION



## M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
11/08/2023	B	Revised entire manual	J.Anderson	E.Visaez
12/31/13	A	Created new manual	-	-