



# DL-1B TANDEM TENSION PACKER 7" X 2-7/8"

Manual No:  
**DL-436-7000-584**

Revision: **C**

Revision Date:  
**10/19/2020**

Authored by: J.Anderson

Approved by: D.Hushbeck

## A) DESCRIPTION

The DL-1B Tandem Tension Packer is an economical, compact, low-pressure, tension set, isolation packer used in casing or perforations and multi-zone injection installations. DL-1B Tandem Tension Packer runs with a tension set packer below. It can be run with the J-pins in the un-jayed position, or in the jayed position. In the un-jayed position, applying tension shears the shear pins and allows pack-off.

If run in the jayed position, the DL-1B Tandem Tension Packer must be used in conjunction with the ASI-X Packer. Set down weight shears the pins; left-hand rotation and applied tension will set the tool.

## 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 – 23.0	6.366 – 6.538	6.125	2.44	2-7/8 EUE	43670 43670H <sup>1</sup> 43670V <sup>2</sup>
	17.0 – 26.0	6.276 - 6.538	6.078	2.44	2-7/8 EUE	43670-2 43670H-2 <sup>1</sup> 43670V-2 <sup>2</sup>
	26.0 – 32.0	6.904 – 6.276	5.875	2.44	2-7/8 EUE	43672 43672H <sup>1</sup> 43672V <sup>2</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton

**NOTE**<sub>1</sub>: Optional J-configurations are available.

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
7,000 PSI	80,000 LBS

## C) PRE-INSTALLATION INSPECTION PROCEDURES

**CAUTION**<sub>1</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.dlmfg.com](http://www.dlmfg.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

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.

If run in the un-jayed position (straight pull), the DL-1B Tandem Tension Packer runs with a tension set packer below. Set the lower packer normally. Apply enough tension to shear the tandem tension packer pins. Continue applying tension (14,000 lbs) to pack off the packer elements.

If run in the jayed position, the DL-1B Tandem Tension Packer must be run with an ASI-X Packer below. Set the ASI-X Packer normally. Set down enough weight to shear the pins of the tandem tension packer. Apply left-hand rotation to move the J-pin out of the jayed position. Pick up on the work string with enough tension (14,000 lbs) to pack off the packer elements.

## E) RELEASING PROCEDURES

Set down weight on the work string to release the tandem tension packer and initiate the releasing sequence of the tension packer below. Follow the tension packer releasing procedures to remove the work string from down hole.

## 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



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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 J-slot body (1) in vise.
  - I-1.1) Unscrew and remove rubber retainer (6) from J-slot body (1).
  - I-1.2) Remove element (5) from J-slot body (1).
  - I-1.3) Unscrew and remove shear screws (7) from torque screw body (3).
  - I-1.4) Unscrew and remove torque screws (4) from torque screw body (3).
  - I-1.5) Remove torque screw body (3) from J-slot body (1).
  - I-1.6) Remove mandrel (2) from J-slot body (1).
    - I-1.6.1) Remove o-rings (8) from mandrel (2).
- I-2) Unclamp and remove J-slot body (1) from vise.

## J) ASSEMBLY

**NOTE<sub>2</sub>:** Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order and orientation.

- J-1) Clamp J-slot body (1) in vise.
  - J-1.1) Install o-rings (8) in grooves in mandrel (2).
  - J-1.2) Install mandrel (2) into J-slot body (1).
    - CAUTION<sub>3</sub>:** Do not rip or tear o-rings during installation.
  - J-1.3) Install torque screw body (3) onto J-slot body (1).
  - J-1.4) Align threaded holes in torque screw body (3) with J-slot in J-slot body (1). Screw torque screws (4) into torque screw body (3).
  - J-1.5) Screw shear screws (7) into torque screw body (3). Tighten until shear screws (7) contact J-slot body (1). Back shear screws (7) out 1/4 turn.
  - J-1.6) Install element (5) onto J-slot body (1).
  - J-1.7) Screw rubber retainer (6) onto J-slot body (1).
- J-2) Unclamp J-slot body (1) and remove assembled tool from vise.



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## K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 43670	P/N 43670-2	P/N 43672
1	1	J-SLOT MANDREL	DLMS80	43670310		
2	1	MANDREL	DLMS80	43670210		
3	1	TORQUE SCREW BODY	DLMS80	43670370	43670370-2	43672370
4	2	TORQUE SCREW	DLMS110	43670325		
5	1	ELEMENT	80 DURO NITRILE	43670512		43672512
6	1	RUBBER RETAINER	-	43670850	43670850-2	43672850
7	6	SHEAR SCREW (3000#) 3/8-16 UNC X 1/2	DLM360BRS	BSSSLT037C050		
8	2	337 O-RING	90 DURO NITRILE	90337		

REDRESS KIT (RDK)		43670050	43672050-2	43672050
ASSEMBLED WEIGHT		56 LBS	55 LBS	52 LBS

### K-1) ELASTOMER TRIM OPTIONS

**NOTE<sub>3</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

#### K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 43670H	P/N 43670H-2	P/N 43672H
5	1	ELEMENT	80 DURO NITRILE	43670512H		43672512H
8	2	337 O-RING	90 DURO NITRILE	90337H		

REDRESS KIT (RDK)		43670050H	43672050H-2	43672050H
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#### K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 43670V	P/N 43670V-2	P/N 43672V
5	1	ELEMENT	80 DURO NITRILE	43670512V		43672512V
8	2	337 O-RING	90 DURO NITRILE	90337V		

REDRESS KIT (RDK)		43670050V	43672050V-2	43672050V
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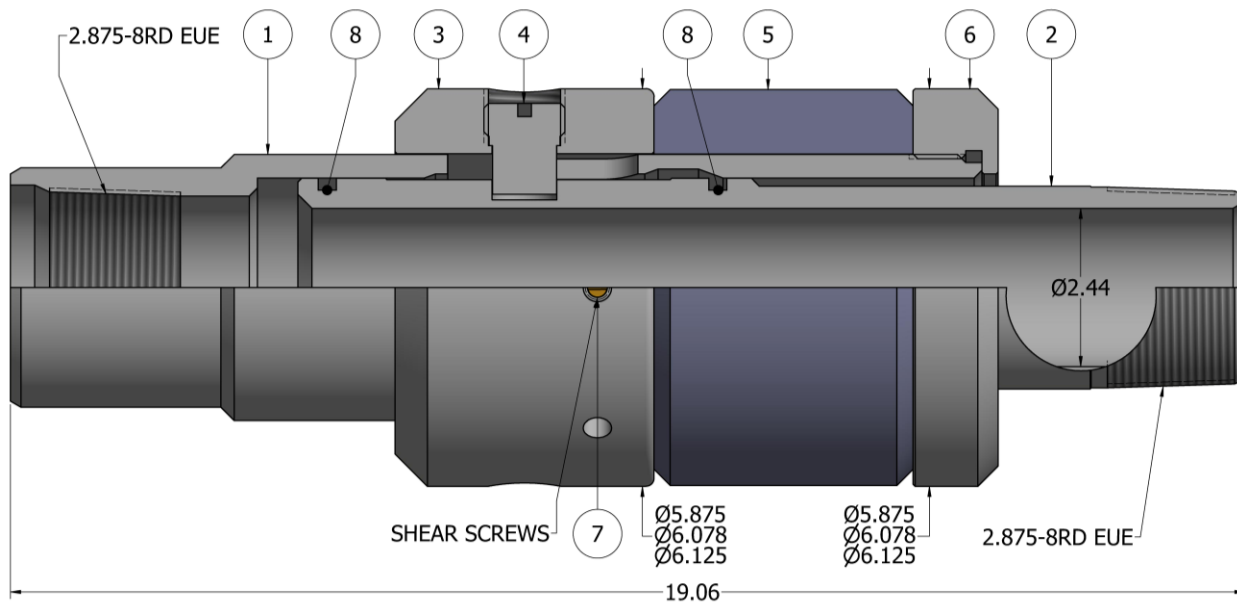
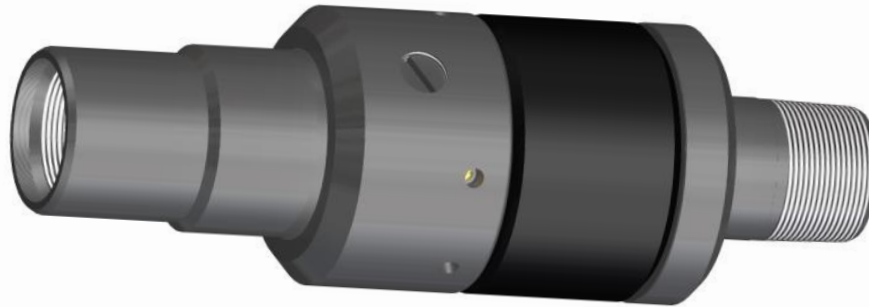
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## L) TECHNICAL ILLUSTRATION



## M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
10/19/2020	C	Added P/N 43670-2	J.Anderson	E.Visaez
05/28/2020	B	Added P/N 43672, Pre-Installation Ins. Procedures, Setting and Releasing, Storage Recommendations, Revised temp. ratings	J.Anderson	K.Plunkett
07/19/13	A	Created new tech manual;	-	-