



# DL SHEAR TENSION PACKER

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

Manual No:  
**DL-412-5500-162**

Revision: **C**

Revision Date:  
**01/17/2023**

Authored by: *B.Mathis*

Approved by: *H.Bringham*

### A) DESCRIPTION

The DL Shear 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 Shear Tension Packer features an adjustable straight pull safety shear release. The shear tension packer is not designed to be run in compression.

The DL Tension Packer is also available which can be run in tension or compression. When the 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)		
5-1/2	13.0 – 20.0	4.778 – 5.044	4.625	1.94	2-3/8 EUE	41255 41255H <sup>1</sup> 41255V <sup>2</sup> 41255C <sup>3</sup> 41255HC <sup>4</sup> 41255VC <sup>5</sup>
	20.0 – 23.0	4.670 – 4.778	4.500	1.94		41257 41257H <sup>1</sup> 41257V <sup>2</sup> 41257C <sup>3</sup> 41257HC <sup>4</sup> 41257VC <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	25,000 LBS

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



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### 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.

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<sub>2</sub>:** 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 proper quantities of shear pins are installed. Each pin shears at 4,000 lbs.

Run to setting depth. Set down on the 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 12,000 lbs. at the packer is required to pack off the elements.

**NOTE<sub>1</sub>:** Take care not to pull more than two-thirds (2/3) of the safety shear setting.

### E) RELEASING PROCEDURES

Set down on the 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.

#### E-1) EMERGENCY RELEASE

In the event the packer will not release, 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 work string to the right until the secondary release threads break loose. Rotate 12 - 15 additional turns to the right at the tool and trip out.



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### 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

### I) DISASSEMBLY

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

I-1.1) Unscrew and remove bottom sub (4) and shear sleeve (8) from mandrel (1).

I-1.2) Disassemble bottom sub (4) and shear sleeve (8):

I-1.2.1) Unscrew and remove pipe plug (13) from shear sleeve (8).

I-1.2.2) Rotate shear sleeve (8) and remove shear pins (5) from hole in shear sleeve (8).

I-1.2.3) Separate bottom sub (4) and shear sleeve (8).

I-1.2.4) Remove o-ring (17) from bottom sub (4).

I-1.3) Remove element (3) and cone (2) from mandrel (1).

I-1.4) Unscrew and remove button head cap screws (14, 16) from J-body (7) and remove drag springs (10).

I-1.5) Unscrew and remove button head cap screws (15) from cage ring (9).

I-1.6) Wedge slips (12) outward (if needed). Remove J-body assembly from mandrel (1) and disassemble:

I-1.6.1) Remove wedges (if needed). Remove slips (12) and slip springs (11) from J-body (7).

I-1.7) Unscrew and remove mandrel (1) from coupling (6) (**NOTE**<sub>2</sub>: Left-hand threads).

**CAUTION**<sub>3</sub>: Do NOT wrench or clamp on seal surface.

I-1.8) Remove cage ring (9) from mandrel (1).

I-2) Unclamp and remove coupling (6) from vise.



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### J) ASSEMBLY

**NOTE<sub>3</sub>:** 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 coupling (6) in vise.

J-1.1) Install cage ring (9) onto mandrel (1).

J-1.2) Screw mandrel (1) into coupling (6) (**NOTE<sub>2</sub>:** Left-hand threads).

**CAUTION<sub>3</sub>:** Do NOT wrench or clamp on seal surfaces.

J-1.3) Assemble J-body assembly:

J-1.3.1) Install slips (12) and slip springs (11) into J-body (7). Wedge slips outward.

**NOTE<sub>4</sub>:** Install two (2ea) springs per slip (Fig. 2).

J-1.4) Install J-body assembly onto mandrel (1). Remove wedges.

J-1.5) Align holes in J-body (7) with threaded holes in cage ring (9). Screw button head cap screws (15) into cage ring (9).

J-1.6) Install drag springs (10) in sets of two (2 ea) in place on J-body (7) – capture end of springs under lip of ring on J-body (7).

J-1.7) Align holes in drag springs with threaded holes in J-body (7). Screw button head cap screws (14, 16) into J-body (7).

J-1.8) Install cone (2) and element (3) onto mandrel (1)

J-1.9) Assemble bottom sub (4) and shear sleeve (8);

J-1.9.1) Install o-ring (17) in o-ring groove in bottom sub (4).

J-1.9.2) One at a time, align recessed hole with plug hole and insert a shear pin (5).

J-1.9.3) Once desired quantity of shear pins (5) are in place, screw pipe plug (13) into shear sleeve (8).

J-1.10) Screw bottom sub (4) and shear sleeve (8) onto mandrel (1).

**CAUTION<sub>4</sub>:** Do NOT rip or tear o-ring during installation.

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

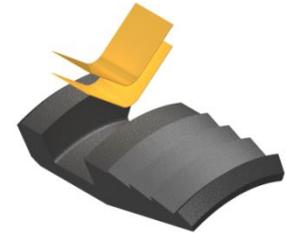


Fig. 2



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### K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 41255	P/N 41257
1	1	MANDREL	DLMS60	41245210	
2	1	CONE	DLMS35	40055410	40057410
3	1	ELEMENT	80 DURO NITRILE	40555512	40557512
4	1	BOTTOM SUB	DLMS60	41045615	
5	10	SHEAR PIN (4000#)	-	41000990	
6	1	COUPLING	DLMS60	CP2375NLH2375E	
7	1	J-BODY	DLMS60/DLMS35	41055310	
8	1	SHEAR SLEEVE	DLMS60	41055850	41057850
9	1	CAGE RING	DLMS60	41045320	
10	8	DRAG SPRING	DLMSSP301	40055920	ZFG920
11	8	SLIP SPRING	-	7155901	
12	4	SLIP	DLMS35	40055110	
13	1	PRESSURE PLUG 1/4 NPT	4140	SPP025	
14	4	BUTTON HEAD CAP SCREW 5/16-18 UNC X 1/2	STEEL	BHSC031C050	
15	6	BUTTON HEAD CAP SCREW 5/16-18 UNC X 3/8	STEEL	BHSC031C037	
16	4	BUTTON HEAD CAP SCREW 5/16-18 UNC X 5/16	STEEL	BHSC031C031	
17	1	228 O-RING	90 DURO NITRILE	90228	

REDRESS KIT (RDK)		41255050	41257050
ASSEMBLED WEIGHT		49 LBS	48 LBS

#### K-1) ELASTOMER TRIM OPTIONS

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

##### K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 41255H	P/N 41257H
3	1	ELEMENT	80 DURO HSN	40555512H	40557512H
17	1	228 O-RING	90 DURO HSN	90228H	

REDRESS KIT (RDK)		41255050H	41257050H
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### K) PARTS LIST (cont'd)

#### K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 41255V	P/N 41257V
3	1	ELEMENT	80 DURO VITON	40555512V	40557512V
17	1	228 O-RING	90 DURO VITON	90228V	

REDRESS KIT (RDK)		41255050V	41257050V
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#### K-2) CARIBDE OPTIONS

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 41255C	P/N 41257C
12	4	CARBIDE SLIP	DLMS110	40055110C	



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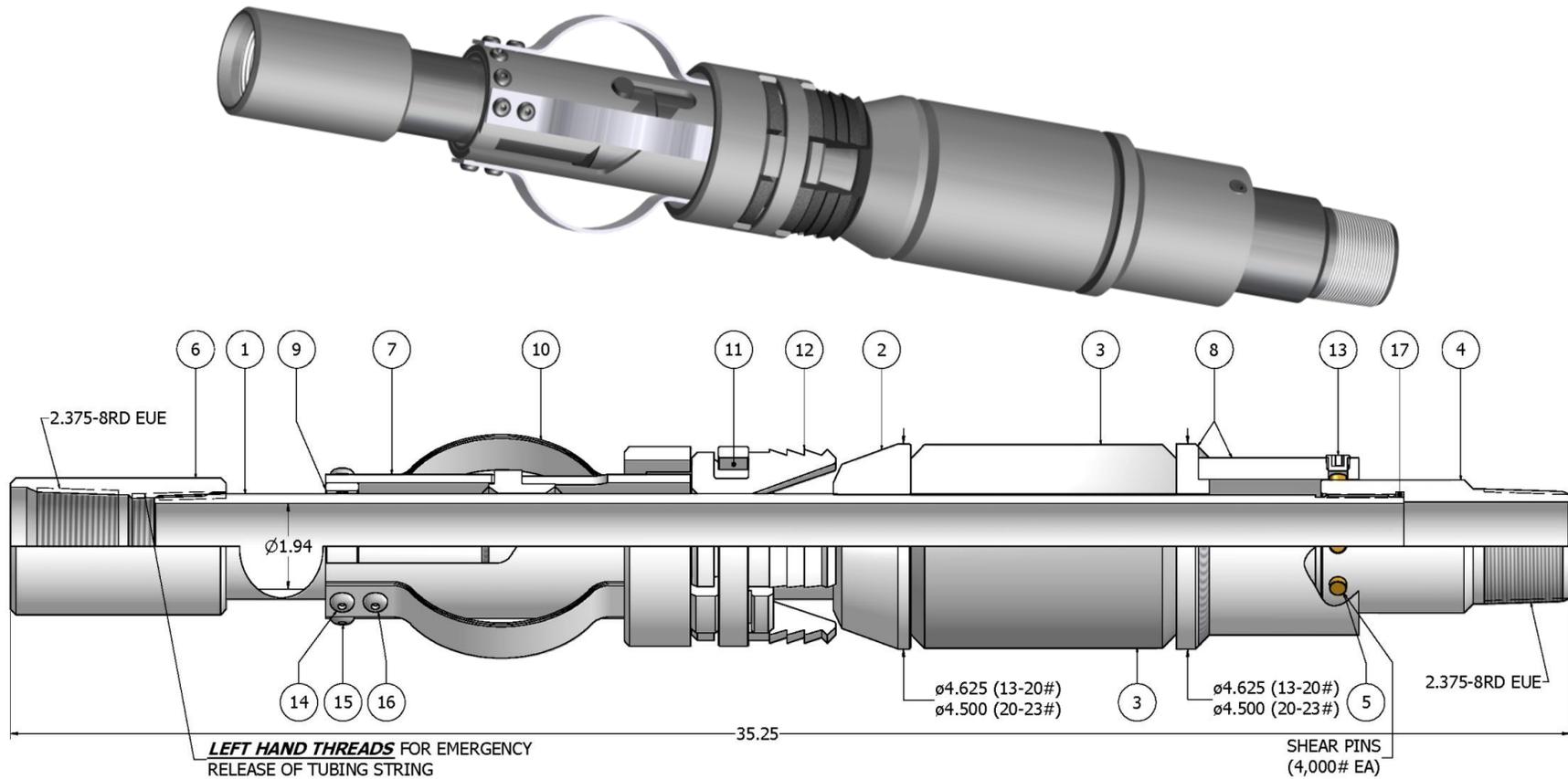
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## L) TECHNICAL ILLUSTRATION



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#### M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
01/17/2023	C	Added carbide options, Revised elastomer trim temp. ratings, P/N 41245210 was 41257210	J.Anderson	D.McKeon
08/27/2015	B	Added tool drift ID, HSN and Viton Options, Pre-Installation Inspection Procedures, Storage Recommendations, Elastomer Trim Temperature Guide, Recommended Hand Tools; Revised P/N CP2375NLH2375E was 40045620, 7155901 was 7155900, qty was 4, P/N 41055310 was 41055310X;	J.Anderson	K.Riggs