



DL SHEAR TENSION PACKER

9-5/8" X 2-7/8"

Manual No:
DL-412-9625-737

Revision: **B**

Revision Date:
04/15/2016

Authored by: J.Anderson

Approved by: K.Plunkett

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 tubing and then pulling tension. To release the packer, slack off the tubing and the packer will automatically re-jay into the release position. This packer has a right-hand rotation release allowing retrieval of the work string.

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

NOTE₁: If running the packer with high pressure from below, risk of unsetting the packer exists. Contact D&L sales for recommendations.

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)		
9-5/8	32.0 – 43.5	8.755 – 9.001	8.500	2.50	2-7/8 EUE	41299-XBAC 41299H-XBAC ¹ 41299V-XBAC ²
	43.5 – 53.5	8.535 – 8.755	8.250	2.50	2-7/8 EUE	41298-XBAC 41298H-XBAC ¹ 41298V-XBAC ²

Elastomer Trim Options: ¹HSN, ²Viton

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
6,000 PSI	40,000 LBS

C) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION₁: 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.dloiltools.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

CAUTION₂: 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 quantity of shear pins is installed. Each pin shears at 4,000 lbs

NOTE₂: Optional shear pins that shear at 6,000 lbs are also available.

Run to setting depth. Set down 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 18,000 lbs at the packer is required to pack off the elements.

NOTE₃: Take care not to pull more than two-thirds (2/3) of the safety shear setting.

E) RELEASING PROCEDURES

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

E-1) EMERGENCY RELEASE

In the event the packer will not release in the normal manner, pull to shear the safety shear release. Once it shears, set down one to two feet (1'-2') and pick up to ensure the packer is released. Trip out with the packer. 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.

F) ELASTOMER TRIM TEMPERATURE GUIDE

RUBBER TYPE	TEMPERATURE RANGE
NITRILE	70° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°F



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G) 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.

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 sub (6) in vise.

I-1.1) From lower end of tool, unscrew and remove pipe plug (19) from shear sleeve (8).

I-1.2) Remove shear pins (18) from bottom sub (4) and shear sleeve (8). Rotate shear sleeve (8) as needed to access shear pins (18).

I-1.3) Unscrew and remove bottom sub (4) from mandrel (1).

I-1.3.1) Remove o-ring (20) from bottom sub (4).

I-1.4) Remove shear sleeve (8) from mandrel (1).

I-1.5) Remove element (3) and cone (2) from rubber mandrel (5).

I-1.6) Remove rubber mandrel (5) from mandrel (1).

I-1.6.1) Remove o-ring (21) from rubber mandrel (19).

I-1.7) Unscrew and remove button head cap screws (13, 14) from J-body (7) and spring ring (15).

I-1.8) Remove drag springs (10).

I-1.9) Unscrew and remove button head cap screws (13) from cage ring (9).

I-1.10) Remove J-body assembly and disassemble:

I-1.10.1) Remove spring ring (15) from J-body (7).

I-1.10.2) Unscrew and remove low head cap screw (17) from J-body (7).

I-1.10.3) Wedge slips (12) outward (if needed). Remove slip sleeve (11) from J-body (7).

I-1.10.4) Remove wedges (if needed). Remove slips (12) and slip springs (16) from J-body (7).

I-1.11) Unscrew and remove mandrel (1) from top sub (6) (**NOTE₄**: Left-hand threads).

CAUTION₃: Do **NOT** wrench or clamp on seal surfaces.

I-1.12) Remove cage ring (9) from mandrel (1).

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



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J) ASSEMBLY

NOTE₅: 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 sub (6) in vise.

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

J-1.2) Screw mandrel (1) into top sub (6) (**NOTE₄:** Left-hand threads).

CAUTION₃: Do NOT wrench or clamp on seal surfaces.

J-1.3) Assemble J-body assembly and install:

J-1.3.1) Install slips (12) and slip springs (16) into J-body (7).

NOTE₆: Install two (2ea) springs per slip (Fig. 2).

J-1.3.2) Wedge slips outward. Install slip sleeve (11) into J-body (7).

J-1.3.3) Align hole in slip sleeve (11) with threaded hole in J-body (7); screw low head cap screws (17) into J-body (7). Remove wedges.

J-1.3.4) Install spring ring (15) onto upper end of J-body (7).

J-1.3.5) Install J-body assembly onto mandrel (1).

J-1.4) Align holes in J-body (7) with threaded holes in cage ring (9). Screw button head cap screws (13) into cage ring (9).

J-1.5) Set drag springs (10) in place on J-body (7).

NOTE₇: Install springs in sets of three (3ea).

J-1.6) Align holes in drag springs with threaded holes in spring ring (15) and J-body (7). Screw button head cap screws (13, 14) into spring ring (15) and J-body (7).

J-1.7) Install o-ring (21) in groove in rubber mandrel (5).

J-1.8) Install rubber mandrel (5) onto mandrel (1).

CAUTION₄: Do not rip or tear o-ring during installation.

J-1.9) Install cone (2) and element (3) onto mandrel (1)

J-1.10) Install shear sleeve (8) onto mandrel (1).

J-1.11) Install o-ring (20) in thread relief in bottom sub (4).

J-1.12) Screw bottom sub (4) onto mandrel (1).

CAUTION₄: Do not rip or tear o-ring during installation.

J-1.13) Align plug hole in shear sleeve (8) with recessed hole in bottom sub (4) and insert a shear pin (18). Repeat for each shear pin (18).

J-1.14) When desired quantity of shear pins (18) are in place, screw pipe plug (19) into shear sleeve (8).

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

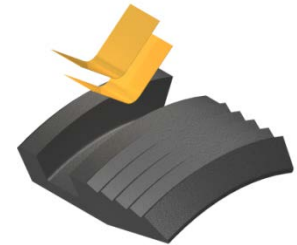


Fig. 2



DL SHEAR TENSION PACKER

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K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	43.5 – 53.5#	32.0 – 43.5#
				P/N 41298-XBAC	P/N 41299-XBAC
1	1	MANDREL	1026	41299210	
2	1	CONE	DLMS80	40094410	40095410
3	1	ELEMENT	70 DURO NITRILE	40594511	40595511
4	1	BOTTOM SUB	DLMS80	41298615-VBAC	
5	1	RUBBER MANDREL	DLMS60	40099220	
6	1	COUPLING	DLMS80	41299610-VBAC	
7	1	J-BODY	DLMS35 / DLMS60	41095310	
8	1	SHEAR SLEEVE	1026	41098850	41099850
9	1	CAGE RING	DLMS60	41099325	
10	18	DRAG SPRING	DLMSSP301	40570920	
11	1	SLIP SLEEVE	DLMS60	40095810	
12	4	SLIP	DLMS80	71095110	
13	-	BUTTON HEAD CAP SCREW 5/16-18 UNC X 5/8	STEEL	BHSC031C062 (17 EA)	(11 EA)
14	-	BUTTON HEAD CAP SCREW 5/16-18 UNC X 3/8	STEEL	BHSC031C037 (12 EA)	(18 EA)
15	1	SPRING RING	DLMS60	40095820	
16	8	SLIP SPRING	-	7170901	
17	2	LOW HEAD CAP SCREW 5/16-18 UNC X 5/8	STEEL	LHSC031C062	
18	15	SHEAR PIN (4000#)	DLM360BRS	41000990	41000990
		OPTIONAL SHEAR PIN (6000#) (Contact D&L Oil Tools for recommendation on maximum shear value allowed for tool.)	STEEL, MILD	41000991	41000991
19	1	PIPE PLUG 1/4	4140	SPP025	
20	1	246 O-RING	90 DURO NITRILE	90246	
21	1	350 O-RING	90 DURO NITRILE	90350	

REDRESS KIT (RDK)		41298050	41299050
ASSEMBLED WEIGHT		203 LBS	206 LBS



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K) PARTS LIST (cont'd)

K-1) ELASTOMER TRIM OPTIONS

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

K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	43.5 – 53.5#	32.0 – 43.5#
				P/N 41298H-XBAC	P/N 41299H-XBAC
3	1	ELEMENT	70 DURO HSN	40594511H	40595511H
20	1	246 O-RING	90 DURO HSN	90246H	
21	1	350 O-RING	90 DURO HSN	90350H	

REDRESS KIT (RDK)		41298050H	41299050H
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K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	43.5 – 53.5#	32.0 – 43.5#
				P/N 41298V-XBAC	P/N 41299V-XBAC
3	1	ELEMENT	70 DURO VITON	40594511V	40595511V
20	1	246 O-RING	90 DURO VITON	90246V	
21	1	350 O-RING	90 DURO VITON	90350V	

REDRESS KIT (RDK)		41298050V	41299050V
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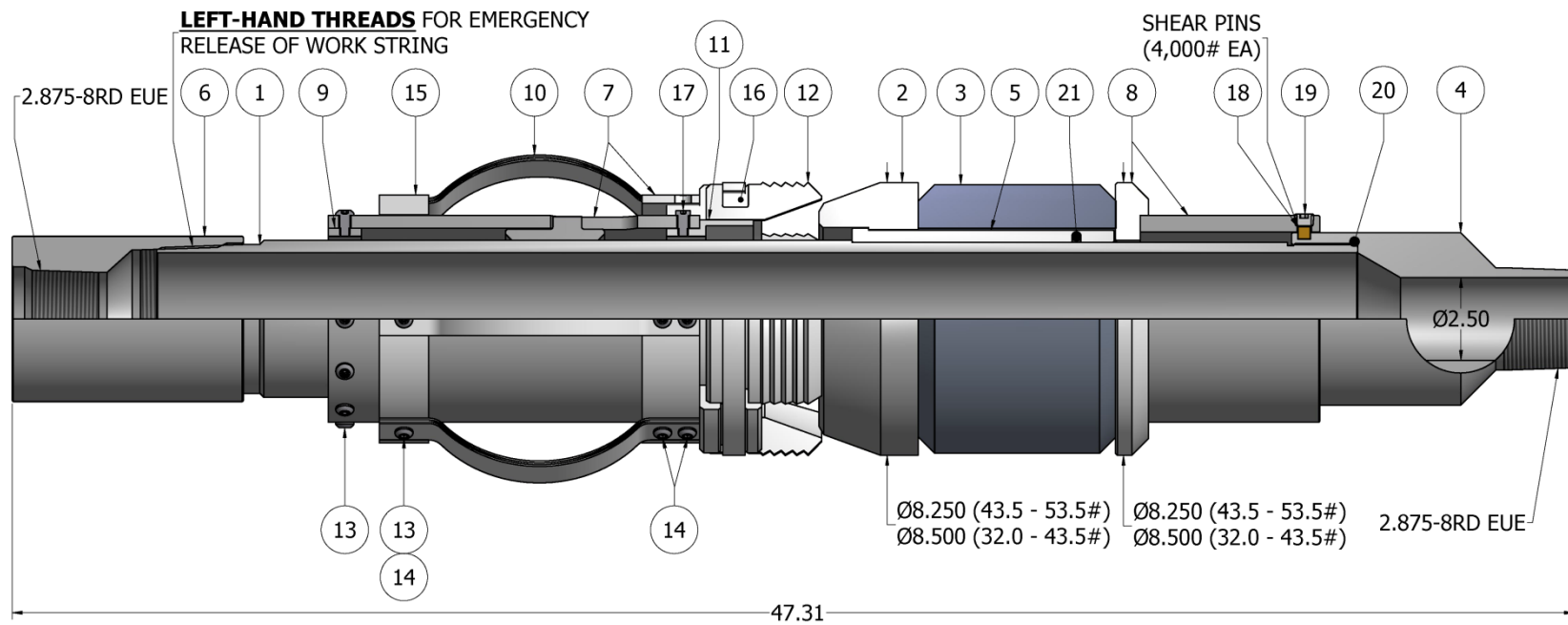
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L) TECHNICAL ILLUSTRATION





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M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
09/04/14	A	Created new manual	-	-
04/15/2016	B	Revised Elastomer Trim Temperature Guide Nitrile and HSN ratings, Technical Illustration Added General Screw Torque Recommendations; Removed tool drift ID	J.Anderson	K.Riggs