



SC TENSION UNLOADER

4-1/2"

Manual No:
DL-525-4500-749

Revision: **A**

Revision Date:
09/25/2014

Written by: *J.Anderson*

Approved by: *R.Dyer*

A) DESCRIPTION

The SC Tension Unloader provides a means of equalizing tubing and annulus pressures when used with a tension packer. It also serves as a by-pass to allow fluid to pass through the mandrel of the packer while running the tubing string in and out of the well.

The SC Tension Unloader features simple setting and releasing and the ability to unload pressure above or below. The collet feature allows the unloader to remain closed while setting weight or picking up on the packer without packing off or swabbing the elements. The SC Tension Unloader transmits torque for setting and releasing packer below string.

B) SPECIFICATION GUIDE

TUBING SIZE (INCHES)	TOOL			THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
	OD (INCHES)	NOMINAL ID (INCHES)	DRIFT ID (INCHES)		
4-1/2	6.25	4.00	3.833	4-1/2 EUE	52545

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
10,000 PSI	270,000 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.

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, o-rings, etc. Contact D&L sales for redress kit and/or other replacement part information.

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



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D) OPERATION

CAUTION₂: Do not run the tool without properly tightening connections. Running the tool with loose connections may damage the tool and cause malfunction.

The SC Tension Unloader can be run in open or closed position. Make up unloader with tubing and packer. Run string down hole to the desired depth. Pick up a minimum of 6,000 lbs to close the unloader. Set down weight (approximately 10,000 lbs) to open the unloader. Allow time for pressure to equalize to ensure before moving string. If the packer should hang up, excessive tension to free the packer will close the unloader. Refer to the applicable packer technical manual for packer specific setting and releasing procedures.

E) STORAGE PROCEDURES

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.

Store the tool, if possible, in an enclosed, temperature and humidity controlled environment. Avoid excessively high temperatures over long periods of time. Keep tool dry and protected from condensation. Do not store in contact with or near volatile or corrosive chemicals,

F) RUBBER SELECTION GUIDE

RUBBER TYPE	TEMPERATURE RANGE
NITRILE	70° - 300°F
HSN (HNBR)	70° - 325°F
VITON	100° - 350°F

G) 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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H) DISASSEMBLY

H-1) Clamp body (8) in vise.

H-1.1) Unscrew collet (3) from center coupling (4) and remove from top sub (1).

H-1.2) Unscrew and remove top sub (1) from mandrel (2).

H-1.3) Unscrew and remove center coupling (4) from body (8).

H-1.3.1) Unscrew and remove coupling extension (5) from center coupling (4).

H-1.4) Remove mandrel (2) from body (8).

H-1.4.1) Remove guide ring (7) and bonded seal (6) from mandrel (2).

H-1.4.1.1) Remove o-ring (10) from bonded seal (6).

H-1.5) Unscrew and remove bottom sub (9) from body (8).

H-1.5.1) Remove o-ring (11) from bottom sub (9).

H-2) Unclamp and remove body (8) from vise.

I) 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.

I-1) Clamp body (8) in vise.

I-1.1) Install o-ring (11) in groove in bottom sub (9).

I-1.2) Screw bottom sub (9) into body (8).

CAUTION₃: Do NOT rip or tear o-ring during installation.

I-1.3) Install mandrel (2) into body (8) and into bottom sub (9). Install mandrel (2) into bottom sub (9) with by-pass valve in open position (Fig. 2).

I-1.4) Install o-ring (10) in groove in bonded seal (6).

I-1.5) Install bonded seal (6) and guide ring (7) into body (8).

CAUTION₃: Do NOT rip or tear o-ring or seal during installation.

I-1.6) Screw coupling extension (5) into center coupling (4).

I-1.7) Screw center coupling (4) into body (8).

I-1.8) Screw top sub (1) onto mandrel (2).

I-1.9) Install collet (3) onto top sub (1) and screw onto center coupling (4).

I-2) Unclamp body (8) from vise and remove assembled tool.

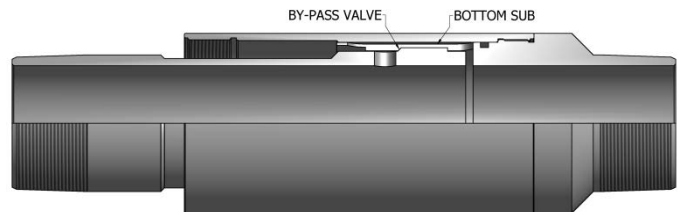


Fig. 2



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J) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52545
1	1	TOP SUB	P-110	52545610
2	1	MANDREL	P-110	52545210
3	1	COLLET	P-110	52545810
4	1	CENTER COUPLING	P-110	52545620
5	1	COUPLING EXTENSION	P-110	52545920
6	1	BONDED SEAL	1018/90 DURO NITRILE	52545520
7	1	GUIDE RING	P-110	52545820
8	1	BODY	P-110	52545311
9	1	BOTTOM SUB	P-110	52545631
10	1	161 O-RING	90 DURO NITRILE	90161
11	1	355 O-RING	90 DURO NITRILE	90355

REDRESS KIT (RDK)	52545050
ASSEMBLED WEIGHT	97 LBS

K) OPTIONS PARTS LIST

K-1) HSN

NOTE₂: For temperature range, refer to Rubber Selection Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52545H
6	1	BONDED SEAL	1018/90 DURO HSN	52545520H
10	1	161 O-RING	90 DURO HSN	90161H
11	1	355 O-RING	90 DURO HSN	90355H

REDRESS KIT (RDK)	52545050H
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K-2) VITON

NOTE₂: For temperature range, refer to Rubber Selection Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52545V
6	1	BONDED SEAL	1018/90 DURO VITON	52545520V
10	1	161 O-RING	90 DURO VITON	90161V
11	1	355 O-RING	90 DURO VITON	90355V

REDRESS KIT (RDK)	52545050V
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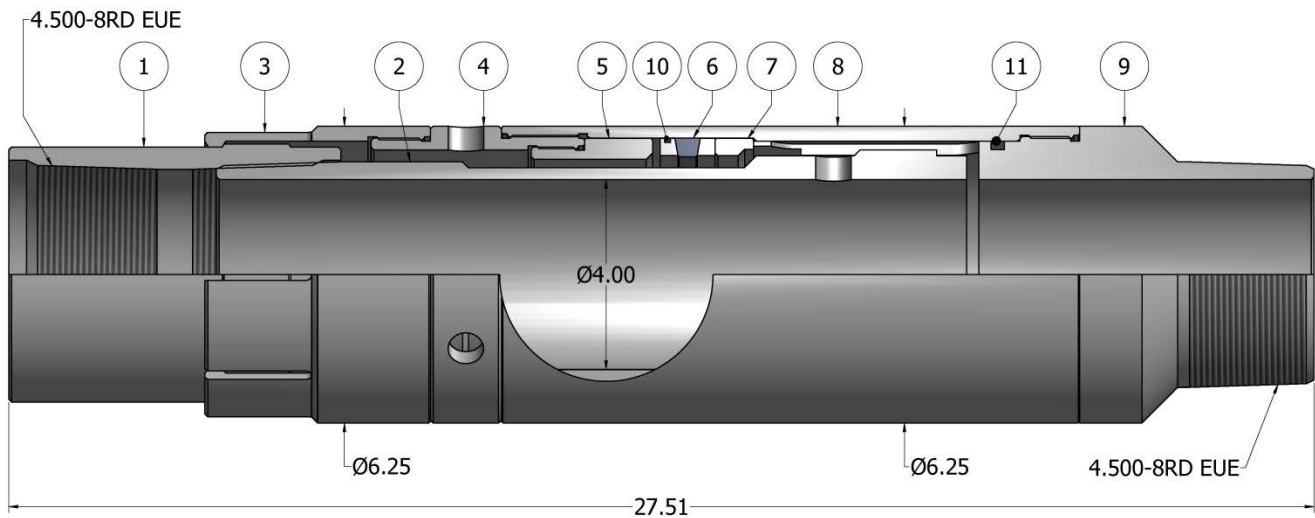
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L) TECHNICAL ILLUSTRATION



M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
09/25/14	A	Created new manual	-	-