



# SC TENSION UNLOADER

## 3-1/2"

Manual No:  
**DL-525-3500-901**

Revision: **A**

Revision Date:  
**07/07/2015**

Authored by: *J.Anderson*

Approved by: *J.McArthur*

### 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)		
3-1/2	5.250	3.00	2.867	3-1/2 EUE	52535 52535H <sup>1</sup> 52535V <sup>2</sup>

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

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
10,000 PSI	200,000 LBS

### C) PRE-INSTALLATION INSPECTION PROCEDURES

**CAUTION:** 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](http://www.dloiltools.com)



# SC TENSION UNLOADER 3-1/2"

Manual No:  
**DL-525-3500-901**

Revision: **A**

Revision Date:  
**07/07/2015**

Authored by: *J.Anderson*

Approved by: *J.McArthur*

## D) OPERATION

**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.

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 7,000 lbs to close the unloader. Set down weight (approximately 7,000 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.

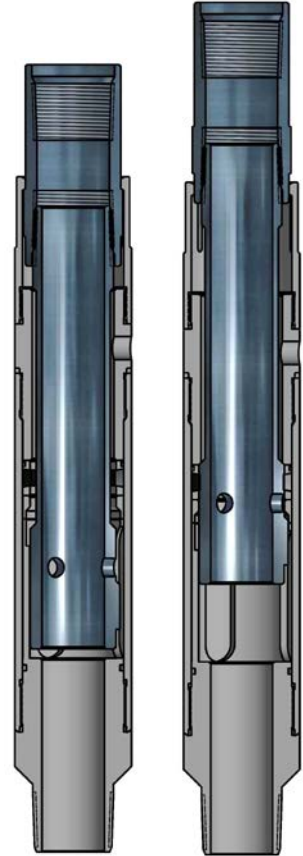
## E) STORAGE RECOMMENDATIONS

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.

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) ELASTOMER TRIM TEMPERATURE GUIDE

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



Open

Closed

## 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



# SC TENSION UNLOADER

## 3-1/2"

Manual No:  
**DL-525-3500-901**

Revision: **A**

Revision Date:  
**07/07/2015**

Authored by: J.Anderson

Approved by: J.McArthur

### H) DISASSEMBLY

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

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

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 (9) from center coupling (4).

H-1.4) Remove bonded seal (6) from body (8).

H-1.4.1) Remove o-ring (10) from bonded seal (6).

H-1.5) Remove guide ring (7) from body (8).

H-1.6) Unscrew and remove bottom sub (5) from body (8).

H-1.6.1) Remove mandrel (2) from bottom sub (9).

H-1.6.2) Remove o-ring (11) from bottom sub (9).

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

### I) ASSEMBLY

**NOTE<sub>1</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.

**CAUTION<sub>3</sub>:** To ensure tool operates properly, install o-rings in o-ring grooves **NOT** thread reliefs (Fig. 2).

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

I-1.1) Install guide ring (7) into body (8).

I-1.2) Install o-ring (10) in o-ring groove in bonded seal (6).

I-1.3) Install bonded seal (6) into body (8).

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

I-1.4) Screw coupling extension (9) into center coupling (4).

I-1.5) Screw center coupling (4) into body (8).

I-1.6) Install o-ring (11) in o-ring groove in bottom sub (9).

I-1.7) Align lugs with slots in bottom sub (9) and install mandrel (2) into bottom sub (9).

I-1.8) Install mandrel (2) and bottom sub (9) into body (8) and through bonded seal (6).

**CAUTION<sub>5</sub>:** Do NOT damage bonded seal during installation.

I-1.9) Screw bottom sub (5) into body (8).

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

I-1.10) Screw top sub (1) onto mandrel (2).

I-1.11) Install collet (3) over top sub (1). Screw collet (3) onto center coupling (4).

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

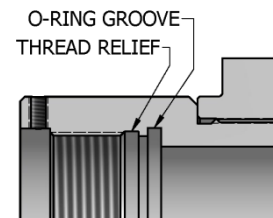


Fig. 2



# SC TENSION UNLOADER

## 3-1/2"

Manual No:  
**DL-525-3500-901**

Revision: **A**

Revision Date:  
**07/07/2015**

Authored by: *J.Anderson*

Approved by: *J.McArthur*

### J) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52535
1	1	TOP SUB	P-110	52535610
2	1	MANDREL	P-110	52535210
3	1	COLLET	P-110	52535810
4	1	CENTER COUPLING	P-110	52535620
5	1	BOTTOM SUB	P-110	52535630
6	1	BONDED SEAL	1026/90 DURO NITRILE	52535520
7	1	GUIDE RING	P-110	52535820
8	1	BODY	P-110	52535310
9	1	COUPLING EXTENSION	P-110	52535920
10	1	157 O-RING	90 DURO NITRILE	90157
11	1	349 O-RING	90 DURO NITRILE	90349

REDRESS KIT (RDK)	52535050
ASSEMBLED WEIGHT	75 LBS

#### J-1) OPTIONS PARTS LIST

**NOTE<sub>2</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

##### J-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52535H
6	1	BONDED SEAL	1026/90 DURO HSN	52535520H
10	1	157 O-RING	90 DURO HSN	90157H
11	1	349 O-RING	90 DURO HSN	90349H

REDRESS KIT (RDK)	52535050H
-------------------	-----------

##### J-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52535V
6	1	BONDED SEAL	1026/90 DURO VITON	52535520V
10	1	157 O-RING	90 DURO VITON	90157V
11	1	349 O-RING	90 DURO VITON	90349V

REDRESS KIT (RDK)	52535050V
-------------------	-----------



# SC TENSION UNLOADER 3-1/2"

Manual No:  
**DL-525-3500-901**

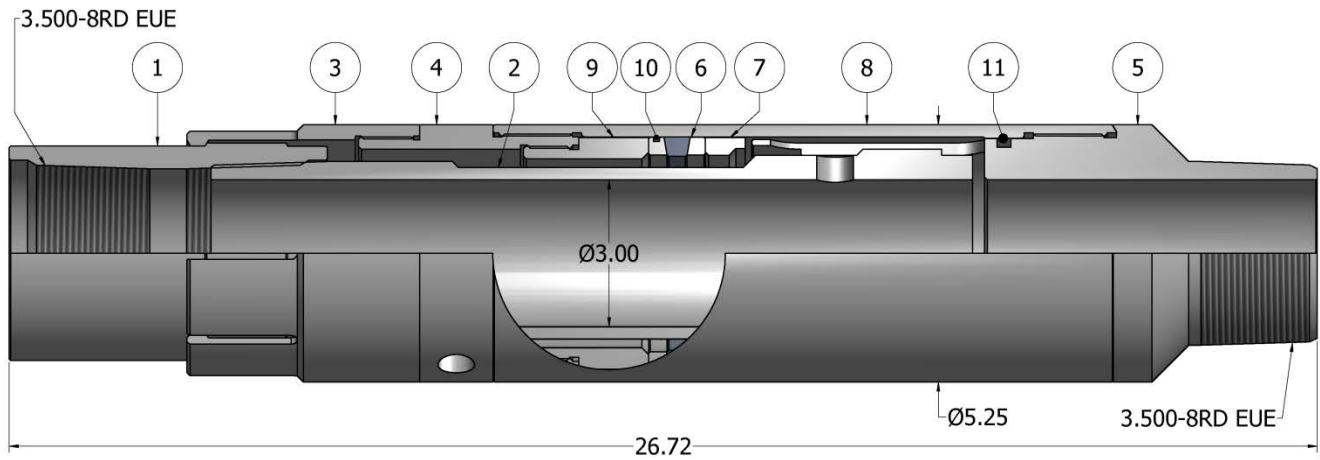
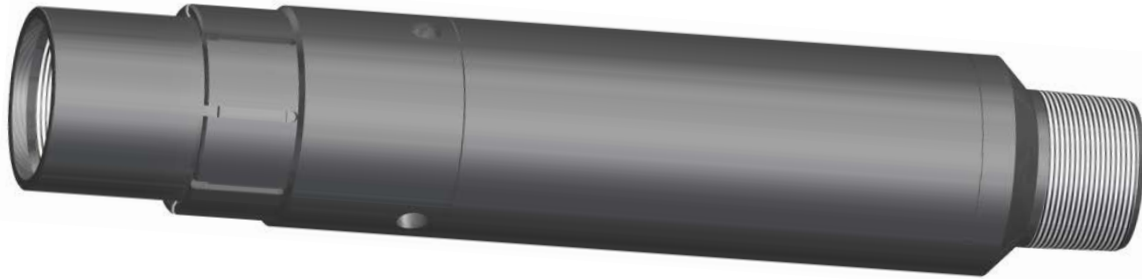
Revision: **A**

Revision Date:  
**07/07/2015**

Authored by: *J.Anderson*

Approved by: *J.McArthur*

## K) TECHNICAL ILLUSTRATION



## L) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
07/07/2015	A	Created new manual;	-	-