



# V-III UNLOADER 4-1/2"

Manual No:  
**DL-527-4500-212**

Revision: **L**

Revision Date:  
**10/10/2023**

Authored by: S. White

Approved by: J. McArthur

## A) DESCRIPTION

The V-III Unloader is designed as a high-pressure accessory for the DLT Retrievable Packer designed to withstand severe operating conditions. This unloader provides a means of equalizing tubing and annulus pressures as well 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. Circulating can be established to spot fluids to the packer or circulating debris from the hole.

## B) SPECIFICATION GUIDE

TUBING OD (INCHES)	TOOL OD (INCHES)	TOOL ID (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
4-1/2	7.250	3.75	4-1/2 IF TOOL JOINT	52745 52745H <sup>1</sup> 52745V <sup>2</sup>

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

**NOTE<sub>1</sub>:** The J-slot in the V-III Unloader is available in various configurations and should be compatible with the packer it is run with.

**CAUTION<sub>1</sub>:** When running the V-III Unloader, always match nominal tubing size of unloader to the size of tubing run above the unloader and packer.

DIFFERENTIAL PRESSURE (MAX)	TORQUE THRU TOOL (MAX)	TENSILE LOAD THRU TOOL (MAX)	J-PIN LOAD (MAX)	FLOW RATE (MAX)
10,000 PSI	15,000 FT-LBS	300,000 LBS	110,000 LBS	40 BBL/MIN

## C) PRE-INSTALLATION INSPECTION PROCEDURES

**CAUTION<sub>2</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 (General thread torque recommendations applicable to parts not covered by SPEC014)			
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 (General thread torque recommendations applicable to parts not covered by SPEC014)									
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.

**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 (cont'd)

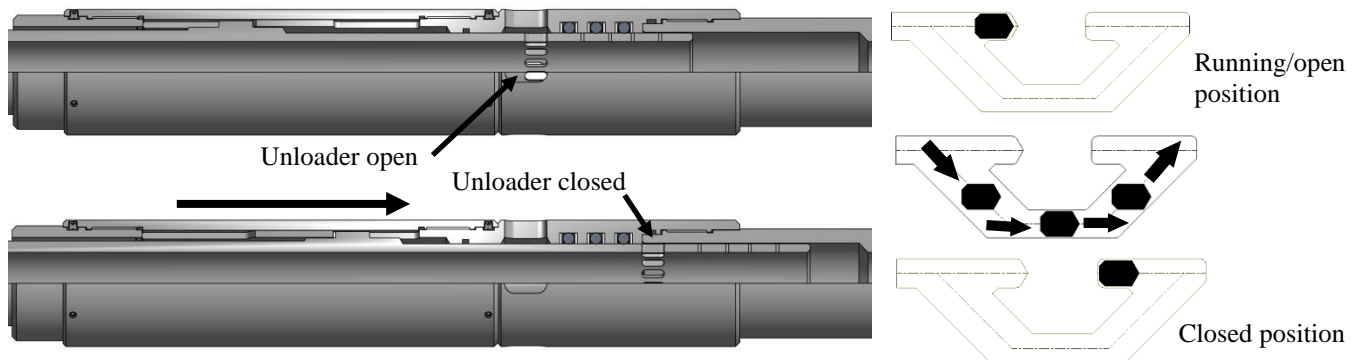
Re-assemble the tool after inspection. Install parts in the correct order and orientation. Properly tighten connections.

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.

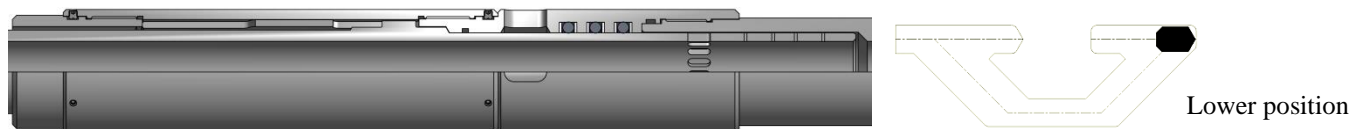
When redressing the tool, D&L recommends replacement of all seals, o-rings, etc. Contact D&L sales for redress kit and/or other replacement part information.

## D) OPERATING PROCEDURES

The V-III Unloader is run above the packer in the open position. After the packer is run to setting depth, the procedures required to set the packer will automatically close the unloader. The J-slot in the standard V-III Unloader locks in both the open and closed positions. With the packer set and the unloader closed, well operation may proceed.



To open the unloader, set down to position the J-pin in the lower position of the J-slot. Rotate the tubing 1/4 turn, then pick-up on the tubing to equalize pressure before releasing the packer. The J-slot is available in various configurations and should be compatible with the packer it is run with.



**NOTE1:** The J-slot in the V-III Unloader is available in various configurations and should be compatible with the packer it is run with.

## 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. 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.



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## F) ELASTOMER TRIM TEMPERATURE GUIDE

RUBBER TYPE	TEMPERATURE RANGE
NITRILE	40° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°F

## G) RECOMMENDED 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

## H) DISASSEMBLY

H-1) Clamp bottom sub (6) in vise.

H-1.1) Unscrew and remove set screws (8) from top sub (1).

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

H-1.2.1) Remove o-ring (11) and back-up rings (12) from top sub (1).

H-1.3) Unscrew and remove set screws (7) from central body (4).

H-1.4) Unscrew and remove J-body cap (3) from central body (4).

H-1.5) Unscrew and remove central body (4) from J-body (5).

H-2) Unclamp and remove bottom sub (6) from vise. Clamp upper end of mandrel (2) in vise.

H-2.1) Unscrew and remove set screws (8) from J-body (5).

H-2.2) Unscrew and remove bottom sub (6) from J-body (5).

H-2.3) Remove J-body (5) from mandrel (2). Rotate and slide J-body (5) as needed.

H-2.3.1) Remove o-rings (9, 11, 13) and back-up rings (10, 14) from J-body (5).

H-3) Unclamp mandrel (2) and remove from vise.



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## I) ASSEMBLY

**NOTE<sub>2</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>4</sub>:** To ensure tool operates properly, install o-rings in o-ring grooves **NOT** thread reliefs (Fig. 2).

**NOTE<sub>4</sub>:** If assembling tool with replacement mated parts (items 1 & 2 and 5 & 6), match counterbore holes (aka drill flat bottom holes) to mating part according to SPEC014.

I-1) Clamp upper end of mandrel (2) in vise.

I-1.1) Install o-rings (9, 11, 13) and back-up rings (10, 14) in grooves in J-body (5) (Detail B).

I-1.2) Install J-body (5) onto mandrel (2). Position J-pin on mandrel (2) in upper landing position of J-slot in J-body (5)(Fig. 3).

**CAUTION<sub>2</sub>:** Do not rip or tear o-rings or back-up rings during installation.

I-1.3) Screw bottom sub (6) into J-body (5). Align threaded holes in J-body (5) with counterbore holes in bottom sub (6).

**CAUTION<sub>2</sub>:** Do not rip or tear o-ring or back-up rings during installation.

I-1.4) Screw set screws (8) into J-body (5).

I-2) Unclamp and remove mandrel (2) from vise. Clamp bottom sub (6) in vise.

I-2.1) Screw central body (4) onto J-body (5).

I-2.2) Screw J-body cap (3) into central body (4)

I-2.3) Screw set screws (7) into central body (4).

I-2.4) Install o-ring (11) and back-up rings (12) in groove in top sub (1) (Detail B).

I-2.5) Screw top sub (1) onto mandrel (2). Align threaded holes in top sub (1) with counterbore holes in mandrel (2).

**CAUTION<sub>2</sub>:** Do not rip or tear o-ring or back-up rings during installation.

I-2.6) Screw set screws (8) into top sub (1).

I-3) Unclamp top sub (1) from vise and remove assembled tool.

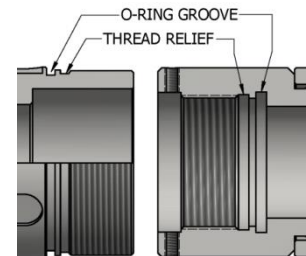


Fig. 2

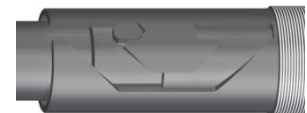


Fig. 3



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## J) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52745
1	1	TOP SUB*	DLMS110	52745610
2	1	MANDREL*	DLMS110	52745216
3	1	J-BODY CAP	DLMS110	52745315
4	1	CENTRAL BODY	DLMS110	52745346
5	1	J-BODY*	DLMS110	52745375
6	1	BOTTOM SUB	DLMS110	52745630
7	6	SET SCREW 3/8-16 UNC X 1/2	STEEL	SSS037C050
8	8	FULL DOG POINT SET SCREW 5/8-11 UNC X 3/4	STEEL	DPS062C075 <sup>§</sup>
9	3	O-RING	85 DURO NITRILE	52945520
10	6	BACK-UP RING	TEFLON	52945045
11	2	349 O-RING	90 DURO NITRILE	90349
12	2	BACK-UP RING - 349 PARBAK 8 SERIES	TEFLON	04500349
13	1	355 O-RING	90 DURO NITRILE	90355
14	2	BACK-UP RING - 355 PARBAK 8 SERIES	TEFLON	04500355

\*Mated part cannot be replaced separately without field adaptation.

<sup>§</sup>Set screw (P/N SSS062C075) used in Rev. H.

REDRESS KIT (RDK)		52745050
ASSEMBLED WEIGHT		354 LBS

### J-1) ELASTOMER TRIM OPTIONS

**NOTE2:** For temperature range, refer to Elastomer Trim Temperature Guide.

#### J-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52745H
9	3	O-RING	80 DURO HSN	52945520H
11	2	349 O-RING	90 DURO HSN	90349H
13	1	355 O-RING	90 DURO HSN	90355H

REDRESS KIT (RDK)		52745050H
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#### J-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 52745V
9	3	O-RING	80 DURO VITON	52945520V
11	2	349 O-RING	90 DURO VITON	90349V
13	1	355 O-RING	90 DURO VITON	90355V

REDRESS KIT (RDK)		52745050V
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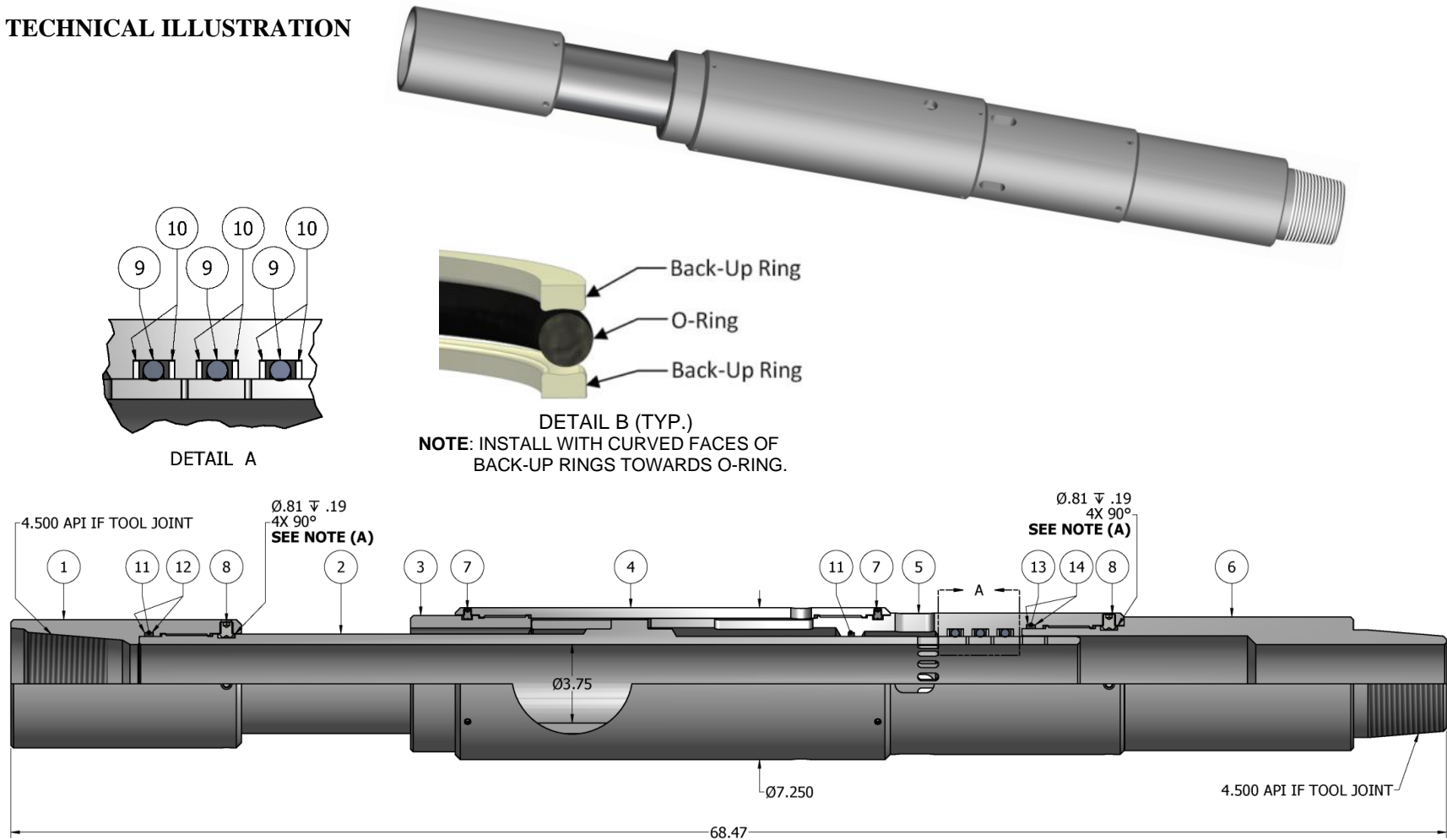
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## K) TECHNICAL ILLUSTRATION



**NOTE4:** If assembling tool with replacement mated parts (items 1 & 2 and 5 & 6), match counterbore holes (aka drill flat bottom holes) to mating part according to SPEC014.

	<h1 style="text-align: center;">V-III UNLOADER</h1> <h2 style="text-align: center;">4-1/2”</h2>	
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## L) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
10/10/2023	L	Revised material for P/Ns 52945520H, 52945520V	J.Anderson	E.Visaez
05/03/2023	K	Corrected Viton P/Ns	J.Anderson	K.Plunkett
08/29/2017	J	Added max. J-pin load; Revised Operating Procedures, Elastomer Trim Temperature guide Nitrile temp. rating was 70-250°	J.Anderson	K.Riggs
12/07/2016	H	Revised P/N DPS062C075 was SSS062C075	J.Anderson	D.Hushbeck
09/23/2016	G	Revised Assembly mated parts	J.Anderson	D.Hushbeck
04/06/2016	F	Added General Screw Torque Recommendations, updated Elastomer Trim Temperature Guide	J.Anderson	D.Hushbeck
11/12/2015	E	Added HSN and Viton options, Pre-Installation Inspection Procedures, Storage Recommendations, Recommended Tools	J.Anderson	K.Riggs
08/15/13	D	Revised max torque and tensile load	J.Anderson	H.Bringham
07/30/13	C	Added max flow rate	J.Anderson	B.Oligschlaeger