



# AS-III PACKER RIGHT-HAND AUTO 5-1/2" X 2-7/8"

Manual No:  
**DL-631-5500-469**

Revision: **C**

Revision Date:  
**10/09/2015**

Authored by: *B.Mathis*

Approved by: *D.Hushbeck*

## A) DESCRIPTION

The AS-III Packer is a single-grip packer with no upper hold-down for use where no differential pressure from below is present. From the packing elements down, this packer operates identically to the AS-II Packer. This packer also features a large by-pass area to prevent swabbing when running or retrieving.

This packer is ideal for isolating casing holes or perforations when used as the lower packer in conjunction with the Snapset Packer as the upper packer.

## 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	14.0 – 20.0	4.778 – 5.012	4.625	2.38	2-7/8 EUE	63156RS 63156RSH <sup>1</sup> 63156RSV <sup>2</sup>
	20.0 – 23.0	4.670 – 4.778	4.500	2.38		63159RS 63159RSH <sup>1</sup> 63159RSV <sup>2</sup>

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

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
7,000 PSI	100,000 LBS

## 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.

Before first use, D&L recommends disassembly and inspection of the tools 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.

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 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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## D) SETTING PROCEDURES

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

Run to setting depth. The unloader remains open while running in. Pick up on the work string, and then lower the string while holding right-hand torque. Set down on the packer (11,000 lbs) to set the slips, close the unloader and compress the packing elements.

## E) RELEASING PROCEDURES

Pick up on the work string to open the unloader, allowing time for the work string and casing pressure to equalize. Continue upward movement of the work string and pull to unset the top slips. Further upward movement relaxes the packing elements, releases the bottom slips, and re-jays the packer. The tool may now be moved and reset, or pulled from the well.

## 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

NITRILE (STD)			
TEMPERATURE RANGE (F°)	DUROMETER		
	END	MIDDLE	END
70° - 125°	80	70	80
125° - 250°	90	70	90
250° - 300°	90	80	90
300° +	Contact D&L Sales		

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

## H) RECOMMENDED TOOLS

### H-1) 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) RECOMMENDED TOOLS (cont'd)

### H-2) SPECIAL TOOLS

ITEM	QTY	DESCRIPTION	PART NUMBER
T1	1	DRAG BLOCK ASSEMBLY TOOL	AT055110

## I) DISASSEMBLY

I-1) Clamp top sub (1) in vise.

I-1.1) Unscrew and remove J-pin bottom sub (10) from inner mandrel (2).

**NOTE<sub>3</sub>**: Drag block body assembly must be free to rotate.

I-1.2) Unscrew and remove set screws (21) from J-body (20).

I-1.3) Compress drag blocks (7) with drag block assembly tool (T1).

I-1.4) Unscrew and remove J-body (20) from drag block body (18) (**NOTE<sub>4</sub>**: Left-hand threads).

I-1.5) Remove drag block retainer (6) from drag block body (18).

I-1.6) Release drag blocks (7). Remove drag blocks (7) and drag block springs (3) from drag block body (18).

I-1.7) Unscrew and remove rubber mandrel cap (19) from rubber mandrel (11).

**NOTE<sub>5</sub>**: For added leverage, insert a rod through rubber retainer (15) and rubber mandrel (11) as needed.

I-1.8) Wedge lower slips (17) outwards (if needed). Remove drag block body assembly and disassemble:

I-1.8.1) Remove wedges (if needed). Remove lower slips (17) and lower slip springs (9) from drag block body (18).

I-1.9) Unscrew and remove lower cone (16) from rubber retainer (15).

I-1.10) Unscrew rubber mandrel (11) from valve body (5).

I-1.11) Remove rubber mandrel assembly and disassemble:

I-1.11.1) Remove elements (13, 14), rubber spacers (12), and rubber retainer (15) from rubber mandrel (11).

I-1.12) Remove valve body (5) from inner mandrel (2).

I-1.12.1) Remove o-ring (22) from valve body (5).

I-1.13) Unscrew and remove seal ring (8) from valve plunger (4).

I-1.14) Unscrew and remove valve plunger (4) from top sub (1).

I-1.14.1) Remove o-ring (23) from valve plunger (4).

I-1.15) Unscrew and remove inner mandrel (2) from top sub (1).

I-2) Unclamp and remove top sub (1) from vise.

## J) ASSEMBLY

**NOTE<sub>6</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).

J-1) Clamp top sub (1) in vise.

**CAUTION<sub>4</sub>**: Do **NOT** wrench or clamp on seal surface.

J-1.1) Screw inner mandrel (2) into top sub (1).

J-1.2) Install o-ring (23) into o-ring groove in valve plunger (4).

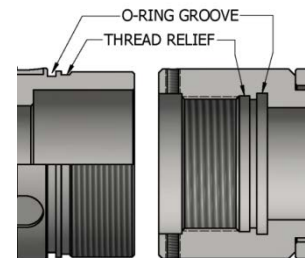


Fig. 2



# AS-III PACKER RIGHT-HAND AUTO 5-1/2" X 2-7/8"

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## J) ASSEMBLY (cont'd)

J-1.3) Screw valve plunger (4) onto top sub (1).

**CAUTION<sub>5</sub>:** Do not rip or tear o-ring during installation.

J-1.4) Screw seal ring (8) onto valve plunger (4).

J-1.5) Install o-ring (22) into o-ring groove in valve body (5).

J-1.6) Install valve body (5) onto inner mandrel (2).

J-1.7) Install rubber retainer (15), elements (13, 14), and rubber spacers (12) onto rubber mandrel (11).

J-1.8) Install rubber mandrel assembly onto inner mandrel (2). Screw rubber mandrel (11) into valve body (5).

**CAUTION<sub>5</sub>:** Do not rip or tear o-ring during installation.

J-1.9) Screw lower cone (16) into rubber retainer (15).

J-1.10) Assemble and install drag block body assembly:

J-1.10.1) Set lower slips (17) and lower slip springs (9) in place in drag block body (18). Wedge slips (17) outward.

**NOTE<sub>7</sub>:** Uses two (2ea) springs per slip (Fig. 3).

J-1.10.2) Install drag block body assembly onto rubber mandrel (11).

J-1.11) Screw rubber mandrel cap (19) onto rubber mandrel (11).

J-1.12) Remove wedges from lower slips (17).

J-1.13) Set drag blocks (7) and drag block springs (3) in place in drag block body (18). Compress drag blocks (7) with drag block assembly tool (T1).

**NOTE<sub>8</sub>:** Uses four (4ea) drag block springs per drag block (Fig. 4).

J-1.14) Install drag block retainer (6) onto drag block body (18) to capture ends of drag blocks (7).

J-1.15) Screw J-body (20) onto drag block body (18) (**NOTE<sub>4</sub>:** Left-hand threads).

J-1.16) Screw set screws (21) into J-body (20). Release drag blocks (7).

J-1.17) Remove drag block assembly tool (T1).

J-1.18) Screw J-pin bottom sub (10) onto inner mandrel (2).

**NOTE<sub>3</sub>:** Drag block body assembly must be free to rotate.

J-2) Unclamp top sub (1) from vise and remove assembled tool.

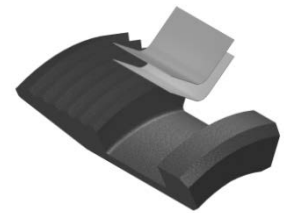


Fig. 3



Fig. 4



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## K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	14.0 - 20.0# P/N 63156RS	20.0 - 23.0# P/N 63159RS
1	1	TOP SUB	1026	64556610	
2	1	INNER MANDREL	L-80	63156210	
3	16	DRAG BLOCK SPRING	INCONEL	9100900	
4	1	VALVE PLUNGER	1026	63156611	
5	1	VALVE BODY	L-80	63156350	63159350
6	1	DRAG BLOCK RETAINER	1026	60056910	60059910
7	4	DRAG BLOCK	8620	9055900	9045900
8	1	SEAL RING	90 DURO NITRILE	61156520	
9	8	SLIP SPRING	ELGILOY	7155901	
10	1	J-PIN BOTTOM SUB	P-110	61056630	
11	1	RUBBER MANDREL	1026	61056220	61059220
12	2	RUBBER SPACER	1026	60256840	60259840
13	1	ELEMENT	70 DURO NITRILE	60256511	60259511
14	2	ELEMENT	90 DURO NITRILE	60256513	60259513
15	1	RUBBER RETAINER	1026	63156850	63159850
16	1	LOWER CONE	1026	60056420	
17	4	LOWER SLIP	1026	60056135	
18	1	DRAG BLOCK BODY	1026	60056335	60059335
19		RUBBER MANDREL CAP	1026	60056230	
20	1	J-BODY	1026	61056340	
21	3	SET SCREW 5/16-18 UNC X 3/8	STEEL	SSS031C037	
22	1	235 O-RING	90 DURO NITRILE	90235	
23	1	237 O-RING	90 DURO NITRILE	90237	

REDRESS KIT (RDK)		63156050	63159050
ASSEMBLED WEIGHT		109 LBS	104 LBS



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## K-1) ELASTOMER TRIM OPTIONS

### K-1.1) HSN

**NOTE<sub>9</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	14.0 - 20.0# P/N 63156RSH	20.0 - 23.0# P/N 63159RSH
8	1	SEAL RING	90 DURO HSN	61156520H	
13	1	ELEMENT	70 DURO HSN	60256511H	60259511H
14	2	ELEMENT	90 DURO HSN	60256513H	60259513H
22	1	235 O-RING	90 DURO HSN	90235H	
23	1	237 O-RING	90 DURO HSN	90237H	

REDRESS KIT (RDK)		63156050H	63159050H
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### K-1.2) VITON

**NOTE<sub>9</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	14.0 - 20.0# P/N 63156RSV	20.0 - 23.0# P/N 63159RSV
8	1	SEAL RING	90 DURO VITON	61156520V	
13	1	ELEMENT	70 DURO VITON	60256511V	60259511V
14	2	ELEMENT	90 DURO VITON	60256513V	60259513V
22	1	235 O-RING	90 DURO VITON	90235V	
23	1	237 O-RING	90 DURO VITON	90237V	

REDRESS KIT (RDK)		63156050V	63159050V
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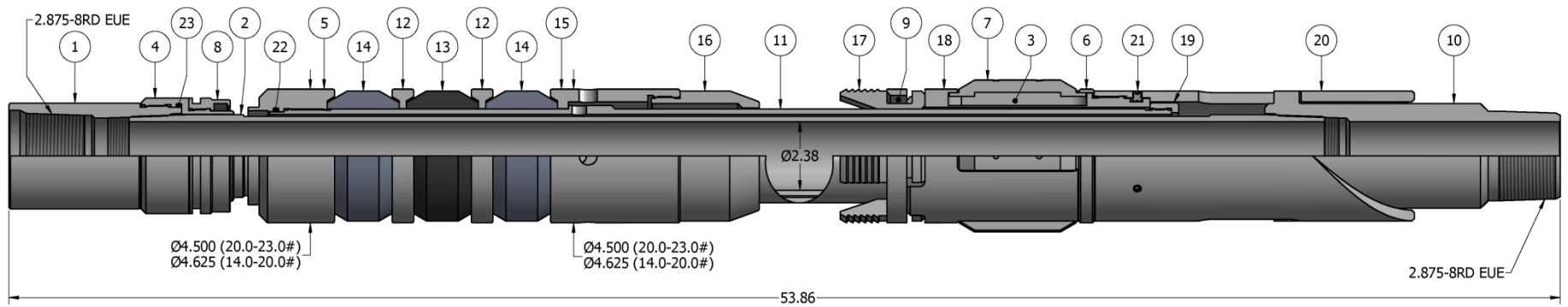
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## L) TECHNICAL ILLUSTRATION





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**M) REVISION HISTORY**

<b>DATE</b>	<b>REVISION</b>	<b>DESCRIPTION OF CHANGES</b>	<b>REVISED BY</b>	<b>APPROVED BY</b>
10/09/2015	C	Revised P/N 9100900 qty 16 was 24; Removed tool drift ID	J.Anderson	B.Bishop
09/30/14	B	Revised thread connection from 2-3/8 EUE to 2-7/8 EUE; Added drift ID to Specification Guide, Pre-installation Inspection Procedure, Storage Procedure, and figures 2, 3 and 4 to assembly instructions.	D.Barlow	-
09/22/11	A	Created new tech manual;	-	-