



AS-III PACKER RIGHT-HAND AUTO 4-1/2" X 2-3/8"

Manual No:
DL-631-4500-357

Revision: **C**

Revision Date:
04/28/2016

Authored by: *B.Mathis*

Approved by: *H.Bringham*

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)		
4-1/2	9.5 - 13.5	3.920 – 4.090	3.750	1.94	2-3/8 EUE	63145RS 63145RSH ¹ 63145RSV ²
	13.5 – 15.1	3.826 – 3.920	3.650	1.94		63144RS 63144RSH ¹ 63144RSV ²

Elastomer Trim Options: ¹HSN, ²Viton

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
7,000 PSI	58,500 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.

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

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)

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.

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 part information.

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 the work string, and then lower the string while holding right-hand torque. Set down on the packer (10,000 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
150° - 250°	90	80	90
250° +	Contact D&L Sales		

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



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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

H-2) SPECIAL TOOLS

ITEM	QTY	DESCRIPTION	PART NUMBER
T1	1	DRAG BLOCK ASSEMBLY TOOL	AT045110

I) DISASSEMBLY

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

I-1.1) Unscrew and remove J-pin bottom sub (6) from inner mandrel (2).

NOTE₁: Drag block body assembly must be free to rotate.

I-1.2) Compress drag blocks (22) with drag block assembly tool (T1).

I-1.3) Unscrew and remove set screws (10) from J-body (20).

I-1.4) Unscrew and remove J-body (20) from drag block body (18) (**NOTE₂:** Left-hand threads).

I-1.5) Release drag blocks (9). Remove drag blocks (9) and drag block springs (3) from drag block body (18).

I-1.6) Unscrew and remove rubber mandrel cap (19) from rubber mandrel (11).

I-1.7) Wedge lower slips (17) outwards (if needed). Remove drag block body assembly and disassemble:

I-1.7.1) Remove wedges (if needed). Remove lower slips (17) and lower slip springs (7) from drag block body (18).

I-1.8) Unscrew lower cone (16) from rubber retainer (15) and remove from rubber mandrel (11).

I-1.9) Unscrew rubber mandrel (11) from valve body (4). Remove rubber mandrel assembly from inner mandrel (2) and disassemble:

I-1.9.1) Remove elements (13, 14), rubber spacers (12), and rubber retainer (15) from rubber mandrel (11).

I-1.10) Remove valve body (4) from inner mandrel (2).

I-1.10.1) Remove o-ring (21) from valve body (4).

I-1.11) For P/N 63145RS:

I-1.11.1) Unscrew seal (8) from valve plunger (5) and remove from inner mandrel (2).

I-1.11.2) Unscrew valve plunger (5) from top sub (1) and remove from inner mandrel (2).

CAUTION₅: Do NOT wrench or clamp on seal surface.

I-1.11.2.1) Remove o-ring (22) from valve plunger (5).

I-1.12) For P/N 63144RS:

I-1.12.1) Unscrew seal (8) from top sub (1) and remove from inner mandrel (2).

I-1.13) Unscrew and remove inner mandrel (2) from top sub (1).

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



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J) ASSEMBLY

NOTE₃: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

CAUTION₃: 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.

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

J-1.2) For P/N 63145RS:

J-1.2.1) Install o-ring (22) in o-ring groove in valve plunger (5).

J-1.2.2) Install valve plunger (5) onto inner mandrel (2) and screw onto top sub (1).

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

CAUTION₅: Do **NOT** wrench or clamp on seal surface.

J-1.2.3) Install seal (8) onto inner mandrel (2) and screw onto valve plunger (5).

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

J-1.3) For P/N 63144RS:

J-1.3.1) Install seal (8) onto inner mandrel (2) and screw onto top sub (1).

CAUTION₄: Do not damage seal during installation.

J-1.4) Install o-ring (21) in o-ring groove in valve body (4).

J-1.5) Install valve body (4) onto inner mandrel (2).

J-1.6) Assemble rubber mandrel assembly and install:

J-1.6.1) Install rubber retainer (15), elements (13, 14), and rubber spacers (12) onto rubber mandrel (11).

J-1.6.2) Install rubber mandrel assembly onto inner mandrel (2) and screw rubber mandrel (11) into valve body (4).

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

J-1.7) Install lower cone (16) onto rubber mandrel (11) and screw into rubber retainer (15).

J-1.8) Assemble drag block body assembly and install:

J-1.8.1) Set lower slips (17) and slip springs (7) in place in drag block body (18). Wedge slips (17) outward.

NOTE₄: Install two (2ea) springs per slip (Fig. 3).

J-1.8.2) Install drag block body assembly onto rubber mandrel (11). Remove wedges.

J-1.9) Screw rubber mandrel cap (19) onto rubber mandrel (11).

J-1.10) Set drag blocks (9) and drag block springs (3) in place in drag block body (18). Compress drag blocks (22) with drag block assembly tool (T1).

NOTE₅: Install three (3ea) springs per drag block (Fig. 4).

J-1.11) Screw J-body (20) onto drag block body (18) capturing ends of drag blocks (22) (**NOTE₂:** Left-hand threads).

J-1.12) Screw set screws (10) into J-body (20). Remove drag block assembly tool (T1).

J-1.13) Screw J-pin bottom sub (6) onto inner mandrel (2).

NOTE₁: Drag block body assembly must be free to rotate.

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

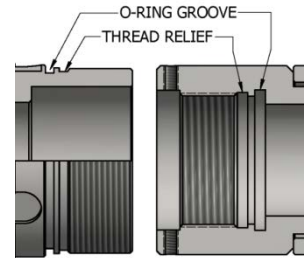


Fig. 2

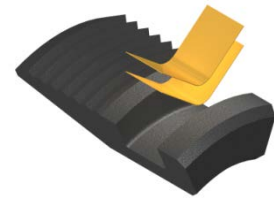


Fig. 3

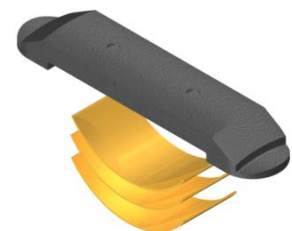


Fig. 4



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K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	9.5 – 13.5# P/N 63145RS	13.5 – 15.1# P/N 63144RS
1	1	TOP SUB	DLMS60	63155610	63145612
2	1	INNER MANDREL	DLMS80	63145210	
3	12	DRAG BLOCK SPRING	INCONEL	9100900	
4	1	VALVE BODY	DLMS60	63145350	63144350
5	1	VALVE PLUNGER	DLMS60	63145611	-
6	1	J-PIN BOTTOM SUB	DLMS110	61045630	
7	8	LOWER SLIP SPRING	ELGILOY	7145901	
8	1	SEAL	90 DURO NITRILE	61145520	
9	4	DRAG BLOCK	DLMSDB8	9045900	9044900
10	4	SET SCREW 1/4-20 UNC X 3/8	STEEL	SSS025C037	
11	1	RUBBER MANDREL	DLMS80	61045220	61044220
12	2	RUBBER SPACER	DLMS60	60245840	60244840
13	1	ELEMENT	70 DURO NITRILE	60245511	60244511
14	2	ELEMENT	90 DURO NITRILE	60245513	60244513
15	1	RUBBER RETAINER	DLMS60	60245850	60244850
16	1	LOWER CONE	DLMS60	60045420	60044420
17	4	LOWER SLIP	DLMS60	60045135	
18	1	DRAG BLOCK BODY	DLMS60	60045335	60044335
19	1	RUBBER MANDREL CAP	DLMS110	61345230	
20	1	J-BODY	DLMS60	61045340	61044340
21	1	231 O-RING	90 DURO NITRILE	90231	
22	1	233 O-RING	90 DURO NITRILE	90233	-

REDRESS KIT (RDK)		63145050	63144050
ASSEMBLED WEIGHT		87 LBS	70 LBS



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K) PARTS LIST (cont'd)

K-1) ELASTOMER TRIM OPTIONS

NOTE₆: For temperature range, refer to Elastomer Trim Temperature Guide.

K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	9.5 – 13.5# P/N 63145RSH	13.5 – 15.1# P/N 63144RSH
8	1	SEAL	90 DURO HSN	61145520H	
13	1	ELEMENT	70 DURO HSN	60245511H	60244511H
14	2	ELEMENT	90 DURO HSN	60245513H	60244513H
21	1	231 O-RING	90 DURO HSN	90231H	
22	1	233 O-RING	90 DURO HSN	90233H	-

REDRESS KIT (RDK)		63145050H	63144050H
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K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	9.5 – 13.5# P/N 63145RSV	13.5 – 15.1# P/N 63144RSV
8	1	SEAL	90 DURO VITON	61145520V	
13	1	ELEMENT	70 DURO VITON	60245511V	60244511V
14	2	ELEMENT	90 DURO VITON	60245513V	60244513V
21	1	231 O-RING	90 DURO VITON	90231V	
22	1	233 O-RING	90 DURO VITON	90233V	-

REDRESS KIT (RDK)		63145050V	63144050V
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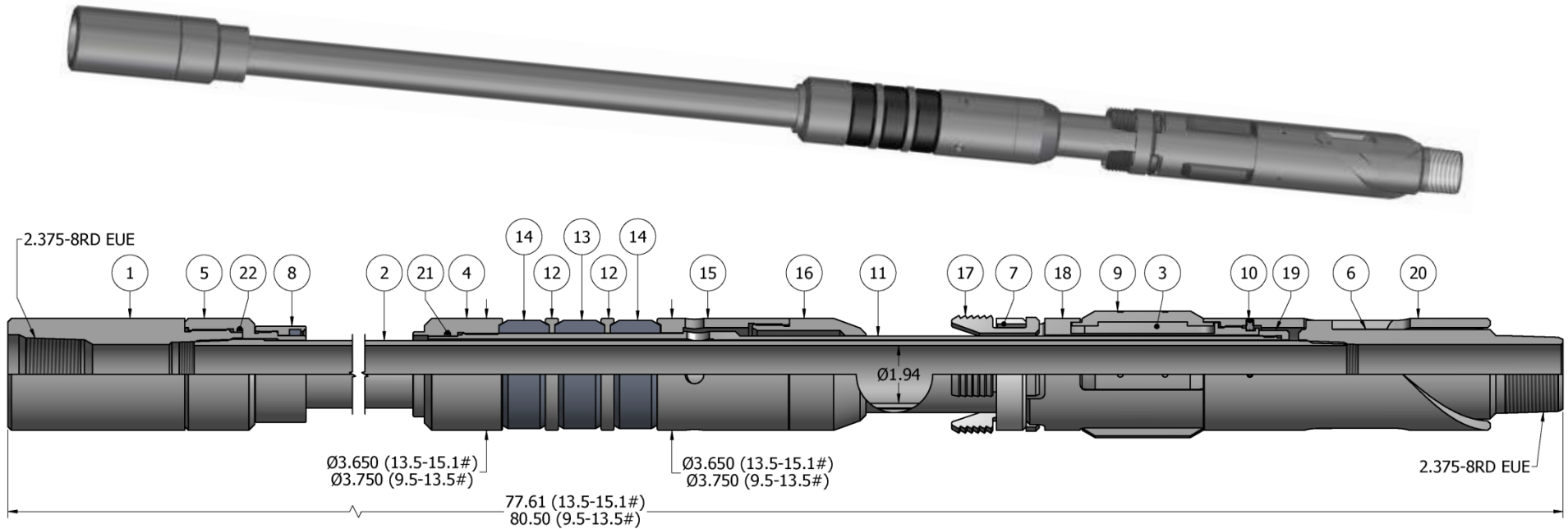
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L) TECHNICAL ILLUSTRATION



M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
04/06/15	B	Added P/N 63144RS, tool tolerances, tool drift ID, Pre-Installation Inspection and Storage Procedures, Recommended Hand Tools, P/N 90353H; Revised P/N 9100900 qty was 16	J.Anderson	K.Riggs
04/28/2016	C	Revised P/N7145901 qty 8 was 4, Elastomer Trim Temperature Guide ratings; Added General Screw Torque Recommendations	J.Anderson	R.Dyer