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	1.94	2-3/8 EUE	63155RS 63155RSH[1] 63155RSV[2]
	20.0 – 23.0	4.670 – 4.778	4.500	1.94	2-3/8 EUE	63157RS 63157RSH[1] 63157RSV[2]

Elastomer Trim Options: [1]HSN, [2]Viton

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
7,000 PSI	95,000 LBS

C) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION[1]: 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

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.

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

D) SETTING PROCEDURES

CAUTION2: 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 (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**
40° - 125°	80	70	80
125° - 250°	90	70	90
250° - 300°	90	80	90
300° +	Contact D&L Sales		

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

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$_1$: 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$_2$**: Left-hand threads).

I-1.5) Unscrew and remove rubber mandrel cap (19) from rubber mandrel (11).

NOTE$_3$: For added leverage, insert a rod thru rubber retainer (15) and rubber mandrel (11) as needed.

I-1.6) Remove drag block retainer (6) from drag block body (18).

I-1.7) Release drag blocks (7). Remove drag blocks (7) and drag block springs (3) from drag block body (18).

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 (23) from valve body (5).

I-1.13) Unscrew and remove seal (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 (22) 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

NOTE4: 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).

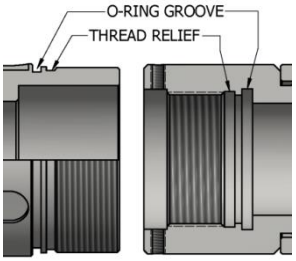


Fig. 2

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

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

J-1.2) Install o-ring (22) in o-ring groove in valve plunger (4).

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

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

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

CAUTION5: Do not damage seal while installing.

J-1.5) Install o-ring (23) in o-ring groove in valve body (5).

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

J-1.7) Assemble and install rubber mandrel assembly:

J-1.7.1) Install rubber retainer (15), elements (13, 14), and rubber spacers (12) onto rubber mandrel (11).

J-1.7.2) Install rubber mandrel assembly onto inner mandrel (2). Screw rubber mandrel (11) into valve body (5).

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

J-1.8) Screw lower cone (16) into rubber retainer (15).

J-1.9) Assemble and install drag block body assembly:

J-1.9.1) Set lower slips (17) and lower slip springs (9) in place in drag block body (18). Wedge slips outward.

NOTE5: Uses two (2ea) springs per slip (Fig. 3).

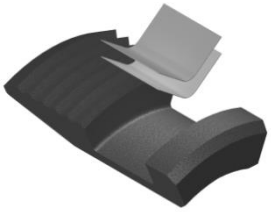


Fig. 3

J-1.9.2) Install drag block body assembly onto rubber mandrel (11). Remove wedges.

J-1.10) Screw rubber mandrel cap (19) onto rubber mandrel (11).

NOTE3: For added leverage, insert a rod thru rubber retainer (15) and rubber mandrel (11) as needed.

J-1.11) 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).

NOTE6: Uses four (4ea) drag block springs per drag block (Fig. 4).

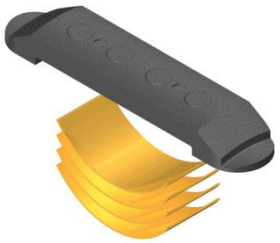


Fig. 4

J-1.12) Install drag block retainer (6) onto drag block body (18) capturing ends of drag blocks (7).

J-1.13) Screw J-body (20) onto drag block body (18) (**NOTE2**: Left-hand threads).

J-1.14) Screw set screws (21) into J-body (20). Release drag blocks (7).

J-1.15) Screw J-pin bottom sub (10) 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.

K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	14.0 – 20.0# P/N 63155RS	20.0 – 23.0# P/N 63157RS
1	1	TOP SUB	DLMS80	63155610	
2	1	INNER MANDREL	DLMS80	63155210	
3	16	DRAG BLOCK SPRING	-	9100900	
4	1	VALVE PLUNGER	DLMS60	63155611	
5	1	VALVE BODY	DLMS35	63155350	63157350
6	1	DRAG BLOCK RETAINER	DLMS60	60055910	60057910
7	4	DRAG BLOCK	DLMSDB8	9055900	9045900
8	1	SEAL	DLMS60 / 90 DURO NITRILE	61155520	
9	8	LOWER SLIP SPRING	-	7155901	
10	1	J-PIN BOTTOM SUB	DLMS110	61055630	
11	1	RUBBER MANDREL	DLMS60	61055220	61057220
12	2	RUBBER SPACER	DLMS60	60255840	60257840
13	1	ELEMENT	70 DURO NITRILE	60255511	60257511
14	2	ELEMENT	90 DURO NITRILE	60255513	60257513
15	1	RUBBER RETAINER	DLMS60	61155850	61157850
16	1	LOWER CONE	DLMS60	60055420	
17	4	LOWER SLIP	DLMS60	60055135	
18	1	DRAG BLOCK BODY	DLMS35	60055335	60057335
19	1	RUBBER MANDREL CAP	DLMS60	60055230	
20	1	J-BODY	DLMS60	61055340	
21	4	SET SCREW 5/16-18 UNC X 1/2	STEEL	SSS031C050	
22	1	233 O-RING	90 DURO NITRILE	90233	
23	1	234 O-RING	90 DURO NITRILE	90234	

REDRESS KIT (RDK)		63155050	63157050
ASSEMBLED WEIGHT		135 LBS	132 LBS

K) PARTS LIST (cont'd)

K-1) ELASTOMER TRIM OPTIONS

NOTE$_7$: For temperature range, refer to Elastomer Trim Temperature Guide.

K-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	14.0 – 20.0# P/N 63155RSH	20.0 – 23.0# P/N 63157RSH
8	1	SEAL	1026/90 DURO HSN	61155520H	
13	1	ELEMENT	70 DURO HSN	60255511H	60257511H
14	2	ELEMENT	90 DURO HSN	60255513H	60257513H
22	1	233 O-RING	90 DURO HSN	90233H	
23	1	234 O-RING	90 DURO HSN	90234H	

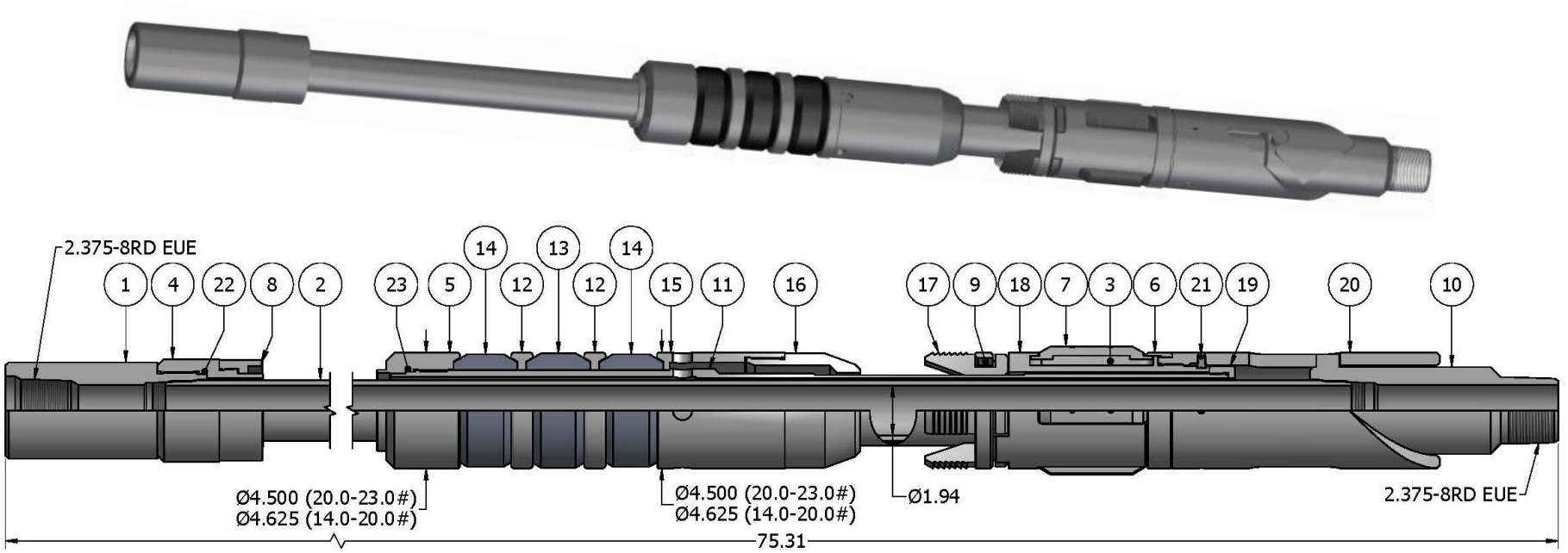
		REDRESS KIT (RDK)		63155050H	63157050H

K-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	14.0 – 20.0# P/N 63155RSV	20.0 – 23.0# P/N 63157RSV
8	1	SEAL	1026/90 DURO VITON	61155520V	
13	1	ELEMENT	70 DURO VITON	60255511V	60257511V
14	2	ELEMENT	90 DURO VITON	60255513V	60257513V
22	1	233 O-RING	90 DURO VITON	90233V	
23	1	234 O-RING	90 DURO VITON	90234V	

		REDRESS KIT (RDK)		63155050V	63157050V

L) TECHNICAL ILLUSTRATION



M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
05/07/2019	C	Removed tool drift ID; Added General Screw Torque Recommendations; Revise Elastomer Trim Temp. Guide	J.Anderson	Z.Speer
07/10/2015	B	Added tool drift ID, HSN and Viton options, max. differential pressure, max. tensile load thru tool, Pre-Installation Inspection Procedures, Storage Recommendation, Recommended Hand Tools, P/N 60057335; Revised P/N 9100900 qty was 20	J.Anderson	J.McArthur