



RETRIEVABLE SEAL BORE PACKER, SMALL BORE 9-5/8" X 4.750"

Manual No:
DL-260-9625-1424

Revision: **B**

Revision Date:
11/30/2023

Authored by: J.Anderson

Approved by: K.Plunkett

A) DESCRIPTION

The Retrievable Seal Bore (RSB) Packer delivers high performance with simplicity of design and desirable economics. This packer is rated for 7,000 PSI and can be equipped to withstand severe corrosion and high temperatures. The RSB Packer is set on wireline (with minor changes) or on tubing with a hydraulic setting tool and is retrieved using a retrieving tool.

NOTE₁: Setting and retrieving tools sold separately.

NOTE₂: This packer requires at least a 30 second burn on the wireline setting tool to ensure a proper set. A burn time less than 30 seconds may shear the setting tool from the packer before fully setting the packer.

B) RELATED TOOLS (sold separately)

B-1) 9-5/8" X 4.750" RSB Setting Adapter Kit (P/N 25994-20)—refer to technical manual *DL-267-9625-731*.

B-2) 9-5/8" X 4.750" Wireline Adapter Kit (WLAK) (P/N 25995)—refer to technical manual *DL-259-9625-756*.

B-3) 9-5/8" X 4.750" Small Bore RSB Retrieving Tool (P/N 26194-2)—refer to technical manual *DL-261-9625-1725*.

C) SPECIFICATION GUIDE

CASING			TOOL OD (INCHES)	SEAL BORE (INCHES)	MIN ID THRU SEALS (INCHES)	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)				
9-5/8	43.5 – 53.5	8.535 – 8.755	8.250	4.750	3.500	26094-2 26094H-2 ¹ 26094V-2 ² 26094C-2 ³ 26094HC-2 ⁴ 26094HV-2 ⁵

Tool Options: ¹HSN, ²Viton, ³Nitrile, Carbide, ⁴HSN, Carbide, ⁵Viton, Carbide

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
7,000 PSI	175,000 LBS

D) PRE-INSTALLATION INSPECTION PROCEDURES

CAUTION₁: 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.

D & L OIL TOOLS
P.O. BOX 52220 TULSA, OK 74152
PHONE: (800) 441-3504 www.dloilttools.com

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D) PRE-INSTALLATION INSPECTION PROCEDURES (cont'd)

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

E) 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 the RSB Packer in on a wireline pressure setting assembly with the RSB Wireline Adapter Kit. The RSB Packer may also be set utilizing a hydraulic setting tool run on tubing.

F) RELEASING PROCEDURES

To release the RSB packer, the RSB Retrieving Tool is run into the well on tubing and latched into the packer. Set down a minimum of 6,000 lbs at the packer to shear out the mandrel from the upper latch. The releasing collet will engage the support ring under the collet in the RSB. Straight pick up shears the support ring away from the collet fingers allowing the collet to collapse. Continued upward movement releases the slips and relaxes the packing element. The packer is now free of the casing and can be removed from the well.

G) 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.

H) ELASTOMER TRIM TEMPERATURE GUIDE

RUBBER TYPE	TEMPERATURE RANGE
NITRILE	40° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°F
AFLAS	100 - 400°F



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I) 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

J) DISASSEMBLY

NOTE3: Ensure vise is capable of handling weight of tool.

NOTE4: Support tool during disassembly and assembly with jack stands as necessary.

J-1) Clamp setting sleeve (9) in vise.

J-1.1) Unscrew and remove set screws (20) from lower end of connector sleeve (14).

J-1.2) Unscrew and remove bottom sub (8) from connector sleeve (14).

J-1.2.1) Remove o-ring (26) from bottom sub (8).

J-1.3) Unscrew and remove set screws (20) from upper end of connector sleeve (14).

J-1.4) Unscrew and remove cap screws (18) from collet (15).

J-1.5) Unscrew and remove connector sleeve (14) from collet (15) and lower cone (13).

J-1.6) Unscrew and remove set screws (20) from collet (15).

J-1.7) Unscrew and remove collet (15) from mandrel (2).

J-1.7.1) Unscrew and remove shear screws (23) from collet (15).

J-1.7.2) Separate collet (15) from support ring (16)

J-1.7.3) Remove o-ring (25) and o-ring (28) and back-up rings (27) from collet (15).

J-1.8) Wedge slips outwards (if needed). Unscrew and remove low head cap screws (19) from lower cone (13).

J-1.9) Remove lower cone (13) from slip body (11).

J-2) Unclamp and remove lock ring housing (3) from vise. Clamp lower end of mandrel (2) in vise.

J-2.1) Moving to upper end of tool, unscrew and remove cap screws (18) from top sub (1).

J-2.2) Unscrew and remove setting sleeve (9) from lock ring housing (3).

J-2.3) Unscrew and remove shear screws (22) from lock ring housing (3).

J-2.4) Unscrew and remove set screws (20) from top sub (1).

J-2.5) Unscrew and remove top sub (1) from mandrel (2)

J-2.6) Unscrew and remove shear screws (21) from lock ring housing (3).

J-2.7) Unscrew lock ring housing (3) from lock ring (5).

J-2.8) Unscrew and/or slide lock ring (5) from mandrel (2).

NOTE5: Using snap ring spreader pliers, lock ring (5) may be spread slightly to be removed from mandrel (2).

J-2.9) Remove lock ring housing (3) from mandrel (2).

J-2.10) Remove element (7) from mandrel (2).

J-2.11) Unscrew gage ring (6) from upper cone (10) and remove from mandrel (2).

J-2.12) Remove slip body assembly and disassemble:

J-2.12.1) Unscrew and remove shear screws (24) from slip body (11).



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J) DISASSEMBLY (cont'd)

J-2.12.2) Remove wedges (if needed). Remove slips (12) and slip springs (4) from slip body (11).

J-2.12.3) Unscrew and remove low head cap screws (19) from upper cone (10).

J-2.12.4) Remove upper cone (10) from slip body (11).

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

J-3.1) Remove pick-up ring (17) from mandrel (2).

K) ASSEMBLY

NOTE6: 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).

NOTE3: Ensure vise is capable of handling weight of tool.

NOTE4: Support tool during disassembly and assembly with jack stands as necessary.

K-1) Install pick-up ring (17) in groove in mandrel (2).

K-2) Clamp lower end of mandrel (2) in vise.

K-2.1) Assemble slip body assembly and install:

K-2.1.1) Install upper cone (10) into lower end of slip body (11).

K-2.1.2) Align threaded holes in upper cone (10) with slots in slip body (11). Screw low head cap screws (19) into upper cone (10).

K-2.1.3) Install slip springs (4) and slips (12) into slip body (11). Wedge slips outwards.

K-2.1.4) Install slip body assembly onto mandrel (2).

K-2.2) Install gage ring (9) onto mandrel (2) and screw onto upper cone (10).

K-2.3) Install lock ring housing (3) onto mandrel (2).

K-2.4) Screw and/or slide lock ring (5) onto top of mandrel (2) threads. Move lock ring housing (3) as necessary to access ratchet threads (**NOTE7:** Left-hand threads).

NOTE5: Using snap ring spreader pliers, lock ring (5) may be spread slightly to pass over ratchet threads.

NOTE8: Threads on lock ring (5) are directional—it **MUST** be installed in correct direction for tool to work properly.

K-2.5) Screw lock ring housing (3) onto lock ring (5). Align threaded hole for shear screw (19) in lock ring housing (3) with gap in lock ring (5).

K-2.6) Screw shear screw (21) into lock ring housing (3). Tighten until shear screw (21) makes contact with mandrel (2). Back shear screws (21) out 1/4 turn.

K-2.7) Screw top sub (1) onto mandrel (2). Align shear screw groove in top sub (1) with threaded holes in lock ring housing (3).

K-2.8) Screw shear screws (22) into lock ring housing (3). Tighten until shear screws (22) make contact with top sub (1). Back shear screws (22) out 1/4 turn.

K-2.9) Screw set screws (20) into top sub (1).

K-2.10) Install setting sleeve (9) onto top sub (1) and screw into lock ring housing (3). Align slots in setting sleeve (9) with threaded holes in top sub (1).

K-2.11) Screw cap screws (18) into top sub (1).

K-3) Unclamp and remove mandrel (2) from vise. Clamp setting sleeve (9) in vise.

K-3.1) Install lower cone (13) into slip body (11).

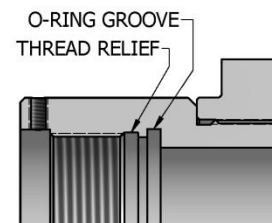


Fig. 2



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K) ASSEMBLY (cont'd)

- K-3.2) Align threaded holes in lower cone (13) with slots in slip body (11).Screw low head cap screws (19) into lower cone (13).
- K-3.3) Align threaded holes in slip body (11) with recessed holes in upper and lower cones (10, 13). Screw shear screws (24) into slip body (11). Tighten until shear screws (24) make contact with cones. Back shear screws (24) out 1/4 turn. Remove wedges.
- K-3.4) Install support ring (16) into collet (15). Align threaded holes in collet (15) with recessed holes in support ring (16).
- K-3.5) Screw shear screws (23) into collet (15). Tighten until shear screws (23) make contact with support ring (16). Back shear screws (23) out 1/4 turn.
- K-3.6) Install o-ring (25) and o-ring (28) and back-up rings (27) in grooves in collet (15) (Det. A).
- K-3.7) Screw collet (15) onto mandrel (2).
CAUTION4: Do not rip or tear o-ring during installation.
- K-3.8) Screw set screws (20) into collet (15).
- K-3.9) Install connector sleeve (14) onto collet (15) and screw onto lower cone (13) and collet (15).
CAUTION4: Do not rip or tear o-ring or back-up rings during installation.
- K-3.10) Align slots in connector sleeve (14) with threaded holes in collet (15). Screw cap screws (18) into collet (15).
- K-3.11) Screw set screws (20) into upper end of connector sleeve (14).
- K-3.12) Install o-ring (26) in groove in bottom sub (8).
- K-3.13) Screw bottom sub (8) into connector sleeve (14).
CAUTION4: Do not rip or tear o-ring during installation.
- K-3.14) Screw set screws (20) into connector sleeve (14).
- K-4) Unclamp lock ring housing (3) from vise and remove assembled tool.



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L) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26094-2
1	1	TOP SUB	DLMS80	26094371
2	1	MANDREL	DLMS80	26094211
3	1	LOCK RING HOUSING	DLMS41X80	26595855
4	4	SLIP SPRING	-	DL94830
5	1	LOCK RING	DLMS80	67295011
6	1	GAGE RING	DLMS80	26595860
7	1	ELEMENT	80 DURO NITRILE	67295512
8	1	BOTTOM SUB	DLMS80	26094621
9	1	SETTING SLEEVE	DLMS110	26094761
10	1	UPPER CONE	DLMS80	26594411
11	1	SLIP BODY	DLMS80	26595321
12	4	SLIP	DLMS35	26595110
13	1	LOWER CONE	DLMS80	26594421
14	1	CONNECTER SLEEVE	DLMS110	26594612SLB
15	1	COLLET	DLMS80	26094661
16	1	SUPPORT RING	DLMS35	26094530
17	1	PICK-UP RING	DLMS80	26594662
18	4	SOCKET CAP SCREW 3/8-16 UNC X 3/8	STEEL	SCS037C037
19	4	LOW HEAD SOCKET CAP SCREW 3/8-16 UNC X 3/8	STEEL	LHSC037C037
20	12	SOCKET SET SCREW 3/8-16 UNC X 3/8	STEEL	SSS037C037
21	1	SLOTTED SHEAR SCREW (750#) #10-32 UNF X 3/8	DLM360BRS	BSSSLT1032F037
22	4	SLOTTED SHEAR SCREW (1200#) 1/4-20 UNC X 1/2	DLM360BRS	BSSSLT025C050
23	12	SLOTTED SHEAR SCREW (1200#) 1/4-20 UNC X 1/4	DLM360BRS	BSSSLT025C025
24	12	SLOTTED SHEAR SCREW (3000#) 3/8-16 UNC X 3/8	DLM360BRS	BSSSLT037C037
25	1	261 O-RING	90 DURO NITRILE	90261
26	1	262 O-RING	90 DURO NITRILE	90262
27	2	PARBACK BACKUP RINGS	TEFLON	4500365
28	1	365 O-RING	90 DURO NITRILE	90365
29	12	DRIV-LOK PIN (4800#) 5/16 X 1"	4140	DLP031100*

*Refer to WLAK technical manual for placement.

REDRESS KIT (RDK)		26094050
ASSEMBLED WEIGHT		482 LBS



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L) PARTS LIST (cont'd)

L-1) ELASTOMER TRIM OPTIONS

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

L-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26094H-2
7	1	ELEMENT	80 DURO HSN	67295512H
25	1	261 O-RING	90 DURO HSN	90261H
26	1	262 O-RING	90 DURO HSN	90262H
28	1	365 O-RING	90 DURO HSN	90365H

REDRESS KIT (RDK)		26094050H
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L-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26094V-2
7	1	ELEMENT	80 DURO VITON	67295512V
25	1	261 O-RING	90 DURO VITON	90261V
26	1	262 O-RING	90 DURO VITON	90262V
28	1	365 O-RING	90 DURO VITON	90365V

REDRESS KIT (RDK)		26094050V
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L-2) CARBIDE OPTION

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26094C-2
12	4	CARBIDE SLIP	DLMS35	26595110C



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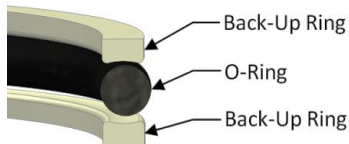
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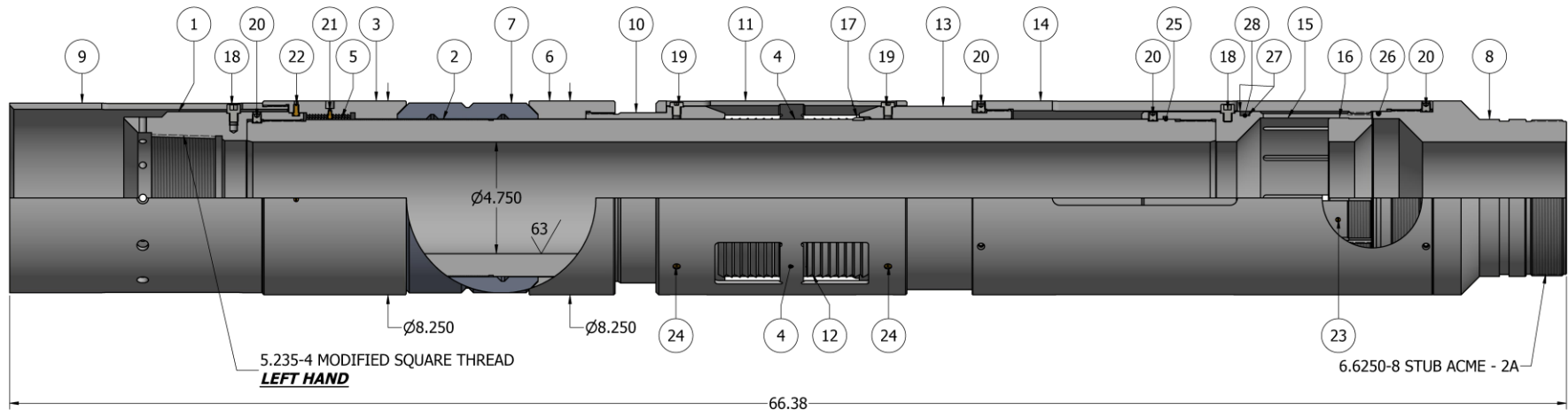
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M) TECHNICAL ILLUSTRATION



DETAIL A (TYP.)

NOTE: CURVED FACES OF BACK-UP
RINGS FACE O-RING



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N) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
11/30/2023	B	Corrected P/N for retrieving tool	J.Anderson	E.Visaez
01/12/2021	A	Created manual	-	-