



RETRIEVABLE SEAL BORE PACKER, DUAL BORE 5-1/2" X 4.000" X 3.000"

Manual No:
DL-268-5500-752

Revision: **C**

Revision Date:
02/16/2017

Authored by: *J.Anderson*

Approved by: *R.Dyer*

A) DESCRIPTION

The Retrievable Seal Bore (RSB) Dual Bore Packer delivers high performance with simplicity of design and desirable economics. This packer allows for a larger ID through the packer by sealing in an upper sealbore. This packer is rated for 7,000 PSI and can be equipped to withstand severe corrosion and high temperatures.

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 off of the packer before fully setting the packer.

B) RELATED TOOLS (sold separately)

B-1) 5-1/2" X 4.000" X 3.000" Wireline Adapter Kit (WLAK) (P/N 26955)—refer to technical manual *DL-269-5500-751*.

B-2) 5-1/2" X 4.000" X 3.000" Large/Dual Bore RSB Retrieving Tool (P/N 26955RT)—refer to technical manual *DL-269-5500-1032*.

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)				
5-1/2	13.0 – 20.0	4.778 – 5.044	4.625	3.000	2.375	26855 26855H ¹ 26855V ²

Elastomer Trim Options: ¹HSN, ²Viton

DIFFERENTIAL PRESSURE (MAX)	TENSILE LOAD THRU TOOL (MAX)
7,000 PSI	91,000 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.dloiltools.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

CAUTION: 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	70° - 250°F
HSN (HNBR)	70° - 300°F
VITON	100° - 350°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

- J-1) Clamp lock ring housing (3) in vise.
- J-1.1) From lower end of tool, unscrew and remove set screws (20) from packer bottom (18).
 - J-1.2) Unscrew and remove packer bottom (18) from connector sleeve (14).
 - J-1.2.1) Remove o-ring (26) from packer bottom (18).
 - J-1.3) Unscrew and remove set screws (20) from upper end of connector sleeve (14).
 - J-1.4) Unscrew and remove cap screws (4) 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 collet (15) from inner mandrel (9).
 - J-1.6.1) Unscrew and remove shear screws (21) from collet (15).
 - J-1.6.2) Separate collet (15) from support ring (16)
 - J-1.6.3) Remove o-rings (23, 24) from collet (15).
 - J-1.7) Unscrew upper cone (10) from lower gage ring (8).
 - J-1.8) Wedge slips outwards (if needed). Remove slip body assembly and disassemble:
 - J-1.8.1) Unscrew and remove shear screws (21) from slip body (11).
 - J-1.8.2) Unscrew and remove low head cap screws (17) from lower cone (13).
 - J-1.8.3) Remove lower cone (13) from slip body (11).
 - J-1.8.4) Remove wedges (if needed). Remove slips (12) and slip springs (19) from slip body (11).
 - J-1.8.5) Unscrew and remove low head cap screws (17) from upper cone (10).
 - J-1.8.6) Remove upper cone (10) from slip body (11).
 - J-1.9) Moving to upper end of tool, unscrew and remove upper seal bore (1) from lock ring housing (3).
- J-2) Unclamp and remove lock ring housing (3) from vise. Clamp lower end of inner mandrel (9) in vise.
- J-2.1) Unscrew and remove shear screws (22) from lock ring housing (3).
 - J-2.2) Unscrew and remove set screws (28) from mandrel top (2). Rotate and slide lock ring housing (3) as necessary to access set screws (28) through threaded holes in lock ring housing (3).
 - J-2.3) Unscrew and remove mandrel top (2) from inner mandrel (9)
 - J-2.3.1) Remove o-rings (25, 27) from mandrel top (2).
 - J-2.4) Unscrew and remove lock ring (5) from lock ring housing (3).
 - J-2.5) Unscrew and remove lock ring housing (3) from upper gage ring (6).
 - J-2.6) Remove upper gage ring (6), element (7), lower gage ring (8) from inner mandrel (9).
- J-3) Unclamp and remove inner mandrel (9) from vise.



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K) 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).

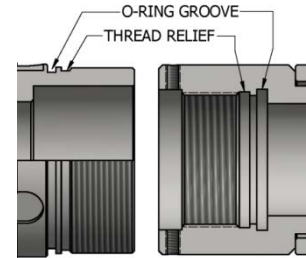


Fig. 2

K-1) Clamp lower end of inner mandrel (9) in vise.

K-1.1) Install lower gage ring (8), element (7), and upper gage ring (6) onto inner mandrel (9).

K-1.2) Loosely install lock ring housing (3) onto inner mandrel (9).

K-1.3) Install o-rings (25, 27) in o-ring grooves in mandrel top (2).

K-1.4) Screw and/or slide lock ring (5) onto mandrel top (2) onto step-up above ratchet threads on mandrel top (2).

NOTE₄: Using snap ring spreader pliers, lock ring (5) may be spread slightly to pass over ratchet threads.

NOTE₅: Threads on lock ring (5) are directional—it **MUST** be installed in correct direction for tool to work properly.

K-1.5) Install mandrel top (2) into lock ring housing (3) and screw onto inner mandrel (2).

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

K-1.6) Carefully screw lock ring housing (3) onto lock ring (5). While making up lock ring housing (3) onto lock ring (5), align threaded holes for shear screws (22) with threaded holes in mandrel top (2).

K-1.7) Screw set screws (28) into mandrel top (2) and continue screwing lock ring housing (3) onto lock ring (5) until fully made up. Align threaded holes in lock ring housing (3) with pocket holes in mandrel top (2).

K-1.8) Screw shear screws (22) into lock ring housing (3). Tighten until shear screws (22) make contact with mandrel top (2). Back shear screws (22) out 1/4 turn.

K-1.9) Screw upper gage ring (6) onto lock ring housing (3).

K-2) Unclamp and remove inner mandrel (9) from vise. Clamp lock ring housing (3) in vise.

K-2.1) Install upper seal bore (1) onto mandrel top (2) and screw into lock ring housing (3).

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

K-2.2) Assemble slip body assembly and install:

K-2.2.1) Install upper cone (10) into lower end of slip body (11).

K-2.2.2) Align threaded holes in upper cone (10) with slots in slip body (11). Screw low head cap screws (17) into upper cone (10).

K-2.2.3) Install slip springs (19) and slips (12) into slip body (11). Wedge slips outwards.

K-2.2.4) Install lower cone (13) into slip body (11).

K-2.2.5) Align threaded holes in lower cone (13) with slots in slip body (11). Screw low head cap screws (17) into lower cone (13).

K-2.2.6) Align threaded holes in slip body (11) with recessed holes in upper and lower cones (10, 13). Screw shear screws (21) into slip body (11). Tighten until shear screws (21) make contact with cones. Back shear screws (21) out 1/4 turn.

K-2.2.7) Install slip body assembly onto inner mandrel (9) and screw upper cone (10) into lower gage ring (8). Remove wedges.

K-2.3) Install support ring (16) into collet (15). Align threaded holes in collet (15) with pocket holes in support ring (16).

K-2.4) Screw shear screws (21) into collet (15). Tighten until shear screws (21) make contact with support ring (16). Back shear screws (21) out 1/4 turn.



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K) ASSEMBLY (cont'd)

K-2.5) Install o-rings (23, 24) in o-ring grooves in collet (15).

K-2.6) Screw collet (15) onto inner mandrel (9).

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

K-2.7) Install connector sleeve (14) onto collet (15) and screw onto lower cone (13) and collet (15).

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

K-2.8) Align slots in connector sleeve (14) with threaded holes in collet (15). Screw cap screws (4) into collet (15).

K-2.9) Screw set screws (20) into upper end of connector sleeve (14).

K-2.10) Install o-ring (26) in o-ring groove in packer bottom (18).

K-2.11) Screw packer bottom (18) into connector sleeve (14).

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

K-2.12) Screw set screws (20) into connector sleeve (14).

K-3) Unclamp lock ring housing (3) from vise and remove assembled tool.

L) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26855
1	1	UPPER SEAL BORE	L-80	26855215
2	1	MANDREL TOP	L-80	26855610
3	1	LOCK RING HOUSING	L-80	26855850
4	2	CAP SCREW 1/4-20 UNC X 1/4	STEEL	SCS025C025
5	1	LOCK RING	L-80	26555720
6	1	UPPER GAGE RING	G-2 CAST IRON	26555931
7	1	ELEMENT	80 DURO NITRILE	26555512
8	1	LOWER GAGE RING	G-2 CAST IRON	26555861
9	1	INNER MANDREL	L-80	26555211
10	1	UPPER CONE	DLMS110	26555410
11	1	SLIP BODY	P-110	26555320
12	4	SLIP	1026	26555110
13	1	LOWER CONE	L-80	26555420
14	1	CONNECTOR SLEEVE	P-110	26555611
15	1	COLLET	P-110	26555661
16	1	SUPPORT SLEEVE	L-80	26555530
17	4	LOW HEAD CAP SCREW 5/16-24 UNF X 5/16	STEEL	LHSC031F031
18	1	PACKER BOTTOM	L-80	26555621
19	4	SLIP SPRING	INCONEL	DL94829
20	4	SET SCREW 1/4-20 UNC X 5/16	STEEL	SSS025C031
21	12	SHEAR SCREW (1200#) 1/4-20 UNC X 1/4	DLM360BRS	BSSSLT025C025



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L) PARTS LIST (cont'd)

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26855
22	4	SHEAR SCREW (3400#) 3/8-16 UNC X 3/8	DLM360BRS	BSSSLT037C037
23	1	239 O-RING	90 DURO NITRILE	90239
24	1	152 O-RING	90 DURO NITRILE	90152
25	1	237 O-RING	90 DURO NITRILE	90237
26	1	341 O-RING	90 DURO NITRILE	90341
27	2	342 O-RING	90 DURO NITRILE	90342
28	2	SET SCREW 1/4-20 UNC X 1/4	STEEL	SSS025C025
29	10	DRIV-LOK PIN (4800#) 5/16 X 1"	4140	DLP031100*

*Refer to WLAK technical manual for placement.

REDRESS KIT (RDK)	26855050
ASSEMBLED WEIGHT	153 LBS

L-1) ELASTOMER TRIM OPTIONS

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

L-1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26855H
7	1	ELEMENT	80 DURO HSN	26555512H
23	1	239 O-RING	90 DURO HSN	90239H
24	1	152 O-RING	90 DURO HSN	90152H
25	1	237 O-RING	90 DURO HSN	90237H
26	1	341 O-RING	90 DURO HSN	90341H
27	2	342 O-RING	90 DURO HSN	90342H

REDRESS KIT (RDK)	26855050H
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L-1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26855V
7	1	ELEMENT	80 DURO VITON	26555512V
23	1	239 O-RING	90 DURO VITON	90239V
24	1	152 O-RING	90 DURO VITON	90152V
25	1	237 O-RING	90 DURO VITON	90237V
26	1	341 O-RING	90 DURO VITON	90341V
27	2	342 O-RING	90 DURO VITON	90342V

REDRESS KIT (RDK)	26855050V
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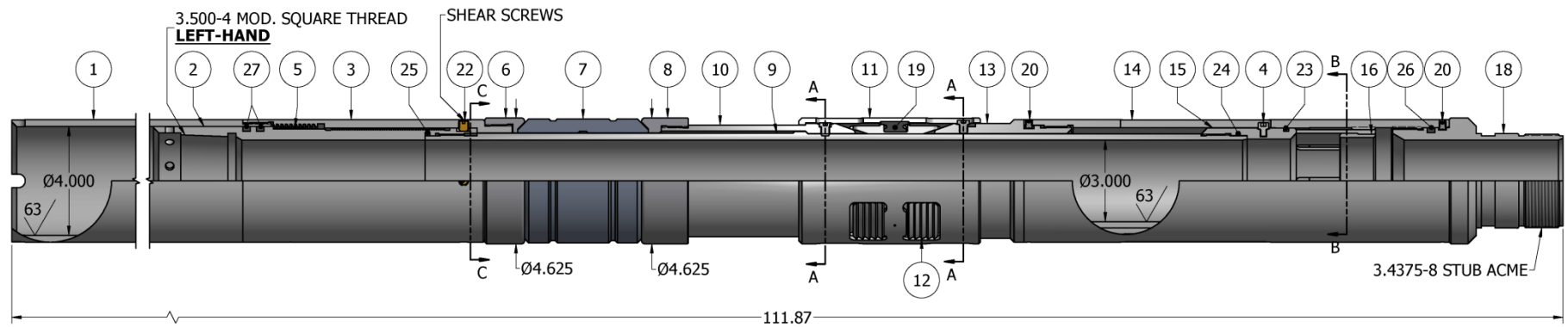
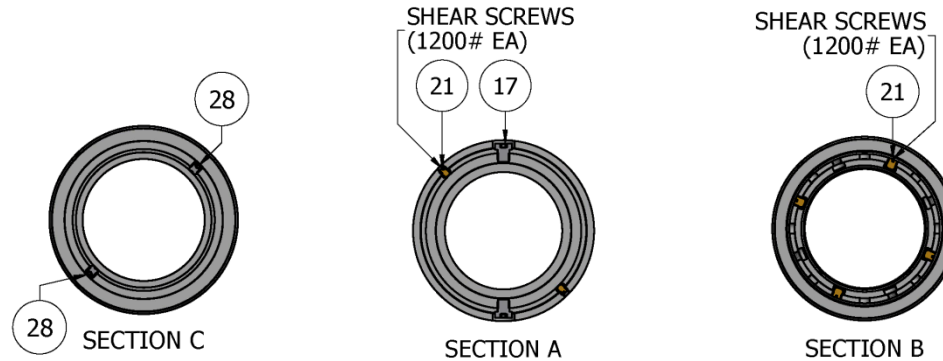
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M) TECHNICAL ILLUSTRATION



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N) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
02/16/2017	C	Revised Related Tools retrieving tool P/N	J.Anderson	K.Riggs
05/10/2016	B	Added General Screw Torque Recommendations, P/N SSS025C025; Revised Elastomer Trim Temperature Guide nitrile and HSN ratings, P/N 90152 was 90153, P/N BSSSLT025C025 qty 12 was 8, P/N BSSSLT037C037 shear value 3,400# was 3,000#	J.Anderson	T.Myerley
09/18/14	A	Created new manual	-	-