



RETRIEVABLE SEAL BORE PACKER, LARGE BORE 7" X 4.000" w/ ECNER AFLAS

Manual No:
DL-265-7000-632

Revision: **D**

Revision Date:
10/10/2023

Authored by: J.Anderson

Approved by: K.Plunkett

A) DESCRIPTION

The D&L Retrievable Seal Bore (RSB) Packer delivers high performance with simplicity of design and desirable economics. This 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. It is ideally suited for use as a gravel pack packer but will also handle deep, high pressure completions.

NOTE₁: Setting and retrieving equipment sold separately.

NOTE₂: When run on wireline, 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) 7" X 4" Wireline Adapter Kit (WLAK) (P/N 26774)—refer to technical manual *DL-267-7000-633*.

B-2) 7" X 4" RSB Retrieving Tool (P/N 26670)—refer to technical manual *DL-266-7000-433*.

C) SPECIFICATION GUIDE

CASING			TOOL OD (INCHES)	BORE (INCHES)	MIN ID THRU SEALS (INCHES)	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)	RECOMMENDED HOLE SIZE (INCHES)				
7	23.0 – 29.0	6.184 – 6.366	5.938	4.000	3.00	26574BA

DIFFERENTIAL PRESSURE (MAX)	TEMPERATURE RATING
7,000 PSI	500° F

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.

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

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 or on tubing with a hydraulic setting tool with the RSB Wireline Adapter Kit. Setting is initiated at approximately 8,000 lbs of force. The slips are set and the elements are compressed at approximately 36,000 lbs. The setting equipment will shear out at approximately 50,000 lbs of force.

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. Elastomers should be in a relaxed state—free from tension, compression or other 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) 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



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I) DISASSEMBLY

I-1) Clamp setting sleeve (5) in vise.

- I-1.1) Unscrew and remove set screws (11) from lower end of lower connector sleeve (14).
- I-1.2) Unscrew and remove bottom sub (18) from lower connector sleeve (14).
 - I-1.2.1) Remove o-ring (26) from bottom sub (18).
- I-1.3) Unscrew and remove set screws (11) from upper end of lower connector sleeve (14).
- I-1.4) Unscrew and remove socket cap screws (10) from releasing collet (3).
- I-1.5) Unscrew and remove lower connector sleeve (14) from lower cone (16).
- I-1.6) Unscrew and remove set screws (11) from releasing collet (3).
- I-1.7) Unscrew releasing collet (3) from mandrel (2). Remove releasing collet assembly and disassemble:
 - I-1.7.1) Unscrew and remove shear screws (21) from fingers on releasing collet (3).
 - I-1.7.2) Separate releasing collet (3) from support ring (12)
 - I-1.7.3) Remove o-rings (25, 26) from releasing collet (3).
- I-1.8) Unscrew and remove shear screws (23) from slip body (6).
- I-1.9) Unscrew and remove low head socket cap screws (24) from lower cone (16).
- I-1.10) Remove lower cone (16) from mandrel (2).

I-2) Unclamp setting sleeve (5) from vise. Clamp lower end of mandrel (2) in vise.

- I-2.1) Unscrew and remove socket cap screws (10) from top sub (1).
- I-2.2) Unscrew and remove setting sleeve (5) from lock ring housing (4).
- I-2.3) Unscrew and remove set screws (11) from top sub (1).
- I-2.4) Unscrew and remove shear screws (22) from lock ring housing (4).
- I-2.5) Unscrew and remove top sub (1) from mandrel (2).
- I-2.6) Unscrew and remove shear screws (15) from lock ring housing (4).
- I-2.7) Unscrew and remove lock ring (19) and lock ring housing (4) from mandrel (2) (**NOTE**₃: Inner threads of lock ring (19) are left-hand threads).
 - I-2.7.1) Unscrew and remove lock ring (19) from lock ring housing (4).
- I-2.8) Remove element (13) from mandrel (2).
- I-2.9) Unscrew and remove gage ring (7) from upper cone (9).
- I-2.10) Wedge slips outwards (if needed). Remove slip body assembly and disassemble:
 - I-2.10.1) Remove wedges (if needed). Remove slips (17) and slip springs (20) from slip body (6).
 - I-2.10.2) Unscrew and remove low head socket cap screws (24) from upper cone (9).
 - I-2.10.3) Separate upper cone (9) from slip body (6).
- I-2.11) Remove pickup ring (8) from mandrel (2).

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



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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.

J-1) Clamp lower end of mandrel (2) in vise.

J-1.1) Install pickup ring (8) in groove in mandrel (2).

J-1.2) Assemble slip body assembly and install:

J-1.2.1) Install upper cone (9) into slip body (6).

J-1.2.2) Align threaded holes in upper cone (9) with slots in upper slip body (6). Screw low head socket cap screws (24) into upper cone (9).

J-1.2.3) Install slips (17) and slip springs (20) into slip body (6) (Fig. 2).

J-1.2.4) Wedge slips outwards. Install slip body assembly onto inner mandrel (2).

J-1.3) Screw gage ring (7) onto upper cone (9).

J-1.4) Install element (13) onto mandrel (2).

J-1.5) Screw lock ring (19) into lock ring housing (4).

J-1.6) Screw lock ring (19) and lock ring housing (4) onto upper gage ring (7) (**NOTE₃:** Inner threads of lock ring are left-hand threads).

J-1.7) Screw top sub (1) onto mandrel (2).

J-1.8) Screw set screws (11) into top sub (1).

J-1.9) Screw setting sleeve (5) into lock ring housing (4).

J-1.10) Align threaded holes in top sub (1) with slots in setting sleeve (5). Screw socket cap screws (10) into top sub (1).

J-1.11) Screw shear screws (15) into lock ring housing (4) to hold lock ring (19) in place.

J-1.12) Screw shear screws (22) into lock ring housing (4). Tighten until shear screws (22) make contact with top sub (1). Back shear screws (22) out 1/4 turn.

J-2) Unclamp inner mandrel (2) from vise. Clamp setting sleeve (5) in vise.

J-2.1) Install lower cone (16) onto mandrel (2).

J-2.2) Align threaded holes in lower cone (16) with slots in slip body (6). Screw low head socket cap screws (24) into lower cone (16).

J-2.3) Align threaded holes in slip body (6) with pocket holes in upper cone (9). Screw shear screws (23) into upper end of slip body (6). Tighten until shear screws (23) contact upper cone (9). Back shear screws (23) out 1/4 turn.

J-2.4) Align threaded holes in slip body (6) with pocket holes in lower cone (16). Screw shear screws (23) into lower end of slip body (6). Tighten until shear screws (23) contact lower cone (16). Back shear screws (23) out 1/4 turn.

J-2.5) Assemble releasing collet assembly and install:

J-2.5.1) Install support ring (12) into releasing collet (3).

J-2.5.2) Align threaded holes in releasing collet (3) with pocket holes in support ring (12). Screw shear screws (21) into fingers on releasing collet (3). Tighten until shear screws (21) contact support ring (12). Back shear screws (21) out 1/4 turn.

J-2.5.3) Install o-rings (25, 26) in o-ring groove in releasing collet (3).

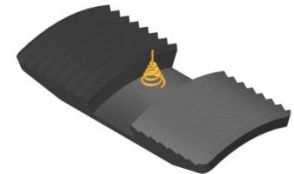


Fig. 2



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J) ASSEMBLY (cont'd)

J-2.5.4) Screw releasing collet (3) and assembly onto mandrel (2).

CAUTION₃: Do not rip or tear o-ring during installation.

J-2.6) Screw set screws (11) into releasing collet (3).

J-2.7) Screw lower connector sleeve (14) onto lower cone (16).

CAUTION₃: Do not rip or tear o-ring during installation.

J-2.8) Screw set screws (11) into lower connector sleeve (14).

J-2.9) Align slots in lower connector sleeve (14) with threaded holes in releasing collet (3). Screw socket cap screws (10) into releasing collet (3).

J-2.10) Install o-ring (26) in o-ring groove in bottom sub (18).

J-2.11) Screw bottom sub (18) into lower connector sleeve (14).

CAUTION₃: Do not rip or tear o-ring during installation.

J-2.12) Screw set screws (11) into lower connector sleeve (14).

J-3) Unclamp setting sleeve (5) and remove assembled tool.



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K) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 26574BA
1	1	TOP SUB	DLMS110	26574371
2	1	MANDREL	DLMS80	26574210
3	1	RELEASING COLLET	DLMS80	26570661
4	1	LOCK RING HOUSING	DLMS41X80	26574855ECNER
5	1	SETTING SLEEVE	DLMS60	26574761
6	1	SLIP BODY	DLMS80	26570320
7	1	LOWER GAGE RING	DLMS35	26574860ECNER
8	1	PICKUP RING	DLMS80	26574662
9	1	UPPER CONE	DLMS80	26570410
10	4	SOCKET CAP SCREW 3/8-16 UNC X 3/8	STEEL	SCS037C037
11	13	SET SCREW 3/8-16 UNC X 3/8	STEEL	SSS037C037
12	1	SUPPORT RING	DLMS60	26570530
13	1	ECNER ELEMENT ARRAY 7" (23-32#)	80 DURO AFLAS	OEM71BA
14	1	LOWER CONNECTOR SLEEVE	DLMS80	26574611
15	1	SHEAR SCREW (750#) #10-32 UNF X 3/8	DLM360BRS	BSSSLT1032F037
16	1	LOWER CONE	DLMS80	26570420
17	4	SLIP	DLMS60	26570110
18	1	BOTTOM SUB	DLMS80	26574621
19	1	LOCK RING	DLMS80	67070011
20	4	SLIP SPRING	-	DL94830
21	8	SHEAR SCREW (1200#) 1/4-20 UNC X 1/4	DLM360BRS	BSSSLT025C025
22	12	SHEAR SCREW (1200#) 1/4-20 UNC X 5/16	DLM360BRS	BSSSLT025C031
23	12	SHEAR SCREW (3000#) 3/8-16 UNC X 3/8	DLM360BRS	BSSSLT037C037
24	4	LOW HEAD SOCKET CAP SCREW 3/8-16 UNC X 3/8	STEEL	LHSC037C037
25	1	247 O-RING	90 DURO AFLAS	90247A
26	2	352 O-RING	90 DURO AFLAS	90352A
27	10	DRIV-LOK PIN (4800#) 5/16 X 1"	4140	DLP031100*

*Not shown in technical illustration. Refer to WLAK tech manual for placement.

REDRESS KIT (RDK)		26574050BA
ASSEMBLED WEIGHT		163 LBS



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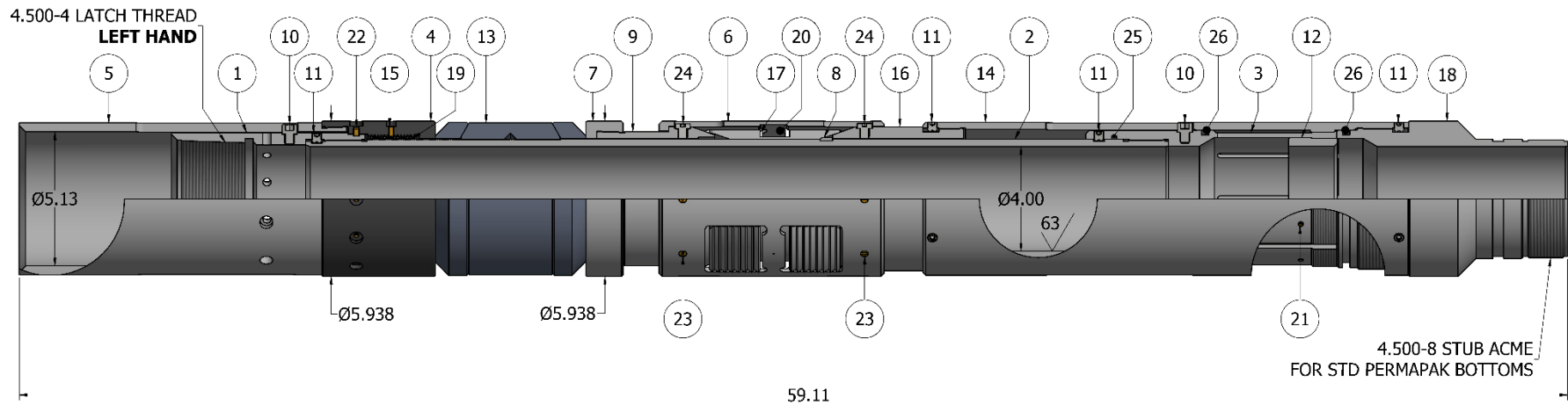
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L) TECHNICAL ILLUSTRATION



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M) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
10/10/2023	D	Corrected recommended hole size; screw torque recommendations	J.Anderson	E.Visaez
05/06/2021	C	Revised DLP031100 was DLP031062, BSSSLT025C031 qty was 10	J.Anderson	E.Visaez
03/24/15	B	Added Related Tools, Pre-Installation Inspection and Storage Procedures; Revised max. differential pressure was 10,000 psi	J.Anderson	J.McArthur
11/05/13	A	Created new manual	-	-