



HYDROSET IV PACKER

4" X 2-3/8"

Manual No:
DL-654-4000-108

Revision: **C**

Revision Date:
10/26/2009

Written by: Bruce Mathis

Approved by: Brian Oligschlaeger

A) DESCRIPTION

The D&L Hydroset IV is a hydraulic set single string retrievable packer. Tubing pump pressure is used to set the packer and the setting force is locked into the packer by a body lock ring. It is ideal to run as a tandem packer with double grip packers that will lock the tubing in place. The Hydroset IV is released with a straight pull that shears pins.

SPECIAL FEATURES:

- Three element packing arrangement
- Locked in setting force
- Field adjustable releasing force

B) SPECIFICATION GUIDE

CASING		RECOMMENDED HOLE SIZE	MAX OD (INCHES)	MIN ID (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
SIZE (INCHES)	WEIGHT (LBS/FT)					
4	9.5-11	3.476 – 3.548	3.250	1.75	2-3/8 EUE	65440
	12.95	3.340	3.187	1.75	2-3/8 EUE	65441

C) SETTING PROCEDURES

C-1) RUNNING SEQUENCE

Running speed is critical, especially in heavy or viscous fluid where excess speed can result in swabbing off the packing element or in creating pressure waves which could lead to creating a preset condition. As a guide it is recommended that running speed should not be more than 30 seconds per joint (range II or 30 feet). **Do not exceed this speed**, particularly when running the packer in the heaviest weight casing for the range for which the packer is dressed.

A run in the well with a junk basket and suitable sized gauge ring or a bit and scraper is strongly recommended prior to running. The location of any tight spots should be noted and the running speed for the packer through these spots should be reduced.

Being a hydraulically set packer, it can be subject to preset conditions by pressure waves through the fluid. A slow steady running speed should be used and sudden stops and starts, such as when setting or pulling slips, should be avoided.

Make up the packer to the tubing string in the desired position and to the required torque-transmission of makeup torque through the packer should be avoided. Run the packer to the desired setting depth at the recommended speed and taking precautions listed above.

Establish a plug in the tubing below the packer using a drop ball, wireline plug or other device. Apply pressure to the tubing to the recommended pressure for the given size of packer and hold for 5 minutes. If the well completion allows, apply annulus pressure to test the packer.

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



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C-2) SETTING SEQUENCE

Internal tubing pressure enters the setting chamber through the setting port and acts upward on the setting sleeve. When the applied load acting on the piston exceeds the value of the setting initiation shear screws, they will shear and allow the setting process to proceed and pack off the elements. All this setting force is mechanically locked in place by the packer lock ring as it slides over the threads on the setting sleeve.

NOTE: No mandrel movement occurs during the setting sequence; however, some residual tension will remain in the tubing due to the tubing elongation caused by piston effects.

D) RELEASING PROCEDURES

To release, pull 19,000 lbs at the packer to shear the shear screws (2,375# per screw) to allow the elements to relax.

E) AREA GUIDE

PACKER SIZE	SETTING AREA (SQ INCHES)	SETTING INITIATION (PSI PER SCREW)
4" X 2-3/8"	2.393	500

F) DISASSEMBLY

F-1) Clamp inner mandrel (1) in vise.

F-1.1) Unscrew and remove shear screws (6) from lock ring housing (8).

F-1.2) Unscrew and remove lock ring housing (8) from lock ring (9).

NOTE: Lock ring is left-hand threads.

F-1.3) Unscrew and remove bottom sub (11) from inner mandrel (1).

F-1.3.1) Remove o-ring (13) from bottom sub (11).

F-1.4) Unscrew and remove setting piston seal (10) from setting piston (7).

F-1.4.1) Remove o-rings (13, 14) from setting piston seal (10).

F-1.5) Unscrew and remove lock ring (9) from setting piston (7).

F-1.6) Unscrew and remove shear screws (12) from setting piston (7).

F-1.7) Remove setting piston (7) from inner mandrel (1).

F-1.8) Remove elements (3, 5) and rubber spacers (4) from inner mandrel (1).

F-1.9) Unscrew and remove gage ring (2) from inner mandrel (1).

F-2) Remove inner mandrel (1) from vise.



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G) ASSEMBLY

NOTE: Install parts in proper order & orientation.

G-1) Clamp inner mandrel (1) in vise.

G-1.1) Screw gage ring (2) onto inner mandrel (1).

G-1.2) Slide elements (3, 5) and rubber spacers (4) onto inner mandrel (1).

G-1.3) Slide setting piston (7) onto rubber retainer (6).

G-1.4) Align threaded holes in setting piston (7) with groove in inner mandrel (1) and screw shear screws (12) into setting piston (7). Tighten and back out 1/4 turn.

G-1.5) Screw lock ring (9) onto setting piston (7).

G-1.6) Install o-rings (13, 14) into grooves on setting piston seal (10).

G-1.7) Screw setting piston seal (10) into setting piston (7).

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

G-1.8) Install o-ring (13) into groove in bottom sub (11).

G-1.9) Screw bottom sub (11) onto inner mandrel (1).

G-1.10) Screw lock ring housing (8) onto lock ring (9) (**NOTE:** Lock ring is left-hand threads).

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

G-1.11) Align threaded holes in lock ring housing (8) with groove in bottom sub (11) and screw shear screws (6) into lock ring housing (8). Tighten and back out 1/4 turn.

G-2) Unclamp inner mandrel (1) and remove assembly from vise.

H) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 65440 (9.5-11#)	P/N 65441 (12.95#)
1	1	INNER MANDREL	L-80	65440210	
2	1	GAGE RING	1018	65440830	65441830
3	2	ELEMENT (OUTER)	90 DURO NITRILE	60240513	
4	2	RUBBER SPACER	1018	60240840	60241840
5	1	ELEMENT (CENTER)	70 DURO NITRILE	60240511	
6	8	SHEAR SCREW (2375#)	BRASS	60100990	
7	1	SETTING PISTON	L-80	65440750	65441750
8	1	LOCK RING HOUSING	L-80	65440725	
9	1	LOCK RING	L-80	65440720	
10	1	SETTING PISTON SEAL	L-80	65440751	
11	1	BOTTOM SUB	L-80	65440630	
12	12	SHEAR SCREW (500 PSI/SCREW)	BRASS	BSSSLT025C050	
13	1	230-90 O-RING		90230	
14	1	227-90 O-RING		90227	



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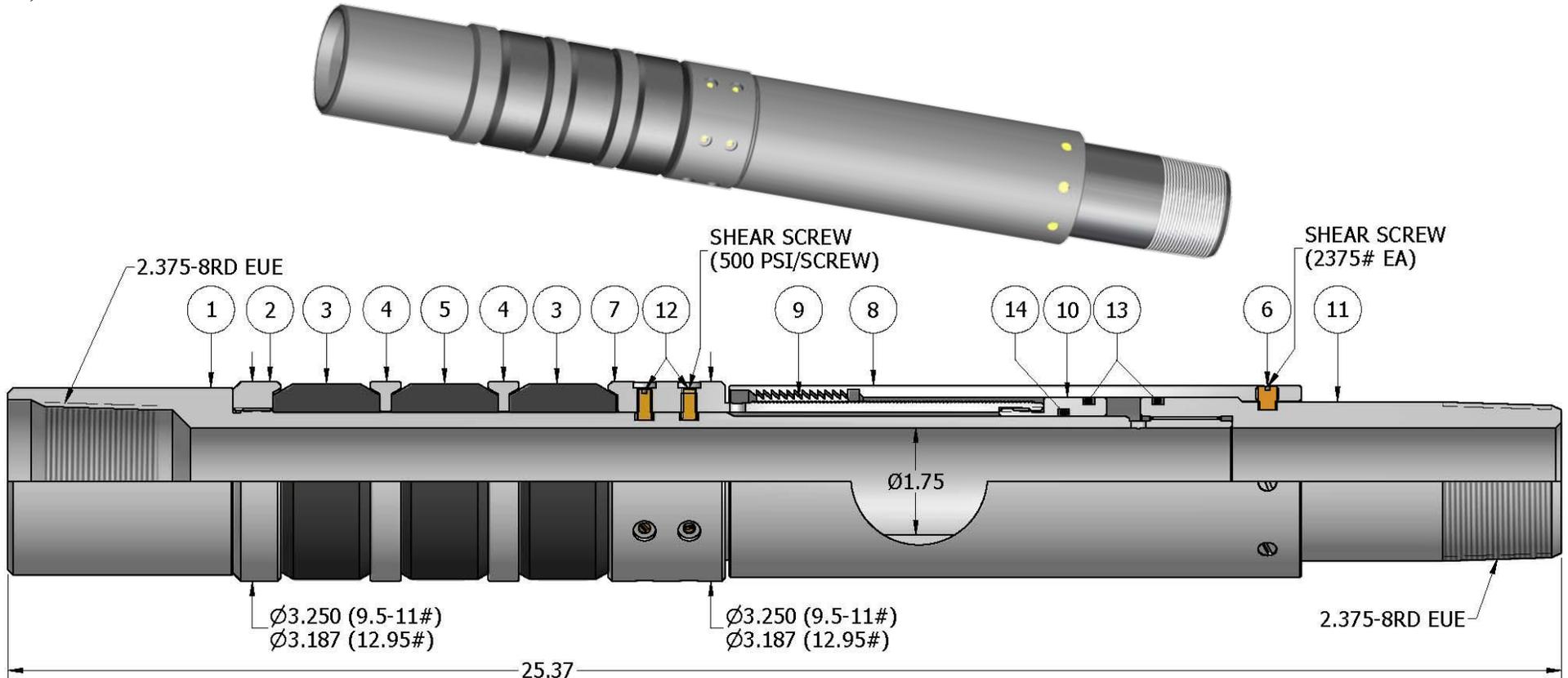
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I) TECHNICAL ILLUSTRATION



P/N	CASING WEIGHT (LBS/FT)	ASSEMBLED WEIGHT
65440	9.5-11#	26 LBS
65441	12.95#	26 LBS

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