



# SEAL BORE ACCESSORIES

## 9.000”

Manual No:  
**DL-581-9000-915**

Revision: **C**

Revision Date:  
**10/02/2020**

Authored by: J.Anderson

Approved by: J.McArthur

### A) DESCRIPTION

The D&L 9.000” Seal Bore Accessories are designed to work with D&L Permapak Packers with 9.000” seal bores.

**NOTE<sub>1</sub>:** Other seal bore accessories are available. Contact D&L Sales for more information.

### B) PRE-INSTALLATION INSPECTION PROCEDURES

**CAUTION<sub>1</sub>:** 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.

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.

### C) 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.

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.

### D) ELASTOMER TRIM TEMPERATURE GUIDE

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

### E) 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

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



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### F) LOCATOR SEAL ASSEMBLY

The Locator Seal Assembly is used in installations which require floating seals. Once landed, the seal locator prevents downward movement of the tubing while allowing the seal to move with tubing contraction.

#### F-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	ASSEMBLY OD (INCHES)	ASSEMBLY BORE (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
9.000	10.812	8.00	9-5/8 LTC / 8.625 STUB ACME	58390 58390H <sup>1</sup> 58390V <sup>2</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton

#### F-2) DISASSEMBLY

F-2.1) Clamp top sub (1) in vise.

F-2.1.1) Remove bonded seals (4) and seal spacer (3) from locator mandrel (2).

F-2.1.1.1) Remove o-rings (5) from bonded seals (4).

F-2.1.2) Unscrew and remove locator mandrel (2) from top sub (1).

F-2.2) Unclamp and remove top sub (1) from vise.

F-2.3) Remove o-ring (6) from top sub (1).

#### F-3) ASSEMBLY

**NOTE:** Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation.

F-3.1) Install o-ring (6) in o-ring groove in top sub (1).

F-3.2) Clamp top sub (1) in vise.

F-3.2.1) Screw locator mandrel (2) into top sub (1).

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

F-3.2.2) Install o-rings (5) in o-ring grooves in bonded seals (4).

F-3.2.3) Install bonded seals (4) and seal spacer (3) onto top sub (1).

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

F-3.3) Unclamp top sub (1) from vise and remove assembled tool.

#### F-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58390
1	1	TOP SUB	L-80	58390610
2	1	LOCATOR MANDREL	DLMS80	58390210
3	1	SEAL SPACER	DLMS60	58090550
4	2	BONDED SEAL	DLMS60 / 90 DURO NITRILE	58090520
5	2	174 O-RING	90 DURO NITRILE	90174
6	1	372 O-RING	90 DURO NITRILE	90372

ASSEMBLED WEIGHT	113 LBS
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### F) LOCATOR SEAL ASSEMBLY (cont'd)

#### F-5) ELASTOMER TRIM OPTIONS

**NOTE<sub>3</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

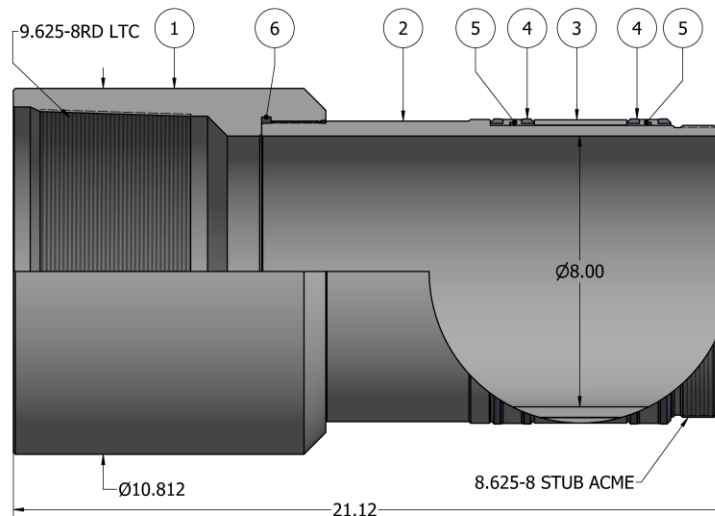
##### F-5.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58390H
4	2	BONDED SEAL	DLMS60 / 90 DURO HSN	58090520H
5	2	174 O-RING	90 DURO HSN	90174H
6	1	372 O-RING	90 DURO HSN	90372H

##### F-5.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58390V
4	2	BONDED SEAL	DLMS60 / 90 DURO VITON	58090520V
5	2	174 O-RING	90 DURO VITON	90174V
6	1	372 O-RING	90 DURO VITON	90372V

#### F-6) TECHNICAL ILLUSTRATION





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### G) ANCHOR LATCH ASSEMBLY

The D&L Anchor Latch is used to hold tubing in tension, or compression. The D&L Anchor Latch will automatically latch into the packer upon set down. To release the Anchor Latch from the packer put 1 to 2 points tension (1,000-2,000 lbs) on the tubing and rotate 8-10 turns to right at packer. The D&L Anchor Latch works with standard packer latch thread.

#### G-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	ASSEMBLY OD (INCHES)	ASSEMBLY BORE (INCHES)	TENSILE LOAD THRU TOOL (MAX)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
9.00	10.06	8.00	280,000 LBS	9-5/8 LTC / 8.625 STUB ACME	58290 58290H <sup>1</sup> 58290V <sup>2</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton

#### G-2) DISASSEMBLY

G-2.1) Clamp top sub (1) in vise.

G-2.1.1) Remove bonded seals (4) and seal spacer (5) from seal mandrel (2).

G-2.1.1.1) Remove o-rings (6) from bonded seals (2).

G-2.1.2) Unscrew and remove seal mandrel (2) from top sub (1).

G-2.1.2.1) Remove collet (3) from seal mandrel (2).

G-2.2) Unclamp and remove top sub (1) from vise.

G-2.3) Remove o-ring (7) from top sub (1).

#### G-3) ASSEMBLY

**NOTE<sub>2</sub>:** Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

G-3.1) Install o-ring (7) in o-ring groove in top sub (1).

G-3.2) Clamp top sub (1) in vise.

G-3.2.1) Install collet (3) onto seal mandrel (2).

G-3.2.2) Screw seal mandrel (2) into top sub (1).

**CAUTION<sub>1</sub>:** Do not rip or tear o-ring during installation

G-3.2.3) Install o-rings (6) in o-ring grooves in bonded seals (4).

G-3.2.4) Install bonded seals (4) and seal spacer (5) onto seal mandrel (2).

**CAUTION<sub>1</sub>:** Do not rip or tear o-rings during installation

G-3.3) Unclamp top sub (1) from vise and remove assembled tool.



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### G) ANCHOR LATCH ASSEMBLY (cont'd)

#### G-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58290
1	1	TOP SUB	L-80	58290610
2	1	SEAL MANDREL	L-80	58290210
3	1	COLLET	P-110	58290003
4	2	BONDED SEAL	1026/90 DURO NITRILE	58090520
5	1	SEAL SPACER	1026	58090550
6	4	174 O-RING	90 DURO NITRILE	90174
7	1	371 O-RING	90 DURO NITRILE	90371

ASSEMBLED WEIGHT	91 LBS
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#### G-4.1) ELASTOMER TRIM OPTIONS

##### G-4.1.1) HSN

**NOTE<sub>3</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58290H
4	2	BONDED SEAL	1026/90 DURO HSN	58090520H
6	4	174 O-RING	90 DURO HSN	90174H
7	1	371 O-RING	90 DURO HSN	90371H

#### D-4.1) ELASTOMER TRIM OPTIONS (cont'd)

##### G-4.1.2) VITON

**NOTE<sub>3</sub>:** For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58290V
4	2	BONDED SEAL	1026/90 DURO VITON	58090520V
6	4	174 O-RING	90 DURO VITON	90174V
7	1	371 O-RING	90 DURO VITON	90371V



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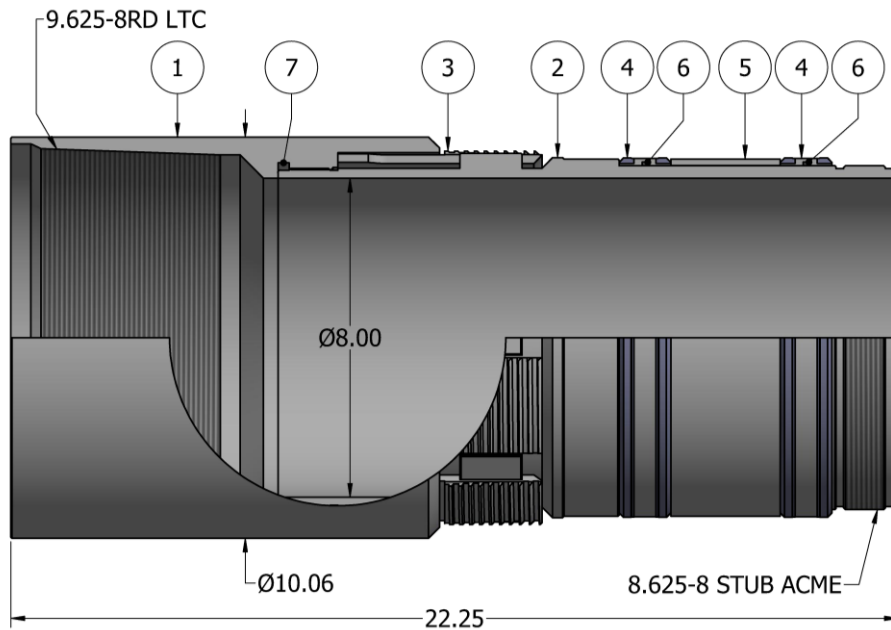
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## G) ANCHOR LATCH ASSEMBLY (cont'd)

### G-5) TECHNICAL ILLUSTRATION





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### H) SNAP LATCH ASSEMBLY

The Snap Latch Seal Assembly latches into the packer upon set down (like our Anchor Latch Seal Assembly). It can be removed with straight pull of 2,000 to 4,000 lbs. above tubing weight. The Snap Latch Seal Assembly is used where a mechanical indication is required to verify the seal assembly is properly positioned in the packer bore.

#### H-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	ASSEMBLY OD (INCHES)	ASSEMBLY BORE (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
9.000	10.060	8.00	9-5/8” LTC / 8.625 STUB ACME	57890-1 57890H-1 <sup>1</sup> 57890V-1 <sup>2</sup>

<sup>1</sup>HSN Option, <sup>2</sup>Viton Option

#### H-2) DISASSEMBLY

H-2.1) Clamp top sub (1) in vise.

H-2.1.1) Remove bonded seals (4) and seal spacer (5) from seal mandrel (2).

H-2.1.1.1) Remove o-rings (7) from bonded seals (2).

H-2.1.2) Unscrew and remove seal mandrel (2) from top sub (1).

H-2.1.3) Unscrew and remove set screws (6) from top sub (1).

H-2.1.4) Unscrew and remove snap latch collet (3) from top sub (1).

H-2.2) Unclamp and remove top sub (1) from vise.

H-2.3) Remove o-ring (8) from top sub (1).

#### H-3) ASSEMBLY

**NOTE<sub>2</sub>:** Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

H-3.1) Install o-ring (8) in o-ring groove in top sub (1).

H-3.2) Clamp top sub (1) in vise.

H-3.2.1) Screw snap latch collet (3) into top sub (1).

H-3.2.2) Screw set screws (6) into top sub (1).

H-3.2.3) Screw seal mandrel (2) into top sub (1).

**CAUTION<sub>1</sub>:** Do not rip or tear o-rings during installation

H-3.2.4) Install o-rings (7) in o-ring grooves in bonded seals (4).

H-3.2.5) Install bonded seals (4) and seal spacer (5) onto seal mandrel (2).

**CAUTION<sub>1</sub>:** Do not rip or tear o-rings during installation

H-3.3) Unclamp top sub (1) from vise and remove assembled tool.



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### H) SNAP LATCH ASSEMBLY (cont'd)

#### H-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 57890-1
1	1	TOP SUB	DLMS80	57890610
2	1	SEAL MANDREL	DLMS80	57890210
3	1	SNAP LATCH COLLET	DLMS110	57890003
4	2	BONDED SEAL	DLMS60 / 90 DURO NITRILE	58090520
5	1	SEAL SPACER	DLMS60	58090550
6	4	SOCKET SET SCREW 1/4-20 UNC X 3/8	STEEL	SSS025C037
7	4	174 O-RING	90 DURO NITRILE	90174
8	1	371 O-RING	90 DURO NITRILE	90371

ASSEMBLED WEIGHT	101 LBS
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#### H-4.1) ELASTOMER TRIM OPTIONS

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

##### H-4.1.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 57890H-1
4	2	BONDED SEAL	DLMS60 / 90 DURO HSN	58090520H
7	4	174 O-RING	90 DURO HSN	90174H
8	1	371 O-RING	90 DURO HSN	90371H

##### H-4.1.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 57890V-1
4	2	BONDED SEAL	DLMS60 / 90 DURO VITON	58090520V
7	4	174 O-RING	90 DURO VITON	90174V
8	1	371 O-RING	90 DURO VITON	90371V





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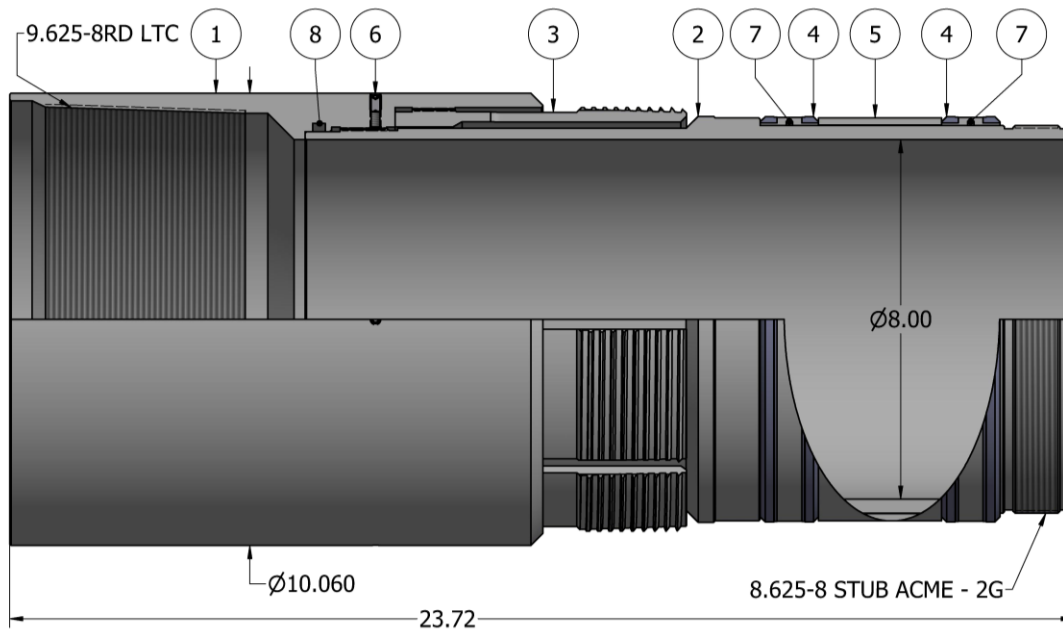
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## H) SNAP LATCH ASSEMBLY (cont'd)

### H-5) TECHNICAL ILLUSTRATION



## D) SEAL UNIT ASSEMBLY

The D&L Seal Unit Assembly is used in conjunction with the D&L Anchor Latch or Locator Assembly to increase the length of seals. The D&L Seal Unit Assembly is installed between the Anchor Latch or Locator Assembly and the Mule Shoe.

### I-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	ASSEMBLY OD (INCHES)	ASSEMBLY BORE (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
9.000	8.98	8.00	8.625 STUB ACME	58190 58190H <sup>1</sup> 58190V <sup>2</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton



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Approved by: *J.McArthur*

### I) SEAL UNIT ASSEMBLY (cont'd)

#### I-2) DISASSEMBLY

I-2.1) Clamp mandrel (1) in vise.

I-2.1.1) Remove bonded seals (2) and seal spacer (3) from mandrel (1).

I-2.1.1.1) Remove o-rings (5) from bonded seals (2).

I-2.2) Unclamp and remove mandrel (1) from vise.

I-2.3) Remove o-ringS (4) from mandrel (1).

#### I-3) ASSEMBLY

**NOTE<sub>2</sub>:** Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order, and orientation and tighten/torque all connections properly.

I-3.1) Install o-ringS (4) in upper thread relief in mandrel (1).

I-3.2) Clamp mandrel (1) in vise.

I-3.2.1) Install o-rings (5) in o-ring grooves in bonded seals (2).

I-3.2.2) Install bonded seals (2) and seal spacer (3) onto mandrel (1).

**CAUTION<sub>1</sub>:** Do not rip or tear o-rings during installation

I-3.3) Unclamp mandrel (1) from vise and remove assembled tool.

#### I-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58190
1	1	SEAL UNIT MANDREL	L-80	58190012
2	2	BONDED SEAL	1026/90 DURO NITRILE	58090520
3	1	SEAL SPACER	1026	58090550
4	2	173 O-RING	90 DURO NITRILE	90173
5	2	174 O-RING	90 DURO NITRILE	90174

ASSEMBLED WEIGHT	41 LBS
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## I) SEAL UNIT ASSEMBLY (cont'd)

### I-4.1) ELASTOMER TRIM OPTIONS

#### I-4.1.1) HSN

**NOTE<sub>3</sub>**: For temperature range, refer to Elastomer Trim Temperature Guide.

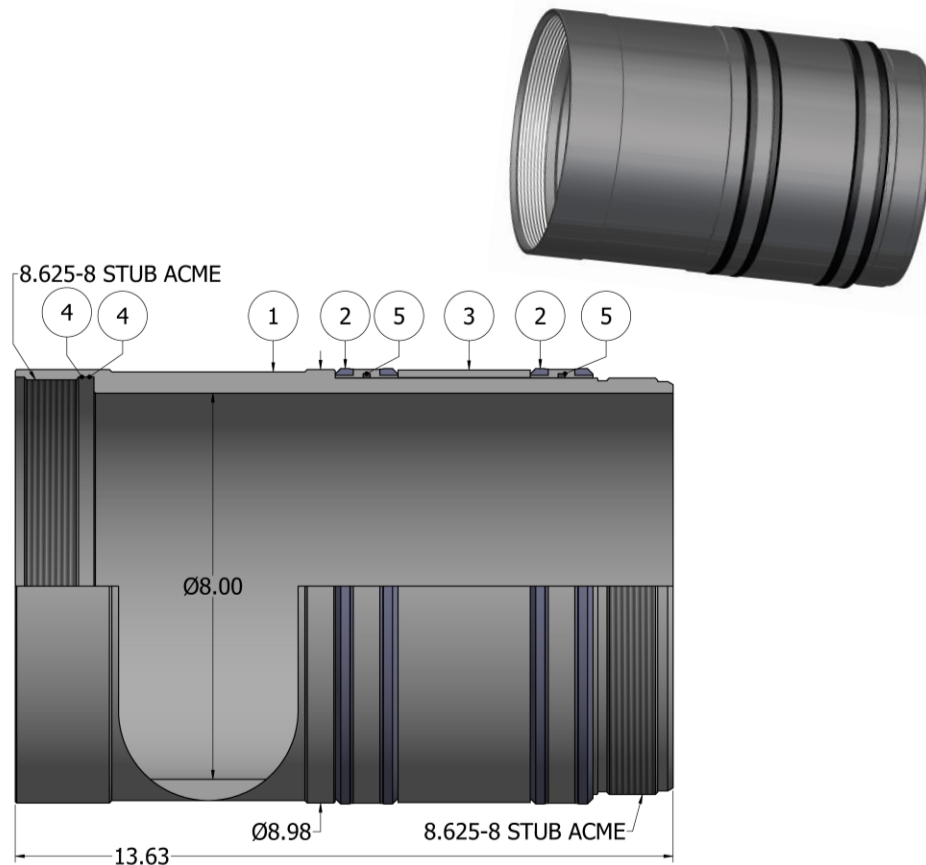
ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58190H
2	2	BONDED SEAL	1026/90 DURO HSN	58090520H
4	2	173 O-RING	90 DURO HSN	90173HH
5	2	174 O-RING	90 DURO HSN	90174

#### I-4.1.2) VITON

**NOTE<sub>3</sub>**: For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58190V
2	2	BONDED SEAL	1026/90 DURO VITON	58090520V
4	2	173 O-RING	90 DURO VITON	90173V
5	2	174 O-RING	90 DURO VITON	90174V

## I-5) TECHNICAL ILLUSTRATION





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## J) MULE SHOE

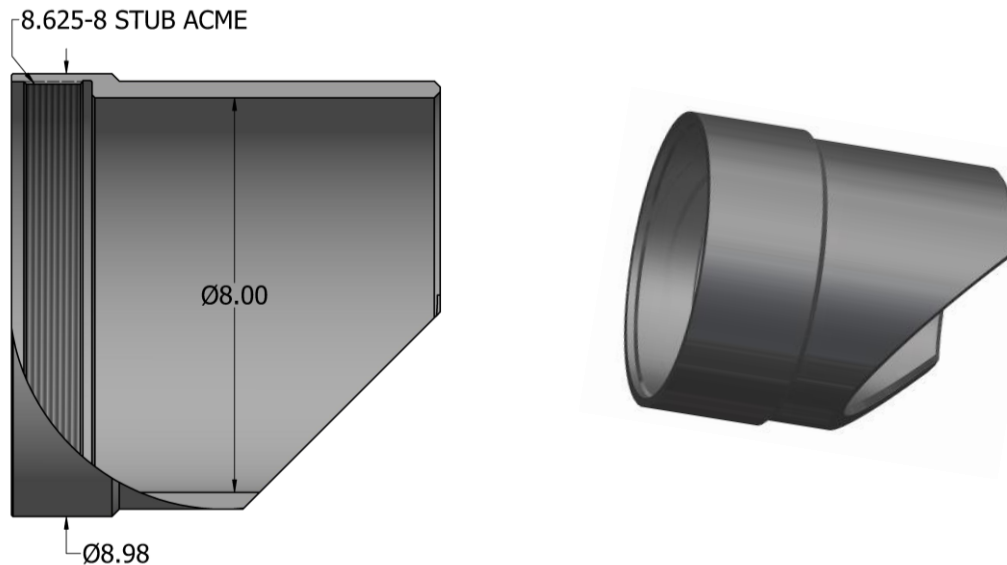
The D&L Mule Shoe is installed on the bottom of the D&L Anchor Latch, Seal Locator, or Seal Unit. The D&L Mule Shoe allows for rotation of the tubing to help guide the seals into the packer seal bore.

### J-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	PART OD (INCHES)	PART BORE (INCHES)	THREAD CONNECTION	PART NUMBER
9.000	8.980	8.00	8.625 STUB ACME	58490615

WEIGHT	18 LBS
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### J-2) TECHNICAL ILLUSTRATION



## K) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
10/02/2020	C	Revised snap latch straight pull release amount; Added tensile load thru anchor latch, Pre-Installation Inspection Procedures, Storage Recommendations	J.Anderson	D.Hushbeck
12/06/2019	B	Added 58390, 57890-1; Revised Elastomer Trim Temp. Guide temp. ratings	J.Anderson	D.Hushbeck
08/18/2015	A	Created new manual	-	-