



# SEAL BORE ACCESSORIES

## 3.250”

Manual No:  
**DL-581-3250-800**

Revision: **C**

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

Authored by: *B.Mathis*

Approved by: *K.Riggs*

### A) DESCRIPTION

The 3.250” Seal Bore Accessories are designed to work with Permapak Packers with 3.250” seal bores.

**NOTE:** Other seal bore accessories are available. Contact D&L Sales for more information.

### B) PRE-INSTALLATION INSPECTION PROCEDURES

**CAUTION:** 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

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

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



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### 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

### 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
3.250	3.75	2.41	2-7/8 EUE / 2.875-8 STUB ACME	58332 58332H <sup>1</sup> 58332V <sup>2</sup> 58332ATR <sup>3</sup> 58332VTR <sup>4</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton, <sup>3</sup>AFLAS, Teflon, Ryton Seal Stack, <sup>4</sup>Viton, Teflon, Ryton Seal Stack

#### F-2) DISASSEMBLY

- F-2.1) Clamp locator sub (1) in vise.
  - F-2.1.1) Remove bonded seals (2) and seal spacer (3) from locator sub (1).
    - F-2.1.1.1) Remove o-rings (4) from bonded seals (2).
- F-2.2) Unclamp and remove locator sub (1) from vise.

#### F-3) ASSEMBLY

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

- F-3.1) Clamp locator sub (1) in vise.
  - F-3.1.1) Install o-rings (4) in o-ring grooves in bonded seals (2).
  - F-3.1.2) Install bonded seals (2) and seal spacer (3) onto locator sub (1).

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

- F-3.2) Unclamp locator sub (1) from vise and remove assembled tool.



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### F) LOCATOR SEAL ASSEMBLY (cont'd)

#### F-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58332
1	1	LOCATOR SUB	DLMS110	58332610
2	2	BONDED SEAL	90 DURO NITRILE	58032520*
3	1	SEAL SPACER	DLMS60	58032550*
4	2	150 O-RING	90 DURO NITRILE	90150*

\*Not part of ATR and VTR assemblies. Refer to ATR and VTR Seal Stack Assembly (K.4).

ASSEMBLED WEIGHT	13 LBS
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#### F-5) ELASTOMER TRIM OPTIONS

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

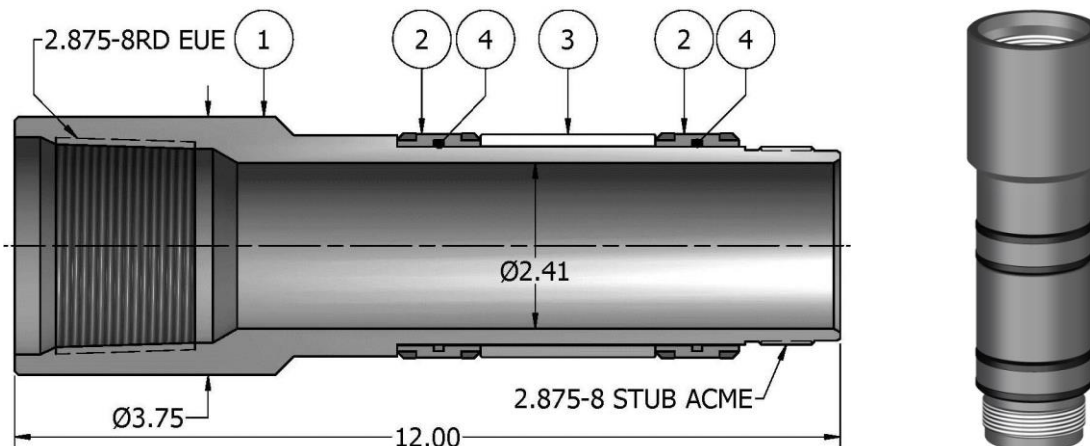
##### F-5.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58332H
2	2	BONDED SEAL	90 DURO HSN	58032520H
4	2	150 O-RING	90 DURO HSN	90150H

##### F-5.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58332V
2	2	BONDED SEAL	90 DURO VITON	58032520V
4	2	150 O-RING	90 DURO VITON	90150V

#### F-6) TECHNICAL ILLUSTRATION



### G) ANCHOR LATCH ASSEMBLY

The Anchor Latch is used to hold tubing in tension, or compression. The 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 Anchor Latch works with standard packer latch thread.



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

### 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
3.250	4.250	2.406	89,500 LBS	2-7/8 EUE / 2.8750-8 STUB ACME	58232 58232H <sup>1</sup> 58232V <sup>2</sup> 58232ATR <sup>3</sup> 58232VTR <sup>4</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton, <sup>3</sup>AFLAS, Teflon, Ryton Seal Stack, <sup>4</sup>Viton, Teflon, Ryton Seal Stack

### 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 mandrel (2).

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

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

G-2.1.3) Remove collet (3) from mandrel (2).

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

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

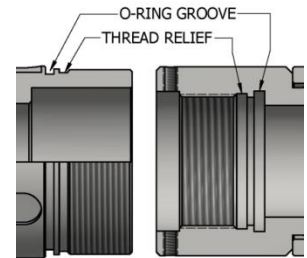


Fig. 2

### 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.

**CAUTION<sub>2</sub>:** To ensure tool operates properly, install o-rings in o-ring grooves - **NOT** in thread reliefs (unless stated otherwise) (Fig. 2).

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 mandrel (2).

G-3.2.2) Screw 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-ring (6) in o-ring groove in bonded seals (4).

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

### G-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58232
1	1	TOP SUB	DLMS60	58232610
2	1	MANDREL	L-80	58232210
3	1	COLLET	P-110	58232003
4	2	BONDED SEAL	90 DURO NITRILE	58032520*
5	1	SEAL SPACER	DLMS60	58032550*
6	2	150 O-RING	90 DURO NITRILE	90150*



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

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58232
7	1	235 O-RING	90 DURO NITRILE	90235

\*Not part of ATR and VTR assemblies. Refer to ATR and VTR Seal Stack Assembly (K.4).

ASSEMBLED WEIGHT	29 LBS
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### G-5) ELASTOMER TRIM OPTIONS

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

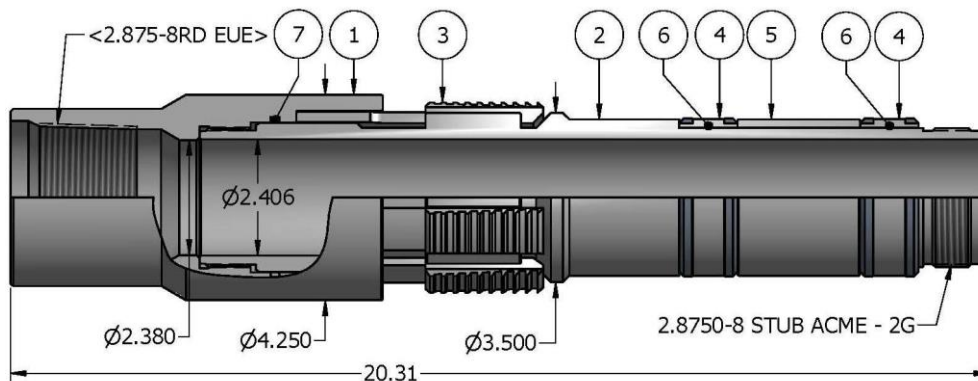
#### G-5.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58232H
4	2	BONDED SEAL	90 DURO HSN	58032520H
6	2	150 O-RING	90 DURO HSN	90150H
7	1	235 O-RING	90 DURO HSN	90235H

#### G-5.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58232V
4	2	BONDED SEAL	90 DURO VITON	58032520V
6	2	150 O-RING	90 DURO VITON	90150V
7	1	235 O-RING	90 DURO VITON	90235V

### G-6) TECHNICAL ILLUSTRATION



### H) SNAP LATCH ASSEMBLY

The Snap Latch Seal Assembly latches into the packer upon set down (like the 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.



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

### H-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	ASSEMBLY OD (INCHES)	ASSEMBLY BORE (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
3.250	4.75	2.38	2-7/8 EUE / 2.875-8 STUB ACME	57832 57832H <sup>1</sup> 57832V <sup>2</sup> 57832ATR <sup>3</sup> 57832VTR <sup>4</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton, <sup>3</sup>AFLAS, Teflon, Rytan Seal Stack, <sup>4</sup>Viton, Teflon, Rytan Seal Stack

### 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 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.

**CAUTION<sub>2</sub>:** To ensure tool operates properly, install o-rings in o-ring grooves - **NOT** in thread reliefs (unless stated otherwise) (Fig. 2).

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 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-ring 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.

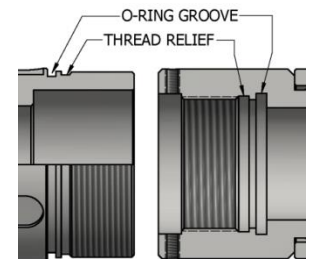


Fig. 2

### H-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 57832
1	1	TOP SUB	DLMS80	57832610
2	1	SEAL MANDREL	P-110	57832210
3	1	COLLET	P-110	57832003
4	2	BONDED SEAL	90 DURO NITRILE	58032520*



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

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 57832
5	1	SEAL SPACER	DLMS60	58032550*
6	3	SET SCREW 1/4-20 UNC X 3/8	STEEL	SSS025C037
7	2	150 O-RING	90 DURO NITRILE	90150*
8	1	235 O-RING	90 DURO NITRILE	90235

\*Not part of ATR and VTR assemblies. Refer to ATR and VTR Seal Stack Assembly (K.4).

ASSEMBLED WEIGHT	32 LBS
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### H-5) ELASTOMER TRIM OPTIONS

**NOTE3:** For temperature range, refer to Elastomer Trim Temperature Guide.

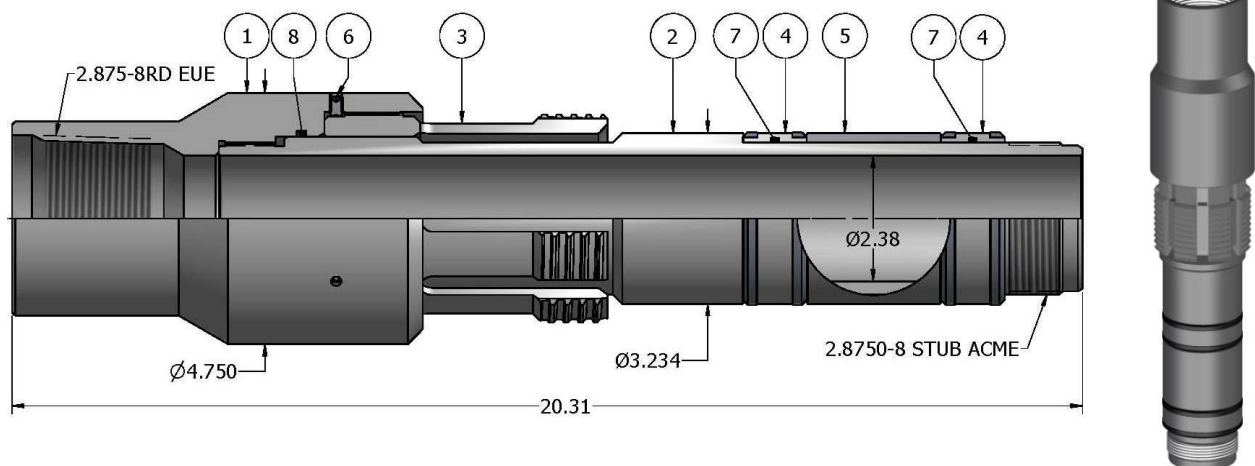
#### H-5.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 57832H
4	2	BONDED SEAL	90 DURO HSN	58032520H
7	2	150 O-RING	90 DURO HSN	90150H
8	1	235 O-RING	90 DURO HSN	90235H

#### H-5.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 57832V
4	2	BONDED SEAL	90 DURO VITON	58032520V
7	2	150 O-RING	90 DURO VITON	90150V
8	1	235 O-RING	90 DURO VITON	90235V

### H-6) TECHNICAL ILLUSTRATION





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### I) SEAL UNIT ASSEMBLY

The Seal Unit Assembly is used in conjunction with the Anchor Latch or Locator Assembly to increase the length of seals. The 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
3.250	3.21	2.41	2.8750 STUB ACME	58132 58132H <sup>1</sup> 58132V <sup>2</sup> 58132ATR <sup>3</sup> 58132VTR <sup>4</sup>

Elastomer Trim Options: <sup>1</sup>HSN, <sup>2</sup>Viton, <sup>3</sup>AFLAS, Teflon, Ryton Seal Stack, <sup>4</sup>Viton, Teflon, Ryton Seal Stack

#### I-2) DISASSEMBLY

- I-2.1) Clamp seal mandrel (1) in vise.
  - I-2.1.1) Remove bonded seals (2) and seal spacer (3) from seal mandrel (1).
    - I-2.1.1.1) Remove o-rings (5) from bonded seals (2).
- I-2.2) Unclamp and remove seal mandrel (1) from vise.
- I-2.3) Remove o-ring (4) from seal mandrel (1).

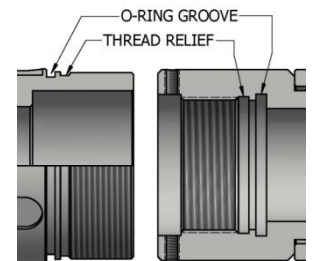


Fig. 1

#### 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.

**CAUTION<sub>2</sub>:** To ensure tool operates properly, install o-rings in o-ring grooves - **NOT** in thread reliefs (unless stated otherwise) (Fig. 1).

- I-3.1) Install o-ring (4) in o-ring groove in seal mandrel (1).
- I-3.2) Clamp seal 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 seal mandrel (1).

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

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

#### I-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58132
1	1	SEAL MANDREL	P-110	58132012
2	2	BONDED SEAL	90 DURO NITRILE	58032520*
3	1	SEAL SPACER	DLMS60	58032550*
4	1	148 O-RING	90 DURO NITRILE	90148*
5	2	150 O-RING	90 DURO NITRILE	90150

\*Not part of ATR and VTR assemblies. Refer to ATR and VTR Seal Stack Assembly (K.4).

ASSEMBLED WEIGHT	11 LBS
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### I) SEAL UNIT ASSEMBLY (cont'd)

#### I-5) ELASTOMER TRIM OPTIONS

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

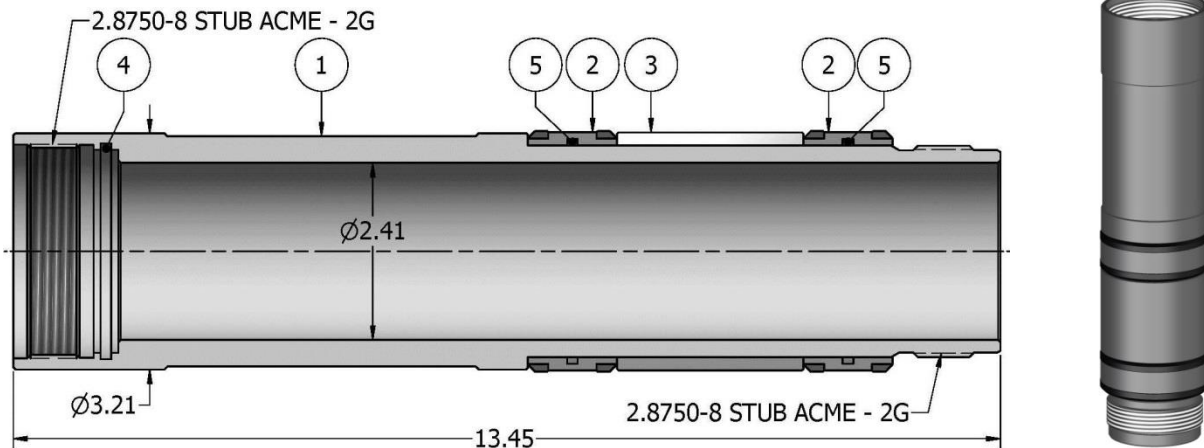
##### I-5.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58132H
2	2	BONDED SEAL	90 DURO HSN	58032520H
4	1	148 O-RING	90 DURO HSN	90148H
5	2	150 O-RING	90 DURO HSN	90150H

##### I-5.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58132V
2	2	BONDED SEAL	90 DURO VITON	58032520V
4	1	148 O-RING	90 DURO VITON	90148V
5	2	150 O-RING	90 DURO VITON	90150V

#### I-6) TECHNICAL ILLUSTRATION





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## J) MULE SHOE

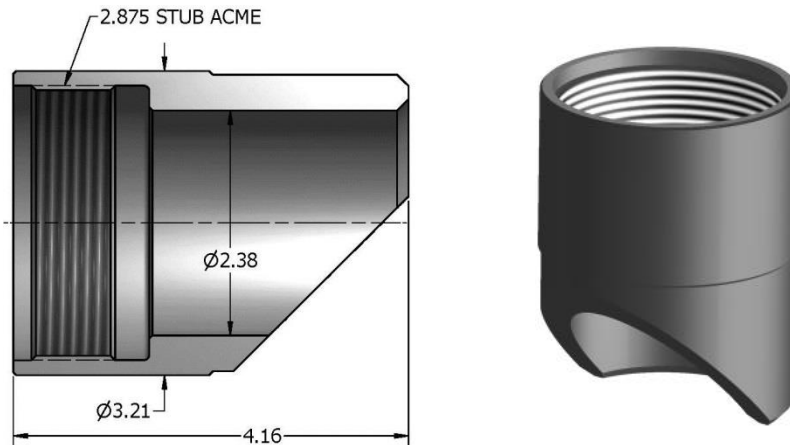
The Mule Shoe is installed on the bottom of the Anchor Latch, Seal Locator, or Seal Unit. The Mule Shoe allows for rotation of the tubing to help guide the seals into the packer seal bore.

### J-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	PART OD (INCHES)	PART ID (INCHES)	THREAD CONNECTION BOX UP	PART NUMBER
3.250	3.21	2.38	2.875 STUB ACME	58432615

ASSEMBLED WEIGHT	3 LBS
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### J-2) TECHNICAL ILLUSTRATION



## K) ATR AND VTR SEAL STACK OPTION ASSEMBLY

The ATR and VTR seal stack options are available for all seal bore accessories. Refer to Rubber Selection Guide for temperature range.

### K-1) ASSEMBLY

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

K-1.1) Clamp seal bore accessory in vise. Follow assembly instructions given above for seal bore accessory for all other parts.

K-1.2) Install end spacer (S.5) onto seal bore accessory.

K-1.3) Install three (3) AFLAS/Viton rings (S.1), Teflon rings (S.2), and Ryton rings (S.3) in order onto seal bore accessory.

**CAUTION<sub>3</sub>:** Rings must be installed in the proper order and orientation. Refer to Technical Illustration.

K-1.4) Install center spacer (S.4) onto seal bore accessory.

K-1.5) Install three (3) Ryton rings (S.3), Teflon rings (S.2), and AFLAS/Viton rings (S.1) in order onto seal bore accessory.

**CAUTION<sub>3</sub>:** Rings must be installed in the proper order and orientation. Refer to Technical Illustration below.

K-1.6) Install end spacer (S.5) onto seal bore accessory.

K-1.7) Unclamp seal bore accessory from vise and remove assembled tool.



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### K) ATR AND VTR SEAL STACK OPTION ASSEMBLY (cont'd)

#### K-2) ATR OPTION PARTS LIST

**NOTE3:** For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER
S	1	3.250" ATR SEAL STACK	-	58732ATRSS
S.1	6	AFLAS RING	AFLAS	587AF325
S.2	6	TEFLON RING	TEFLON	587TF325
S.3	6	RYTON SPACER	RYTON	587RY325
S.4	1	CENTER SPACER	1026	587CS325
S.5	2	END SPACER	1026	587ES325

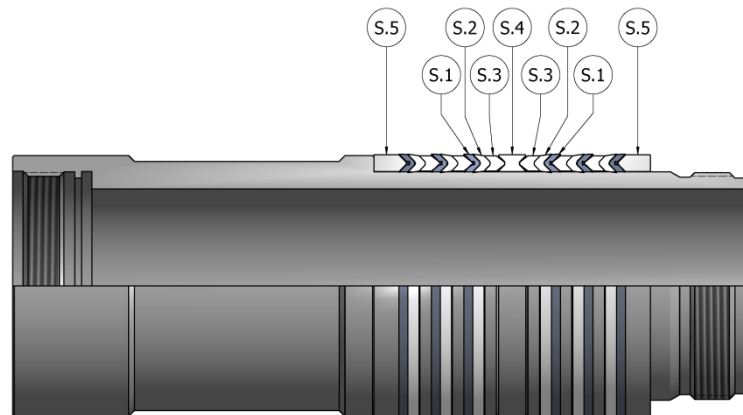
#### K-3) VTR OPTION SEAL STACK

**NOTE3:** For temperature range, refer to Elastomer Trim Temperature Guide.

ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER
S	1	3.250" VTR SEAL STACK	-	58732VTRSS
S.1	6	VITON SEAL RING	VITON	587VT325
S.2	6	TEFLON SEAL RING	TEFLON	587TF325
S.3	6	RYTON SPACER	RYTON	587RY325
S.4	1	CENTER SPACER	1026	587CS325
S.5	2	END SPACER	1026	587ES325

#### K-4) TECHNICAL ILLUSTRATION

**NOTE4:** Seal Unit Assembly (P/N 58132ATR) shown. Order, orientation and quantity typical of all assemblies.





# SEAL BORE ACCESSORIES

## 3.250”

Manual No:  
**DL-581-3250-800**

Revision: **C**

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

Authored by: *B.Mathis*

Approved by: *K.Riggs*

### L) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
10/02/2020	C	Revised nitrile temp. rating, snap latch straight pull release amount; Added tensile load thru anchor latch	J.Anderson	D.Hushbeck
01/20/2016	B	Added Pre-Installation Inspection Procedures and Storage Recommendations; Revised Rubber Type Temperature Ranges – Nitrile was 70° - 300°F, HSN was 70° - 325°F, P/N 58432615 was 58132615	J.Anderson	J.McArthur
12/17/14	A	Created new manual	-	-