



SEAL BORE ACCESSORIES

5.250”

Manual No:
DL-581-5250-697

Revision: **B**

Revision Date:
10/02/2020

Authored by: J.Anderson

Approved by: N.Banker

A) DESCRIPTION

The 5.250” Seal Bore Accessories are designed to work with D&L Permapak and RSB Packers and with 5.250” seal bores.

NOTE₁: Other seal bore accessories are available. Contact D&L Sales for more information.

B) 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

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/VTR	100° - 350°F
ATR	100° - 400°F

D & L OIL TOOLS
P.O. BOX 52220 TULSA, OK 74152
PHONE: (800) 441-3504 www.dloiltools.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
5.250	5.875	4.25	5.000 LTC / 4.8750 STUB ACME	58352 58352H ¹ 58352V ² 58352ATR ³ 58352VTR ⁴

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

NOTE₂: 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).

CAUTION₁: Do not rip or tear o-rings during installation

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

F-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58352
1	1	LOCATOR SUB	P-110	58352612
2	2	BONDED SEAL	90 DURO NITRILE	58052520*
3	1	SEAL SPACER	1026	58052550*
4	2	159 O-RING	90 DURO NITRILE	90159*

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

ASSEMBLED WEIGHT	36 LBS
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F) LOCATOR SEAL ASSEMBLY (cont'd)

F-5) ELASTOMER TRIM OPTIONS

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

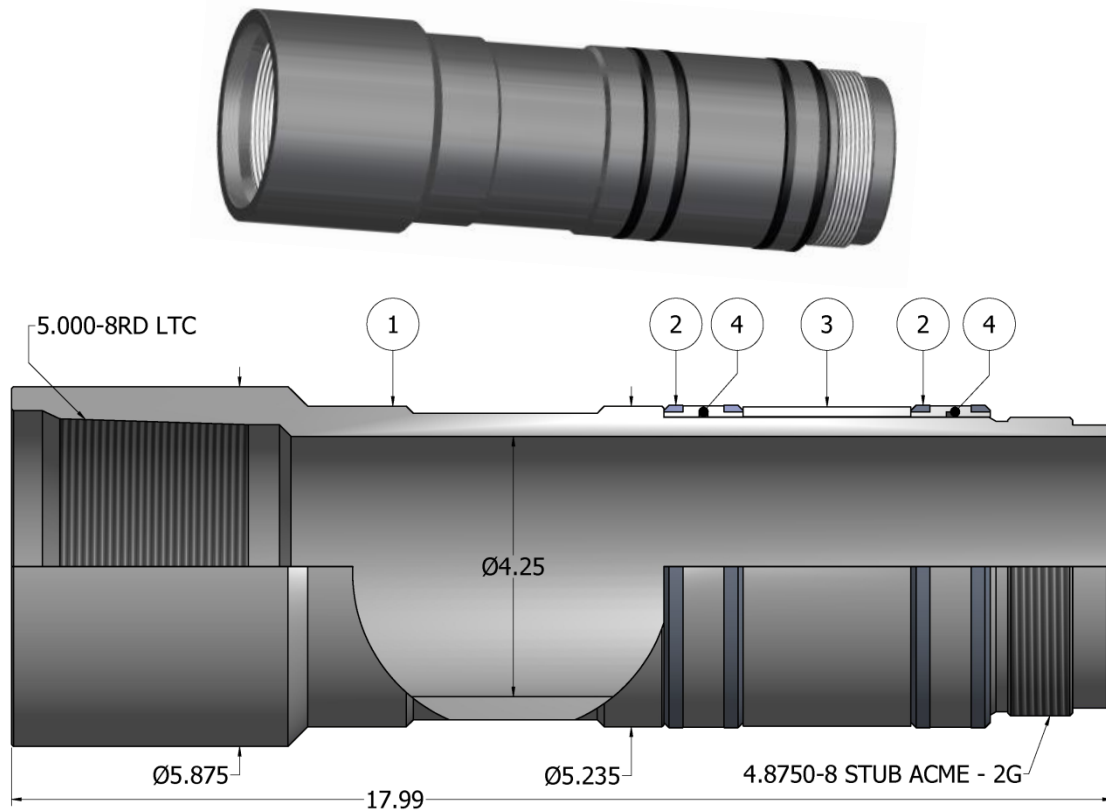
F-5.1) HSN

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58352H
2	2	BONDED SEAL	90 DURO HSN	58052520H
4	2	159 O-RING	90 DURO HSN	90159H

F-5.2) VITON

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58352V
2	2	BONDED SEAL	90 DURO VITON	58052520V
4	2	159 O-RING	90 DURO VITON	90159V

F-6) TECHNICAL ILLUSTRATION





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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.

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
5.250	6.310	4.25	196,000	4-1/2” LTC / 4.875 STUB ACME	58252 58252H ¹ 58252V ² 58252ATR ³ 58252VTR ⁴

¹HSN Option, ²Viton Option, ³AFLAS, Teflon, Ryton Seal Stack Option, ⁴Viton, Teflon, Ryton Seal Stack Option

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-2.1.3) 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: 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: Do not rip or tear o-rings 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: 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 58252
1	1	TOP SUB	L-80	58252610
2	1	SEAL MANDREL	P-110	58252210
3	1	COLLET	P-110	58252005
4	2	BONDED SEAL	90 DURO NITRILE	58052520*
5	1	SEAL SPACER	1026	58052550*
6	2	159 O-RING	90 DURO NITRILE	90159*
7	1	350 O-RING	90 DURO NITRILE	90350

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

ASSEMBLED WEIGHT	63 LBS
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G-4.1) ELASTOMER TRIM OPTIONS

G-4.1.1) HSN

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

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58252H
4	2	BONDED SEAL	90 DURO HSN	58052520H
6	2	159 O-RING	90 DURO HSN	90159H
7	1	350 O-RING	90 DURO HSN	90350H

G-4.1.2) VITON

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

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58252V
4	2	BONDED SEAL	90 DURO VITON	58052520V
6	2	159 O-RING	90 DURO VITON	90159V
7	1	350 O-RING	90 DURO VITON	90350V



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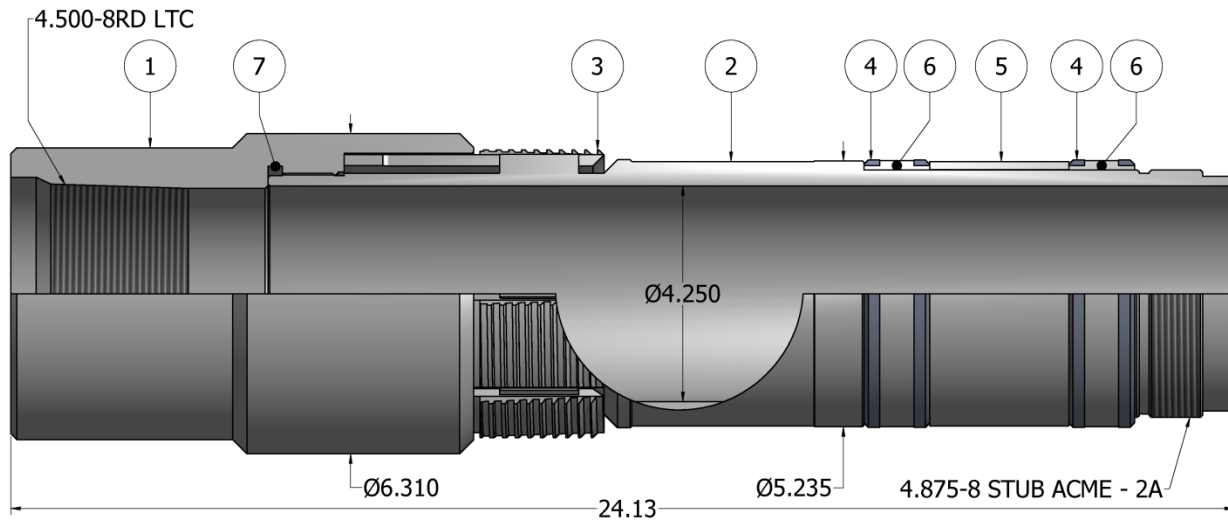
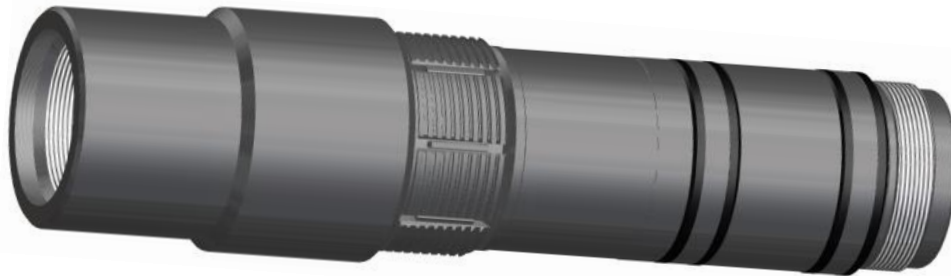
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G) ANCHOR LATCH ASSEMBLY (cont'd)

G-5) TECHNICAL ILLUSTRATION



H) 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.

H-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	ASSEMBLY OD (INCHES)	ASSEMBLY BORE (INCHES)	THREAD CONNECTION BOX UP / PIN DOWN	PART NUMBER
5.250	5.235	4.25	4.8750-8 STUB ACME	58152 58152H ¹ 58152V ² 58152ATR ³ 58152VTR ⁴

¹HSN Option, ²Viton Option, ³AFLAS, Teflon, Ryton Seal Stack Option, ⁴Viton, Teflon, Ryton Seal Stack Option



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H) SEAL UNIT ASSEMBLY (cont'd)

H-2) DISASSEMBLY

H-2.1) Clamp seal mandrel (1) in vise.

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

H-2.1.1.1) Remove o-rings (4) from bonded seals (2).

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

H-2.3) Remove o-ring (5) from seal mandrel (1).

H-3) ASSEMBLY

NOTE₂: 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 (5) in o-ring groove in seal mandrel (1).

H-3.2) Clamp seal mandrel (1) in vise.

H-3.2.1) Install o-rings (4) in o-ring grooves in bonded seals (2).

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

CAUTION₁: Do not rip or tear o-rings during installation

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

H-4) PARTS LIST

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58152
1	1	SEAL MANDREL	L-80	58152012
2	2	BONDED SEAL	90 DURO NITRILE	58052520*
3	1	SEAL SPACER	1026	58052550*
4	2	159 O-RING	90 DURO NITRILE	90159*
5	1	247 O-RING	90 DURO NITRILE	90247

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

ASSEMBLED WEIGHT	22 LBS
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H-4.1) ELASTOMER TRIM OPTIONS

H-4.1.1) HSN

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

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58152H
2	2	BONDED SEAL	90 DURO HSN	58052520H
4	2	159 O-RING	90 DURO HSN	90159H
5	1	247 O-RING	90 DURO HSN	90247H

H-4.1.2) VITON

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

ITEM	QTY	DESCRIPTION	MATERIAL	P/N 58152V
2	2	BONDED SEAL	90 DURO VITON	58052520V
4	2	159 O-RING	90 DURO VITON	90159V
5	1	247 O-RING	90 DURO VITON	90247V



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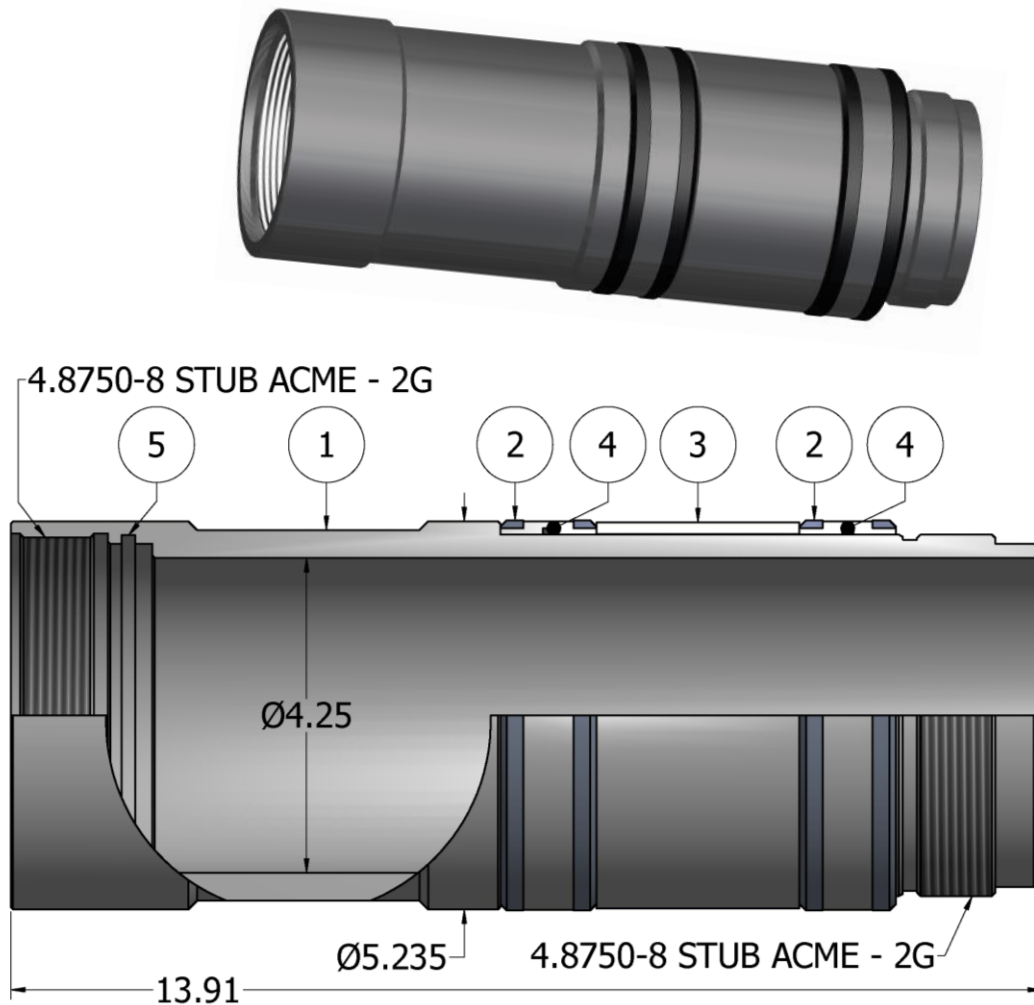
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H) SEAL UNIT ASSEMBLY (cont'd)

H-5) TECHNICAL ILLUSTRATION



I) 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.

I-1) SPECIFICATION GUIDE

PACKER BORE SIZE (INCHES)	PART OD (INCHES)	PART BORE (INCHES)	THREAD CONNECTION	PART NUMBER
5.250	5.240	4.25	4.875 STUB ACME	58452615

WEIGHT	8 LBS
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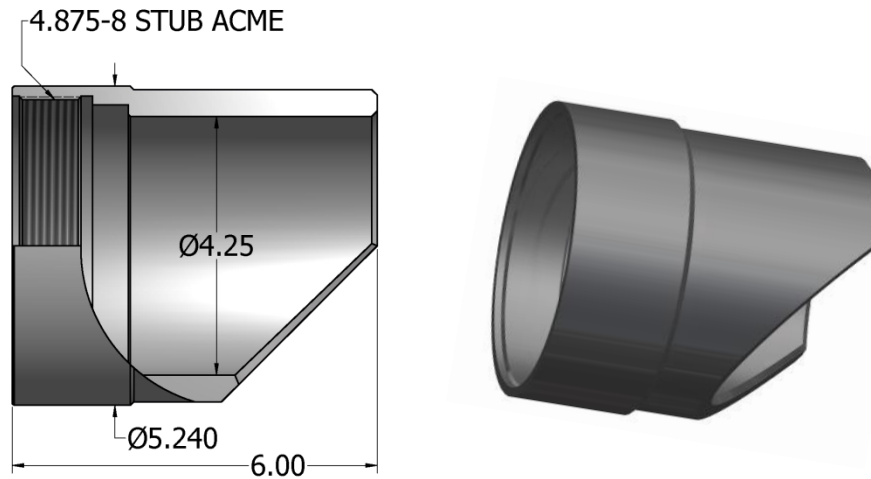
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I) MULE SHOE (cont'd)

I-2) TECHNICAL ILLUSTRATION



J) ATR AND VTR SEAL STACK OPTION ASSEMBLY

The ATR and VTR seal stack options are available for all seal bore accessories.

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

J-1) ASSEMBLY

NOTE₂: Clean and inspect all parts. Replace all worn and damaged parts. Install parts in proper order and orientation.

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

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

J-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.

CAUTION₄: Rings must be installed in the proper order and orientation. Refer to Technical Illustration below.

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

J-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.

CAUTION₄: Rings must be installed in the proper order and orientation. Refer to Technical Illustration below.

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

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



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

J-2) ATR OPTION PARTS LIST

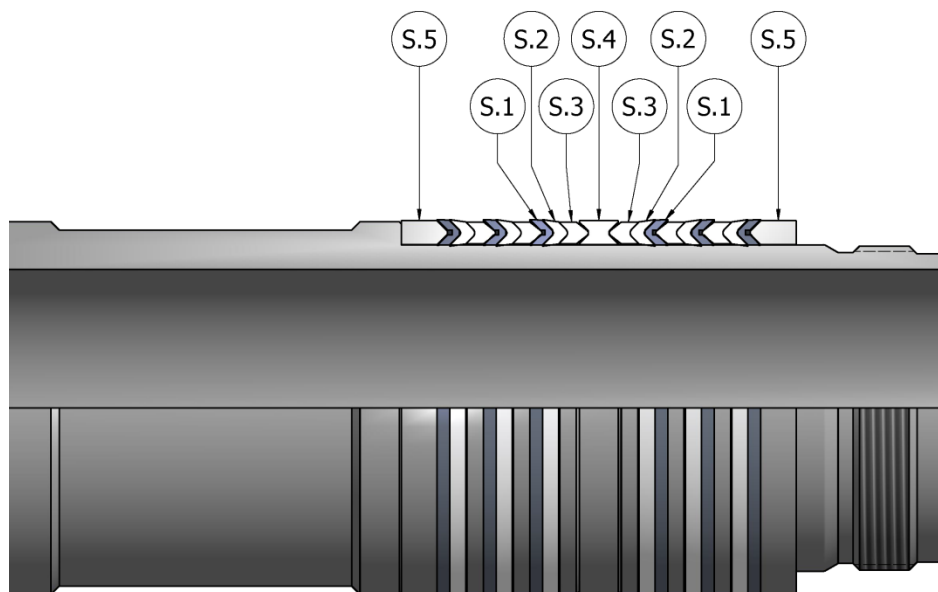
ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER
S	1	5.250" ATR SEAL STACK	-	58752ATRSS
S.1	6	AFLAS RING	AFLAS	587AF525
S.2	6	TEFLON RING	TEFLON	587TF525
S.3	6	RYTON SPACER	RYTON	587RY525
S.4	1	CENTER SPACER	1026	587CS525
S.5	2	END SPACER	1026	587ES525

J-3) VTR OPTION SEAL STACK

ITEM	QTY	DESCRIPTION	MATERIAL	PART NUMBER
S	1	5.250" VTR SEAL STACK	-	58752VTRSS
S.1	6	VITON RING	VITON	587VF525
S.2	6	TEFLON RING	TEFLON	587TF525
S.3	6	RYTON SPACER	RYTON	587RY525
S.4	1	CENTER SPACER	1026	587CS525
S.5	2	END SPACER	1026	587ES525

J-4) TECHNICAL ILLUSTRATION

NOTE4: Seal Unit Assembly (P/N 58152ATR) shown. Order, orientation and quantity typical of all assemblies.





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K) REVISION HISTORY

DATE	REVISION	DESCRIPTION OF CHANGES	REVISED BY	APPROVED BY
10/02/2020	B	Added tensile load for anchor latch	J.Anderson	D.Hushbeck
03/12/2019	A	Created new manual	-	-