MiTek®
SERVICE BULLETIN

Document ID:
SB298

Title:
Replacing Seals on the LASM Cylinder

Affected machinery: BLADE II™ Linear Saw
Distribution: Customers upon order
Sensitivity: Approved for customer use

CAUTION:
MiTek recommends printing this document in high resolution using color ink. Many of the graphics may be unclear and may create an unsafe condition if this recommendation is not followed.

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Revised By	
Rev. Approved By	
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Orig. Created By	M. Farmer
Orig. Approved By	R. Tucker

Purpose and Scope

Over time, the scrapers, seals, piston head, and gland nut on the LASM assembly may wear down. This seal kit replaces these parts.

Overview

Parts Included

The parts included in this kit are shown in Table 1. Please make sure all parts and supplies are present before starting the procedure.

Table 1: Parts in SB298KIT

Quantity	Description	Part #
1	LASM Seal Kit	423455
1	Service bulletin document	SB298

Table 2: Parts Included in LASM Seal Kit

Quantity	Description	Part #
	Piston	
	Piston Rod Seal	
	O-ring	
	Guide Rod Scrapers	
	Guide Ring	
	Cylinder Front Cover	

If you have any questions, call MiTek Automation Support at 1-800-523-3380.

Supplies Needed

- Small and medium flathead screwdrivers
- Retaining ring pliers
- Metric and standard hex (allen) wrench sets
- Wrench set
- Thread adhesive
- Kluber Microlube 261 or comparable grease
- Permanent marker
- Masking tape or duct tape
- Safety glasses

Lockout/Tagout Instructions

Electrical Lockout/Tagout Procedure

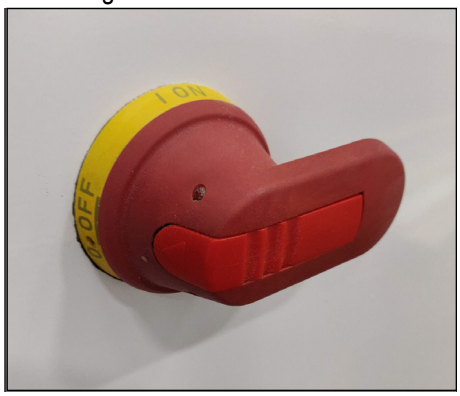
The lockout/tagout instructions for the electrical systems will be referenced as necessary in this document. Service Bulletin instructions start on page 5.

Working on a Machine Outside the Machine's Main Electrical Enclosure

	⚠ WARNING
	**ELECTROCUTION HAZARD.** **All electrical work must be performed by a qualified electrician.** **Verify that all power to the machine has been turned off and follow approved lockout/tagout safety procedures before performing any maintenance.** **If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.** **When the disconnect switch is off, there is still live power within the disconnect switch's enclosure. Always turn off the power at the building's power source to the equipment before opening this electrical enclosure.**

1. If applicable, close machine software and shut down the PC using the **Power** > **Shut down** method in Windows.
2. Engage an E-stop on the machine.
3. Turn the disconnect switch handle to the Off position. See Figure 1.
4. Attach a lock and tag that meet OSHA requirements for lockout/tagout to the electrical service entry panel.
5. Open the door to the enclosure to which you need access. Using a multimeter, verify that the power is off.

Figure 1: Disconnect Switch



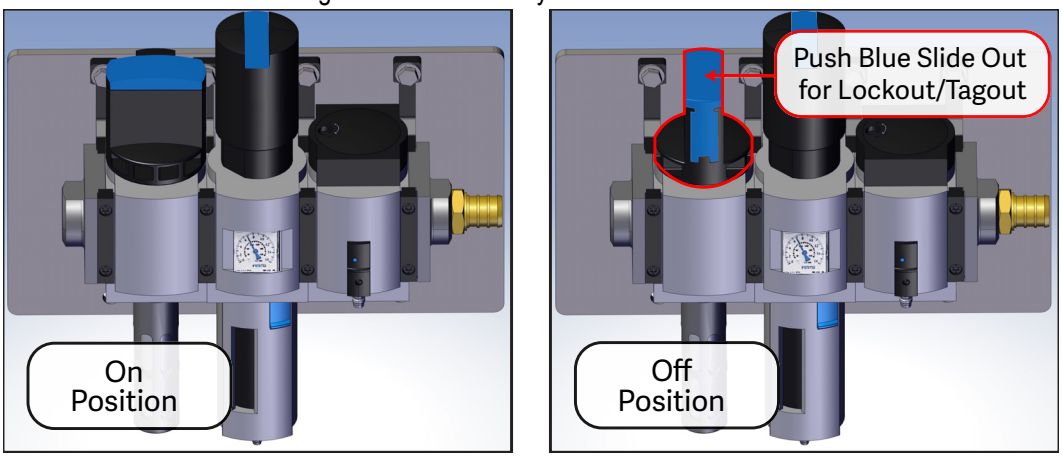
Pneumatic or Hydraulic System Lockout/Tagout Procedure

The lockout/tagout instructions for the pneumatic or hydraulic systems will be referenced as necessary in this service bulletin.

	⚠ WARNING
	**HIGH PRESSURE HAZARD.** **Bleed pneumatic lines before performing any maintenance on the system.** **Working on pressurized lines may cause injury.**

1. After lockout/tagout of the electrical power, turn off or close the system's air shut-off valve and attach a lock and tag. See Figure 2.

Figure 2: Pneumatic System Shut-Off Valve



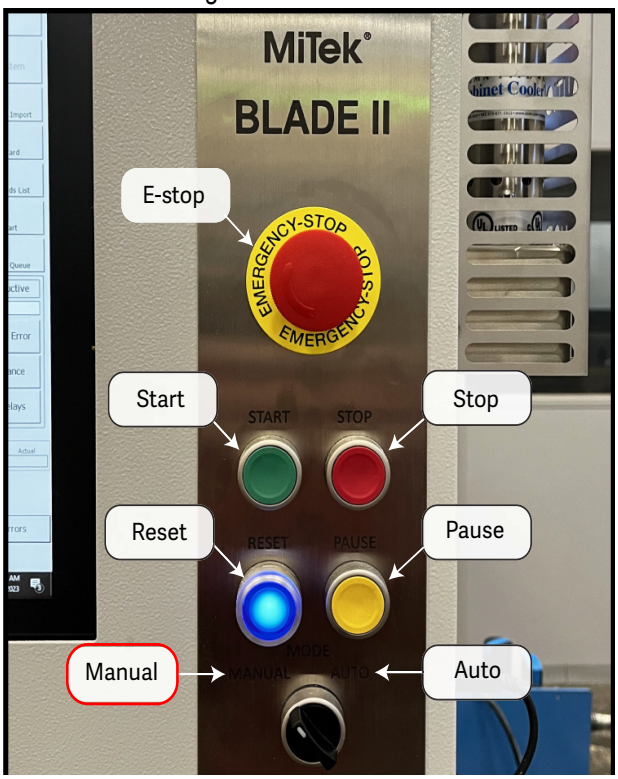
Procedure

Preparing the Saw

	**⚠ WARNING** **MOVING PARTS CAN CRUSH AND CUT.** **Always verify that power to the machine has been turned off and follow approved lockout/tagout procedures.**

1. Turn the saw to Manual mode. Elevate the saw blade to its highest position.

Figure 3: Manual Mode

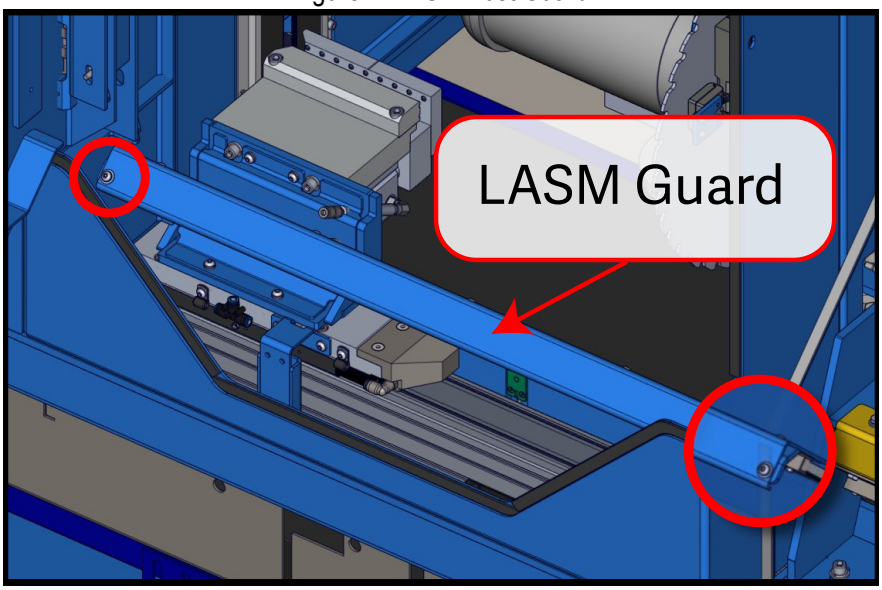


2. Adjust the bevel so that the saw blade is as close as possible to the infeed side of the saw chamber.
3. Move the LASM jaws to approximately the middle of the saw chamber.
4. Unclamp the LASM jaws by pressing the Clamps button on the screen then selecting Unclamp.
5. Open the saw chamber door.
6. Lockout/tagout the electrical and pneumatic systems of the machine using the Lockout/Tagout Instructions on page 3.

Removing the LASM from the Saw

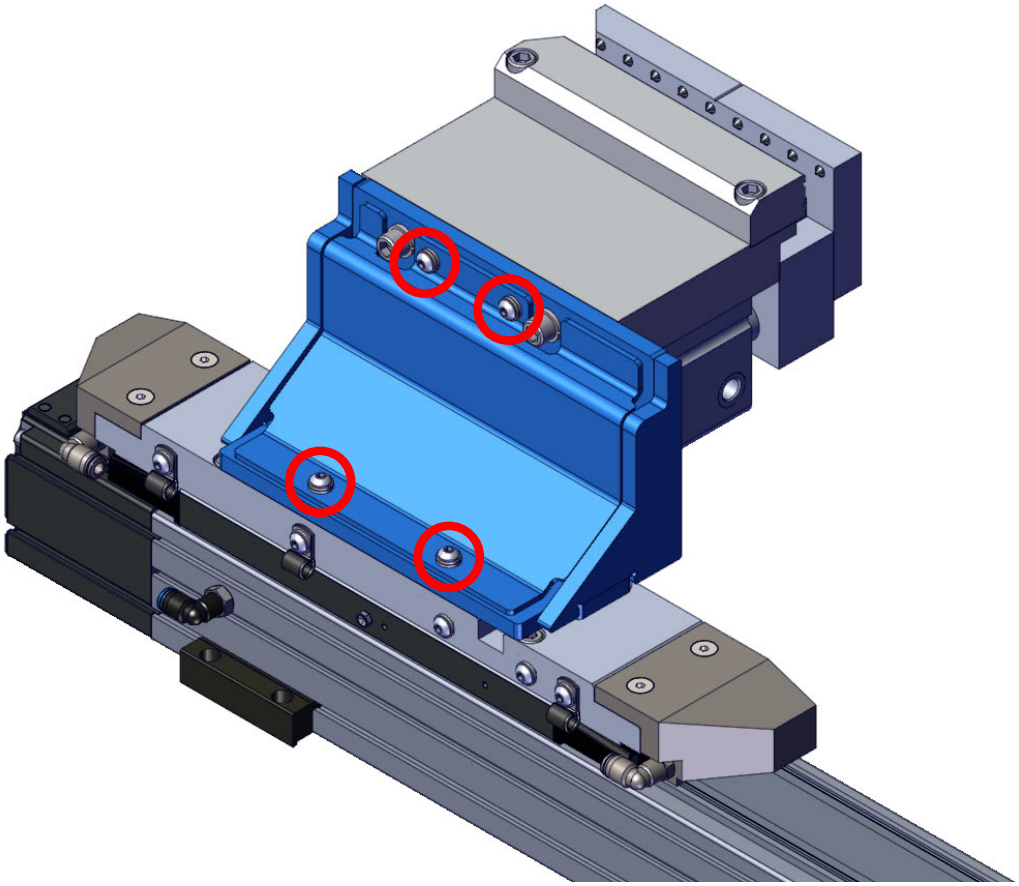
1. Remove the dust guard.

Figure 4: LASM Dust Guard



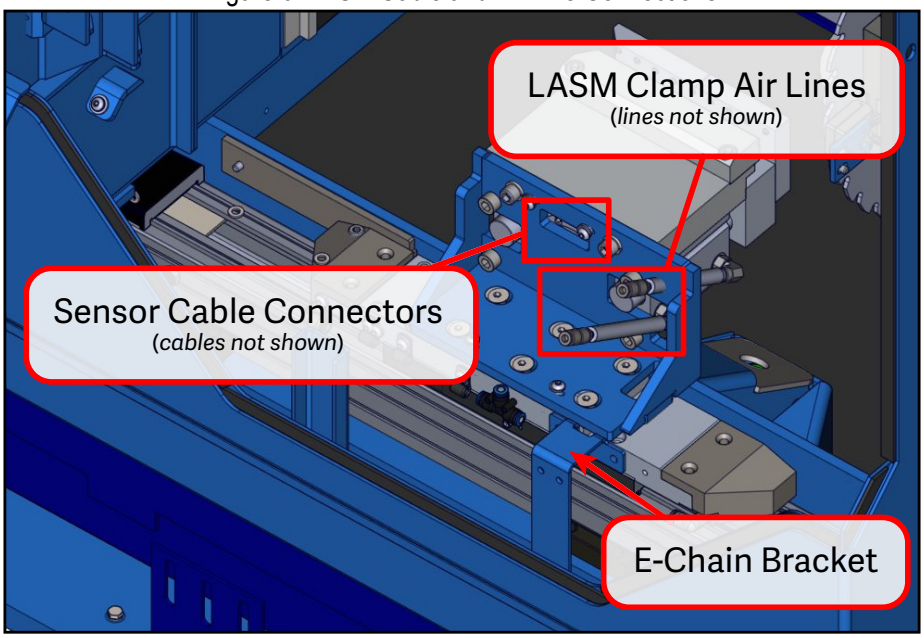
2. Remove the four screws holding the LASM dust cover.

Figure 5: LASM Dust Cover Screws



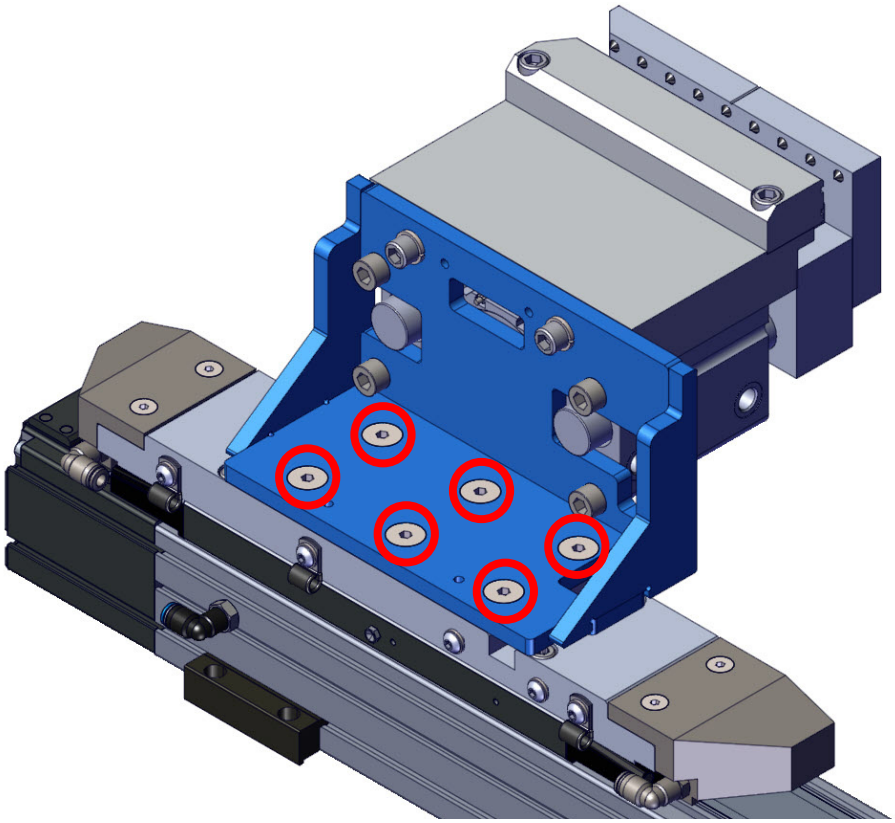
3. Mark the sensor cable connectors to note the correct connector for each cable. Then, remove air lines from the LASM and disconnect the e-chain bracket.

Figure 6: LASM Cable and Air Line Connections



4. Remove the six screws used to mount the LASM to the carriage.

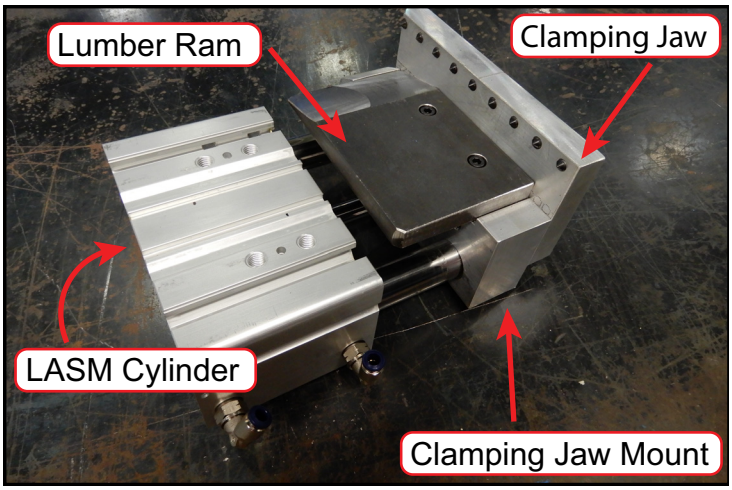
Figure 7: LASM Mount Screws



Disassembling the LASM Cylinder

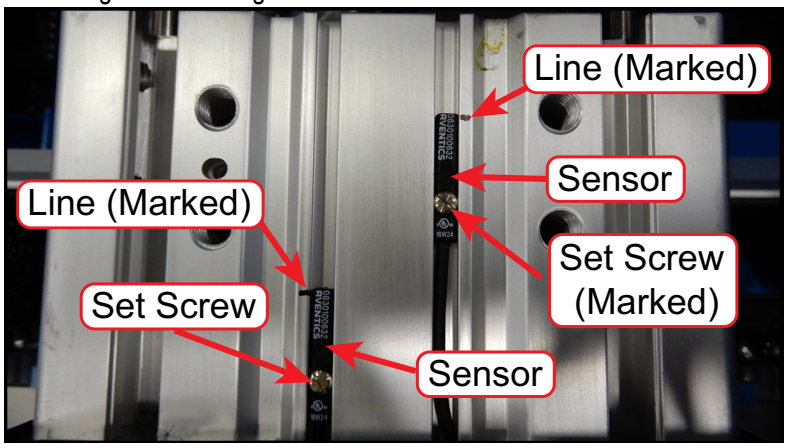
1. Use a hex wrench to detach the lumber ram from the clamping jaw mount. Remove any shims beneath it. If there are shim washers on top of the shims, keep them.

Figure 8: Clamping Jaw, Lumber Ram, and Mount



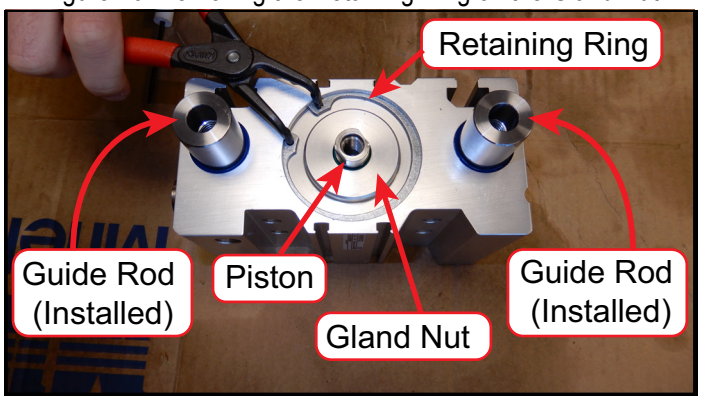
2. Detach the clamping jaw from the clamping jaw mount.
3. Detach the clamping jaw mount from the guide rods and piston.
4. Inspect all washers, thrust bearing, and spring. Replace hardware as necessary.
5. Remove the sensors from the LASM cylinder by using the following steps.
   a) Use a permanent marker to draw lines at the ends of the sensors if no mark exists. Mark the set screw of the right-hand sensor but not the set screw of the left-hand one. These marks make re-installation easier.
   b) Use a flathead screwdriver to loosen the set screws on top of the sensors.

Figure 9: Marking Locations to Remove Set Screw Sensors



6. Clean any dust and debris thoroughly from the LASM, taking special care near the gland nut and guide rods.
7. Use retaining ring pliers to remove the retaining ring that holds the gland nut in place.

Figure 10: Removing the Retaining Ring on the Gland Nut

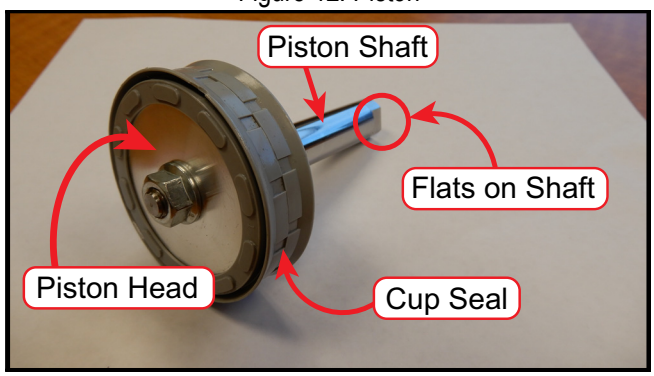


8. Pull the piston from the cylinder to remove the gland nut. Discard the old gland nut. Take note of the color of the seal on the gland nut.
9. Pull the guide rods from the cylinder.
10. Use a small flathead screwdriver to pry the scrapers from the guide rod holes. Note the color of the guide rod scrapers, then discard them.

Figure 11: Guide Rod Scrapers

11. Unscrew the nut on the piston shaft to detach the piston head from the piston shaft. Keep the nut, and discard the old piston head.

Figure 12: Piston



Cleaning and Inspection

1. Thoroughly clean the body of the cylinder, piston shaft, and the cylinder guide rods.
2. Clean inside the guide rod bores and make sure to get all of the debris off of the bearings.
3. Inspect all parts for excessive wear, deep grooves, and divots.
4. Insert clean guide rods into the cleaned body and bearings and inspect for worn bearings. If the shafts are excessively loose, replace the entire cylinder.

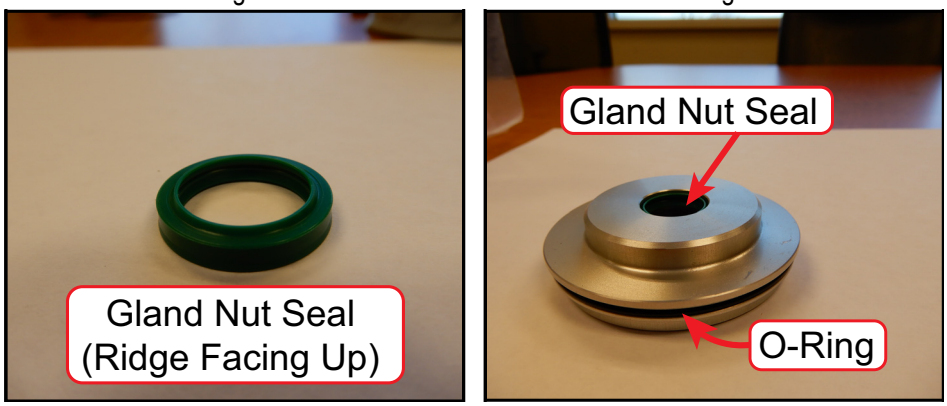
Installing the Seal Kit

1. Attach the new piston head to the piston shaft using thread adhesive. Use a wrench to tighten the nut securing the piston head to the piston shaft.
2. Place new guide rod scrapers into the guide rod holes. The small ridge on the scraper should be facing upward.

Figure 13: Guide Rod Scraper

3. Place a black O-ring on the gland nut. You should have two spare O-rings in the kit.

Figure 14: Gland Nut Seal and Gland Nut O-Ring



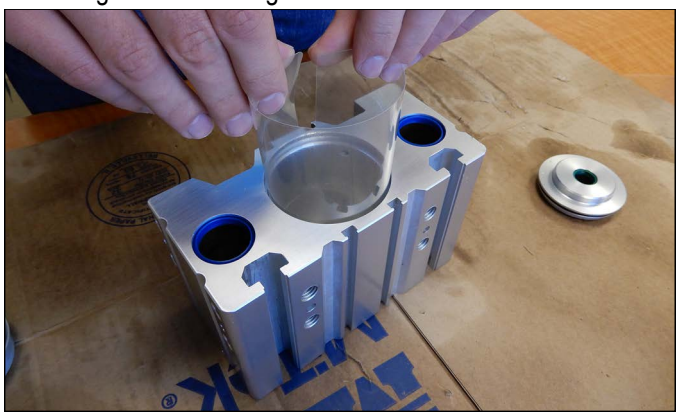
4. Place the appropriately colored gland nut seal, noted in Step 8 on page 9 into the top of the gland nut. The small ridge of the seal should be facing upward.

Reassembling the LASM

Fitting the piston into the cylinder without the plastic sheet will cause the piston to hang on to the cylinder lip.

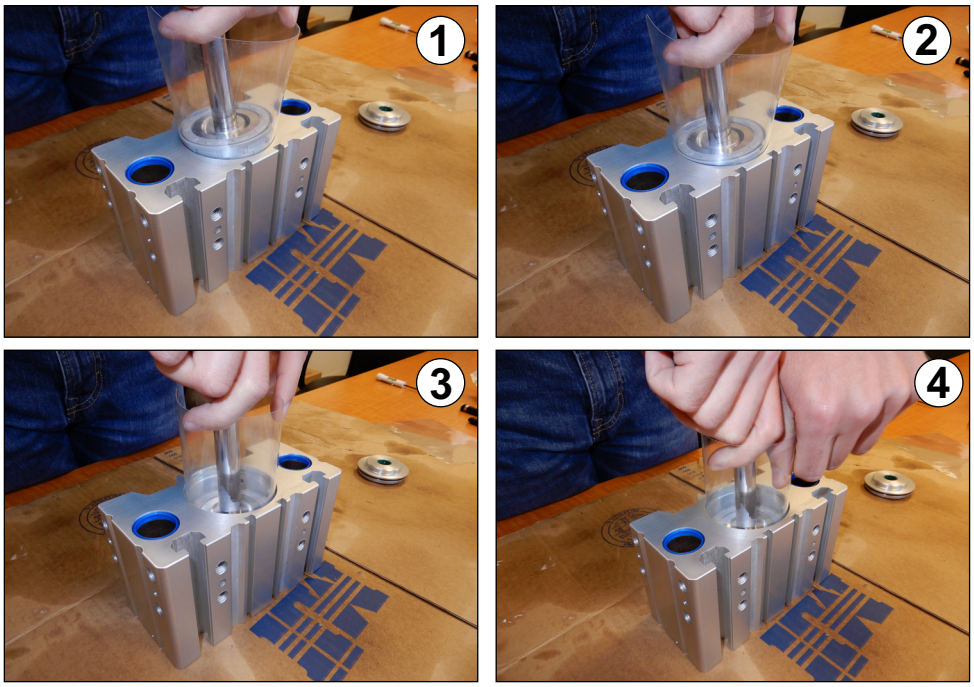
1. Reinsert the piston into the cylinder by using the following steps:
   a) Wipe the cylinder clean with a rag.
   b) Apply Kluber Microlube 261 or a comparable grease to the outside of the cup seal on the piston head.
   c) Form a circle with the included plastic sheet. Insert the bottom of the rolled up sheet approximately 1-1/2" to 2" into the cylinder.

Figure 15: Forming a Circle with the Plastic Sheet



   d) Slide the piston into the cylinder through the circle formed by the plastic sheet. Tilt the piston head lower on the side with the gap in the plastic to avoid the lip in the cylinder. Push the piston into the cylinder.

Figure 16: Placing the Piston into the Cylinder



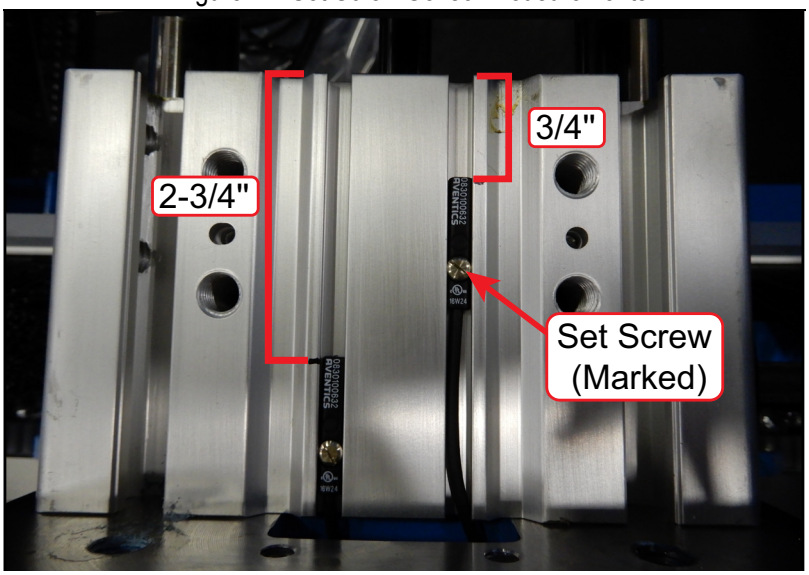
   e) Pull the plastic sheet from the cylinder.

2. Replace the gland nut by pressing it firmly over the piston shaft and into place on the cylinder.
3. Use retaining ring pliers to place the retaining ring over the gland nut. It should snap into place. Refer to Figure 10 on page 9.
4. Reattach the clamping jaw mount by using the following steps:
   a) Slide the guide rods into their holes. The circular end with threads inside should be facing upward. Make sure that the guide rods are pushed in far enough to stick slightly from the rear of the cylinder to prevent binding later.
   b) Place the clamping jaw mount over the guide rods and piston.
   c) Reattach the clamping jaw mount to the guide rode and piston.
   d) Reattach the clamping jaw to the clamping jaw mount. Do not attach the shim and lumber ram for now.

Placing the LASM Cylinder Back onto its Carriage

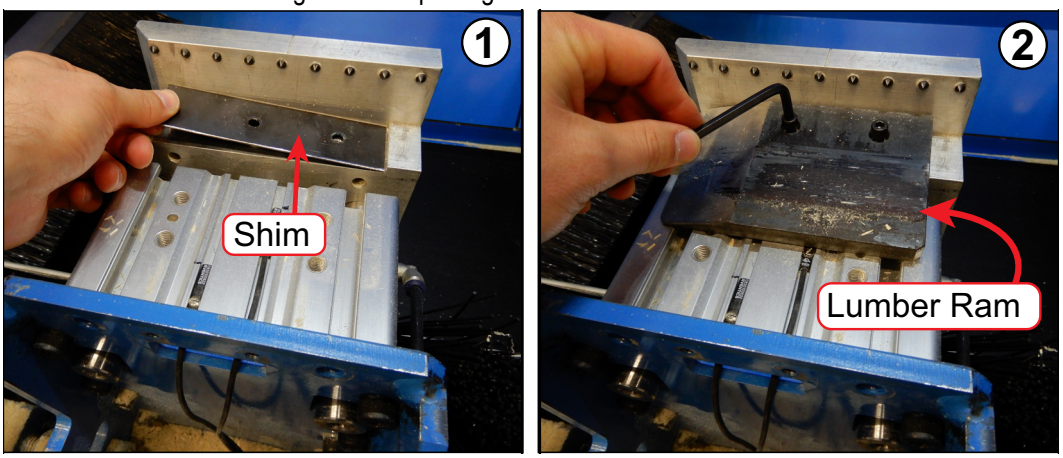
1. Slide the sensors back onto the top of the LASM. The sensor with the marked set screw should be on the right. Align the front of the sensors with the marks on the cylinder. Default measurements appear below in the figure if you forgot to mark the cylinder.

Figure 17: Set Screw Sensor Measurements



2. Tighten the set screws on the sensors.
3. Place the shim(s) onto the clamping jaw mount. If you removed shim washers with the shim or shims earlier, place them on the shim or shims. Place the lumber ram over the shim or shims. Tighten the screws on the lumber ram. See Figure 18.

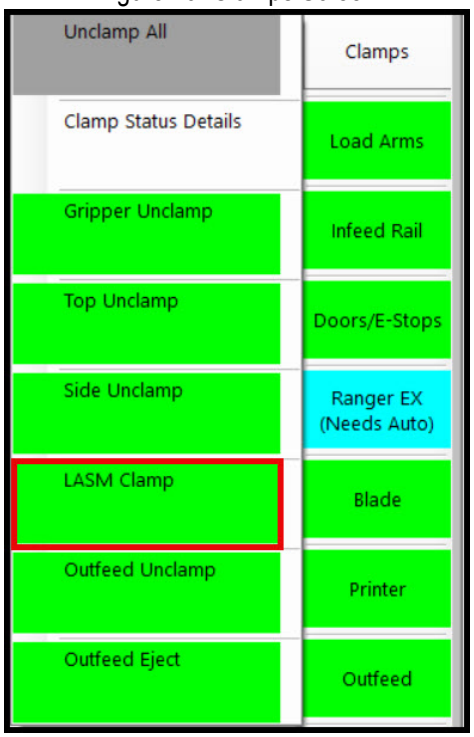
Figure 18: Replacing the Shim and Lumber Ram



4. Place the LASM onto the carriage and line up the screws for the mounting bracket. Tighten the screws. See Figure 7 on page 7 for screw locations.
5. Replace the E-chain bracket, then reconnect the air lines and the sensor cables removed in Step 3 on page 7.

6. Replace the dust cover and dust guard. See Figure 4 and Figure 5 on page 6 for screw locations.
7. Close the saw chamber door.
8. Remove lockout/tagout devices and power on the saw.
9. On the machine interface screen, select the **Clamps** button, then press **LASM Clamp**. Clamp and unclamp the LASM several times to ensure it is working properly.

Figure 19: Clamps Screen



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