

MiTek®
Machinery Division

Service Bulletin

Machinery Affected: *BLADE™* Wood Processing System
Document: SB223
Title: Replacing Seals on the LASM Cylinder
Distribution: Customers Upon Order



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Purpose and Scope

Over time, the scrapers, seals, piston head, and gland nut on the LASM assembly may become worn. The seal kit replaces these parts.

The parts included in this kit are shown in Table 1. Please ensure all parts are present before starting this procedure.

Table 1: Parts in SB223KIT

Qty.	Part Description	Part #
1	Service bulletin document	SB223
1	Seal kit	423455
1	Gland nut	
1	Gland nut seal	
3	O-rings (two extra)	
2	Guide rod scrapers (Royal Blue)	
2	Guide rod scrapers (Navy Blue)	
1	Piston head	
1	4" x 7-1/4" plastic sheet	655032

Figure 1: SB223KIT Parts

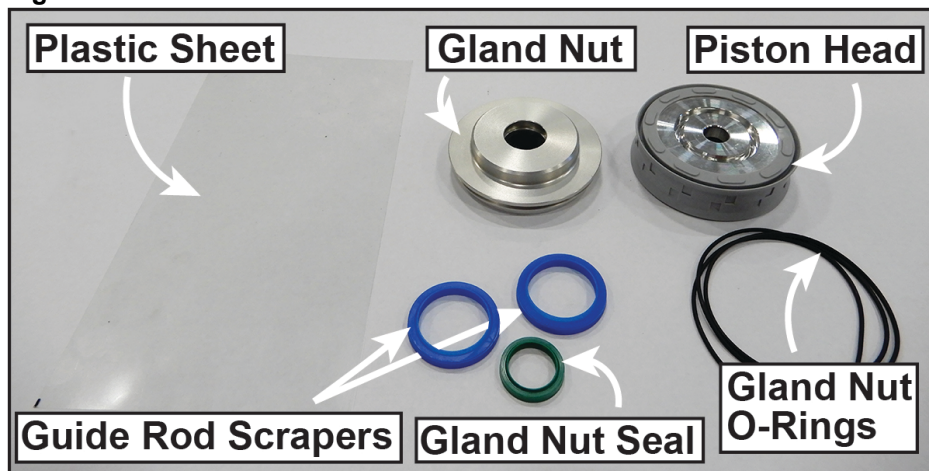
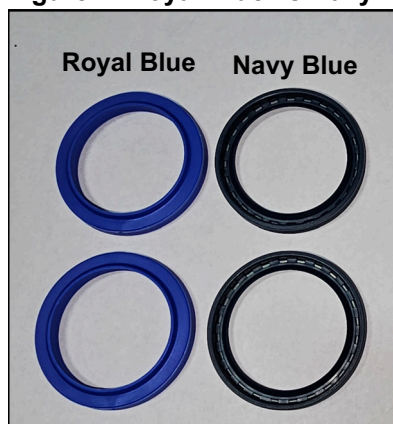


Figure 2: Royal Blue vs Navy Blue Guide Rod Scrapers



Match the color of the new guide rod scraper to that of the guide rod scraper that is currently in your LASM.





Before beginning the procedure, gather the supplies listed here:

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

If you have any questions, call MiTek Machinery Division Customer Service at 800-523-3380.



Procedure

Preparing the Saw

1. Turn the saw to Manual mode. Elevate the saw blade to its highest position.
2. Adjust the bevel so that the blade is as close as possible to the infeed side.
3. Move the LASM jaws to the middle of the saw chamber.
4. Unclamp the LASM jaws.

Electrical Lockout/Tagout Procedures





 WARNING	
	<p>ELECTROCUTION HAZARD!</p> <p>Verify that all power to the machine has been turned off and follow approved lockout/tagout safety procedures before performing any maintenance.</p> <p>All electrical work must performed by a qualified electrician.</p> <p>If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.</p>

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

Before performing maintenance on any machine with electrical power, lockout/tagout the machine properly. When working on a machine outside of the machine's main electrical enclosure, not including work on the electrical transmission line to the machine, follow your company's approved lockout/tagout procedures which should include, but are not limited to the steps here.

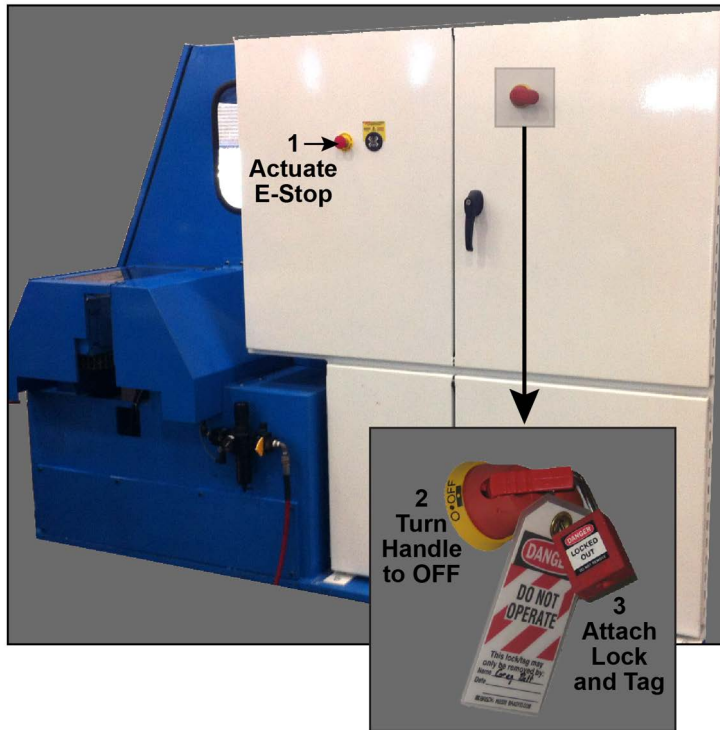
1. Engage an E-stop on the machine.

- Turn the disconnect switch handle on the machine's main electrical enclosure to the Off position. See Figure 3.



	 WARNING
	<p>ELECTROCUTION HAZARD.</p> <p>When the disconnect switch is off, there is still live power within the disconnect switch's enclosure. Always turn off power at the building's power source to the equipment before opening this electrical enclosure!</p>



- Attach a lock and tag that meets OSHA requirements for lockout/tagout.

Figure 3: Lockout/Tagout on the Main Electrical Enclosure



Pneumatic System Lockout/Tagout Procedure

	 WARNING
	<p>MOVING PARTS CAN CRUSH AND CUT.</p> <p>Always verify that power to the machine has been turned off and follow approved lockout/tagout procedures.</p> <p>Turn off the air switch before performing any maintenance on the equipment.</p>

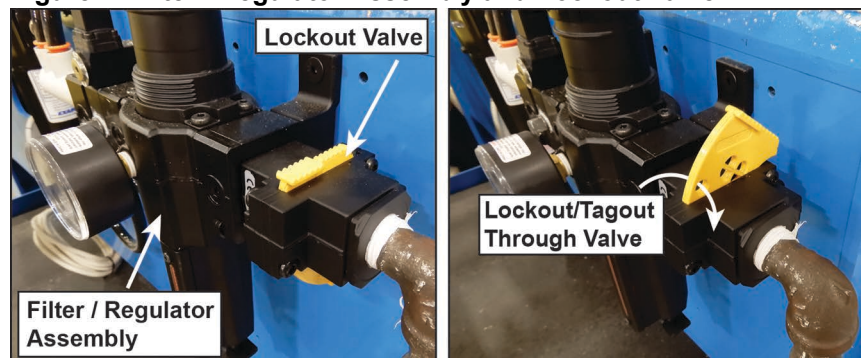
	 WARNING
	<p>HIGH PRESSURE HAZARD.</p> <p>Bleed pneumatic lines before performing any maintenance on the pneumatic system. See following steps for details.</p>

1. Lockout/tagout the filter / regulator assembly by using the following steps.

- a) Locate the yellow lockout valve on the filter / regulator assembly on the outfeed side of the saw. See Figure 4.



Figure 4: Filter / Regulator Assembly and Lockout Valve

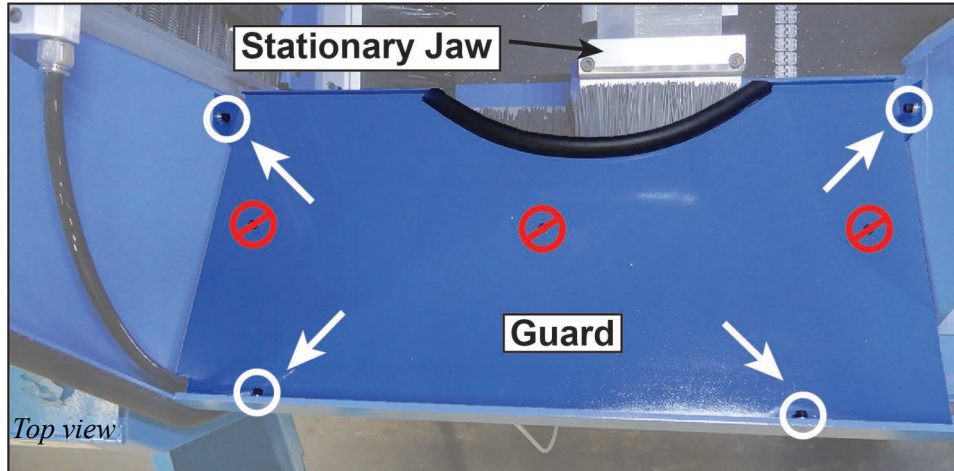


- b) Push the valve up from below. Lockout/tagout on the valve as shown in Figure 4.

Removing the LASM Cylinder

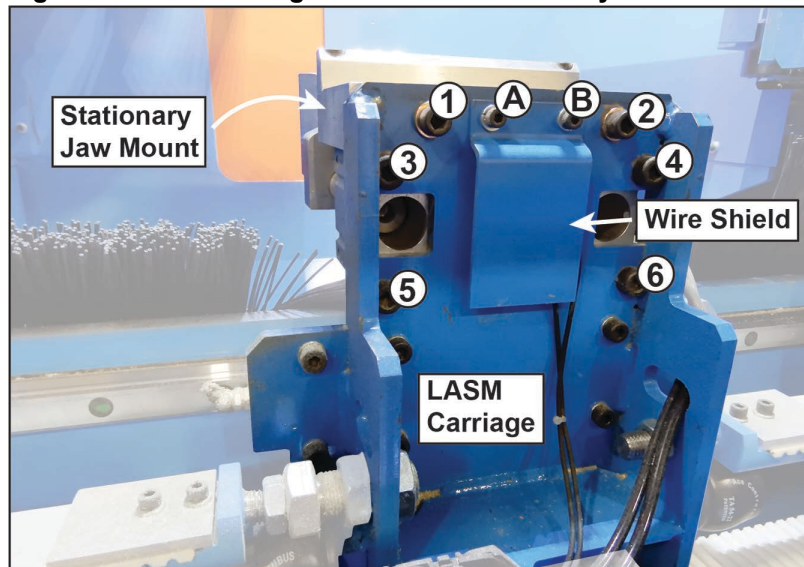
1. Open the saw chamber door.
2. Remove the four screws holding the guard in place above the LASM. See Figure 5. Remove the guard.

Figure 5: Guard



3. Remove the LASM cylinder from its carriage by using the following steps.
 - a) Use an Allen wrench to remove screws 1 and 2 with their washers. See Figure 6 for screw location.
 - b) Remove the stationary jaw mount and stationary jaw.

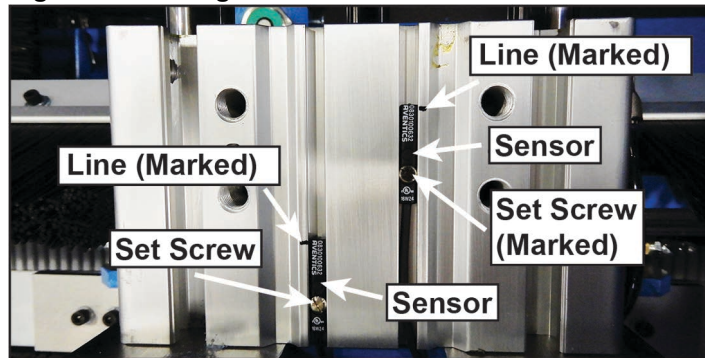
Figure 6: LASM Carriage Screws and Stationary Jaw Mount





- c) Remove the sensors from the LASM cylinder by using the following steps.
 - 1) 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. See Figure 7.

These marks make re-installation easier.
 - 2) Use a flathead screwdriver to loosen the set screws on top of the sensors. See Figure 7.

Figure 7: Marking Locations to Remove Set Screws

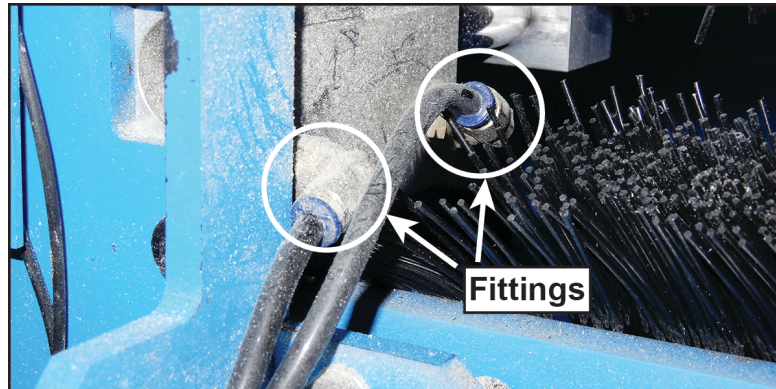


- 3) Use an Allen wrench to remove screws A and B attaching the wire shield to the LASM carriage. See page 7 for the screw locations.
- 4) Remove the wire shield.
- 5) Pull the sensors from the LASM cylinder.

	 WARNING
	<p>Wear safety glasses and keep the pneumatic lines away from your face while detaching them. Sawdust may blow out of the saw chamber because of residual air pressure in the lines.</p>

- d) Remove the pneumatic lines from the LASM by using the following steps.
- 1) Locate the two pneumatic lines on the right-hand side of the cylinder. Wrap an inch of tape around the line that goes into the fitting farthest from the LASM carriage.
The tape will make re-installation easier.
 - 2) Push the blue disks while pulling the tubes at the same time to disconnect the pneumatic lines. See Figure 8.

Figure 8: Pneumatic Lines



- e) Remove screws 5, 6, 3, and 4 to remove the LASM cylinder from its carriage. See page 7 for screw locations.

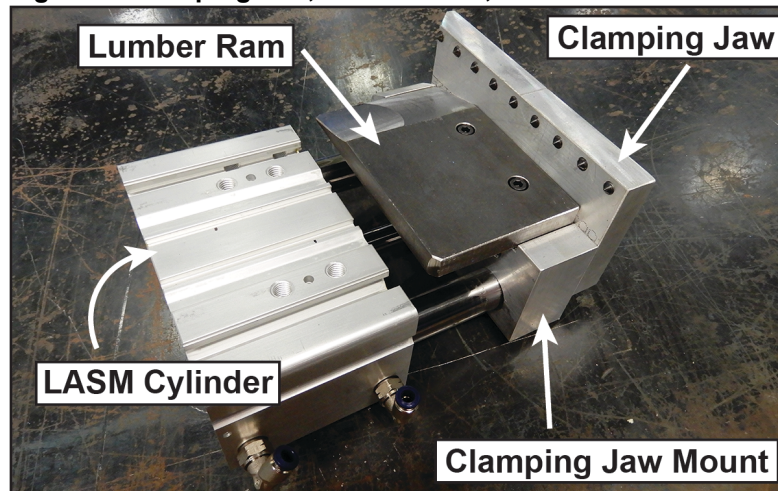
Disassembling the LASM Cylinder



You may need to use an Allen wrench on the rear of the guide rods to prevent them from turning while removing the clamping jaw mount.

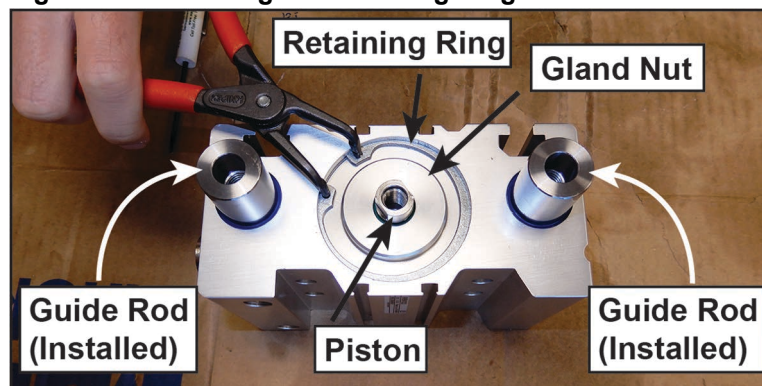
1. Use an Allen wrench to detach the lumber ram from the clamping jaw mount. See Figure 9. Remove the shim or shims beneath it. If there are shim washers on top of the shim, keep those.
2. Detach the clamping jaw from the clamping jaw mount.
3. Detach the clamping jaw mount from the guide rods and piston.

Figure 9: Clamping Jaw, Lumber Ram, and Mount



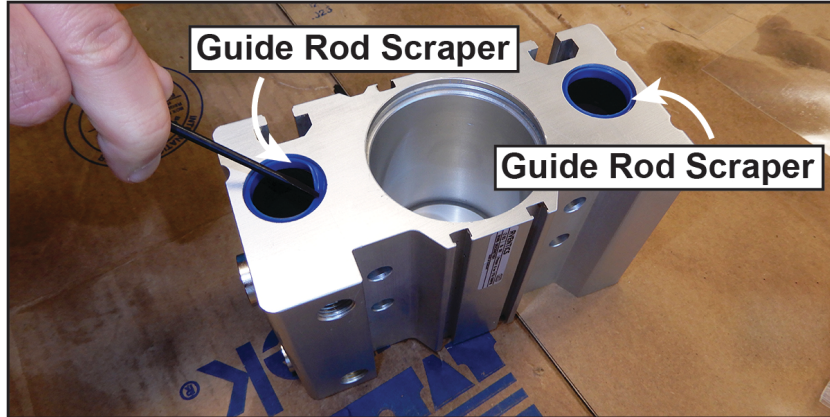
4. Clean dust and debris thoroughly from the area near the gland nut and guide rods to prevent dust, dirt, or other debris from entering the cylinder or guide rod holes.
5. Use retaining ring pliers to remove the retaining ring that holds the gland nut in place. See Figure 10.
6. Pull the piston from the cylinder to remove the gland nut. Discard the old gland nut.

Figure 10: Removing the Retaining Ring on the Gland Nut



7. Pull the guide rods from the cylinder. After that, use a small flathead screwdriver to pry the scrapers from the guide rod holes. See Figure 11. Discard the old scrapers.

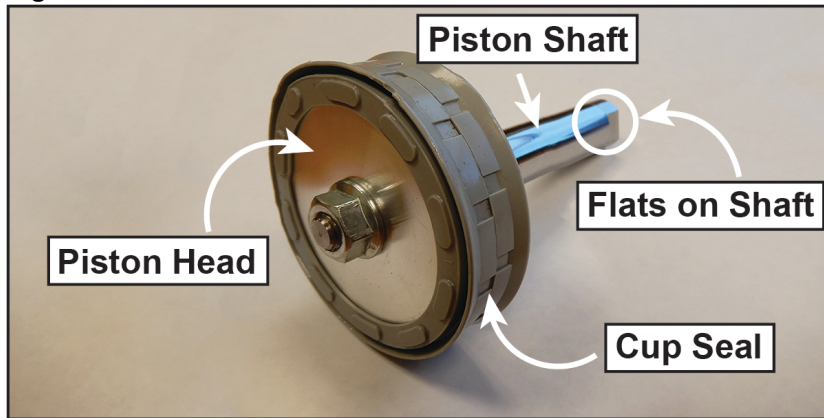
Figure 11: Removing Guide Rod Scrapers



Match the color of the new guide rod scraper to that of the guide rod scraper that is currently in your LASM.

8. Unscrew the nut on the piston shaft to detach the piston head from the piston shaft. See Figure 12. Keep the nut. Discard the old piston head.

Figure 12: Piston



You may need a wrench on the flats of the piston shaft to keep the shaft from rotating while unscrewing the nut.

Installing the Seal Kit

1. Attach the new piston head to the piston shaft using thread adhesive. Use a wrench to tighten the nut.
2. Place the new guide rod scrapers into the guide rod holes. The small ridge on the scraper should be facing upward. See Figure 13 for detail of the scraper.

Figure 13: Guide Rod Scraper

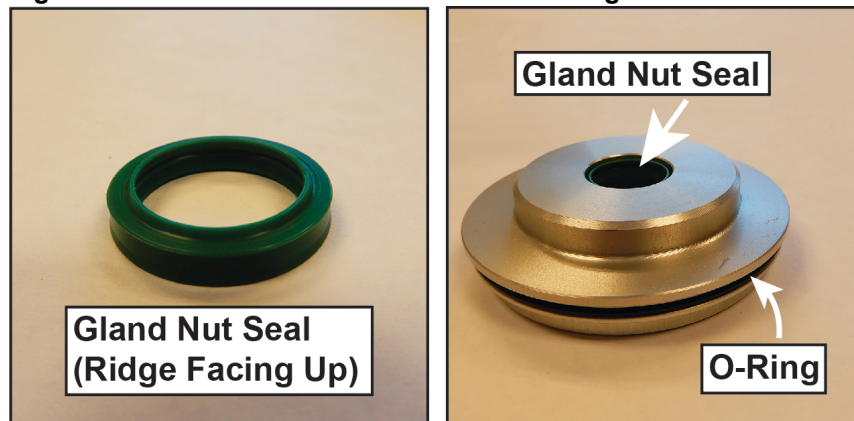


Match the color of the new guide rod scraper to that of the guide rod scraper that is currently in your LASM.



3. Place a black O-ring on the gland nut. See Figure 14 for placement. You should have two spare O-rings in the kit.

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



4. Place the green or red gland nut seal into the top of the gland nut. The small ridge on the seal should be facing upward. See Figure 14.

Reassembling the LASM

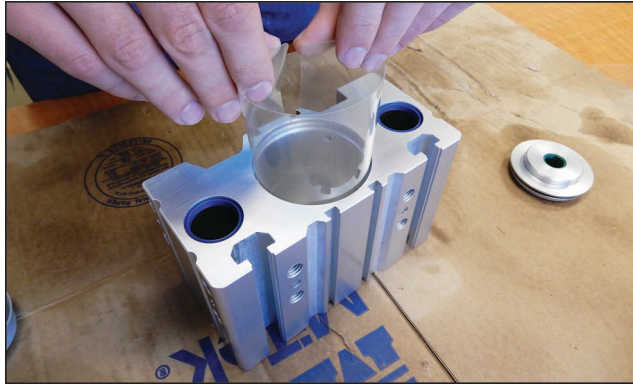
1. Reinsert the piston into the cylinder by using the following steps.
 - a) Wipe the inside of the cylinder with a clean rag.

- b) Apply Klüber Microlube 261 or comparable grease to the outside of the cup seal on the piston head. See page 11 to identify the cup seal.
- c) Form a circle with the plastic sheet. The bottom of the sheet should be roughly 1-1/2" to 2" into the cylinder. See Figure 15.



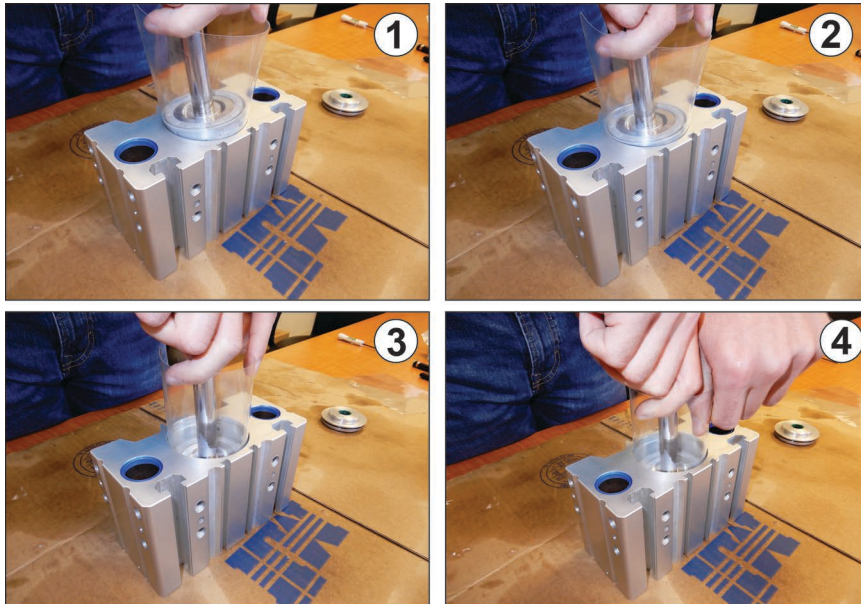
Fitting the piston into the cylinder without the plastic sheet will cause the piston to hang on the cylinder lip.

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. See Figure 16.

Figure 16: Placing the Piston into the Cylinder



- e) Pull the plastic sheet out 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. (See page 10 for an assembled cylinder.)
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 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 rod 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

Removing the brush beneath the cylinder makes reinstalling the cylinder easier, but it is not necessary.

1. Reattach the LASM cylinder to its carriage by using the following steps.
 - a) Using thread adhesive, insert and tighten screws 3, 4, 5, and 6. See page 16 for screw locations.
 - b) 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. Measurements appear below if you forgot to mark the cylinder.
 - Saw frames 1 through 170 have the old sensors, shown in Figure 17.
 - Saw frames 171 and higher have the new sensors, shown in Figure 18.

Figure 17: Sensor Placement for Saws 1 through 170

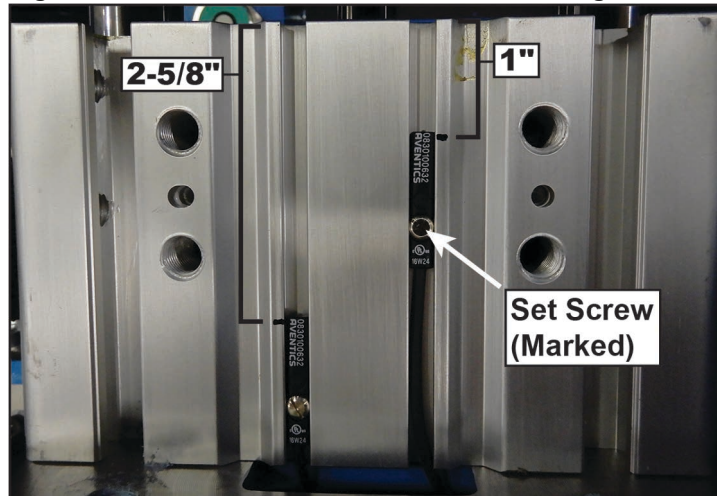
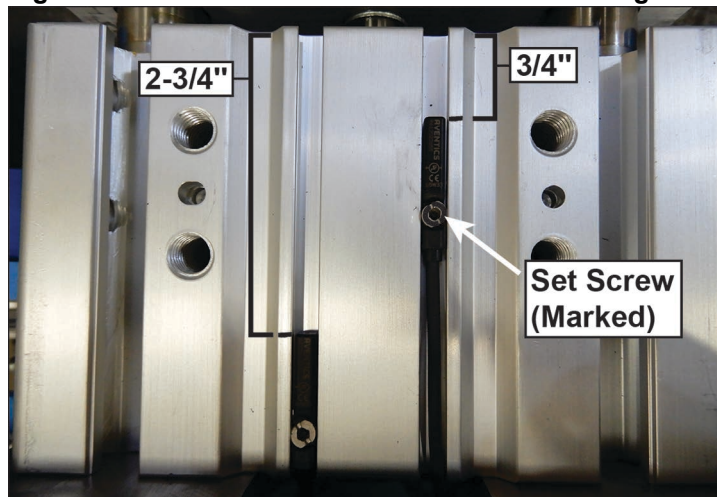


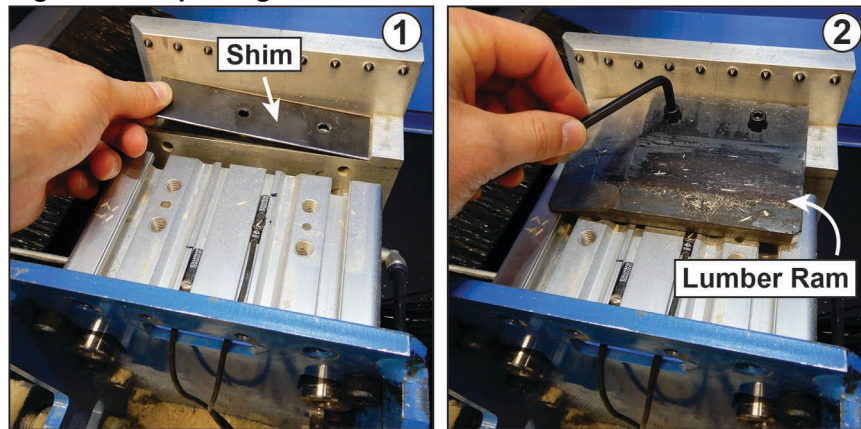
Figure 18: Sensor Placement for Saws 171 and Higher



- c) Tighten the set screws on the sensors.

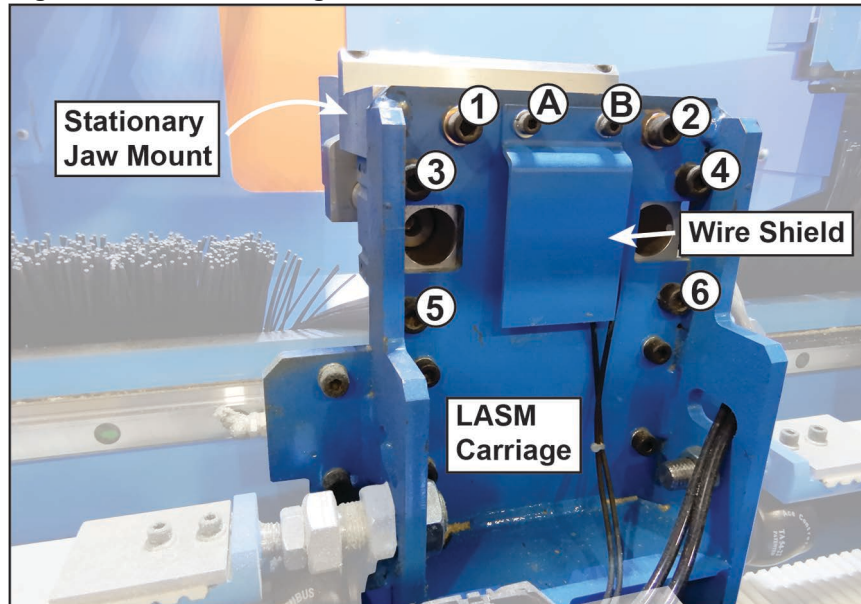
- d) Place the shim or shims onto the clamping jaw mount. If you removed shim washers with the shim or shims earlier, place them on the shim or shims. Place the lumber ram over the shim or shims. Tighten the screws on the lumber ram. See Figure 19.

Figure 19: Replacing the Shim and Lumber Ram



- e) Place the wire shield back onto the carriage. Insert and tighten screws A and B and their washers. See Figure 20 for screw locations.

Figure 20: LASM Carriage Screws

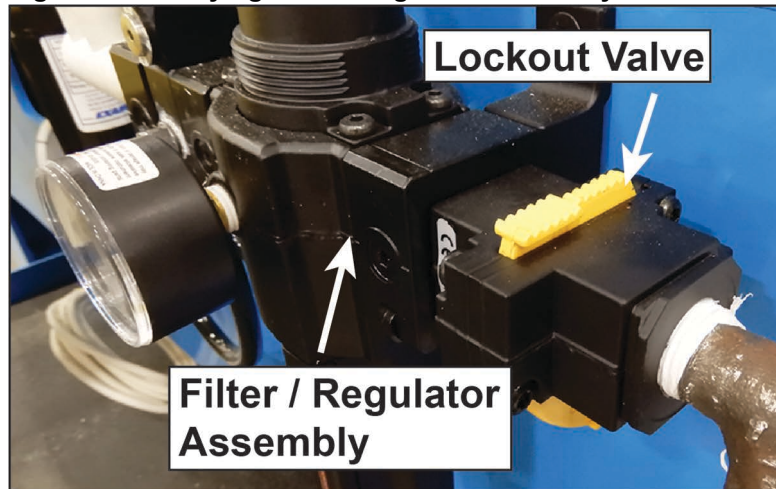


If the clamping jaw is too far closed to install the stationary jaw mount, push the guide rods forward through the rear of the carriage.

2. Place the stationary jaw mount back onto the LASM cylinder. Insert and tighten screws 1 and 2 with their washers. See Figure 20 for screw locations.
3. Reconnect the two pneumatic lines on the right-hand side of the LASM cylinder by pushing the tubes into the fittings. The line marked with tape should go into the fitting farthest from the LASM carriage.

4. Close the saw chamber door.
5. Return to the outfeed side of the saw. Prepare the saw to restart by using the following steps.
 - a) Remove the lock and tag from the filter / regulator assembly.
 - b) Press the yellow lockout valve down.

Figure 21: Readyng Filter / Regulator Assembly

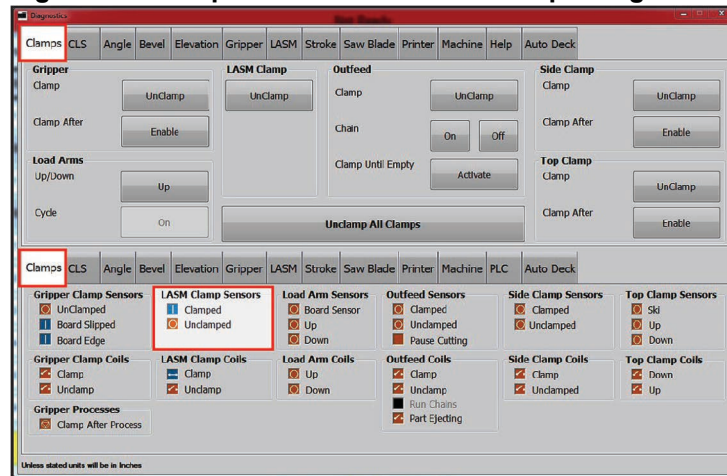


- c) Remove the lock and tag from the disconnect switch on the main electrical enclosure.
- d) Turn the disconnect switch to the On position.

6. Use the touch screen monitor to make sure that the LASM functions properly by using the following steps.
 - a) Actuate the LASM cylinder several times. The clamping jaw should move smoothly.
 - b) Clamp the LASM jaw shut. On the Clamps Screen, the blue indicator should appear next to Clamped. The orange indicator should appear next to Unclamped. See Figure 22.

To reach the Clamps Screen, select Diagnostics>Detailed Diagnostics>Clamps. Then select the Clamps Tab.

Figure 22: Clamp Status Indicator on Clamps Diagnostic Screen



- c) Unclamp the LASM jaw. The blue indicator should appear next to Unclamped. The orange indicator should appear next to Clamped.
7. Resume operation.

END OF SERVICE BULLETIN