

Service Bulletin

Machinery Affected: *BLADE*® Wood Processing System
Document: SB230
Title: Replacing the CLS and Cable
Applies To: Any Existing CLS
Distribution: Customers, Upon Order



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Purpose and Scope

This Service Bulletin describes how to replace the CLS sensor, and if necessary, the sensor cable. If the new sensor is identical to the sensor being replaced, the cable is not needed. If an old-style sensor is being replaced with a newer-style sensor, the cable must be replaced and routed as described here.

Overview

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

Table 1: Parts in SB230KIT-A: No Cable Needed

Qty.	Part Description	Part #
1	CLS sensor	92090-501
1	Service Bulletin document	SB230

Supplies Needed: Kit A
Lockout/tagout equipment
Lock-jaw pliers
Slotted screwdriver

Table 2: Parts in SB230KIT-B: Includes Cable

Qty.	Part Description	Part #
1	CLS sensor	92090-501
1	Sensor cable	515759
8	Cable ties	508704
1	Service Bulletin document	SB230



Supplies Needed: Kit B
Lockout/tagout equipment
Lock-jaw pliers
Slotted screwdriver
Hex key set
Duct or masking tape
Wire strippers
Wire cutters
Cutters for cable ties

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

Procedure





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 be 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.
2. Turn the disconnect switch handle on the machine’s main electrical enclosure to the “off” position. See Figure 1.

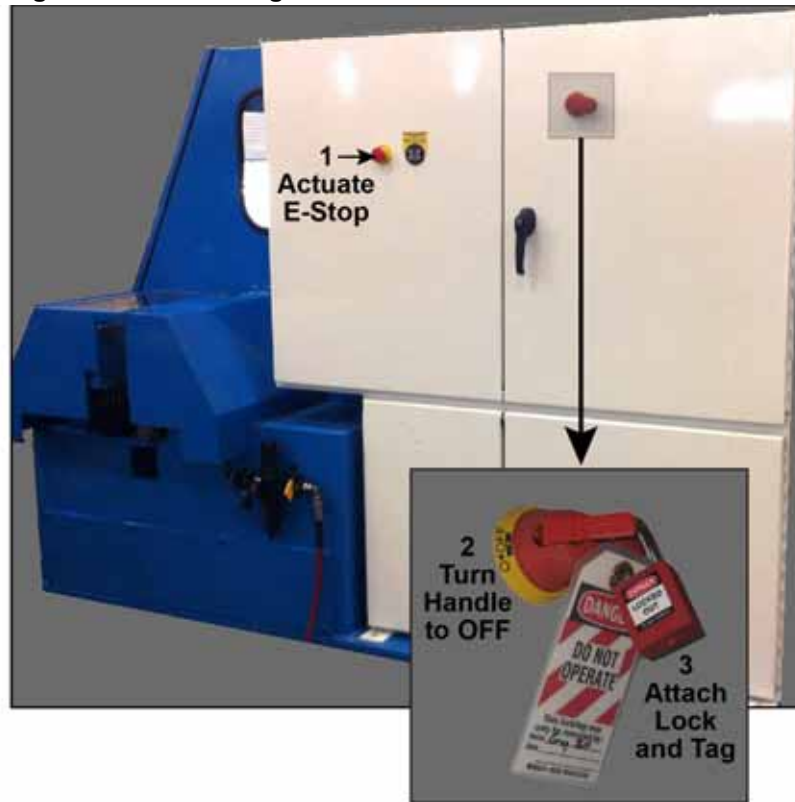
	 WARNING
	<p>ELECTROCUTION HAZARD.</p> <p>When the disconnect switch is off, there is still live power within the disconnect switch’s enclosure. Always turn off power at the building’s power source to the equipment before opening this electrical enclosure!</p>

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







Because the bottom half of the main electrical enclosure is separated from the top half and only has 24-volt power, it is considered “outside the machine’s main electrical enclosure” for lockout/tagout purposes.

Figure 1: 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>

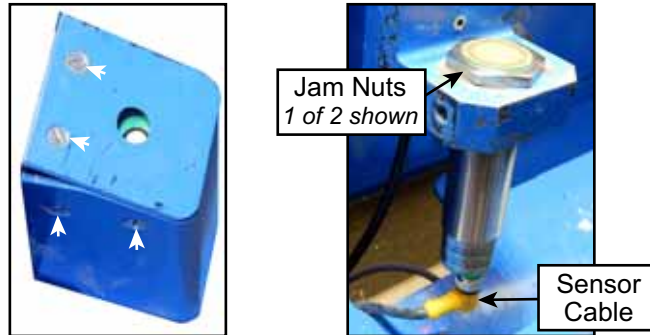
	 WARNING
	<p>HIGH PRESSURE HAZARD.</p> <p>Bleed pneumatic lines before performing any maintenance on the pneumatic system.</p>



Replacing the CLS

1. Remove old CLS sensor as shown in Figure 2.

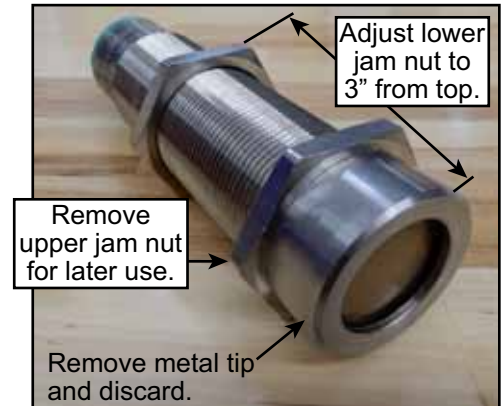
Figure 2: Remove Parts Shown



2. Install the new CLS sensor:

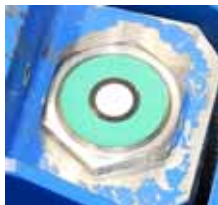
- a) Prepare the new CLS sensor as shown in Figure 4.
- b) Insert the sensor from the bottom of the bracket and place the second jam nut on from the top.
- c) Tighten both jam nuts so the sensor top surface is flush with the jam nut's top surface.
- d) Tighten the lower jam nut.

Figure 4: Prepare the New CLS



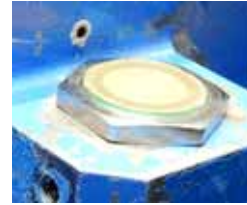
3. Determine your next step depending on which sensor style was just replaced.

If your old sensor looks like this...



Go to page 7.

If your old sensor looks like this...

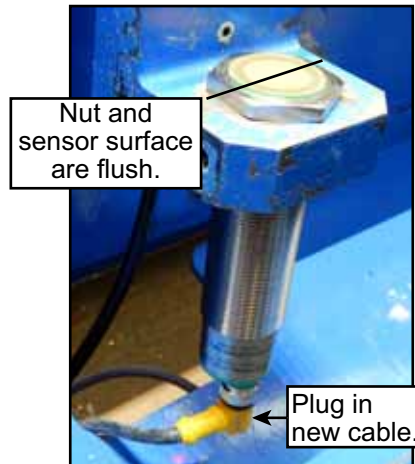


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Completion Steps if Replacing the Same Style Sensor

If the old and new sensors are identical, the same sensor cable can be used.

Figure 5: Adjust Nuts



1. Ensure the nuts are adjusted correctly so the top of the top jam nut and the top surface of the sensor are flush as shown in Figure 5.
2. Plug the existing sensor cable into the bottom of the CLS sensor.
3. Attach the sensor guards and front door.
4. Restore power.
5. Run a few test cuts to ensure the CLS is working.

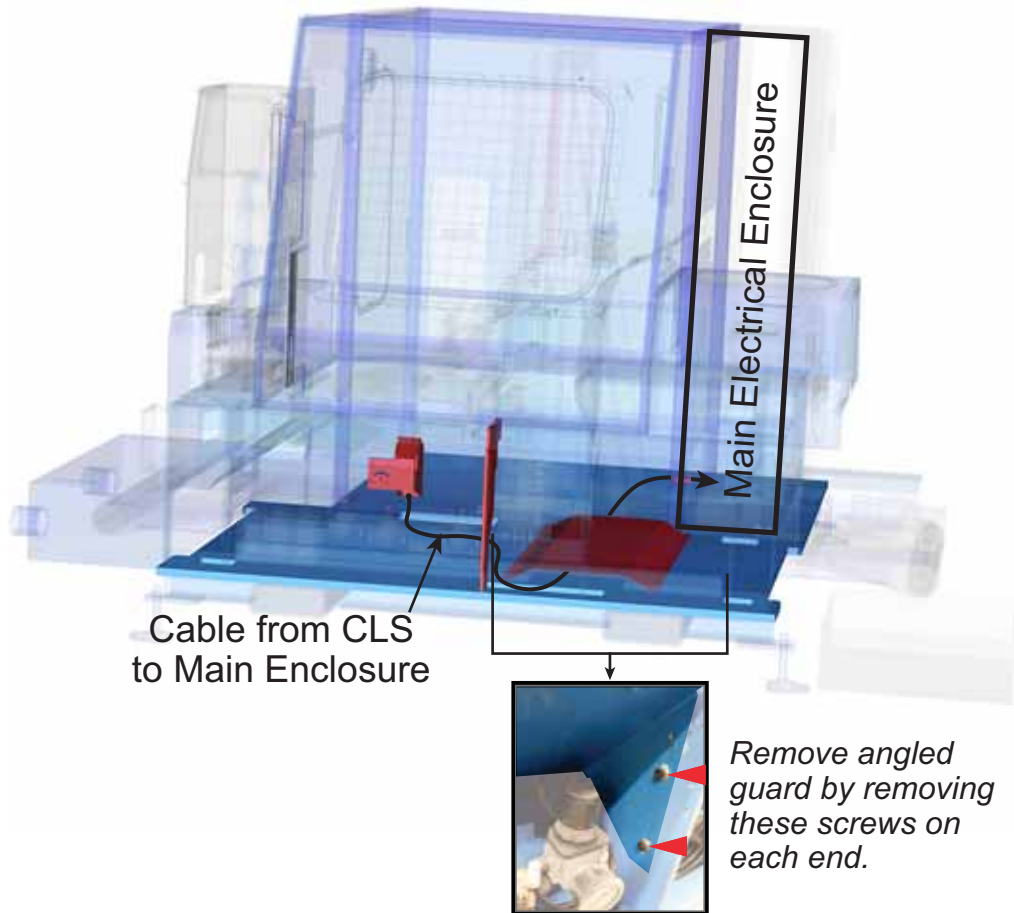
PROCEDURE FOR NEW STYLE SENSOR REPLACEMENT IS COMPLETE.

Completion Steps if Replacing an Old Sensor With a New

If the new sensor is a different style than the one replaced, the sensor cable must also be replaced. Follow these steps to replace the sensor cable and complete the CLS procedure.

1. Remove the angled guard behind the pneumatic regulators shown in Figure 6.

Figure 6: Cable Routing Overview and Guard to Remove



2. Unsecure the OLD sensor cable using these steps:

- a) At the front of the saw, locate the end of the old sensor cable that was removed from the sensor earlier. It is shown in Figure 7.
- b) Follow the old sensor cable's route into the bottom of the stroke/elevation chamber and cut any cable ties securing it to other cables.
- c) Inside the stroke/elevation chamber, continue to follow the route and cut any cable ties securing it.
- d) At the front of the saw, on the OLD sensor cable, cut the cable connector off as shown in Figure 7.

Figure 7: Cut Connector Off

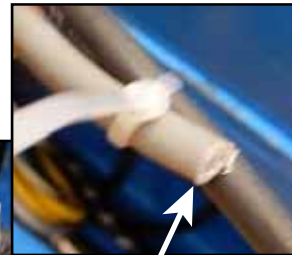


3. Connect the old cable to the new cable per Figure 8.

Figure 8: Connect the Old and New Cables

OLD cable end where connector was cut off.

Piggyback new cable onto old cable.



Cover with masking or duct tape to prevent snagging.

4. From inside the stroke/elevation chamber: Loosen the fitting shown in Figure 9. Have a second person go inside the bottom half of the main electrical enclosure and watch while you “jiggle” the cable labeled OLD in Figure 9.
5. From inside the bottom half of the main electrical enclosure: Locate the cable being removed (jiggled in previous step) and cut it near the fitting. Leave it attached to its termination points for reference later.
6. From inside the stroke/elevation chamber: Perform the steps in Figure 9.

Figure 9: Inside the Stroke/Elevation Chamber

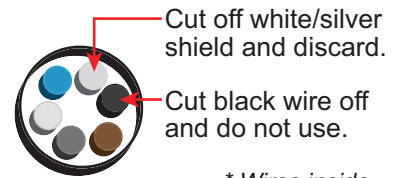


- a) Pull the old cable (cut from other side) into the stroke/elevation chamber.
- b) Pull other end until masking tape enters stroke/elevation chamber.
- c) Remove the tape and discard the OLD cable that is now loose on both ends.
- d) Thread NEW cable through fitting so it enters the bottom electrical enclosure.

7. In the bottom half of the main electrical enclosure, prepare the NEW sensor cable for termination using these steps:
 - a) Temporarily leave the old cable connected at the terminals to identify which terminals to use.
 - b) Continue to pull the new cable through the enclosure wall (from the stroke/elevation chamber) and route it through the cable-ways.
 - c) Trim the NEW cable to the length needed to reach the termination points currently used by the old cable (and shown in Figure 11).
 - d) Trim the cable insulation off as needed to access the individual wires.
 - e) Cut and discard the parts labeled in Figure 10.

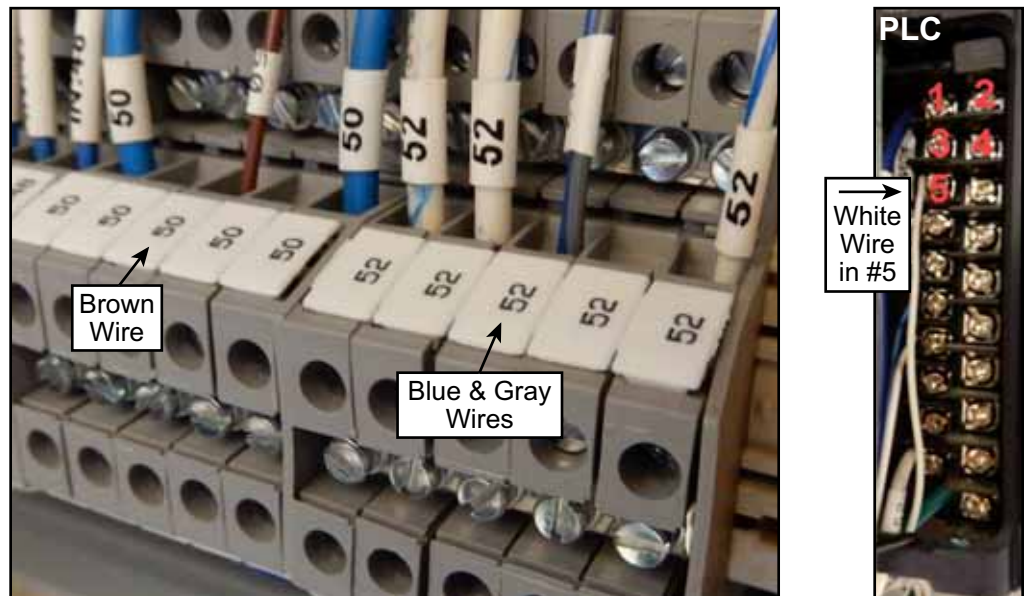
8. Remove the OLD cable from its terminals, and terminate each wire in the NEW cable according to Figure 11.

Figure 10: Cable Wires



** Wires inside cable may be different order than shown.*

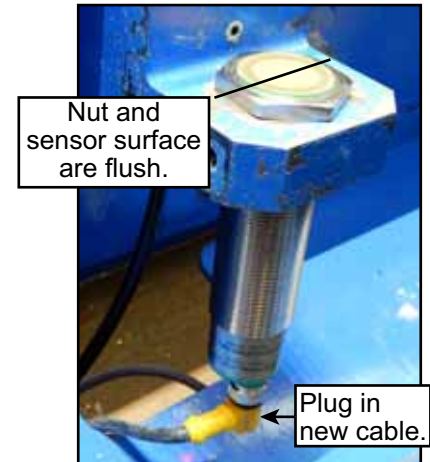
Figure 11: Wire Termination Points Inside the Bottom Main Electrical Enclosure



9. Finish the cable routing and connections with these steps:

- a) Once the new cable is routed, follow its complete route and add new cable ties wherever necessary to keep your enclosures and chambers neat and safe.
- b) Ensure the fitting in the stroke/elevation chamber (shown in Figure 9) has been tightened in place.
- c) Ensure the nuts are adjusted correctly so the top of the top jam nut and the top surface of the sensor are flush as shown in Figure 12.
- d) From the front of the saw, finish routing the connector-end of the new cable and plug the cable into the bottom of the CLS sensor.

Figure 12: Adjust Nuts



10. Re-assemble and test the saw:

- a) Attach the sensor guards, angled guard, and front door.
- b) Restore power.
- c) Perform CLS calibration using the *BLADE* software.
- d) Run a few test cuts to ensure the CLS is working.

PROCEDURE FOR OLD STYLE SENSOR REPLACEMENT IS COMPLETE.