
MiTek[®]

SERVICE BULLETIN

Document ID:
SB277

Title:
**Replacing the Gripper Obstruction
Sensor**

Affected machinery: BLADE II saw

Distribution: Customers upon order

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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Purpose and Scope

This service bulletin instructs how to replace a gripper board obstruction sensor on the BLADE II saw. The sensor sent with this kit has been preprogrammed for optimal performance and should only be adjusted if necessary.

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 SB277KIT

Quantity	Description	Part #
1	Preprogrammed gripper obstruction sensor	516021
1	Sensor cable	509936
1	Service bulletin document	SB277

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





Supplies Needed

- Flathead screwdriver
- Hex key set
- Adjustable wrench

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 4](#).

 WARNING	
	<p>ELECTROCUTION HAZARD.</p> <p>All electrical work must be performed by a qualified electrician.</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>If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.</p> <p>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.</p>



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



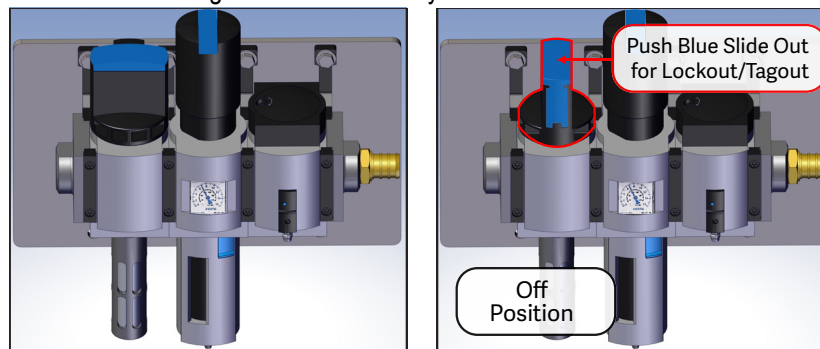
Pneumatic or Hydraulic System Lockout/Tagout Procedure

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

	 WARNING
	<p>HIGH PRESSURE HAZARD.</p> <p>Bleed pneumatic lines before performing any maintenance on the system.</p> <p>Working on pressurized lines may cause injury.</p>

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

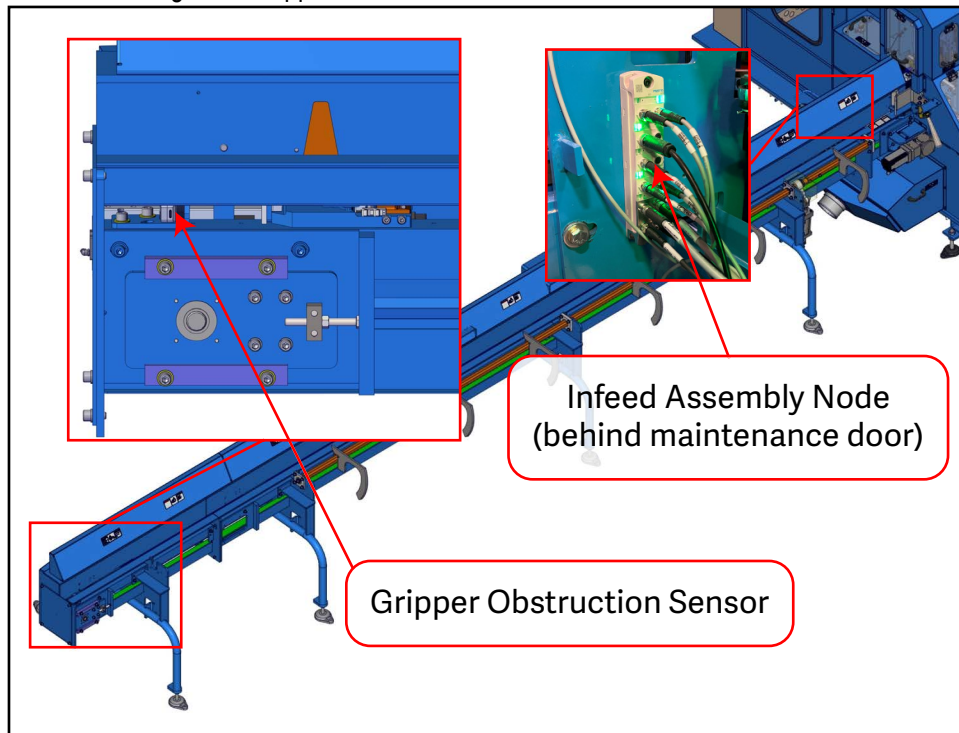
Replacing the Sensor



	 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>

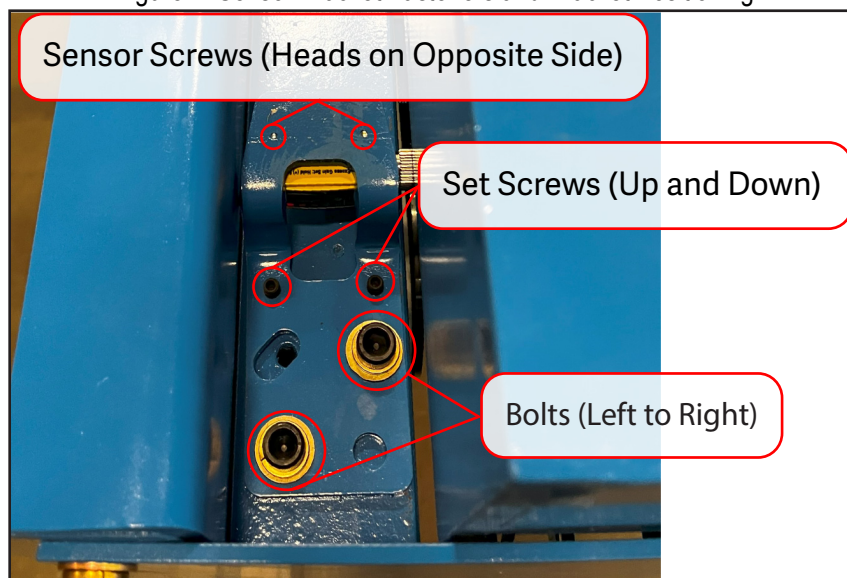
1. Lockout/tagout the electrical and pneumatic systems of the machine using the [Lockout/Tagout Instructions on page 3](#).
2. Locate the gripper obstruction sensor at the far end of the Infeed Rail (see [Figure 3](#)).

Figure 3: Gripper Obstruction Sensor and Infeed Node Location



3. With power locked out as previously described, unplug the sensor cable from the existing sensor.
 - This upgrade kit comes with an extra sensor cable that should only be used if the existing cable is damaged. See [Sensor Troubleshooting and Calibration](#) for further instruction.
4. Remove the 4 fasteners (2 bolts, 2 set screws) securing the sensor bracket and remove the bracket (with the sensor attached). Set aside fasteners for reinstallation.

Figure 4: Sensor Bracket Fasteners and Bracket Positioning

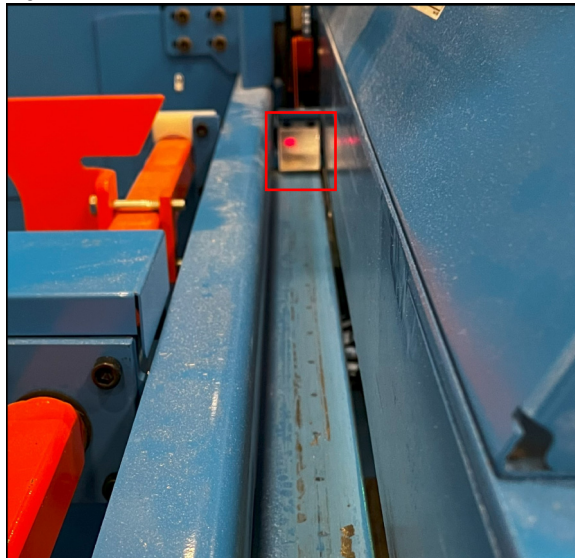


5. Remove the existing sensor from the bracket by releasing the 2 screws shown in [Figure 4](#). Retain the screws and discard the sensor.
6. Attach the new sensor to the sensor bracket with the 2 screws removed in the previous step.
7. Reattach the sensor bracket (with new sensor attached) to the Infeed Rail using the fasteners removed in step 4.
 - DO NOT fully tighten the fasteners. The bracket will need to be aligned in a later step.
8. Reconnect the cable to the sensor.
9. Remove lockout/tagout devices and power on the machine.

Testing the New Sensor

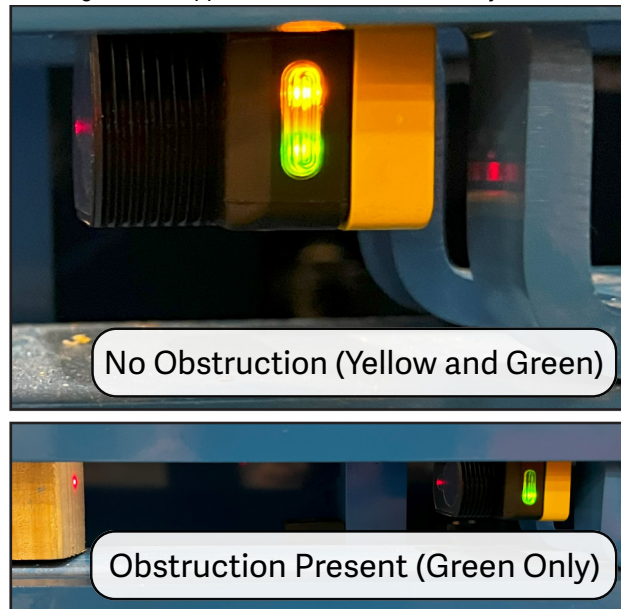
1. To begin testing the sensor, switch the saw to MANUAL mode.
2. From the software home screen, select **Gripper > Move Min** to move the gripper toward the saw chamber.
3. Activate an E-stop.
4. The red laser from the sensor should be visible and as close to the center as possible on the reflective plate on the back of the gripper assembly (see [Figure 5](#)). See below sub-steps for further instruction if needed:
 - a) To adjust the sensor from left to right, loosen the bolts shown in [Figure 4](#) and slightly move the bracket.
 - b) To adjust the sensor up and down, adjust the set screws shown in [Figure 4](#) to raise and lower the bracket. Be careful not to raise the sensor bracket too far and place pressure on the sensor cable connector.

Figure 5: Red Laser Visible on Reflective Gripper Plate



5. Tighten the two bolts (left to right) to fully secure the sensor bracket. The set screws do not need to be adjusted further.
6. The yellow and green lights on the side of the sensor should be lit, indicating there is no obstruction present (see [Figure 6](#)).
7. Use a piece of board to test the sensor. If the sensor is blocked, the yellow light should turn off and the green light will remain lit (see [Figure 6](#)).

Figure 6: Gripper Obstruction Sensor Adjustment



8. Release the E-stop and select **Gripper > Move Max** from the software home screen to move the gripper away from saw chamber. Verify the red laser is positioned within the reflector boundaries as it the gripper travels to max position.
9. The yellow and green lights, indicating no obstruction, should be also lit with the gripper in the max position (closest point to the sensor).
10. If the sensor behaves as described in the previous steps, the installation is complete. If the sensor does not behave as expected, see [Sensor Troubleshooting and Calibration](#).

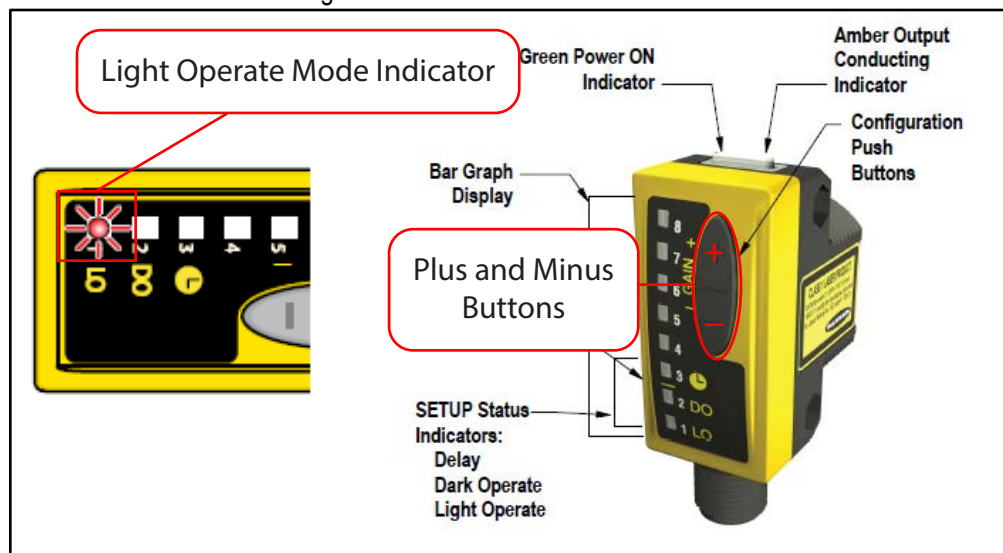
Sensor Troubleshooting and Calibration

If the new sensor is not functioning as expected, carry out the following troubleshooting steps.

1. Check that the green light is on above the X4 port (where the sensor cable connects) on the infeed assembly node. See [Figure 3 on page 5](#) for location.
2. If the X4 port light is not lit, see the following steps:
 - a) Check the security of the cable connections. Only hand-tighten cables until resistance is felt to avoid over-tightening.

- b) Replace the existing sensor cable with the new cable supplied in this kit.
3. If the X4 port light is lit, but the sensor lights are not behaving as described in [Testing the New Sensor](#), see the following steps:
 - a) Check if the sensor is in LO (Light Operate) mode:
 - 1) Hold both the + and - buttons for less than 2 seconds to enter SETUP mode (see [Figure 7](#)).
 - 2) Use + and - buttons to make sure the LO sensor is lit (see [Figure 7](#)).
 - 3) Hold both the + and - buttons for more than 2 seconds to return to RUN mode for normal operation.
 - b) Check if the sensor gain is set correctly:
 - 1) If the sensor is not already in run mode, hold both the + and - buttons for more than 2 seconds to enter RUN mode.
 - 2) Use + and - buttons to adjust the gain. The gain should be set that so that yellow and green lights are lit when the gripper is in min and max positions without obstructions in place. Only the green light should be lit if there is an obstruction between the gripper and sensor.
 - 3) See [Testing the New Sensor](#) for further testing instructions.

Figure 7: Sensor Indicators and Buttons

**END OF SERVICE BULLETIN**