MiTek®

SERVICE BULLETIN

Document ID:

SB248

Title:

Replacing Light Curtains

Affected machinery: *RoofTracker III*™ roller press

Distribution: Customers upon order

Applies to: All *RoofTracker III* roller presses with discontinued light curtains

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Graphics may be unclear and could create an unsafe condition if this recommendation is not followed.

Purpose and Scope

This service bulletin instructs how to replace the discontinued light curtains previously used in the *RoofTracker III* with updated light curtains.

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 SB248KIT

Quantity	Description	Part #
2	Transmitter and receiver light curtains	515707
2	Transmitter cable (5 pin)	515709
2	Receiver root cable (8 pin)	515719
2	Receiver extension cable (8 pin)	515708
4	Adjustment brackets	515714
16	Bolts 1/4"-20x1/2	354012
1	5/32" tamper proof hex key	354015
2	Blue wire 18g	508003-06
1	Service bulletin document	SB248

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

Supplies Needed

- Diagonal wire cutter
- Flat blade or terminal block screwdriver
- Hex key set

Procedure

Electrical Lockout/Tagout Procedure

	**⚠ 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 person protective equipment.**

Before opening the main electrical enclosure or attempting to repair or replace an electrical transmission line, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures, which should include, but are not limited to, the steps here.

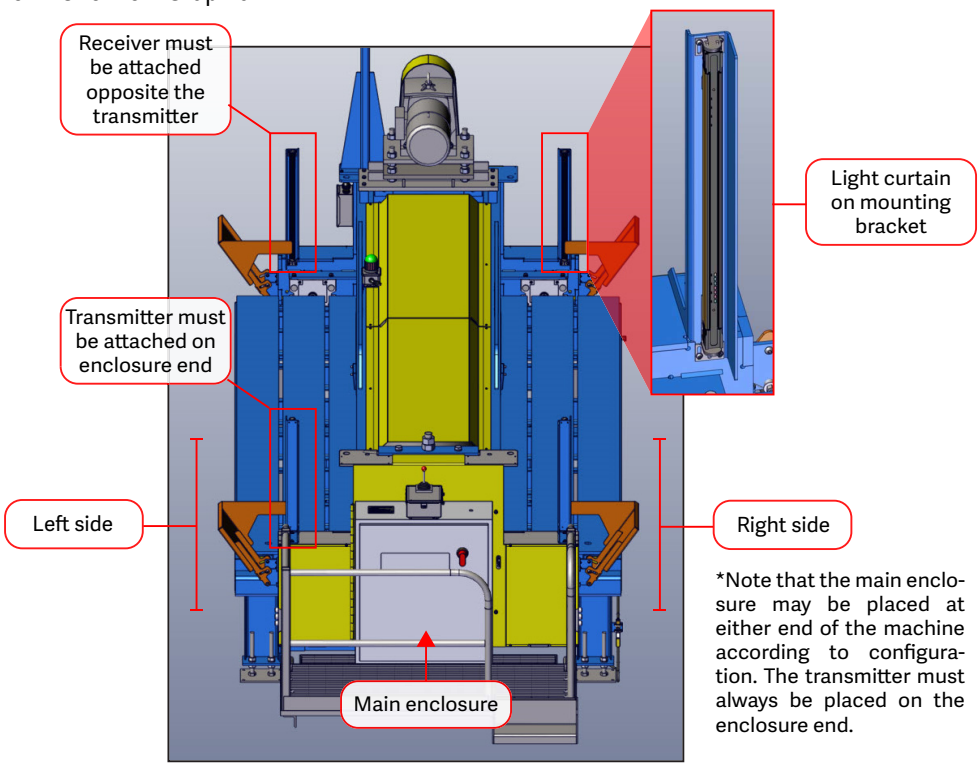
1. Engage an E-stop on the machine.
2. Turn the machine's disconnect switch to the Off position. This is usually required to open the main electrical enclosure's door.
3. Shut the power to the machine off at the machine's power source, which is usually an electrical service entry panel on the facility wall. One example of a locked-out power source panel is shown in 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: Lockout/Tagout on the Power Source Panel

Overview

The overview graphic in Figure 2 identifies important configuration information and components referenced in these instructions. Light curtains are secured to mounting brackets on the left and right sides of the machine (2 on each side). Left and right is determined from the perspective on the main enclosure end.

Figure 2: Overview Graphic

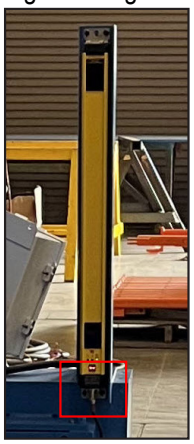


Replacing Light Curtains

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

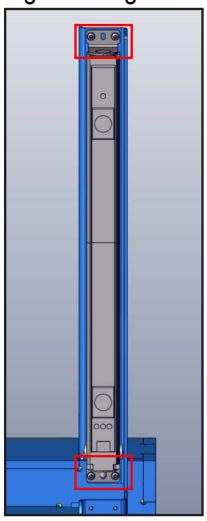
1. With power locked out as previously described, disconnect the cables from the bottom of the existing light curtains on the left and right sides of the machine. Standing at the main electrical enclosure, pull all existing transmitter and receiver cables free of the machine. All cables will be fully disconnected from the enclosure at a later step.

Figure 3: Light Curtain Cable Location



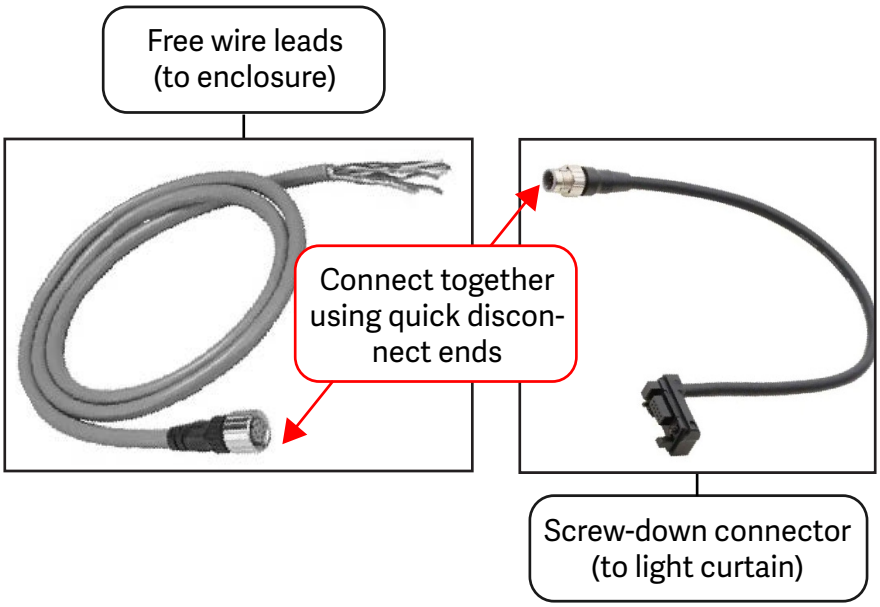
2. Use the supplied tamper-resistant hex key to remove the 4 bolts that secure the light curtains to the mounting brackets at the top and bottom of light curtain. Remove and set aside the light curtain. Repeat this step for each curtain (4 total).

Figure 4: Light Curtain Adjustment Bracket Location



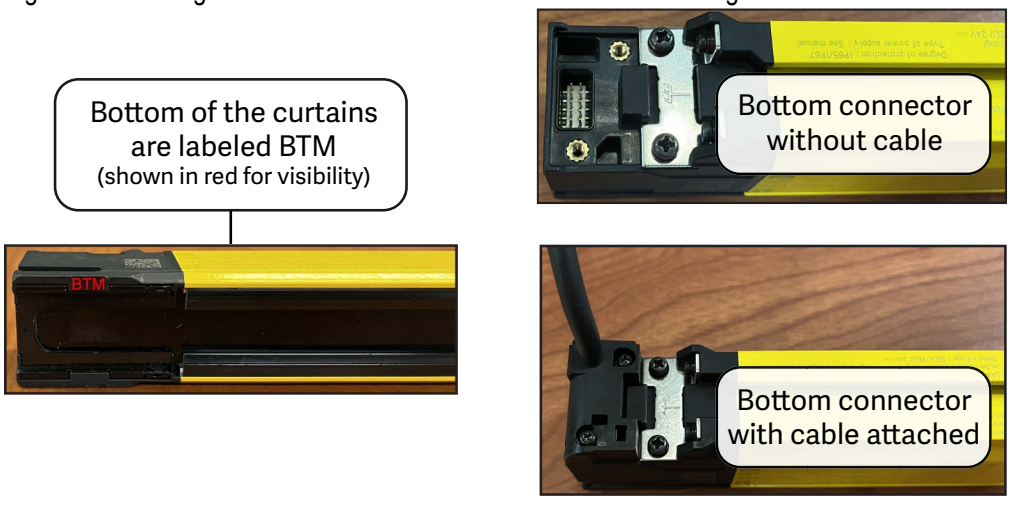
3. Connect the root and extension receiver cables together via quick disconnect before proceeding to the next step (see Figure 5).

Figure 5: Connecting Root and Extension Receiver Cables



4. Attach the (now combined) receiver cables to both light curtains labeled RECEIVER and the supplied transmitter cables (5 pin) to the light curtains labeled TRANSMITTER / EMITTER. These cables must be attached to the BTM (bottom) end of each curtain (see Figure 6).

Figure 6: Attaching Receiver and Transmitter Cables to Bottom of Light Curtains

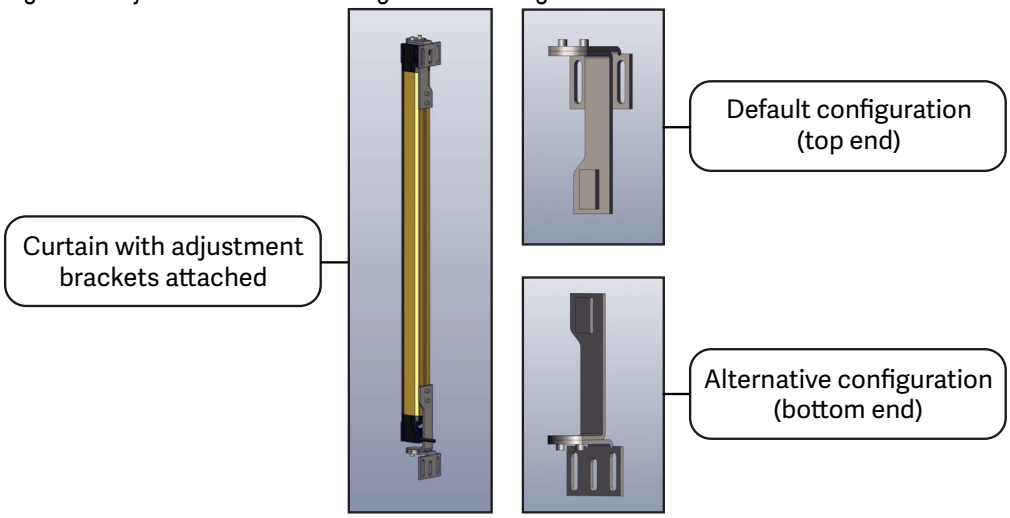


5. Locate and properly orient the supplied adjustment brackets. Use the default configuration (the way the brackets are shipped) for the top end of the curtains and use the alternative configuration for the bottom end of the curtains (see Figure 7).

6. Use a standard hex key to loosen the adjustment brackets. Slide them into place using the grooves on the back of the curtains. Tighten the

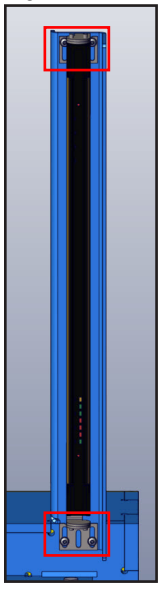
adjustment brackets to secure them in place. See Figure 7 for example of a curtain with the brackets properly installed.

Figure 7: Adjustment Bracket Configurations for Light Curtains



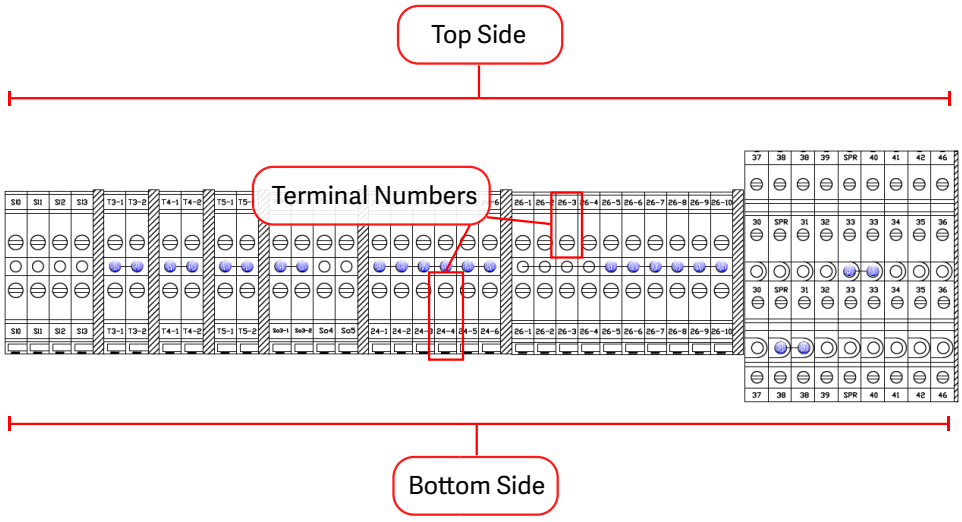
7. With the adjustment brackets now attached to the light curtains, use the supplied tamper-resistant hex key and bolts for following steps:
   - attach the transmitter curtains to mounting brackets on the main enclosure end
   - attach the receiver curtains to mounting brackets on the opposite end

Figure 8: New Light Curtain Installed on Mounting Bracket



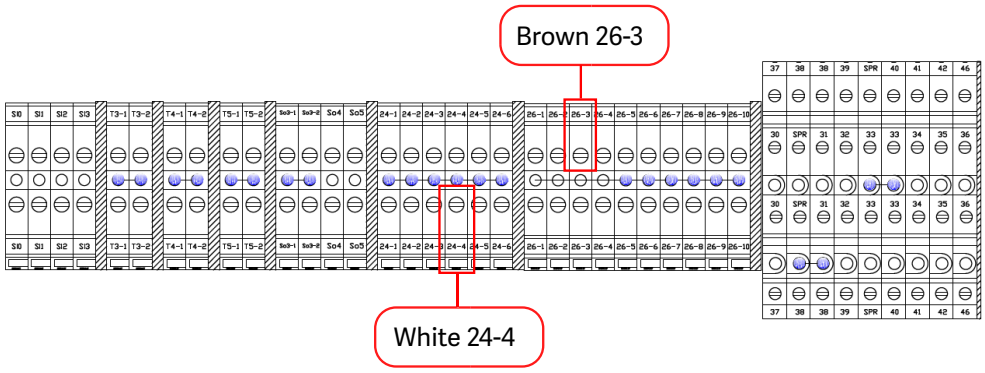
8. Access the main electrical enclosure. See Figure 2 for location. These instructions will call out specific terminals using the corresponding numbers at the top and bottom of the terminals.

Figure 9: Terminal Layout Key



9. Disconnect Brown 26-3 Top and White 24-4 Bottom for the **Left Transmitter** from the enclosure end.

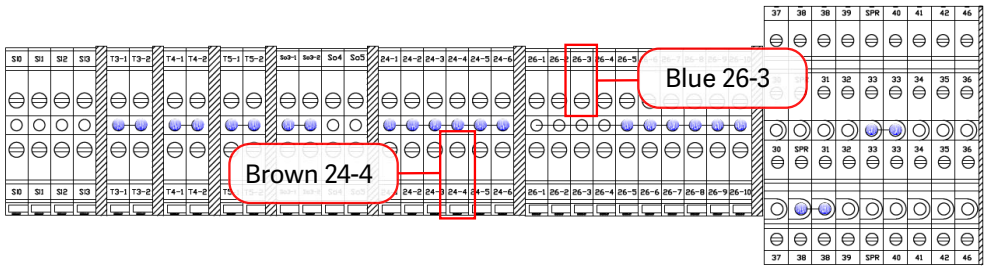
Figure 10: Wires to Disconnect for Left Receiver



10. Set aside the now loose **Left Transmitter** cable.
11. Run the supplied transmitter cable (5-pin) from the **Left Transmitter** light curtain, using the same routing and bundling excess to keep clear of moving parts.

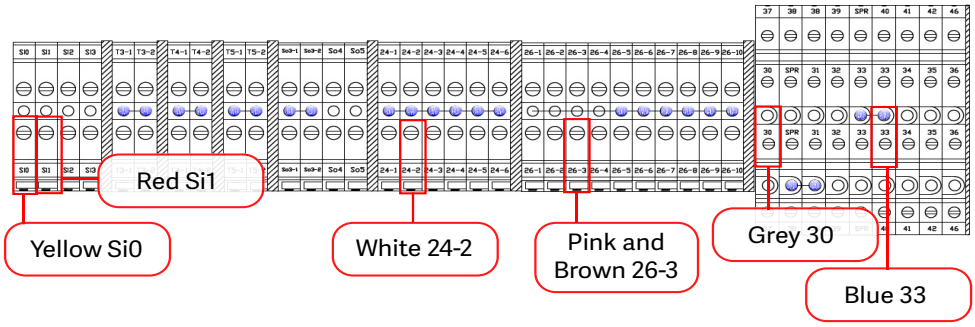
12. Using the supplied 5-conductor transmitter cable for the **Left Transmitter**, connect the blue conductor (O VDC) to 26-3 top and connect the brown conductor (24VDC) to 24-4 bottom.

Figure 11: Wires to Connect for Left Transmitter



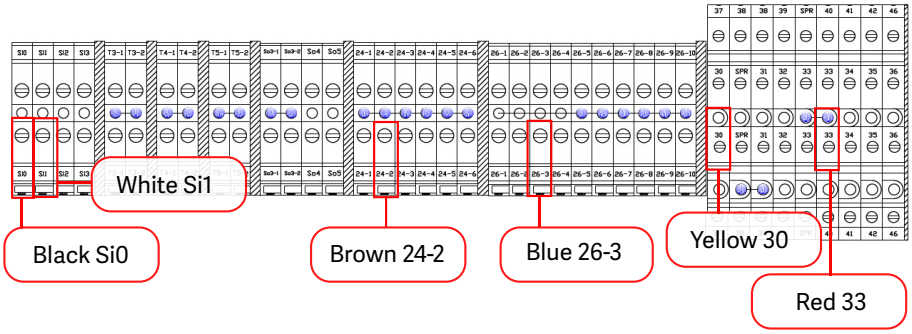
13. Remove all listed wires from respective terminal blocks for the **Left Receiver** shown in Figure 12.

Figure 12: Existing Wires to Remove for Left Receiver



14. Set aside the now loose **Left Receiver** cable.
15. Run the supplied receiver cable (8 pin) from the **Left Receiver** light curtain, using the same routing and bundling excess to keep clear of moving parts.
16. Using the 8-conductor receiver cable for the **Left Receiver**, connect all listed wires to respective terminal blocks shown in Figure 13.

Figure 13: Wires to Connect for New Left Receiver

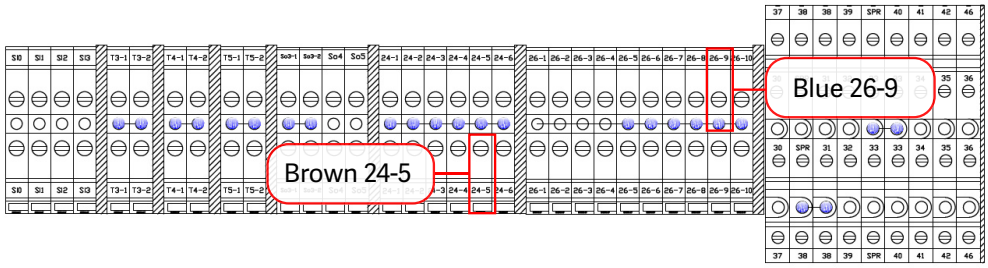


17. Disconnect Brown 26-9 Top and White 24-5 Bottom for the **Right Transmitter**.

Figure 14: Existing Wires to Remove for Right Transmitter

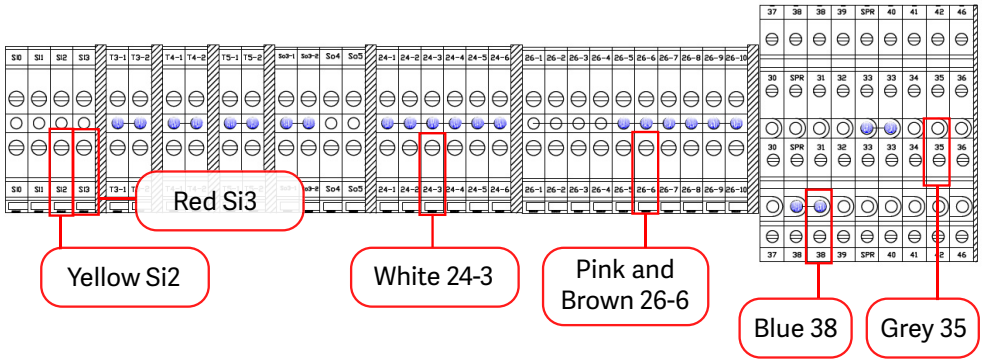
18. Set aside the now loose **Right Transmitter** cable.
19. Run the supplied receiver cable (5 pin) from the **Right Transmitter** light curtain, using the same routing and bundling excess to keep clear of moving parts.
20. Using the supplied 5-conductor transmitter cable for the **Right Transmitter**, connect the blue conductor (O VDC) to 26-9 top and connect the brown conductor (24VDC) to 24-5 bottom.

Figure 15: Wires to Connect for Right Transmitter



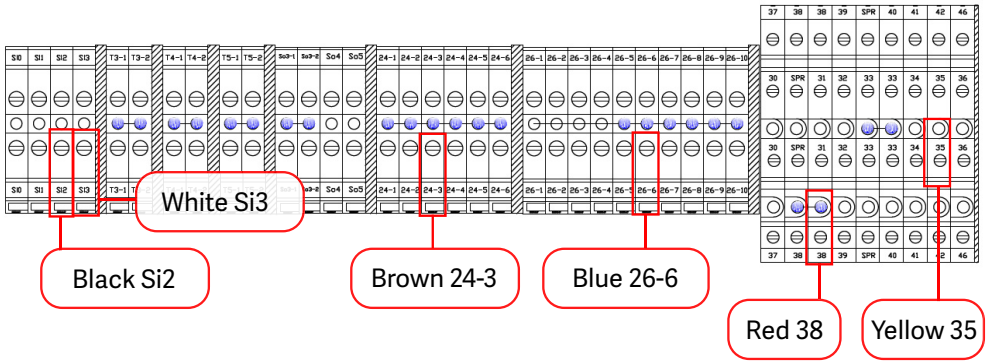
21. Remove all listed wires from respective terminal blocks for the **Right Receiver** shown in Figure 16.

Figure 16: Existing Wires to Remove for Right Receiver



22. Set aside the now loose **Right Receiver** cable.
23. Run the supplied receiver cable (8 pin) from the **Right Receiver** light curtain, using the same routing and bundling excess to keep clear of moving parts.
24. Using the 8-conductor receiver cable for the **Right Receiver**, connect all listed wires to respective terminal blocks shown in Figure 17.

Figure 17: Wires to Connect for New Right Receiver

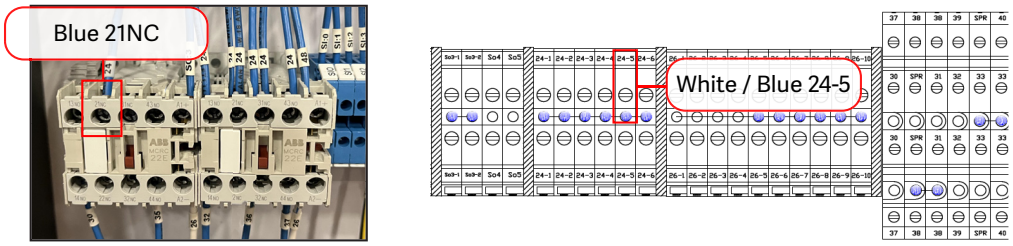


25. Disconnect and remove the White/Blue 26 wires connected to terminals 13NO and 43NO (one end) and from 26-2 top and 26-5 top (the other end).

Figure 18: Existing Wires to Remove at CR2 (labeled in enclosure)

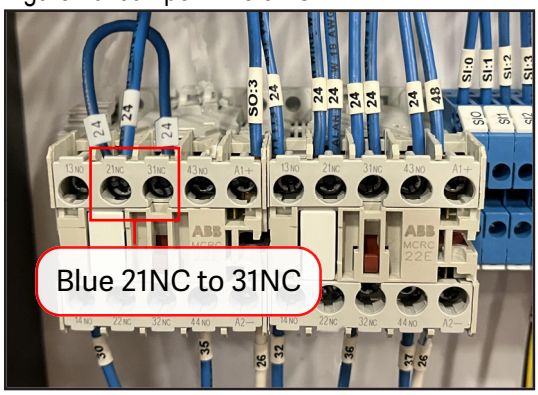
26. Use supplied blue wire to connect 24-5 top to 21NC at CR2.

Figure 19: Wires to Connect at CR2



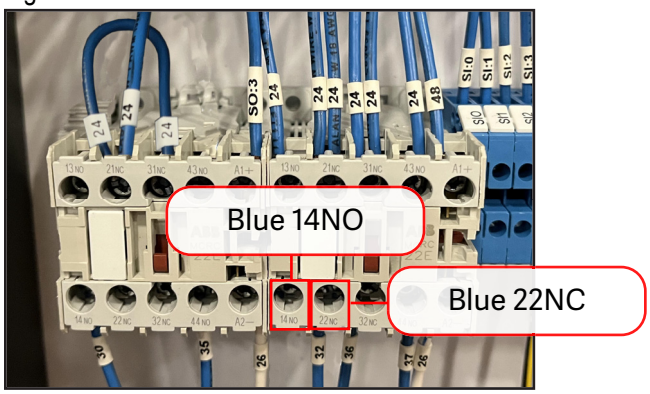
27. Use supplied blue wire to create a jumper between 21NC to 31NC at CR2.

Figure 20: Jumper Wire on CR2



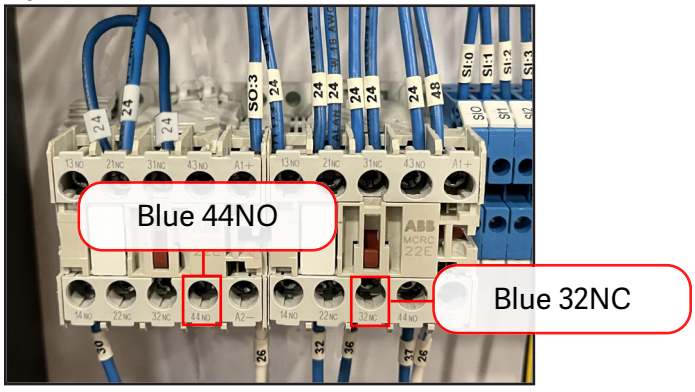
28. Disconnect blue wire from 14NO and connect it to 22NC at CR2.

Figure 21: Wire to Transfer



29. Disconnect blue wire from 44NO and connect it to 32NC at CR2.

Figure 22: Wire to Transfer



30. Remove lockout/tagout devices and restore power to the machine.

Aligning Light Curtains

As long as the curtains are out of alignment, an E-stop will be active and prevent movement of the gantry. Make certain no other personnel interact with the gantry during the alignment process.

1. Verify the optical surface of the light curtain sensors are clean and that there are no interrupting objects in the detection zone of the sensors.
2. To adjust the light curtains, loosen (but do not remove) the adjustment and mounting bracket bolts as needed.
3. Move the transmitter and receiver vertically and horizontally until the following state is achieved:
   - the indicator lights at the top and bottom of the light curtains turn blue
   - the indicator lights in the middle of the curtains alternate every second between green / orange
4. Once the light curtains are aligned, tighten the adjustment and mounting bracket bolts to secure alignment.
5. Clear E-stop according to instructions in the machine manual.
6. Run standard safety test according to instructions in the machine manual.

END OF SERVICE BULLETIN