
MiTek®

SERVICE BULLETIN

Document ID:

SB272-A

Title:

Safety Scanner Update

Affected machinery: *RoofTracker III™* Roller Press

Distribution: Customers upon order.

Applies to: All customers using machines with Omron scanners.

Sensitivity: Internal Use Only (Installed by MiTek)

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.

MiTek Automation
Phone: 800-523-3380
Fax: 636-328-9218
www.mitek-us.com

Part # and Rev.	SB272-A rev. A
Print Date	23 January 2025
Effectivity	Frames up to 939
Revision Date	23 January 2025
Revised By	M. Farmer
Rev. Approved By	
Orig. Release Date	29 October 2024
Orig. Created By	M. Farmer
Orig. Approved By	R. Tucker

Purpose and Scope

This document instructs how to update the Omron safety scanner to the SICK safety scanner used in the equipment referenced on the title page.

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 SB272KIT-A

Quantity	Description	Part #
2	SICK Safety Laser Scanner	See Table 2
2	SICK Mounting Kit	515723
2	SICK Weather Hood	515724
2	Safety Scanner Signal Cable	508127
1	Power Supply, 24VDC 10A	509144
1	Fuse, 10A, Time Delay	516583
4	7/8" Hex Head 1/4-20 Bolt	327159
8	1/4" Flat Washer	365115
4	1/4-20 Lock Nut	361986
2	Scanner Mounting Plate	67074
1	Service Bulletin Document	SB272-A

Table 2: SICK Scanner Programmed Part Numbers

Platform Configuration	Kit Number	Programmed Scanner Part #
Bottom Chord LEFT	SB272KIT-A-BCL	93285-501
Bottom Chord RIGHT	SB272KIT-A-BCR	93285-502
Top Chord LEFT	SB272KIT-A-TCL	93285-503
Top Chord RIGHT	SB272KIT-A-TCR	93285-504
Top & Bottom Chord LEFT	SB272KIT-A-TBCL	93285-505
Top & Bottom Chord RIGHT	SB272KIT-A-TBCR	93285-506
Bottom Chord Platform, Right 12'x6'	SB272KIT-A-BCR-12	93285-515
Bottom Chord Platform, Left 12'x6'	SB272KIT-A-BCL-12	93285-516
Bottom Chord Platform, Left 16'x6'	SB272KIT-A-BCL-16	93285-517
Bottom Chord Platform, Right 16'x6'	SB272KIT-A-BCR-16	93285-518
Top Chord Platform, Left 16'x6'	SB272KIT-A-TCL-16	93285-519
Top Chord Platform, Right 16'x6'	SB272KIT-A-TCR-16	93285-520

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



Supplies Needed

- Phillips screwdriver
- 7/8" wrench
- 15mm wrench
- Flat head terminal screwdriver
- 5/32" Allen wrench

Procedure

Electrical Lockout/Tagout Procedure

	<div data-bbox="529 632 1289 682" style="background-color: orange; text-align: center;"> WARNING </div> <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>
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Procedure for Working Inside the Machine's Main Electrical Enclosure

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



Removing the Omron Scanners



Use a 15mm wrench.

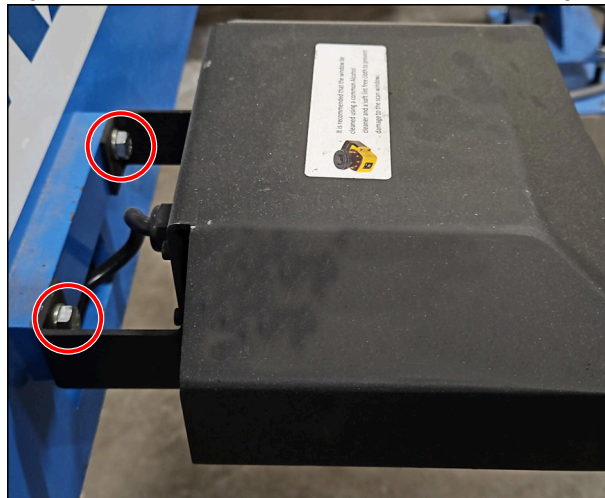
	WARNING
	<p>MOVING PARTS CAN CRUSH AND CUT.</p> <p>Always verify that power to the machine has been turned off and follow approved lockout/tagout procedures.</p>

- With power locked out as previously described, remove the 2 bolts holding the Omron mounting plate to the *RoofTracker III* frame.
 - One bolt is circled in [Figure 2](#), showing one of the mounting assemblies.
 - Both bolts are circled in [Figure 3](#), showing another mounting assembly.

Figure 2: Bolt Location on Omron Scanner Mounting Assembly



Figure 3: Bolt Locations on Omron Scanner Mounting Assembly



Keep the bolts, they will be reused.

- Remove the Omron scanner from the frame.
- Unplug the signal cable from the Omron scanner.
- Repeat for the Omron scanner on the other side of the gantry.

Removing the Omron Signal Cables



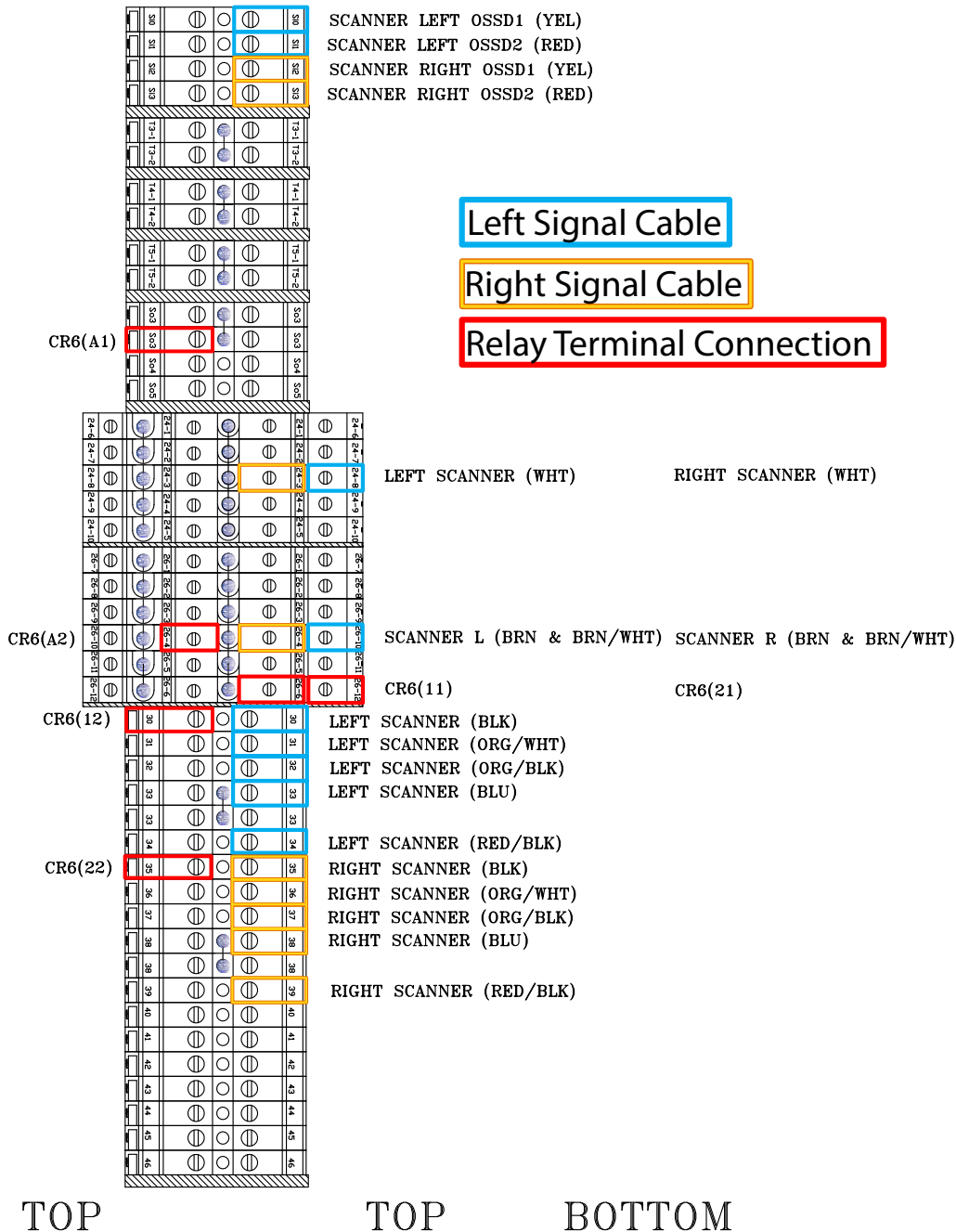
Work with only one set of wiring at a time to ensure you do not mix up the left and right cabling.

1. Inside the electrical enclosure, remove the relay terminal connections outlined in red in [Figure 4](#).

The other end of these connections will be removed in [Adjusting the Relay on page 9](#).

2. Open the electrical enclosure and remove **ONE** set of wiring.
 - Left signal cable wiring is outlined in blue.
 - Right signal cable wiring is outlined in yellow and orange.

Figure 4: Wire Location in *RoofTracker III* Main Electrical Enclosure



Routing the Signal Cables

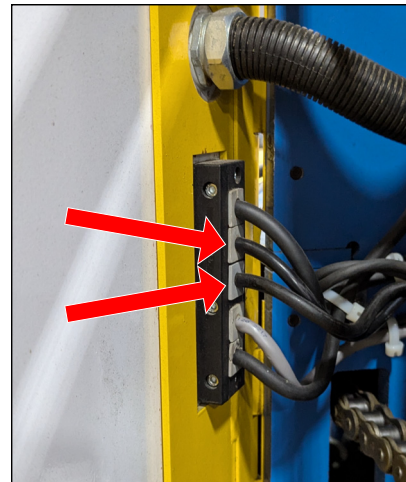
1. Open the gantry side cover by removing the bolts circled in [Figure 5](#).

Figure 5: Gantry Side Cover Access Bolts



2. Loosen the screws on the sides of the cabtite and remove gray grommets.

Figure 6: Cabtite with Signal Cables



You may cut the Omron signal wires back to the insulation on the cable for convenience.

3. Feed the cable with the set of wiring you just removed through the opening on the back of the electrical enclosure.
4. Feed the quick connect end of one of the provided SICK signal cables through the opening on the back of the electrical enclosure.
5. Tape the two cables together.
6. Cut the cable ties and unscrew the hold-downs fastening the Omron signal cable to the machine or other cables.
7. Pull the Omron signal cable through the machine to route the SICK signal cable. Ensure there is at least a few inches hanging out of the frame at the scanner mounting area.
 - When feeding the right signal cable, pull the Omron signal cable through the channel in the side panel before pulling the cable from the scanner location.

Installing the Scanner Signal Cables



Folding the exposed wiring back on itself better ensures a solid connection in the terminal.

1. If necessary, cut excess cabling, then strip the outer insulation to expose at least 8" of wiring.
2. Strip the last 1/2" of insulation from the end of the wires protruding from the SICK signal cable. Fold the exposed wiring back on itself.
 - The pink wire will not be used.
3. Install the wires of the SICK signal cable into the terminals you removed wires from in [Step 2 on page 5](#). Refer to [Figure 7](#) and [Figure 8](#) for wiring instructions.
 - Wires for the left scanner are labeled "L" and wires for the right scanner are labeled "R" in [Figure 8](#).
4. Gently tug on each wire after tightening the screw to ensure they are all fully seated.
5. Connect the orange conductor of the signal cable to the ground connection, located to the right of the power supply.
6. Repeat from [Step 2 on page 5](#) for the other set of wiring.

Figure 7: Electrical Schematic of SICK Signal Cable Wiring

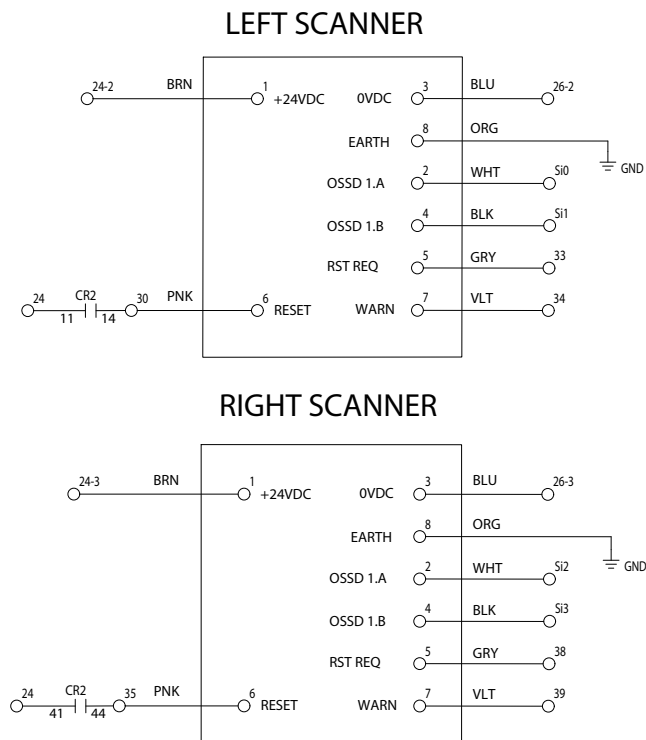
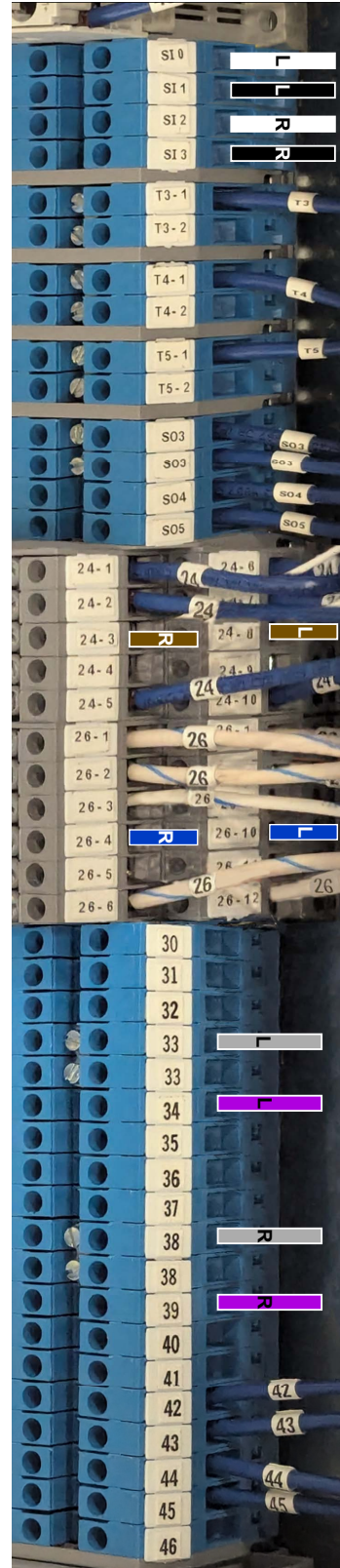


Figure 8: SICK Signal Cable Wiring



Replacing the Power Supply and Fuse

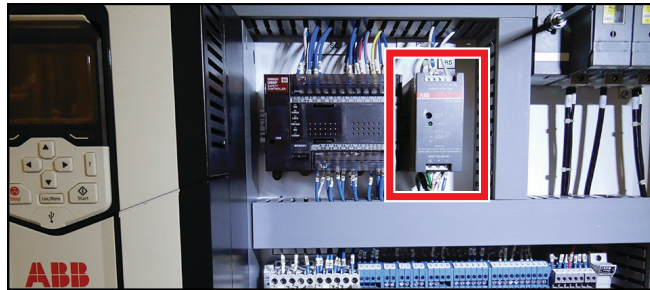
1. Remove the fuse holder from the front of the fuse shown in [Figure 9](#) below. Replace the fuse inside with the provided 10A fuse then reinstall the fuse holder. There will be a click when the fuse holder is fully seated on the fuse mount.

Figure 9: Fuse 5 Location Inside of Main Electrical Enclosure



2. Disconnect all wires from the power supply shown in [Figure 10](#). Then, locate the push/pull clip on the bottom of the power supply to disengage the DIN rail lock. Pull the top of the power supply away from the DIN rail to remove.

Figure 10: Power Supply Location Inside of Main Electrical Enclosure



3. Install the provided power supply onto the DIN rail. You should hear a "click" when the DIN rail lock is engaged.
4. Insert the wires into the provided power supply.
Ensure the wires match the correlating ports.

Figure 11: Provided Power Supply

Top:

- 26 (White/Blue) into (-)
- 23 (Blue) into (+)

Bottom:

- 1 (Red) into (L)
- 2 (White) into (N)
- Unlabeled Green/White into Ground (\perp)



Adjusting the Relay

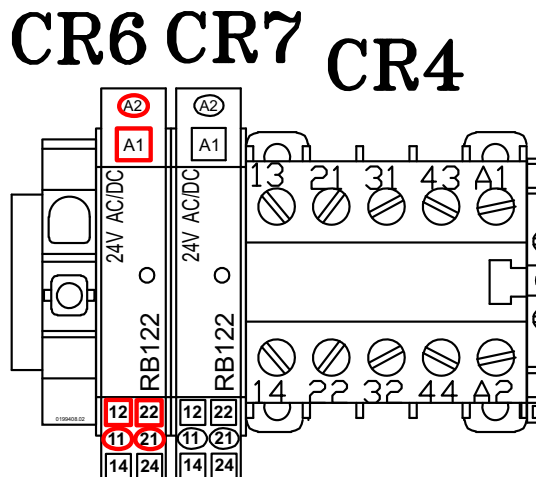
The relay labeled CR6 needs to be disconnected from the electrical system. The relay will stay on the DIN rail, but will not be used.

Remove the wires from the relay terminals outlined in red in [Figure 13](#).

Figure 12: Relay Location



Figure 13: CR6 Relay



The other ends of these connections were removed in [Step 1](#) of [Removing the Omron Signal Cables](#) on [page 5](#)

Close the electrical enclosure.

Installing the SICK Safety Scanners

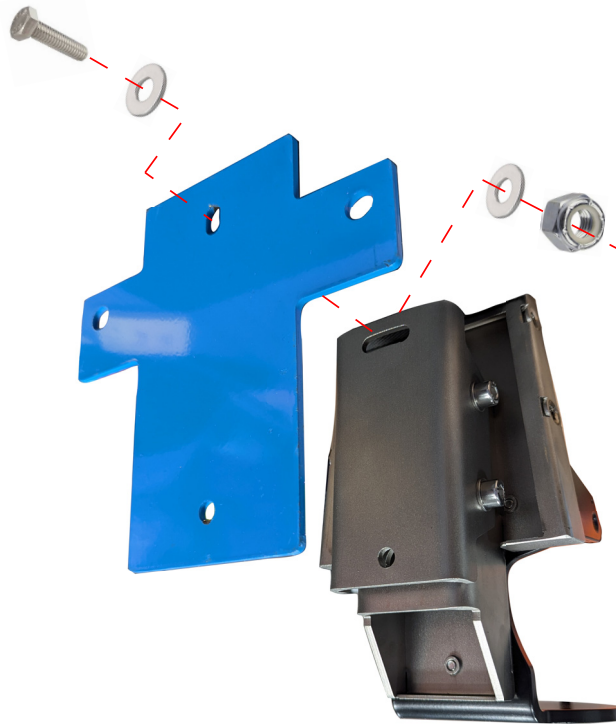
1. Loosen the 4 angling bolts located on the sides of the mounting kit, two of which are circled in [Figure 14](#). Two bolts are on the opposite side and not shown in [Figure 14](#).

Figure 14: Angling Bolts



2. Attach the supplied mounting plate to the supplied mounting kit, as shown below, for both the topmost hole (shown in [Figure 15](#)) and the bottommost hole.

Figure 15: Attaching the Mounting Kit and Mounting Plate



3. Install the mounting assembly to the *RoofTracker III* frame using the bolts that held the Omron scanners.

Figure 16: Hole Locations for Mounting Assembly to the Frame



4. Slide the SICK scanner into the mounting assembly and secure using the supplied bolts. Feed the pig tail cable (coming from the SICK scanner) into the opening in the mounting assembly, identified in [Figure 17](#).
 - Keep the pig tail cable away from the lens of the SICK scanner.

Figure 17: Slide the SICK Scanner into the Mounting Assembly



5. Paying attention to the pin layouts, connect the pig tail cable to the provided signal cable.
6. Tighten the angling bolts.

Adjusting the Scanner Angle

1. Place a piece of lumber, with a connector plate partially hammered in, 60" away from one scanner.
 - Ensure the table is clear of all other debris.
2. Remove the lockout/tagout, and power on the machine.
3. If the display on the scanner is green, loosen the angling screws and tilt the top of the scanner forward, away from the gantry, about 5°.

Figure 18: Green Display on SICK Scanner

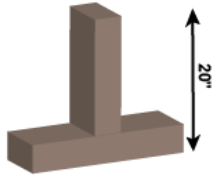


4. Ensure the table is clear of all debris, then vacate the warning zone.
5. Continue to adjust the angle of the scanner until the display turns orange when an object is 60" in front of it.
6. Repeat for other scanner.

Test the Functionality of the Scanner

1. Place the wooden T on the table at least 10 feet from one scanner. It should be placed with one end sticking in the air.

Figure 19: Wooden T as per the Equipment Manual



2. Move the gantry head by using the following steps.
 - a) Disengage the E-stop. Press the Reset button.
 - b) Check the Left Ready and Right Ready lights on the operator controls. Both should be illuminated in green.
 - c) Use the operator controls to move the gantry head towards the wooden T.

Figure 20: Top-Chord Platform Zoning

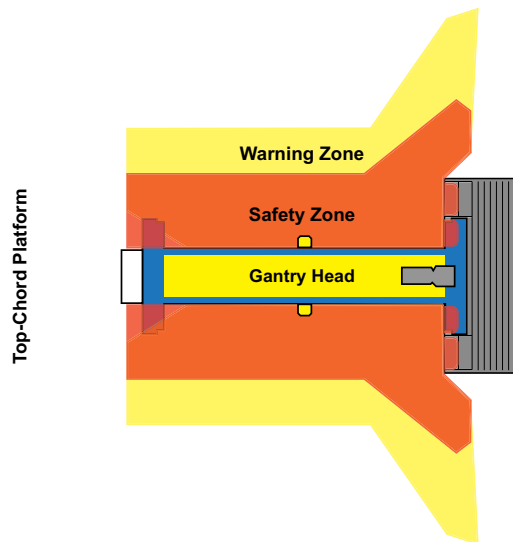
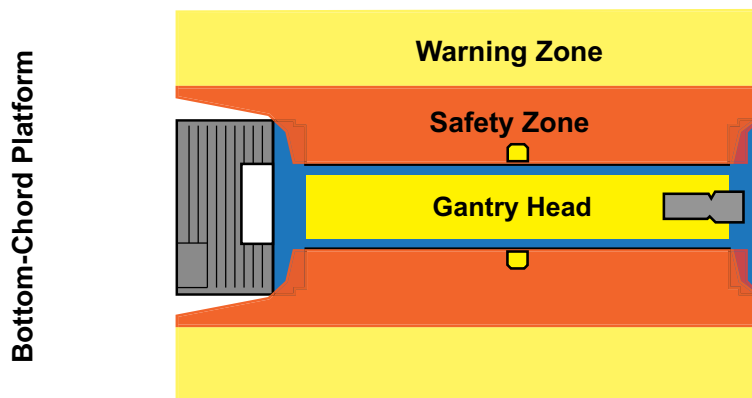




Figure 21: Bottom-Chord Platform Zoning



Zones above are intended as representations. Actual dimensions of zones may change.

	 DANGER
	<p>If the gantry head hits the wooden T, immediately lockout/tagout and call MiTek Customer Service.</p> <p>Operating the gantry head after it fails the safety test may result in serious injury or death.</p>

3. Check to make sure the following events happen when the gantry head approaches the wooden T.
 - a) The gantry head should slow down when the wooden T enters the warning zone.
 - b) The gantry head should initiate an emergency stop when the wooden T reaches the safety zone.
 - c) It should stop without skidding and without hitting the wooden T.
 - d) The beacon should turn red.
 - e) The Ready light nearest to the wooden T should not be illuminated.
4. Check the operator control station to make sure the Ready light farthest from the wooden T is illuminated.
5. Reset the E-stop. Move the gantry head away from the T. After an E-stop, the gantry head should move away from the wooden T but not toward it.
6. Repeat step 1 through step 5 with the scanner on the other side of the gantry head.

Installing the Weather Hood

The weather hood attaches to the mounting kit using 4 bolts, which are included with the mounting kit. Two of the holes on the mounting kit are circled in [Figure 22](#). Two bolts are on the opposite side and not shown in [Figure 22](#).

Figure 22: Mounting Kit Holes for Weather Hood



Figure 23: Weather Hood



Be sure to install the weather hoods on both safety scanners.

END OF TECHNICAL ARTICLE