
MiTek®

SERVICE BULLETIN

Document ID:

SB272-C

Title:

SICK® Safety Scanner Installation

Affected machinery: *Auto 8/10™ and AutoPress 14TL™* Platen Presses

Distribution: All customers with affected machinery.

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.

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Revised By	
Rev. Approved By	
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Orig. Created By	M. Farmer
Orig. Approved By	R. Tucker

Purpose and Scope

This service bulletin 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-C

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	31193
1	Service Bulletin document	SB272-C

Table 2: SICK Scanner Programmed Part Numbers

Platform Configuration	Kit Number	Programmed Scanner Part #
Auto 8 LEFT	SB272KIT-C-8L	92284-504
Auto 8 RIGHT	SB272KIT-C-8R	92284-505
Auto 10 LEFT	SB272KIT-C-10L	92284-518
Auto 10 RIGHT	SB272KIT-C-10R	92284-519
Auto 14LRT LEFT	SB272KIT-C-14L	92284-506
Auto 14LRT RIGHT	SB272KIT-C-14R	92284-507

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

	 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>

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



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



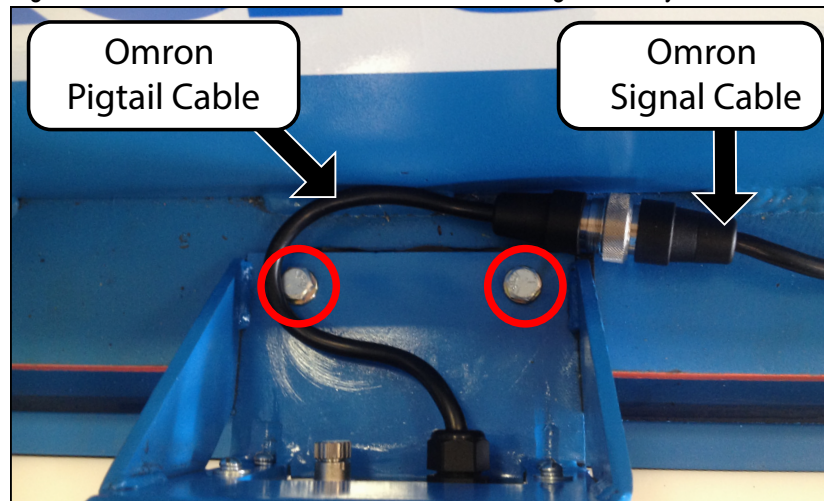
Use a 15mm wrench.



Keep the bolts, they will be reused.

1. With power locked out as previously described, unplug the signal cable from the Omron scanner.
2. Remove the 2 bolts holding the Omron mounting plate to the *Auto 8/10* and *Auto 14LTR* frame.

Figure 2: Bolt Location on Omron Scanner Mounting Assembly



3. Remove the Omron scanner from the frame.
4. Repeat for the Omron scanner on the other side of the gantry.

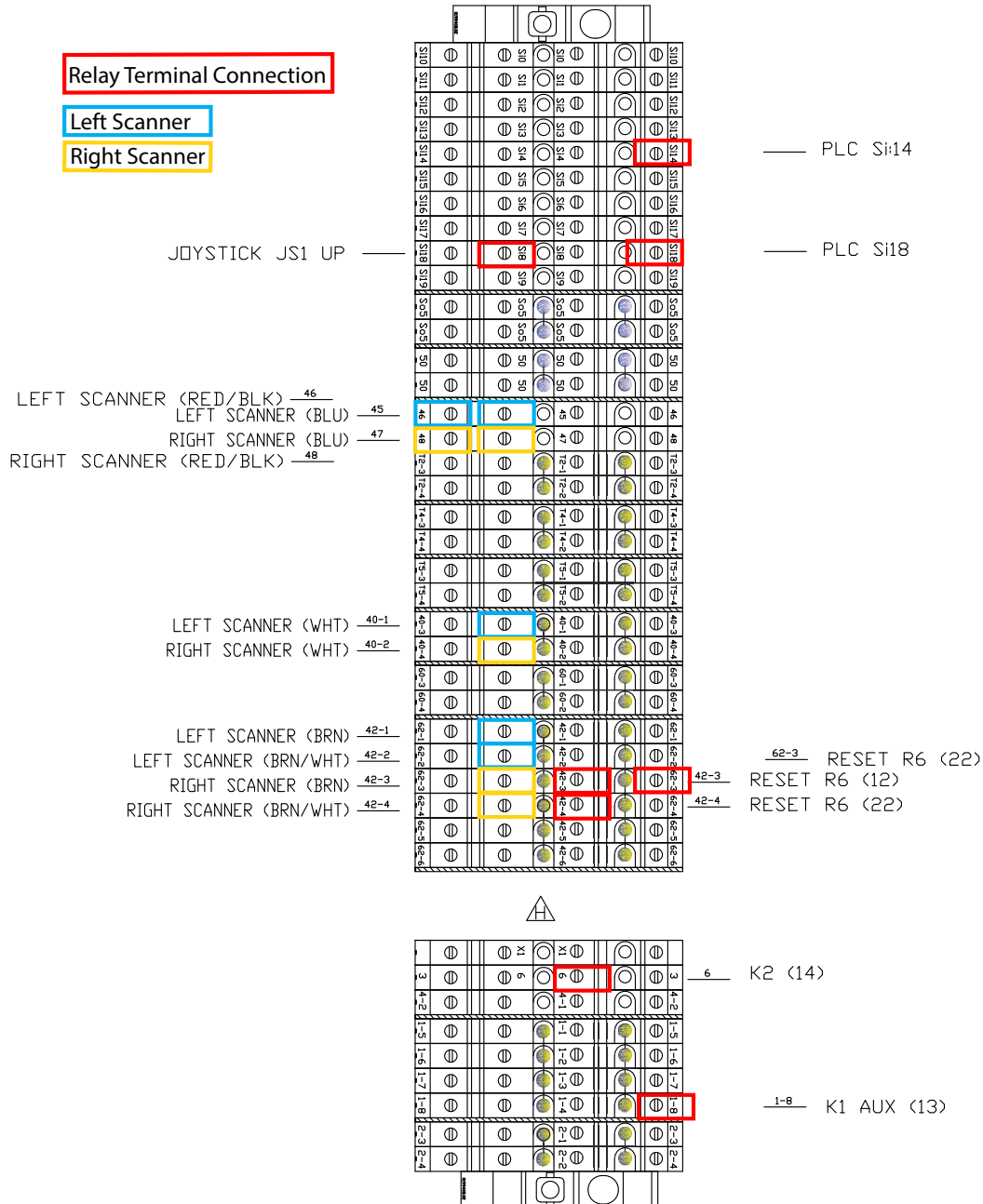
Removing the Omron Signal Cables

1. Inside the electrical enclosure, remove the relay terminal connections outlined in red in [Figure 3](#). The other end of these connections will be removed in [Installing the SICK Safety Scanners 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.



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

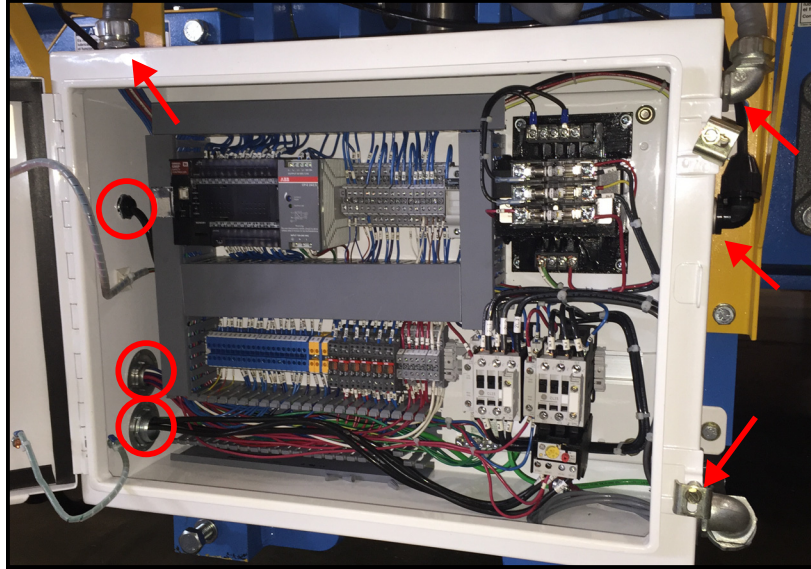
Figure 3: Wire Location in Auto 8/10 and Auto 14LTR Main Electrical Enclosure



Routing the Signal Cables

1. Outside the electrical enclosure, pull the Omron signal cable you disconnected through the opening in the electrical enclosure.
 - Make note of which opening the Omron signal cable was routed through.
 - Do not pull any further, as the Omron signal cable will be used to route the SICK signal cable.

Figure 4: Example Openings



2. From inside the electrical enclosure, feed the quick connect end of the SICK signal cable through the same opening that the Omron signal cable went through.
3. Tape the quick connect end of the SICK signal cable to the end of the Omron signal cable.
4. Outside of the electrical enclosure, pull the quick connect end of the SICK signal cable and route it following the Omron signal cable.
 - Taping the signal cable ends together and pulling the Omron signal cable from the scanner mounting location should be done carefully.
5. Ensure there are at least a few inches hanging out of the frame at the scanner mounting location.

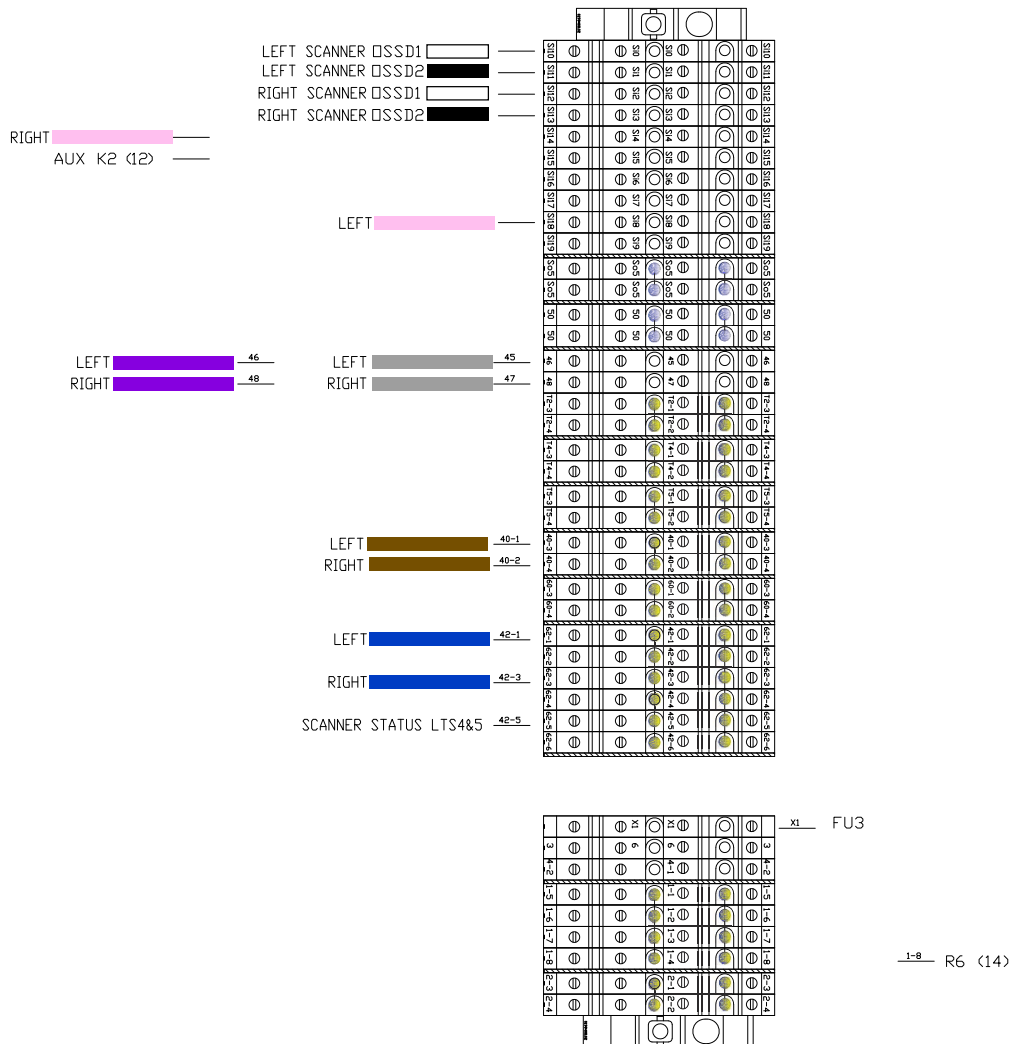
Installing the Scanner Signal Cables



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 inches of wiring.
2. Strip the last 1/2 inch of insulation from the end of the wires protruding from the SICK signal cable. Fold the exposed wiring back on itself.
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 5](#) for wiring instructions.
 - Wires for the left scanner are labeled “LEFT” and wires for the right scanner are labeled “RIGHT”.
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.

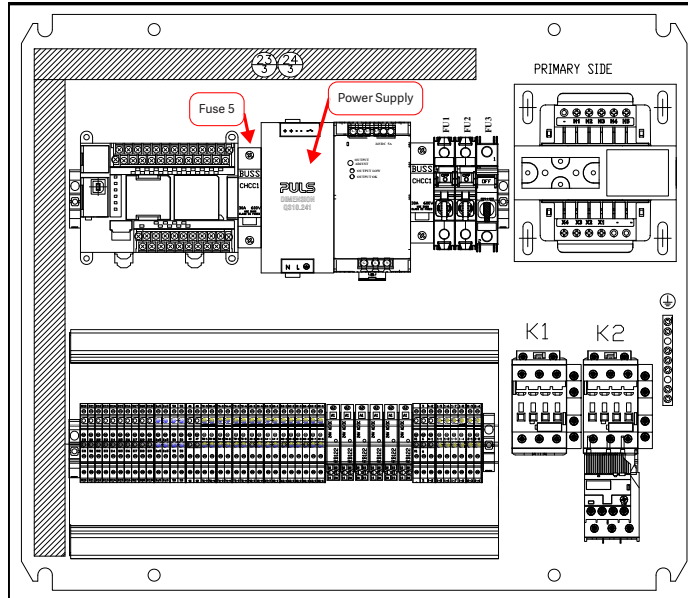
Figure 5: SICK Signal Cable Wiring



Replacing the Power Supply and Fuse

1. Remove the fuse holder from the front of the fuse shown in [Figure 6](#) 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.
2. Disconnect all wires from the power supply shown in [Figure 6](#). 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 6: 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.

Figure 7: Provided Power Supply

Top:

- 42 (White/Blue) into (-)
- 40 (Blue) into (+)

Bottom:

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



Installing the SICK Safety Scanners

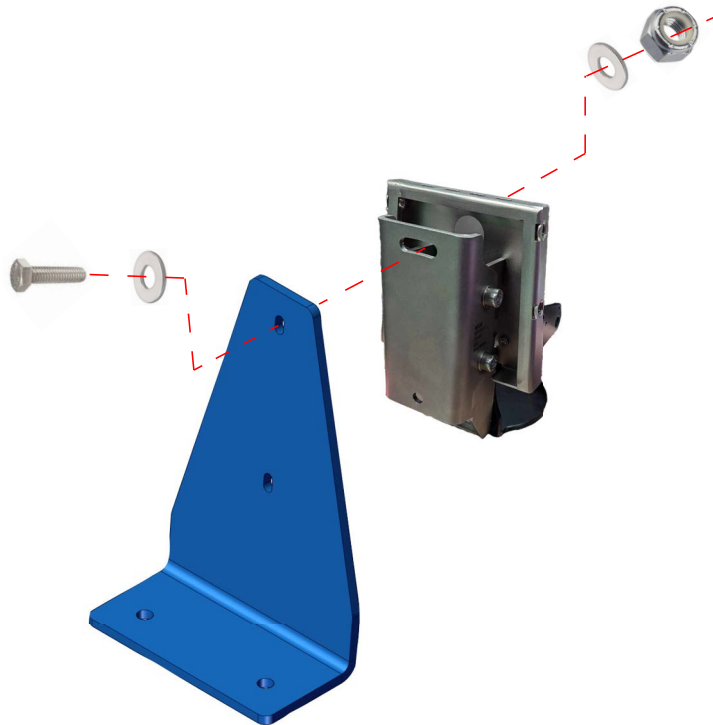
1. Loosen the 4 angling bolts located on the sides of the mounting kit, two of which are circled in [Figure 8](#).

Figure 8: Angling Bolts



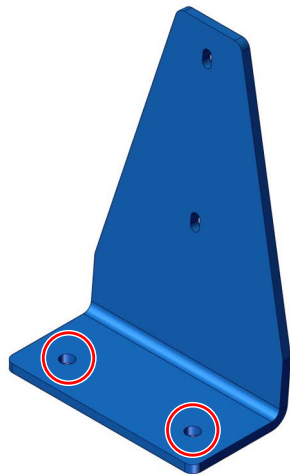
2. Attach the supplied mounting plate to the supplied mounting kit, as shown below, for both the topmost hole (shown in [Figure 9](#)) and the bottommost hole.

Figure 9: Attaching the Mounting Kit and Mounting Plate



3. Install the mounting assembly to the *Auto 8/10 and Auto 14LTR* frame using the bolts that held the Omron scanners.

Figure 10: 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 11](#).
 - Keep the pig tail cable away from the lens of the SICK scanner.

Figure 11: 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 inches 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 12: Green Display on SICK Scanner

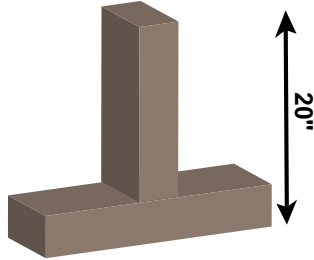


4. Ensure the table is clear of all debris, then vacate the warning zone.
5. Continue to adjust the angle of the scanner until the display turns orange when an object is 60 inches in front of it.
6. Repeat for other scanner.

Test the Functionality of the Scanner

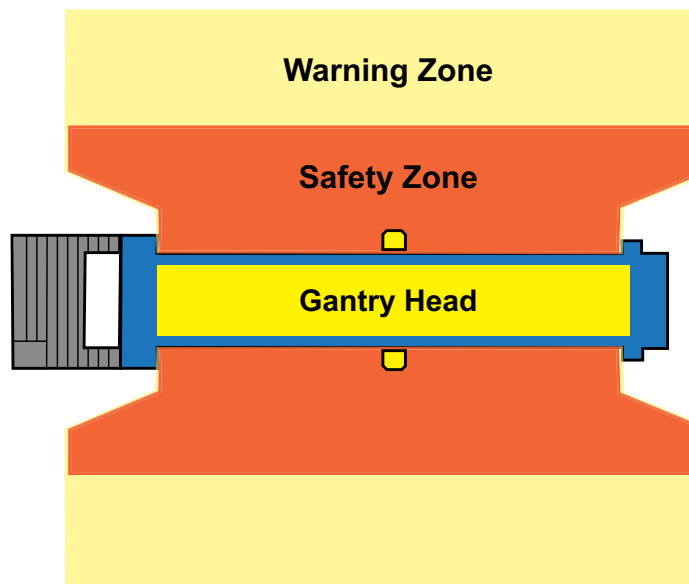
1. Place the wooden T on the table at least 10 feet from one scanner. It should be placed with one end sticking in the air.

Figure 13: 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.
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.

Figure 14: Safety Scanner 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>

- 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 15](#).

Figure 15: Mounting Kit Holes for Weather Hood



Figure 16: Weather Hood



END OF SERVICE BULLETIN