
MiTek[®]

Service Bulletin

Document ID:
SB282

Title:
Convert Omron Safety Scanner to Push Bar

Affected machinery: Railrider Pro Floor Truss Press

Distribution: Customers upon order

Applies to: Any RailRider Pro with an Omron safety scanner

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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Purpose and Scope

This service bulletin instructs how to convert a Railrider Pro from an Omron scanner to a push bar safety mechanism.

These instructions apply to Omron scanners (legacy hardware) only. Contact Automation Support if attempting to replace a SICK scanner.

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 SB282KIT-A-C

Quantity	Description	Part #
2	Push bar safety sensors	515386
2	Signal Cable	508027
2	Cabtite grommet	511868
1	Push Bar Kit (specific to SB282KIT-A, B, and C)	82212-***
*	Push Bar Kit, 7 ft (SB282KIT-A)	82212-501
*	Push Bar Kit, 7 1/2 ft (SB282KIT-B)	82212-601
*	Push Bar Kit, 8 ft (SB282KIT-C)	82212-701
1	Service bulletin document	SB282

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

Supplies Needed



- Allen wrench, 5/32"
- Flathead terminal screwdriver
- Philips screwdriver
- Wrench, 7/8"
- Wrench, 15mm

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 5](#).

	 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 Either on a Machine Inside the Machine's Main Electrical Enclosure or in the Electrical Transmission Line to the Machine.

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 machine's disconnect switch to the Off position. This is usually required to open the main electrical enclosure's door.
4. 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](#).
5. Attach a lock and tag that meet OSHA requirements for lockout/tagout to the electrical service entry panel.
6. 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



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.

Removing the Omron Scanners

	 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>



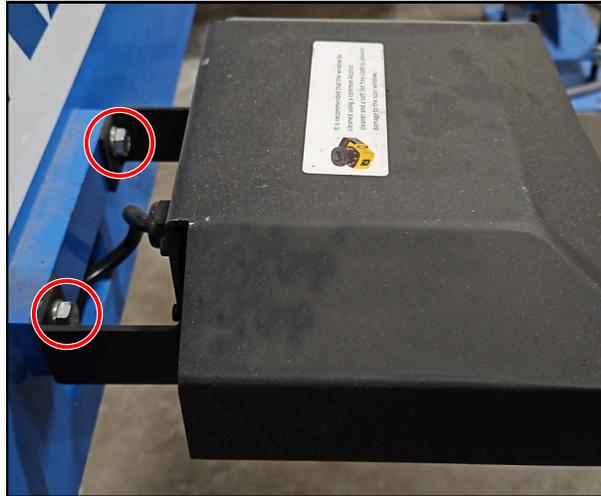
- Lockout/tagout the electrical and pneumatic systems of the machine using the [Lockout/Tagout Instructions on page 3](#).
- With power locked out as previously described, remove the 2 bolts holding the Omron mounting plate to the *RailRider Pro* frame.
 - One bolt is circled in [Figure 2](#), showing 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



Use a 15mm wrench.

Figure 3: Bolt Locations on Omron Scanner Mounting Assembly



Keep the bolts, they will be reused.

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

Installing the Push Bars

1. Connect the push bar safety sensors.
2. Install the push bars on each side of the gantry according to the instructions in the listed drawings (choose matching size):
 - 82212-501 - Push Bar Kit, 7 ft
 - 82212-601 - Push Bar Kit, 7 1/2 ft
 - 82212-701 - Push Bar Kit, 8 ft
3. Use the existing scanner cables to route the new push bar cables to the electrical enclosure. The routing should be identical.
4. Replace the existing cable grommets with new grommets.
 1. Inside the electrical enclosure, remove the terminal connections outlined in red in [Figure 4](#).
 - The relay labeled CR2 needs to be disconnected from the electrical system. The relay will stay on the DIN rail but will not be used.
 2. Remove the wiring for both the left and right signal cables in the main electrical enclosure (shown in [Figure 4](#)) and from the safety controller (shown in [Figure 5](#)).
 - Left signal cable wiring is outlined in blue.
 - Right signal cable wiring is outlined in yellow and orange.

Figure 4: Wire Locations in Main Electrical Enclosure

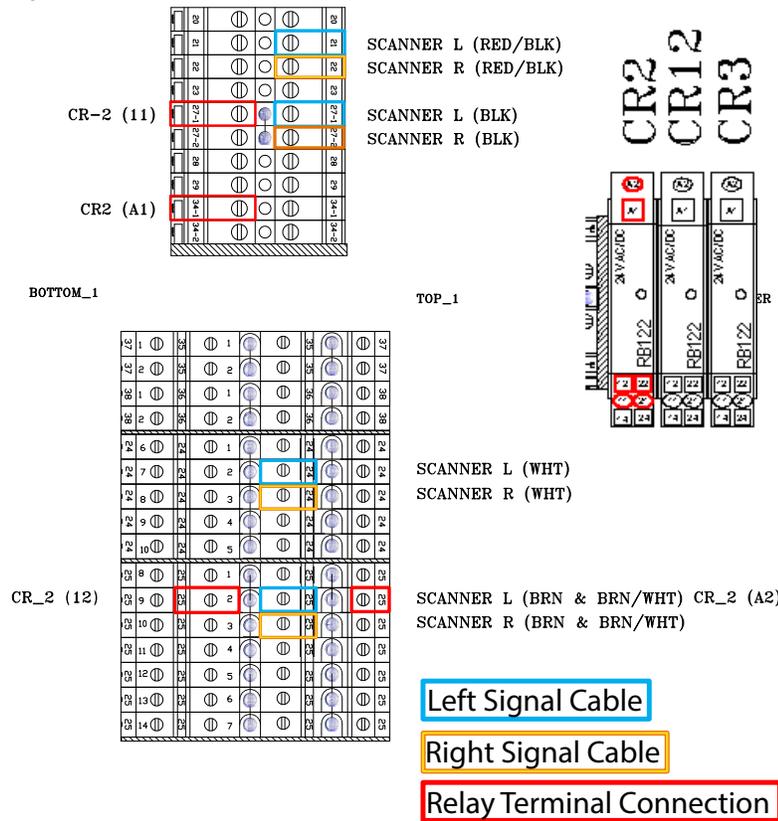
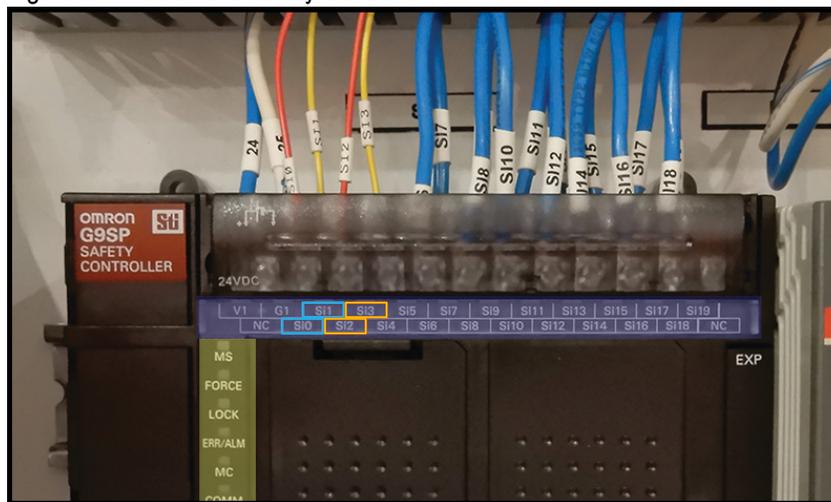


Figure 5: Wires on the Safety Controller



3. Inside the electrical enclosure, connect the left sensor cable
 - a) BRN to TB24-9
 - b) GRY to TB35
 - c) WHT to CR5 (11)
 - d) BLK to CR5 (21)
 - e) BLU to TB25-11

4. Connect the right sensor cable
 - a) BRN to TB24-10
 - b) GRY to TB37
 - c) WHT to CR6 (11)
 - d) BLK to CR6 (21)
 - e) BLU to TB25-12
5. Connect the remaining CR5 connections
 - a) A1 to TB36
 - b) A2 to TB25-12
 - c) 14 to Safety Controller input Si0
 - d) 25 to Safety Controller input Si1
 - e) 31 to TB35
 - f) 34 to TB36
6. Connect the remaining CR6 connections
 - a) A1 to TB38
 - b) A2 to TB25-13
 - c) 14 to Safety Controller input Si2
 - d) 24 to Safety Controller input Si3
 - e) 31 to TB37
 - f) 34 to TB38
7. Connect the reset relay terminals (CR12)
 - a) 11 to TB35
 - b) 14 to TB36
 - c) 21 to TB37
 - d) 24 to TB38
 - e) A1 and A2 should already be connected to TB34 and TB25-8, respectively.

Safety Test

8. Remove lockout/tagout devices and test that the push bar stops the gantry head:
 - a) Move the gantry to the middle of the table line. There must be at least 10 ft of table space on both sides of the gantry head.
 - b) Place a heavy object on the table, on either side of the gantry head, approximately 8 ft away from the push bar.
 - The object height must be higher than the push bar.
 - The object weight must be at least 100 lb.

- c) Move the gantry head toward the object on the table. Do not let go of the button when the push bar strikes the object.



As the push bar moves, the limit switch will go to an open state causing the gantry to stop in an E-stop status. The stopping distance should be less than 10 in.

9. Test the electrical connections:
 - a) After performing the test in step 8, do NOT reset the push bar.
 - b) Attempt to move the gantry head in the direction of the actuated push bar.
 - c) The gantry head should NOT move.
 - d) Attempt to move the gantry head in the opposite direction.
 - e) The gantry head should move in the opposite direction.
 - f) If the gantry head reacted as it should, continue. If the gantry head did not react as it should, check electrical connections and refer to the equipment manual for troubleshooting assistance.
10. Repeat this entire test, starting on page 7, for the push bar on the opposite side with the gantry head moving in the opposite direction than the test just performed.
11. Do not operate the machine if any step in this test failed.

END OF SERVICE BULLETIN