

MiTek Machinery

Service Bulletin

Equipment Affected ***RailRider***[®] Floor Truss Roller Press

Title **Replacing a Soft-Start Controller**

Applicability ***Replacing a GE***[®] **Soft-Start**
with a *Square D*[®] **Soft-Start**

Date **06/20/05**



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Equipment Affected	<i>RailRider</i>[®] Floor Truss Roller Press
Title	Replacing a Soft-Start Controller
Applicability	<i>Replacing a GE</i>[®] <i>Soft-Start</i> with a <i>Square D</i>[®] <i>Soft-Start</i>
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Purpose and Scope

This Service Bulletin affects the *MiTek*[®] *RailRider*[®] floor truss roller press, frames 1-112, that were manufactured prior to April of 2003.

This Service Bulletin is being issued to assist MiTek customers when replacing the current *GE*[®] soft-start with a *Square D*[®] soft-start. In this Service Bulletin, you will find the procedure for removing the current soft-start and installing the *Square D* soft-start.

If there are any questions, please have your electrician call MiTek Customer Service at 800-523-3380.

Overview

Parts and Supplies

In Table 1, you will find a list of the tools and supplies required to complete this Service Bulletin.

Table 2 lists the kits available and the items included in each kit.

Table 1: Tools and Supplies

Description
Drill
Drill bit, 1-1/8"
Mounting screws (4) (soft-start)
Multimeter
Phillips head screwdriver
Slotted screwdriver
Tape measure
Wire cutters
Wrench set, open-ended

Table 2: Parts Included in Each Kit

Kit	Quantity	Part Number	Description
SB156KIT-208V	1	SB156	Service Bulletin document
	5 ft	508006	Wire, red 16 AWG*
	5 ft	508006	Wire, white 16 AWG*
	30 ft	508863	Wire, black 10AWG
	4 ft	510033	Conduit 3/4"
	2	511113	Connector, flex 3/4", 90°
	1	512988	Soft-start 208 VAC
	2	518192	Terminal end stop
	3	518225	Terminal block
	1	518226	Terminal end section
	1	694060	Wire label sheet
SB156KIT-230/460V	1	SB156	Service Bulletin document
	5 ft	508006	Wire, red 16 AWG*
	5 ft	508006	Wire, white 16 AWG*
	30 ft	508863	Wire, black 10AWG
	4 ft	510033	Conduit 3/4"
	2	511113	Connector, flex 3/4", 90°
	1	512987	Soft-start 230/460 VAC
	2	518192	Terminal end stop
	3	518225	Terminal block
	1	518226	Terminal end section
	1	694060	Wire label sheet

*This wire is supplied for wiring the soft-start, however, it may not be required if the old wire can be used.

Wiring Overview

Figure 1 depicts the current wiring.

Figure 2 depicts the wiring after the completion of this Service Bulletin.

Figure 1: Old Soft-Start Wiring Detail

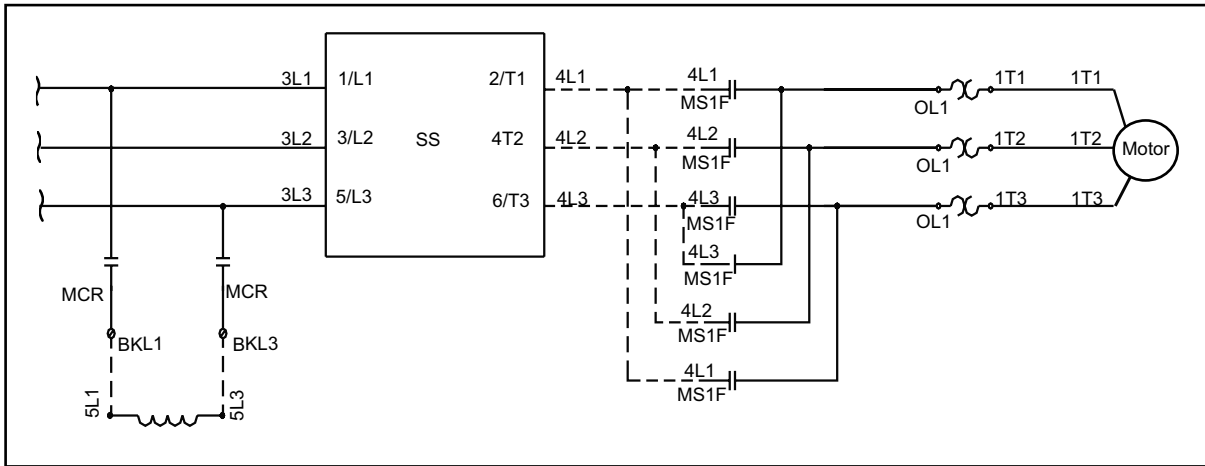
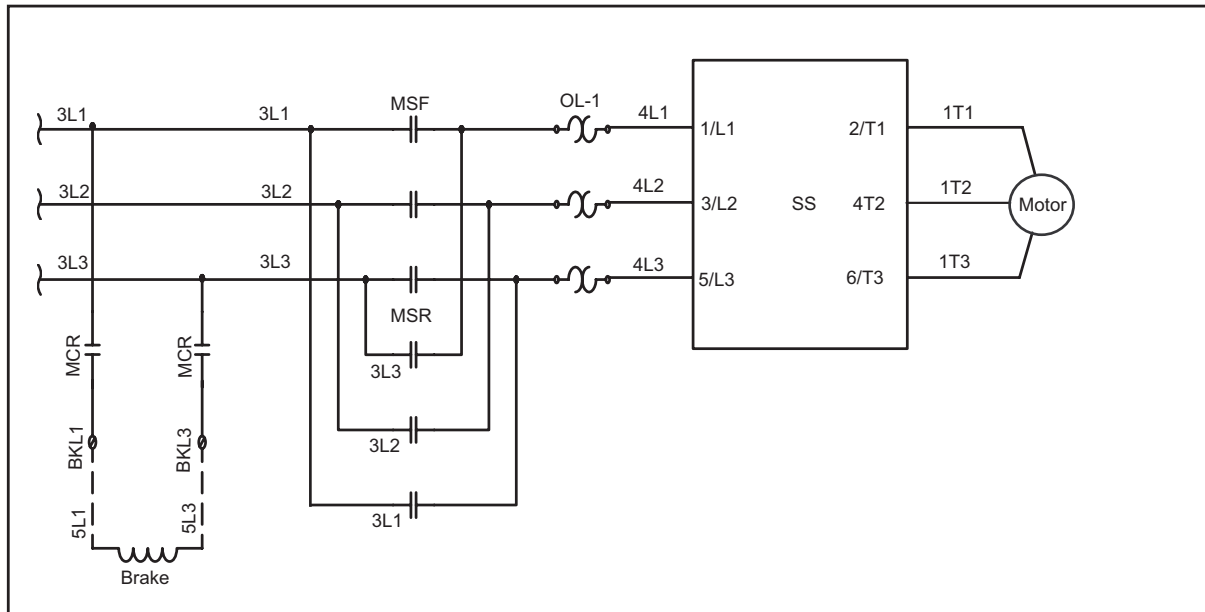



Figure 2: New Soft-Start Wiring Detail



It is recommended that this page be kept with your electrical drawings to reflect the changes made during this procedure.

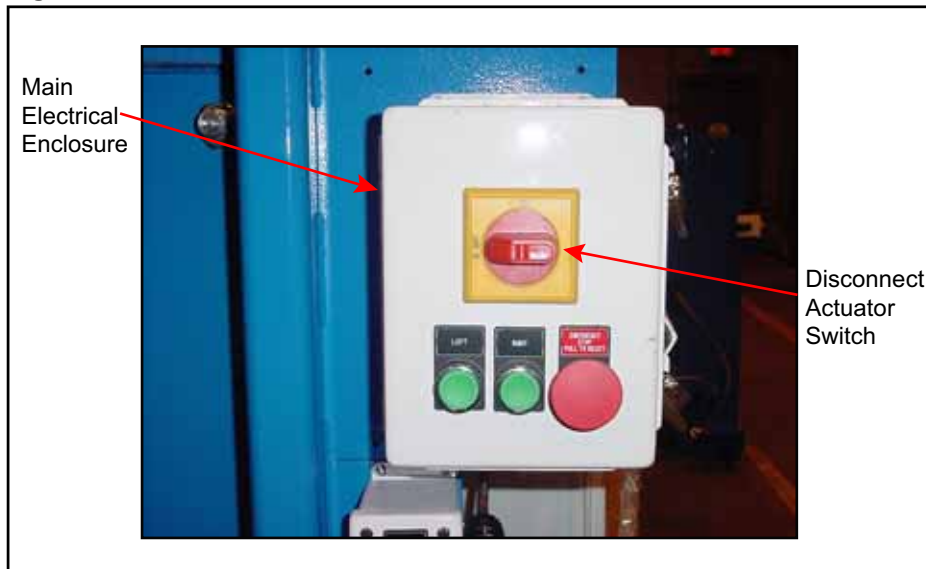
Procedure

Removing the Soft-Start

WARNING	
	<p>All electrical work must be performed by a qualified electrician and shall conform to all national and local electrical codes.</p> <p>Do not turn on electrical power until you have completed the entire procedure.</p> <p>Follow approved lockout/tagout procedures (OSHA 29 CFR 1910.147).</p>

1. Refer to Figure 3 to turn off and lockout/tagout all the power to the machine at the disconnect actuator switch located on the main electrical enclosure.

Figure 3: Disconnect Actuator Switch

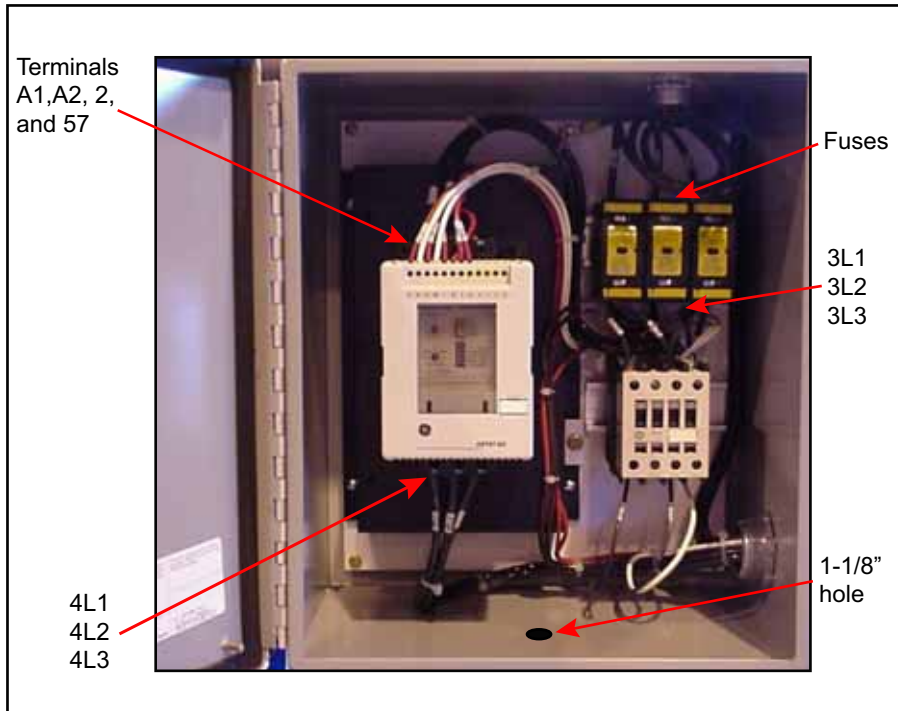


- Open the soft-start enclosure. Figure 4 displays the soft-start enclosure and control enclosure.

Figure 4: Soft-Start and Control Enclosures



Figure 5: Soft-Start Enclosure Interior



- Refer to Figure 5, and using a multimeter, verify the power is off inside the soft-start enclosure, above the fuses.



If the location of the new soft-start does not allow using the old wiring, use the wiring supplied with this kit.

4. Disconnect and remove the following wires: (3L1, 3L2, and 3L3) from the load side of the fuses (FU1, FU2, and FU3) and the soft-start terminals. Refer to Figure 5 for the location of the wires.
5. Refer to Table 3 and disconnect, re-label and connect the wires listed. Use the supplied sheet of wiring labels to re-label the wires.

Table 3: Soft-Start Load Wiring

Disconnect	Re-Label	Connect To
4L1	3L1	Load Side of FU1
4L2	3L2	Load Side of FU2
4L3	3L3	Load Side of FU3

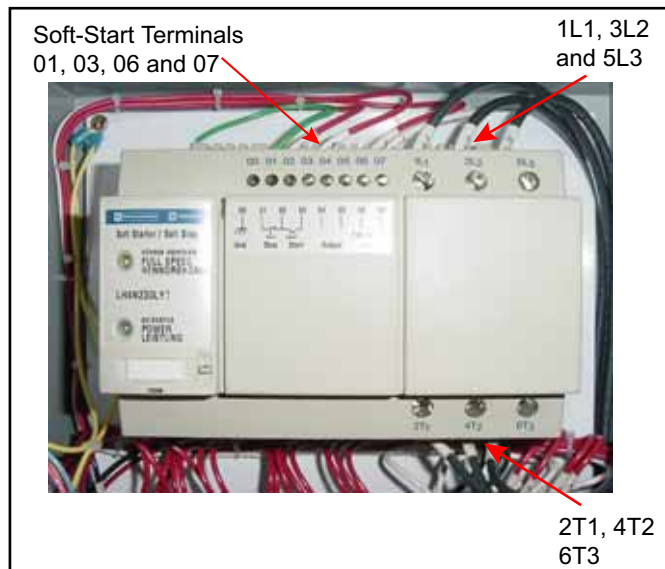
6. Disconnect the wires labeled 1, 2, 14, and 15 from the soft-start terminals A1, A2, 2, and 57.
7. Loosen and remove the screws holding the soft-start on the soft-start enclosure back panel.
8. Remove the soft-start from the soft-start enclosure back panel.

Replacing the Soft-Start

Installing the Soft-Start

1. Mount the soft-start on the soft-start enclosure back panel.
2. Refer to Figure 6, and connect the wires labeled 1, 2, 14, and 15 to the soft-start terminals as follows:
 - wire 1 (red) to terminal 06
 - wire 2 (white) to terminal 07
 - wire 14 (red) to terminal 03
 - wire 15 (red) to terminal 01

Figure 6: New Soft-Start Connections



Installing the New Wires in the Soft-Start Enclosure



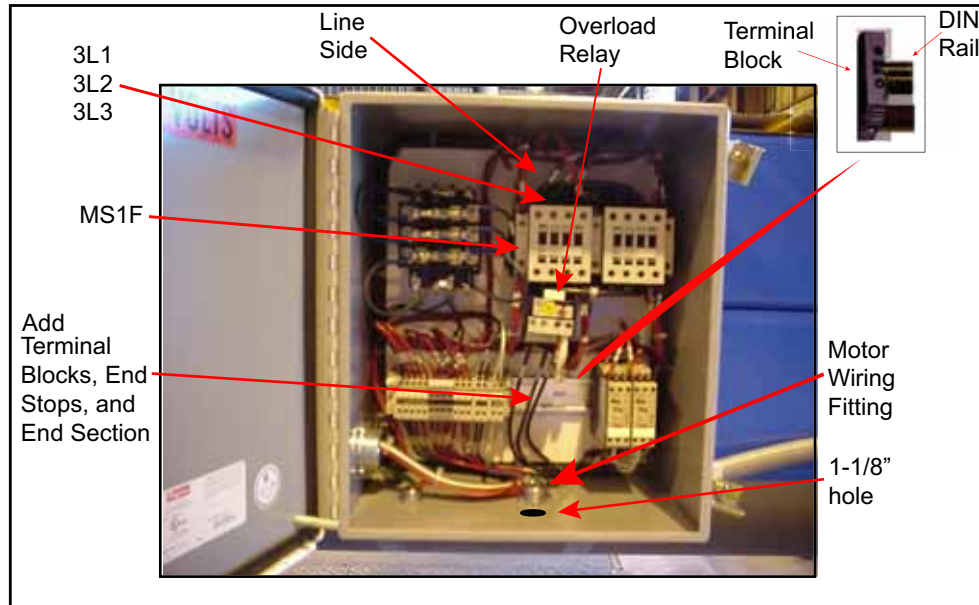
The wiring that is cut and labeled in the following steps will be connected between the soft-start enclosure and the control enclosure.

1. Cover the components inside the soft-start enclosure with a cloth to prevent metal shavings from contacting the electrical components.
2. Drill a 1-1/8 inch diameter hole in the bottom of the soft-start enclosure, approximately 2 inches from the enclosure door. Refer to Figure 5 for the approximate location of the hole.
3. Cut three (3) pieces of the supplied black wire 5 feet long and label both ends of one piece 4L1, one piece as 4L2, and one piece as 4L3.
4. Cut three (3) pieces of the supplied black wire 5 feet long and label both ends of one piece 1T1, one piece as 1T2, and one piece as 1T3.
5. Fish the six (6) new wires through the supplied conduit.
6. Attach a supplied connector fitting to the end of the conduit.
7. Install the new wires through the opening at the bottom of the soft-start enclosure from the outside.
8. Mount and tighten the connector fitting onto the soft-start enclosure.
9. Refer to Figure 6 and connect the new wires listed below inside the soft-start enclosure as follows:
 - wire 4L1 to soft-start input terminal 1L1
 - wire 4L2 to soft-start input terminal 3L2
 - wire 4L3 to soft-start input terminal 5L3
 - wire 1T1 to soft-start output terminal 2T1
 - wire 1T2 to soft-start output terminal 4T2
 - wire 1T3 to soft-start output terminal 6T3

Installing the New Wires in the Control Enclosure

1. Refer to Figure 4 on page 6 and open the control enclosure door.
2. Cover the electrical components with a cloth to prevent metal shavings from contacting the electrical components.

Figure 7: Control Enclosure



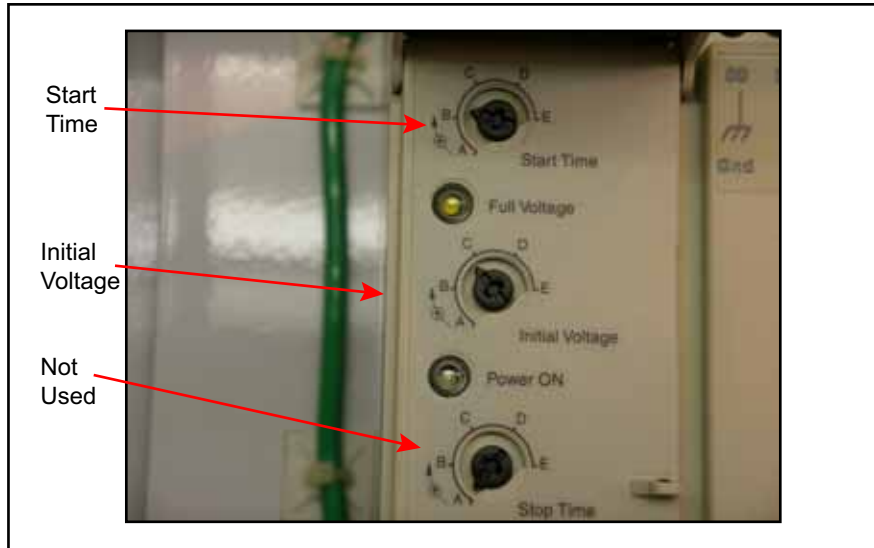
3. Refer to Figure 7 and drill a 1-1/8 inch diameter hole in the bottom of the control enclosure, approximately 2 inches from the control enclosure door and in front of the motor wiring fitting.
4. Re-label the wires on the line side of MS1F and MS1R as follows:
 - wire 4L1 to 3L1
 - wire 4L2 to 3L2
 - wire 4L3 to 3L3
5. Install the three (3) supplied terminal blocks, with end stops and an end section onto the DIN rail, located below the overload relay. Refer to Figure 7 for the correct location.
6. Disconnect wires 1T1, 1T2, and 1T3 from the overload relay.
7. Connect the wires removed in the previous step to the bottom of the new terminal blocks as follows:
 - wire 1T1 to the left terminal block
 - wire 1T2 to the middle terminal block
 - wire 1T3 to the right terminal block

8. Install a supplied connector fitting in the new hole in the bottom of the control enclosure.
9. Run the free end of the six (6) new wires (4L1, 4L2, 4L3, 1T1, 1T2, 1T3) and the conduit through the connector fitting and tighten the collar on the connector fitting.
10. Connect 4L1, 4L2, and 4L3 to the bottom of the overload relay.
11. Connect the remaining wires to the top of the new terminal blocks as follows:
 - 1T1 to the left terminal block
 - 1T2 to the middle terminal block
 - 1T3 to the right terminal block

Setting the Soft-Start

1. Set the Initial Voltage dial to setting “C”. The soft-start is shown in Figure 8.

Figure 8: Soft-Start Settings




The Start Time dial starts at “A” and ends with “E”. “A” is the quickest start time and “E” is the slowest. If the soft-start is set to “A”, the soft-start will ramp up to speed within 1 second and if set to “E”, the soft-start will ramp up to full speed within 25 seconds. When set correctly, the machine should start smoothly with no brake chatter. The Stop Time setting is not used.

2. Adjust the start time by moving the Start Time dial between “A” and “E”.

Testing

1. Close all enclosure doors.
2. Connect power to the *RailRider* press.
3. Check the rotation of the *RailRider* press motor.
 - a) Push the left pushbutton.
 - b) Verify that the *RailRider* press moves to the left. If the *RailRider* press does not travel to the left, go to the next step. If the *RailRider* press responds correctly, this procedure is complete.

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	<p>All electrical work must be performed by a qualified electrician and shall conform to all national and local electrical codes.</p> <p>Do not turn on electrical power until you have completed the entire procedure.</p> <p>Follow approved lockout/tagout procedures (OSHA 29 CFR 1910.147).</p>

4. If necessary, reverse the rotation of the motor.
 - a) Refer to Figure 3 to turn off and lockout/tagout all the power to the machine.
 - b) Open the control enclosure door.
 - c) Switch any two (2) of the three (3) wires labeled 1T1, 1T2, or 1T3 inside the control enclosure.
 - d) Close the control enclosure door.
 - e) Remove the lockout and tagout mechanisms and return power to the machine.
 - f) Push the left pushbutton.
 - g) Verify that the *RailRider* press moves to the left. If the *RailRider* press does not travel to the left, go back to the beginning of step 3. If the *RailRider* press responds correctly, this procedure is complete.

END OF SERVICE BULLETIN