

Service Bulletin

Machinery Affected: *MiTek[®]* Finish Roller Press
Document: SB183
Title: Installing the Safety Improvement Kit
Applies To: MiTek brand
Distribution: All *MiTek* Finish Rollers in the field prior to 11 April 2008



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See the new Training Guide at the end of this document and the additional procedures too!

Purpose and Scope

MiTek is offering a free kit which it believes will further enhance the safety of your Finish Roller by reducing the likelihood of dangerous and improper use of the machine. The kit can be installed in about 1-1/2 hours.

Finish Rollers, within roller gantry truss production systems, are intended to be used to receive trusses automatically conveyed to them from a set of spaced conveyor rollers, and NEVER TO RECEIVE TRUSSES HAND-FED INTO THEM. Safety systems are designed with the expectation that they will not be intentionally disabled or avoided. Employers and their workers have been warned to stay out from between the conveyor rollers and the area near the Finish Roller during production to avoid injuries.

Installing this kit will prevent entry behind the pushbar and reduce the likelihood of dangerous hand-feeding of trusses. When used in conjunction with the training information in this document, employees will be armed with the knowledge they need to make good decisions when working with or near the Finish Roller.



We highly recommend that you protect your workers by contacting MiTek Machinery Division Customer Service to order your free kit today.

Ordering the Free Kit

Order the Finish Roller Safety Improvement Kit using one of the methods described below. You can request one free kit for each *MiTek* Finish Roller currently installed. It will be sent with a copy of this Service Bulletin.

- *eStore*
Go to the MiTek *eStore*TM at <http://estore.mii.com> and enter the part number SB183KIT-A. If you don't already have a password for *eStore*, you may request one at the *eStore* Web page.
- E-mail
Send an e-mail to mitekparts@mii.com requesting part number SB183KIT-A.

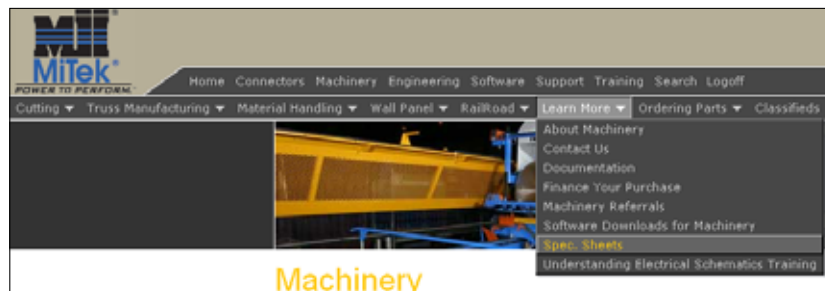
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Think About It...

- If you need to press plates into trusses that are too short to pass from one roller to another in the roller conveyor line feeding your Finish Roller, talk to your MiTek Sales Representative about using the *Jack Table*™ platen press or *JackRabbit*® coil-fed joint maker. Specification sheets can be found on the MiTek Web site.
- Adding a table and roller bed may allow the Finish Roller to be safely used for small trusses. Your MiTek Sales Representative can help determine the best configuration.
- The Finish Roller has many safeguarding mechanisms in its current design, but we believe that looking for ways to improve safety should be a continuous joint effort between plant employees, plant managers, and your equipment manufacturers. Please take this opportunity to review the safety and training procedures in effect at your plant and revise them to be consistent with the guidelines in this document.
- A completely revised Finish Roller manual will be available later this year.
- Go to the MiTek Web site at www.mitek.com and click “Machinery” to find specification sheets, manuals, and other valuable information

Figure 1: Finding Equipment Specification Sheets on the Web



Parts and Supplies

If you have any questions, call MiTek Machinery Division Customer Service at 800-523-3380. Before beginning the procedure, gather the supplies listed in Table 1.

Table 1: Customer-Supplied Items Required to Install SB183KIT

7/16" socket or wrench	Lockout/tagout devices
Center punch and hammer	Marker
Tap handle and 1/4"-20 tap	Tape measure
Knife or scissors to cut safety tape	Gloves (optional)
Drill and drill bits for sheet metal and aluminum at these sizes:	Safety glasses
<ul style="list-style-type: none"> • For pilot holes • #7 or 23/64" 	Lubricating fluid for tapping
	Tool to cut 1/8" chain

The parts included in this kit are listed in Table 2. Everything needed to complete the steps in the *Procedure for Installing SB183KIT* section is included.

Table 2: Items Included in SB183KIT, Free of Charge

Qty.	Part Description	Part #
12	1/4"-20x1" hex head screws	327161
12	1/4" lock washers	364034
12	1/4" flat washers	365115
1	Chain, 1/8" x 24' 11" long	555003
1	Label, Lockout/tagout before servicing motor	691408
1	Label, Arc flash and shock hazard	691411
4	Label, Do not hand feed	691420
4	Label, Trusses enter and exit	691421
2	Label, Moving parts...keep guard on	691500
4	Label, May stop and start automatically	691512
2	Label, Lubrication	691700
1	Label, Customer Service contact information	691821
1 roll	warning tape, black and yellow striped	691901
1	Service Bulletin 183	SB183


To perform any of the recommended additional procedures at the same time as the primary procedure, refer to Table 3 and the *Recommended Additional Procedures* section starting on page 11 to determine the additional parts to order. Contact Customer Service at 800-523-3380 for pricing and technical advice.

Table 3: Part Number Identification for Additional Procedures

Part Description	Part Detail	Part #
Additional Chain, 1/8" x 24' 11" long		555003
Bracket assembly identical to the those on Finish Rollers prior to 2008.	Brackets	68376
	Bolts	327265
	Washers	364042
Electrical switch for angled pushbar manufactured...	Prior to March 1998	Limit switch 515069 Roller arm 515063
	After March 1998	Limit switch 515069 Roller arm 515076
Truss sensor	Sensor-Emitter light	477011
	Sensor-Receiver	477012
Horn assembly for control panel		513529
Beacon assembly	On control panel	SB185KIT
Beacon/horn assembly	For additional locations	90535-501
E-stop pushbutton assembly <i>Contact Customer Service to determine number.</i>		SB186KIT-xx

Procedure for Installing SB183KIT

Electrical Lockout/Tagout Procedures

WARNING	
	<p>ELECTROCUTION HAZARD!</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>All electrical work must performed by a qualified electrician.</p> <p>If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.</p>

Before performing maintenance on any machine with electrical power, lockout/tagout the machine properly. When working on a machine outside of the machine’s main electrical enclosure, not including work on the electrical transmission line to the machine, follow your company’s approved lockout/tagout procedures which should include, but are not limited to the steps here.

Always engage an E-stop when you see the symbol shown in the margin.

1. Engage an E-stop on the machine.
2. Turn the disconnect switch handle on the machine’s main electrical enclosure to the “off” position. See Figure 2.
3. Attach a lock and tag that meets OSHA requirements for lockout/tagout.
4. Repeat the lockout/tagout steps for equipment near the Stand-Alone Conveyors, presses, and other equipment near the Finish Roller that could cause harm to personnel performing this procedure.



Figure 2: Lockout/Tagout on the Main Electrical Enclosure



Lock prevents power from being restored.

Tag identifies who is holding the key.

Installing the Warning Tape

Place the warning tape around the opening, on both sides of the machine, to bring attention to this high-risk area. Use the following steps.



Gloves are optional for this procedure.

Figure 3: Applying the Warning Tape



1. Clean the surface where the tape will be applied using a damp cloth. Refer to Figure 3 for the proper location.
2. Dry the surface thoroughly.
3. Starting in one corner, begin unrolling the tape, and press it onto the surface surrounding the opening.
4. Continue until all four sides of the rectangular opening have tape around it.
5. Repeat on the other side of the machine.

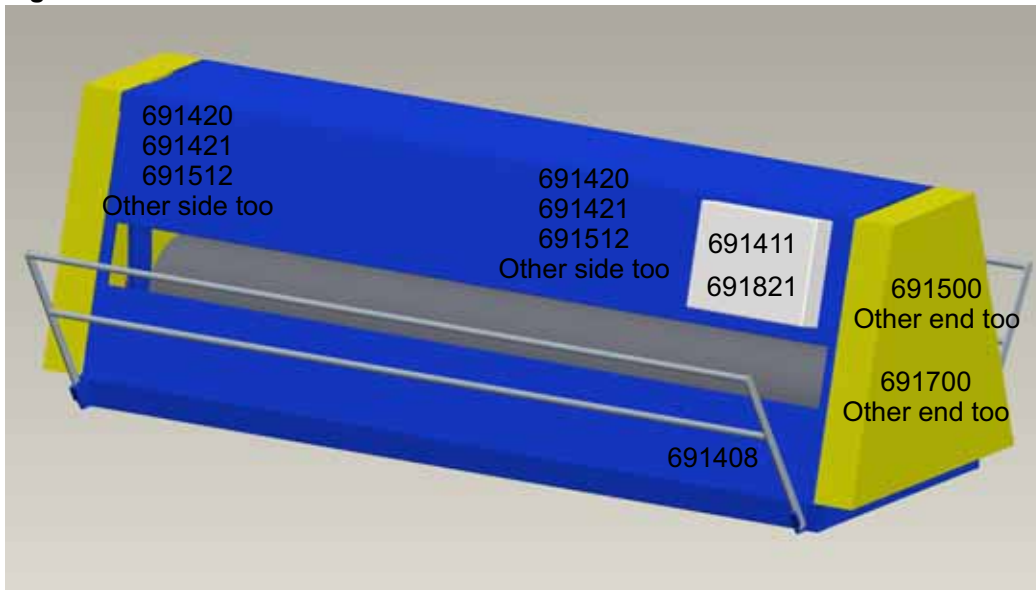
Installing Labels

1. Locate the labels listed in Table 2.
2. Clean and dry the surfaces where labels will be applied, as shown in Figure 4.
3. Peel of the backing and adhere the labels in the approximate locations shown in Figure 4.



If your machine already has any of these labels, we recommend replacing the existing label with the new label.

Figure 4: Locations for New Labels



Installing Chain on the Pushbars

Chain is supplied to hang from the Finish Roller frame to the pushbar to prevent walking behind the pushbar. It is also intended to reduce the ability to reach in or feed small trusses from beside the pushbar, as this is an unsafe practice.



1. Drill and tap 2 through-holes in the Finish Roller frame using the following procedure:
 - a) Measure and mark the 2 hole locations as illustrated in Figure 5.
 - b) Use a punch to mark the center of the hole, then drill a pilot hole.
 - c) Use a #7 drill bit (23/64") to drill the final hole size.
 - d) Use a 1/4"-20 tap and lubricant to thread the holes.

2. Drill and tap 1 through-hole in the end of the pushbar, centered on the top tube.
 - a) See Figure 6 for the hole location.
 - b) Follow the same measuring and drilling procedure used on the frame.

3. Cut the supplied chain into approximately 6-ft sections.
 - Test that the section reaches between the holes just drilled before cutting.
 - Choose the most appropriate cutting method you have available.



Wear safety glasses when cutting the chain.

Figure 5: Measuring Location of Finish Roller Holes

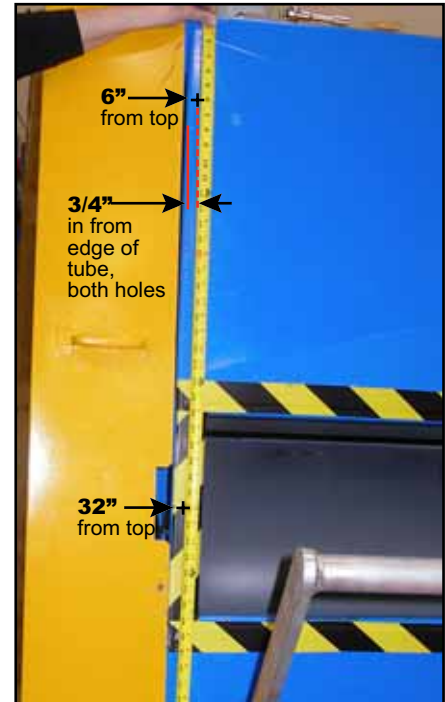


Figure 6: Measuring Location of Pushbar Hole (View From End)



4. Loosely attach one end of the 6-ft cut chain to the top hole in the Finish Roller using a capscrew, lock washer, and flat washer supplied.
5. Loosely attach the other end of the 6-ft cut chain to the bottom hole in the Finish Roller using a capscrew, lock washer, and flat washer supplied.
6. Loosely attach the chain to the pushbar using these guidelines:

- a) Pull the center of the chain toward the pushbar until you find the link that best reaches the hole in the pushbar. See Figure 7.

- b) Attach that link to the pushbar using a capscrew, lock washer, and flat washer supplied.

Figure 7: Attaching the Chain to the Pushbar



7. Tighten all 3 capscrews with 7/16" socket.
8. Push the pushbar against the Finish Roller to check for a bind in the chain.
9. Repeat until procedure is complete on all four corners of the machine.
10. Remove the lockout/tagout device on the Finish Roller.
11. Ensure all personnel and equipment are clear, then start the Finish Roller and test the operation of both pushbars. If you need to readjust the chain for the pushbars to work properly, first lockout/tagout the Finish Roller.
12. Remove the lockout/tagout devices on nearby equipment and resume operation.



Read entire procedure to determine additional parts and supplies that may be needed.

Recommended Additional Procedures

MiTek highly recommends completing the following procedures to ensure the safest environment possible.

- For Finish Rollers Against a Wall
- Ensuring the Horn Provides Proper Notification
- Installing Beacon Lights and Additional Horn
- Installing Additional E-Stop Pushbuttons

An experienced maintenance person should perform these procedure and obtain the appropriate parts. Refer to Table 3 on page 5 to easily identify the proper part numbers. Ordering information is on page 3.

For Finish Rollers Against a Wall

Many Finish Rollers are located against a wall, leaving the opening of the Finish Roller accessible from outside the wall. MiTek recommends adding a barrier or safety device to the outside of the building in these cases. Every plant and configuration differs, but one method for accomplishing the relocation of the pushbar is described here.



1. Remove the pushbar and switch from the wall side of the Finish Roller.
2. Remove the brackets that the pushbar rested against if you plan to re-use them, or make a new set that easily attaches to the building.
3. Install chains to keep personnel from walking between the Finish Roller and the wall. Use the same method used in *Installing Chain on the Pushbars*.
4. Attach the brackets that hold the pushbar to the outside of the building so the pushbar is at the same height it is on the inside. The best method to attach the brackets outside is dependent on your building design.
5. Install the electrical switch on a bracket outside. Additional wire may be needed.
6. Test the pushbar to ensure it stops the equipment as it was designed to do.

Ensuring the Horn Provides Proper Notification

A horn is located on the Finish Roller's electrical enclosure to notify personnel when a truss is entering the Finish Roller. It is necessary for notifying people standing on the opposite side of the Finish Roller that a truss is entering their area.

Testing the Horn

1. Place a truss on the Stand-Alone Conveyor.
2. Ensure the Finish Roller's disconnect switch is in the On position. It is not necessary for the Finish Roller to be in motion.
3. Turn on the Stand-Alone Conveyor so the truss enters the Finish Roller frame.
4. Just before the truss reaches the Finish Roller rollers, the horn should sound. If the horn does not sound, the most likely reasons are either the horn is not working properly or the sensor is broken.

Figure 8: Horn and Optional Beacon on Control Panel



Restoring the Horn Feature

1. Check for a volume screw on the front of the horn.
 - If a screw is present, turn it counterclockwise to increase the volume. Removing the screw will set the volume at approximately 100 dB which is the recommended volume level.
 - If the screw is missing, the horn is set at approximately 100 dB which is the recommended volume level.
2. If the volume screw has been removed and the horn still fails to work, have an electrician troubleshoot the machine to determine if there is a faulty horn, sensor, or wiring system.

Figure 9: Horn and Optional Beacon on Control Panel



Remove screw for appropriate volume level.





Installing Beacon Lights and Additional Horn

Adding a Beacon Light to the Finish Roller

Prior to 2008, Finish Rollers were manufactured with a horn on the Finish Roller enclosure, but no beacon light. To add a beacon light to the Finish Roller enclosure, order SB185KIT-A. Figure 8 shows a Finish Roller with a horn and beacon on the main enclosure.

Installing an Additional Horn and Beacon Assembly

It is recommended that a second horn and beacon light be installed to supplement the horn and optional beacon located on the Finish Roller. Most Finish Rollers are located inside a building, so the personnel working around the conveyor and stackers outside the building can not hear the horn or see the beacon. Order part number SB185KIT-B to receive the required parts and a drawing containing instructions for installing a supplemental horn and beacon.

Installing Additional E-Stop Pushbuttons

The Finish Rollers manufactured prior to 2008 have a pushbar on each side of the Finish Roller and one E-stop pushbutton on the enclosure attached to the Finish Roller. There are a multitude of reasons why your employees may benefit from adding additional E-stop pushbuttons to the Finish Roller and Stand-Alone Conveyor system.



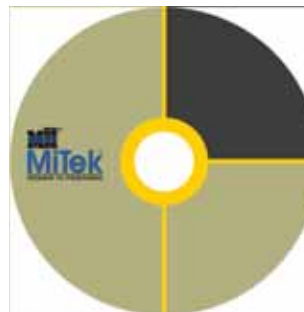
Instructions and parts kits can be ordered under part number SB186KIT. MiTek's Customer Service Department can help determine the most effective quantity and locations which will affect the part number suffix.

Training Guide

Applicable to Finish Rollers manufactured prior to mid-2008.

Training Tools

In addition to this Service Bulletin, use the Truss Assembly Safety (Plant Safety) DVD to train people working on or near the Finish Roller and Stand-Alone Conveyors. This DVD is included in the initial mailing of this Service Bulletin (June 2008). To order additional copies of the safety DVD, order part number 001301 using one of the methods on page 3.



Capabilities of the Finish Roller

Finish Roller systems installed prior to 2008 were designed to have the capabilities specified in Table 4. Do not attempt to place material through the Finish Roller if it falls outside of these specifications.

Table 4: Finish Roller and Stand-Alone Conveyor Capabilities

	Length	Width
Minimum size of material that can travel independently with standard configuration	10 ft	N/A
Maximum size of material that can travel independently with standard configuration	N/A	14 ft
Material that can travel with limited assistance—supplemental equipment is recommended	5-10 ft	N/A
Requires supplemental equipment—talk to your MiTek Sales Representative	< 5 ft	N/A

Material as small as 5 ft long can be lifted onto the Stand-Alone Conveyor from outside the Stand-Alone Conveyor line and will need to be supported at one end until it reaches the last Stand-Alone Conveyor roller. Refer to the safety notes in this section for guidance on assisting a small truss.

If you need to feed trusses or material smaller than the specifications allow, MiTek offers products designed for this purpose. Contact your MiTek Sales Representative to find out more about the *Jack Table*[™] platen press, *JackRabbit*[®] coil-fed joint maker, and a variety of roller bed configurations available.

Checklist Prior To Starting FR

The Finish Roller has features that must be operating properly for the machine to be safely used. If you discover that any safety mechanism or stop device is not operating properly, immediately lockout/tagout the equipment and notify a supervisor. Never operate machinery without all safety mechanisms and stop devices in proper working condition!

1. Check that nobody is standing near the Finish Roller or in the Stand-Alone Conveyor aisles.
2. Check for trusses already in the Finish Roller. Ensure that they will not collide with another truss or personnel when the Finish Roller begins turning.
3. Check for trusses already on the Stand-Alone Conveyor that should be indexed forward or removed from the conveyor.
4. After clearing material in previous steps, check again to ensure nobody is standing near the Finish Roller or in the Stand-Alone Conveyor aisles.
5. Test for proper operation of safety devices, notification devices, and stop methods on the Finish Roller. Start the Finish Roller, then actuate each device:
 - There is a minimum of 2 pushbars, 1 E-stop pushbutton, and 1 horn.
6. If your system has a Stand-Alone Conveyor and/or stacker system, check for proper operation of safety devices and stop methods on that equipment, regardless of who the manufacturer is. Refer to the Operation and Maintenance Manual.

Operating the Finish Roller Safely

Understanding the Finish Roller

The Finish Roller is a powerful machine that can cause injury or death if used improperly. It consists of two 24-in. diameter steel rollers weighing 3500 lb each.

Depending on your system configuration, the Finish Roller may be tied in with other equipment. Always be aware of equipment movement outside of your control.

- The Finish Roller may start and stop automatically, controlled by the stacker.
- The Finish Roller may turn on when the Stand-Alone Conveyor is turned on.
- The Stand-Alone Conveyor may turn on when the Finish Roller is turned on.

While pressing the plates, the rollers move the truss forward with great force. When a truss is being pushed through the Finish Roller, there is no practical way to stop the truss from traveling forward. Because of this, you must pay attention to the area extending out from both sides of the Finish Roller when thinking about Finish Roller safety.

Operator Location

Do not enter the restricted zone shown in Figure 10 while any of the equipment in that line is in motion. Stay out of the table aisles if the gantry head is in motion.

Stay out of the Stand-Alone Conveyor aisles if the Finish Roller and/or Stand-Alone Conveyors have the potential to start up.

Lockout/tagout the Finish Roller and Stand-Alone Conveyors on both sides if you need to touch the material and any of the following conditions occur:

- Any part of your body will pass over or under the pushbar or side chains
- The material has already been grabbed by the Finish Roller rollers
- It requires you to step into or lean down between the conveyor rollers

Use a push stick to align the truss with the Finish Roller if necessary.

WARNING	
	<p>CRUSH HAZARD.</p> <p>Never stand between conveyor rollers. Never walk between pushbar and Finish Roller.</p>

Figure 10: Restricted Zone

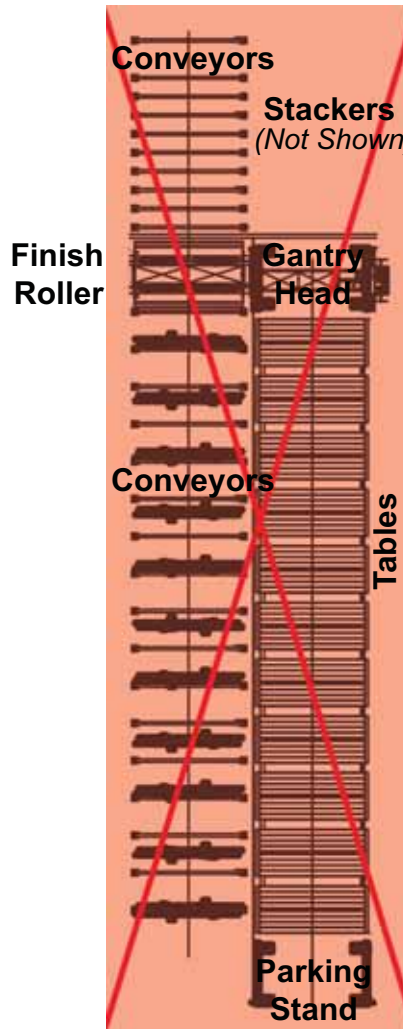
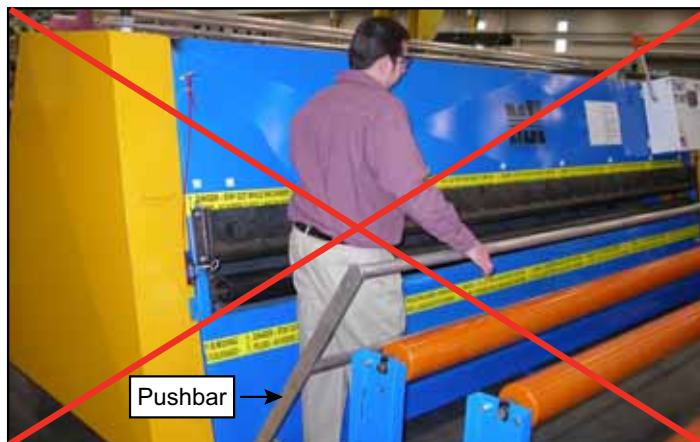


Figure 11: Do Not Walk Behind Pushbar



Communication Feature

The Finish Roller has a horn to notify personnel in the area when a truss is entering the machine. The horn sounds for 3 seconds every time a truss enters the sensor's zone. This horn is a valuable notification device and should never be turned off.

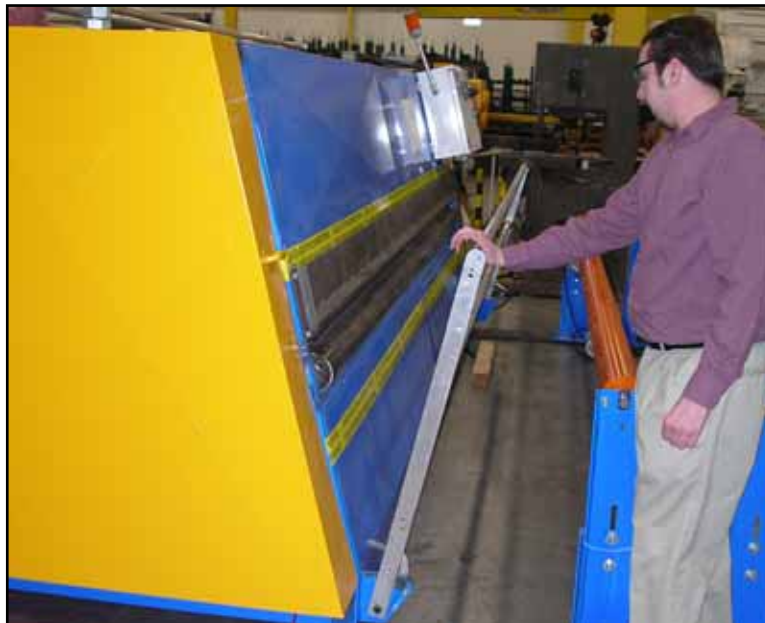
Beacon lights are also available to install on the infeed side or outfeed side of the Finish Roller and conveyor line. Refer to the *Recommended Additional Procedures* section for part numbers and installation instructions.

Using the Pushbar (On Finish Rollers Manufactured Prior to 2008)

The purpose of the pushbar is to stop the Finish Roller if a person pushes the pushbar toward the machine for any reason. When the pushbar is pushed forward, the electrical circuit is interrupted, and the Finish Roller stops almost immediately.


Never cross or allow your hands or feet to cross the plane of the pushbar or side chains.

Figure 12: Using the Pushbar to Stop the Finish Roller



Feeding Small Trusses

If your work flow requires using the Finish Roller for material that is less than 10-ft long, plant management must determine the safest way to feed small trusses into the Finish Roller. The plant guidelines must be consistent with the guidelines in this document.

DANGER	
	<p>CRUSH HAZARD!</p> <p>Do not hand-feed trusses. Machine may start and stop automatically. Trusses enter and exit the Finish Roller.</p> <p>Lockout/tagout before entering area in front of Finish Roller, on either side.</p>

Some suggestions and guidelines for feeding small trusses are:

- Place trusses on the Stand-Alone Conveyor from the side.
 - ✓ It may be helpful to add a conveyor or roller bed perpendicular to the Stand-Alone Conveyor.
 - ✓ Adding a table or roller bed at the opening of the Finish Roller will assist in feeding very small trusses and prevent them from falling between the last Stand-Alone Conveyor rollers and the Finish Roller rollers.



COMING SOON!

MiTek will have roller bed options available configured specifically for your Finish Roller. Keep an eye on our Web site for more information!

Figure 13: Do Not Hand-Feed Directly Into Finish Roller



- Constantly be aware of material traveling along the Stand-Alone Conveyor.
- Use proper lifting techniques:
 - ✓ Use your legs, not your back, to lift trusses onto the conveyor.
 - ✓ Directly face the conveyor when lifting the truss to avoid twisting your back

END OF SERVICE BULLETIN