Operation and Maintenance Manual

FloorTracker™

Floor Truss Roller Press

001076

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Floor Truss Roller Press

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Made and sold under one or more of the following patents:

U.S. 37,797	U.S. 5,468,118
U.S. 5,553,375	U.S. 6,079,325
U.S. 6,145,684	U.S. 6,330,963
U.S. 6,405,916	U.S. 6,651,306
U.S. 6,807,903	Other Patents Pending

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To report errors or to recommend improvements to this manual, please complete the Document Evaluation Form located in *Appendix E*. Mail or fax the form to:

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Machinery Division
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Attn: Engineering Manager
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Your assistance in helping MiTek provide unsurpassed machinery and support is appreciated.

Notice of Change

Use this page to record Service Bulletins and Notices that you receive to keep your manual updated.

Operation and Maintenance Manual
FloorTracker™ Roller Press

Service Bulletin or Notice #	Dated	Title

Safety Indicators

The following safety alert symbols and signal words are used throughout this document to indicate safety hazards. Please pay careful attention when you see them. The level of severity differs with each symbol or signal word. The definitions below may also be found in ANSI z535.4-2002.

Failure to comply with the accompanying instructions may result in property damage, personal injury, or even death. Personnel must follow all safety procedures and practices to ensure the safest possible operation and maintenance of this equipment. However, at no time is this document a substitute for common sense. Personnel must ensure that the work environment is safe and free of distractions.

DANGER

Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

CAUTION

When used with the safety alert symbol shown here, indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

When used without the safety alert symbol shown here, indicates a potentially hazardous situation which may result in equipment damage.

NOTICE

NOTICE

Calls attention to information that is significant to understanding the operation at hand.

ENVIRONMENTAL

ENVIRONMENTAL

Applies to conditions that may affect the environment but does not have an immediate, direct effect on personnel or equipment.

General Safety Rules

Because it is impossible to anticipate every circumstance that might involve a hazard, the safety information provided in this manual and on the machine are not all-inclusive. If this machine is operated or serviced using a procedure not specifically recommended by the manufacturer, the procedure shall be approved by a professional engineer to ensure it will not render the equipment unsafe. Use extreme caution and common sense at all times!

1. All personnel shall read this manual completely before using or maintaining the equipment. Do not operate this machine unless you have a thorough knowledge of the controls, safety devices, emergency stops, and general operating procedures outlined in this manual.

2. All safety notes shall be read and observed before operating the machine or performing any maintenance work. Failure to comply with these instructions may result in economic loss, property damage, and/or serious personal injury including death.

3. Only qualified personnel shall operate, perform maintenance on, or be unsupervised near this equipment. The definitions of "qualified personnel" in this use are:

   > *...a person or persons who, by possession of a recognized degree or certificate of professional training, or who, by extensive knowledge, training, or experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work* —*ANSI B30.2-1983*
   >
   > *...one who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved* —*NEC 2002 Handbook*

4. Refer to the lockout/tagout guidelines on the following pages to safely perform maintenance and troubleshooting of this equipment.

5. Check that all safety devices are in working order before each shift starts. All protective guards and safety devices must be in place before and during use of the machine. Never disconnect or bypass any safety device or electrical interlock.

6. Observe and obey all safety labels. Replace worn labels immediately.

7. Check for worn or damaged parts regularly. Repair or replace them immediately.

8. Always wear safety glasses and hearing protection in an industrial environment.

9. Utilize a filtering face piece (dust mask) when working near sawdust.

10. Use caution when lifting heavy parts or material.

11. Wear proper apparel and appropriate personal protective equipment. Do not wear loose clothing or jewelry. Confine long hair.

General Safety Rules

12. Keep children away. All visitors should be kept a safe distance from the work area. Hazards may not be apparent to individuals who are unfamiliar with the machine.

13. Keep work area clean and free of any trip or slip hazards.

14. Do not use any liquids in the interior of electrical cabinets.

15. When using solvents on and around the machine, remove power to the machine to eliminate the chance of sparking, which may result in explosion or fire. Wear a respirator approved for use with solvents. Wear protective clothing, gloves, and safety glasses.

16. Do not use in damp or wet locations, or expose the machine to rain or snow.

17. Keep work areas well lit.

18. Ensure that all tools and foreign objects are clear of the restricted zones before operating this equipment. The restricted zones are shown on page xi.

19. Periodically inspect the quality of the finished product to ensure it will perform its intended function safely. Use only materials certified for the intended use. Truss designs must be approved by a qualified design engineer. Qualification of design engineers is dictated by local, state, and federal regulations.

20. Use this equipment solely for the purpose described in this manual.

21. In case of machine malfunction, stop the machine immediately and report the malfunction to a supervisor.

22. Never leave the machine running unattended. Turn the power off! Do not leave the machine until all parts have come to a complete stop and all electrical power has been shut off.

23. This equipment must be operated and maintained in accordance with all current governing standards, including local, state, and national codes for the location in which it resides.

24. Keep the hydraulic, pneumatic, and electrical systems in good working order at all times. Repair leaks and loose connections immediately. Never exceed the recommended pressure or electrical power.

25. Before performing maintenance on the pneumatic or hydraulic systems, bleed the lines to eliminate pressure.

Lockout/Tagout Guidelines

All lockout/tagout guidelines must be met according to *OSHA 29 CFR 1910.147*. Guidelines should be included in your company's energy control program. This manual is not intended to replace your company's lockout procedure required by OSHA, but merely to provide general guidance.

The term *lockout*, as used throughout this manual, means that the main power and control power to the machinery are turned off and is physically locked at the OFF position to prevent accidental restarting or re-energizing. If more than one person is working in a danger zone, use a gang lockout assembly that will allow each person to use a lock that can be removed only by the person performing the maintenance. *Tagout* means that a prominent warning is securely fastened to an energy isolating device to indicate that the equipment shall not be operated.

If a troubleshooting or repair activity can not be accomplished with the power turned off, refer to *NFPA 70E* for the personal protective equipment required. Any time maintenance is performed while the equipment is energized, there is a potential electric arc flash hazard. Every effort should be made to avoid this scenario, but when it is necessary, take every precaution possible.

Performing Maintenance Outside the Enclosure

When performing any maintenance or adjustments outside of the electrical enclosure, turn off the disconnect handle on the machine. Notify other personnel in the area that you are working on the machine by tagging and locking the disconnect handle in the off position as shown in the photo.

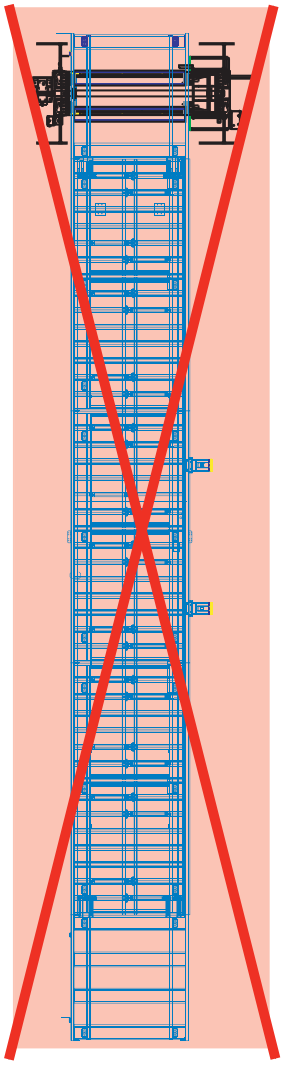
Performing Maintenance Inside the Enclosure

Before opening an electrical enclosure, turn off the machine's disconnect handle and lockout/tagout the source of power. It is usually located in an electrical panel mounted on the building wall, similar to the panel shown in the photo. When you open the electrical enclosure, check the voltage inside the enclosure using a multimeter to ensure that there is no live power.

Restricted Zone

All personnel must stay clear of the area indicated in red below when the machine is in use. The operator must check and clear the entire area before putting the machine in motion. The restricted zone covers all areas that the press head can reach or be reached from.

	DANGER
	Stay clear of the restricted zone when machine is in use! Serious injury or death may result to personnel in the restricted zone.



Gantry Head
Moving Component

Table System
May Have Moving Components

Parking Stand

General Information

Chapter 1

Introduction

	DANGER
	**Read this manual completely before using this equipment!** **Do not operate this machine until you have a thorough understanding of all controls, safety devices, emergency stops, and operating procedures outlined in this manual.** **All warnings must be read and observed. Failure to do so may result in economic loss, property damage, and/or personal injury.** **This manual must always be available to personnel operating and maintaining this equipment.**

Purpose

The primary function of the *FloorTracker*™ roller press is to press *MiTek*® connector plates into floor trusses to connect the truss components.

The length of the trusses your system can create depends on the number of tables in your system. The width of the trusses can be up to 26 in. wide or 30 in. wide, depending on your model.

Identifying Your System and Available Options

Table 1-1: System Variations

	Max. Truss Depth	# of Tables	Ejection System	Splice	Outfeed Ejector Pop-Up	Infeed Flipper
56300-501	26	3	Side	Y	Pop-Up	Flipper
56374-501	26	3	End	Y	End-eject	Flipper
56534-501	26	5	Side	N	Pop-Up	Flipper
56535-501	26	3	Side	Y	Pop-Up	None

Table 1-2: Optional Equipment

Name	Part #
Dual control air	Contact MiTek Customer Service
Overhead rack	Contact MiTek Customer Service
2nd pendant	90544-611
Multiple gantry head	Contact MiTek Customer Service
Pneumatic end clamp	56361-501

Figure 1-1: Main Components of the *FloorTracker* Roller Press System

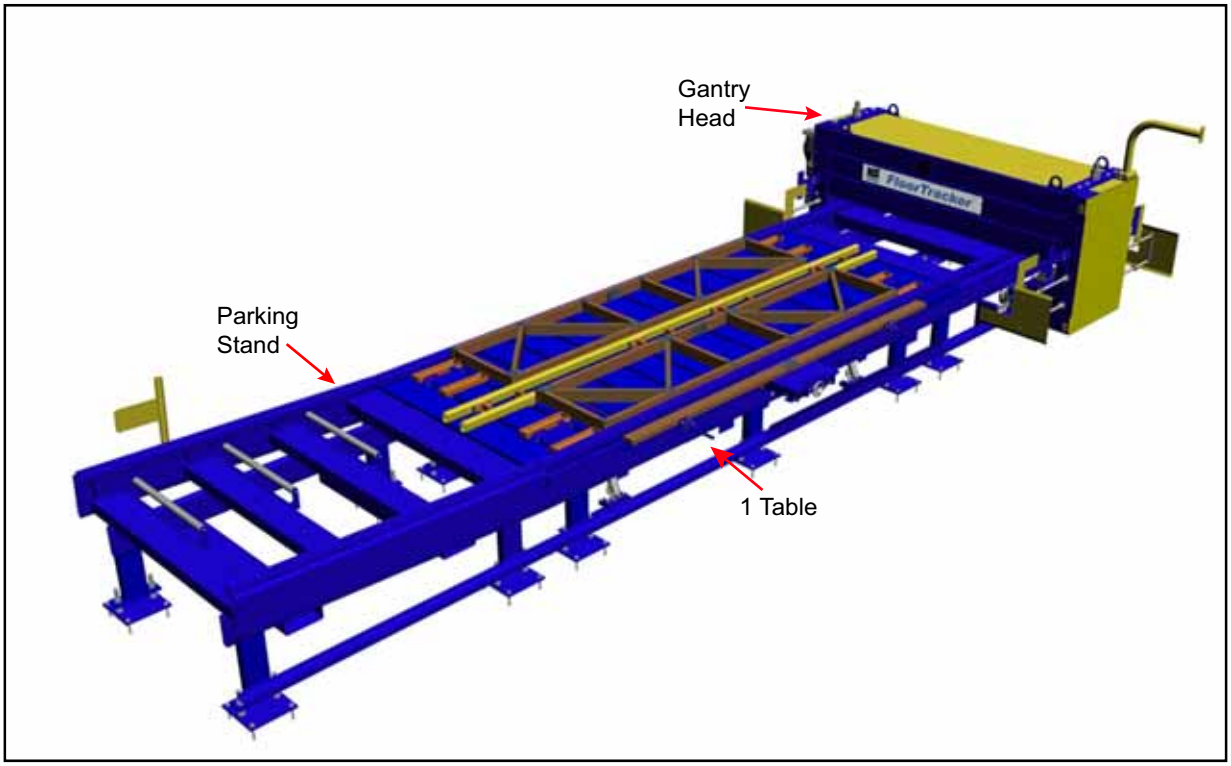
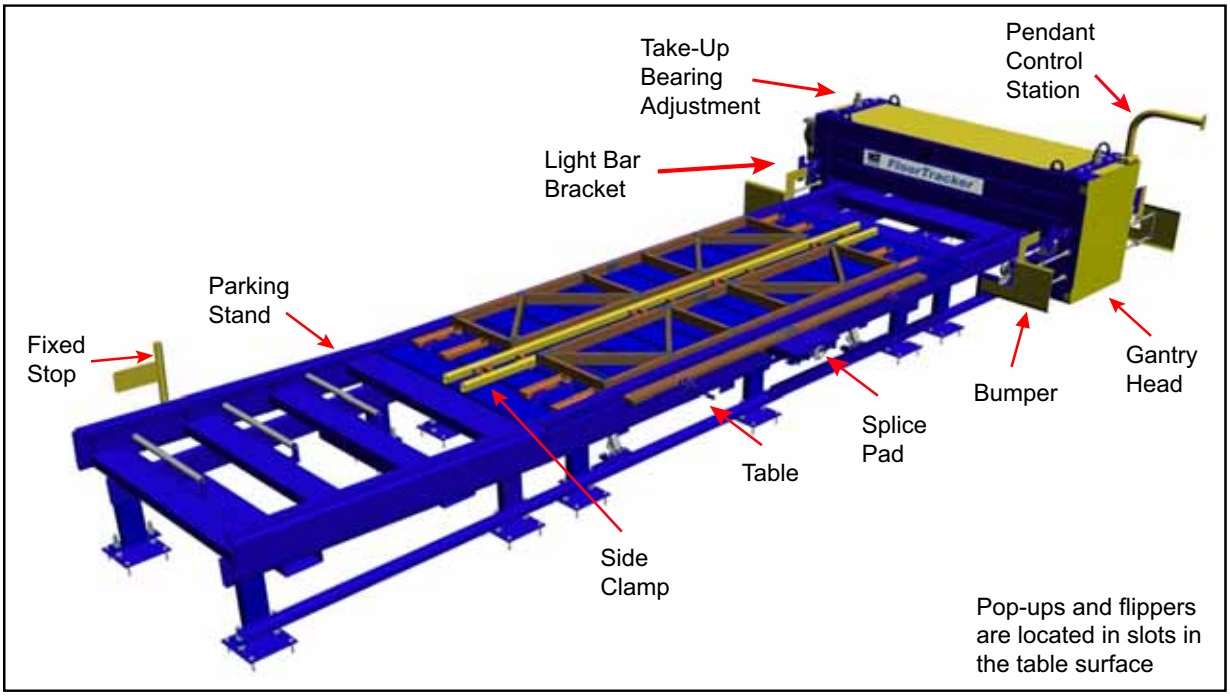


Figure 1-2: Overview of System Parts and Components



System Components

Components Overview

The *FloorTracker* roller press system consists of a moving gantry head and a set of stationary tables. The gantry head houses the roller that causes the embedment of the connector plates while the tables hold and support the trusses and gantry head. The number of tables your system has depends on the length of trusses you need to fabricate.

The main system components are shown in Figure 1-1 and the additional options are shown in Figure 1-2. Refer to Table 1-2 and Table 1-4 for a description of the machine variations and options available.

Understanding Your System Components

Table 1-3: Main Components of the *FloorTracke*r Roller Press System

Gantry Head	Moves across the tables for the plate embedment
Tables	Support the truss material while being pressed by the gantry head; standard features are slotted tops for jigging, adjustable end clamps, pneumatic side clamp; other options available as listed below
Parking Stand	Area to place the gantry head to keep it off of the working surface

Table 1-4: Optional Components Discussed in this Manual

Flipper	Flips the truss to the second side
Pop-Up, Side-Eject	Lifts the truss above the camber rail for the operator to discharge off the side above end stops
Pop-Up, End-Eject	Lifts the truss above the end stops to allow the operator to discharge in-line to the system
Pneumatic End Clamps	Replaces one standard end clamp to easily clamp and release the end of the truss in its desired location
On-Table Splicing	Adjustable pad and supports that allow on-table splicing without using valuable table space

Table 1-5: Optional Components Purchased Separately, Not Discussed in this Manual

Stacker	Takes the truss from a conveyor system and stacks it for shipping—MiTek has several to offer
VIRTEK™ Laser Projection System	Projects an exact laser template of the truss onto the table surface for easy and accurate setups

Operating Options

The standard operating mechanism is a pushbutton pendant control station. A joystick is available to use instead of the pendant. You may also opt for dual control mechanisms (one controlling mechanism on each end of the gantry head). They are interlocked with each other so only one will operate at a time.

With any of the control options above, you may choose to have independent working zones that allow more than one truss to be built simultaneously. The pneumatic clamping systems are controlled separately, but the same gantry head can be used for all the working zones.

General Specifications

Table 1-6: General Specifications

GANTRY HEAD	
Speed	Up to 150 ft/min
Direction of movement	Left and right (forward and reverse)
Controls	Pushbutton pendant (other options available)
Drive mechanism	The pressing roller drives the gantry head
Roller diameter	24" nominal (outside)
Roller wall thickness	3/4" nominal
Baffles per roller (welded)	3
Shaft diameter	4" (outside)
Bearing size	3-7/16", heavy-duty
Acceptable wood member thickness	3-1/2" nominal
MOTOR AND GEAR BOX—ELECTRIC	
Horsepower	10 hp
Motor speed	1735 rpm
Gear box output	24 rpm
Starting switch	New line of soft-start controllers
See Table 2-3 for additional electrical information	
PNEUMATIC CLAMPING SYSTEM	
Recommended operating pressure	90 psi
Avg. SCFM (3-table system)	1.4
Avg. SCFM @ cycle (when pneumatics are active)	120
Pneumatic cylinders	Bore: 2-1/2", 2-1/2", 1-1/2" Stroke: 16", 4", 4"
Minimum receiver tank capacity	60 gal
Minimum recommended supply line	1-in. diameter
SAFETY FEATURES	
Light bar and bumpers on gantry head	
Industrial brake and emergency stop controls	
DIMENSIONS OF SYSTEM COMPONENTS	
See Table 2-2	
WEIGHT OF SYSTEM COMPONENTS	
See Table 2-6	

Pre-Installation Overview

Before the installation of your equipment, the items and procedures in this chapter must be arranged, purchased, or assembled. Table 2-1 provides an overview of the items that must be taken care of before your machine is installed. Each topic is explained in detail in the text following the table.

If a MiTek representative is managing the installation of your equipment, the requirements in Table 2-1 must be satisfied before the scheduled installation date or the installation may need to be rescheduled.

Table 2-1: Pre-Installation Requirements

Requirement	Description
Space	This equipment requires enough space to allow for the machine dimensions listed in Table 2-2, plus additional working space for operation and maintenance. Operation space should ensure safety, freedom of movement, storage, and a free flow of materials. Space should have adequate lighting.
Location	Concrete, a minimum of 6 in. thick 5000 psi, is required under the weight of the gantry head, tables, and stand-alone conveyors. The gantry head and tables are made to be durable and weather resistant. It is recommended that they be operated in a covered area without extreme temperature changes.
Electrical	The standard electrical requirements are shown in Table 2-3. Contact your MiTek representative immediately if custom power specifications need to be arranged.
Compressed air	Refer to your specific layout drawing. See Table 2-4.
Customer supplied parts	The customer is responsible for having the supplies listed in Table 2-5 at the time of installation.

Space Requirements

Refer to the guidelines described here when planning your space allocation. MiTek can provide help in plant layout and space utilization on request.

It is the customer's responsibility to provide adequate space for the installation, operation, and protection of the equipment. The physical dimensions of the system are shown in Table 2-2. Additional space is required for operation, maintenance, and optional equipment.

Dimensions

Figure 2-1: Terminology Used for Dimensions

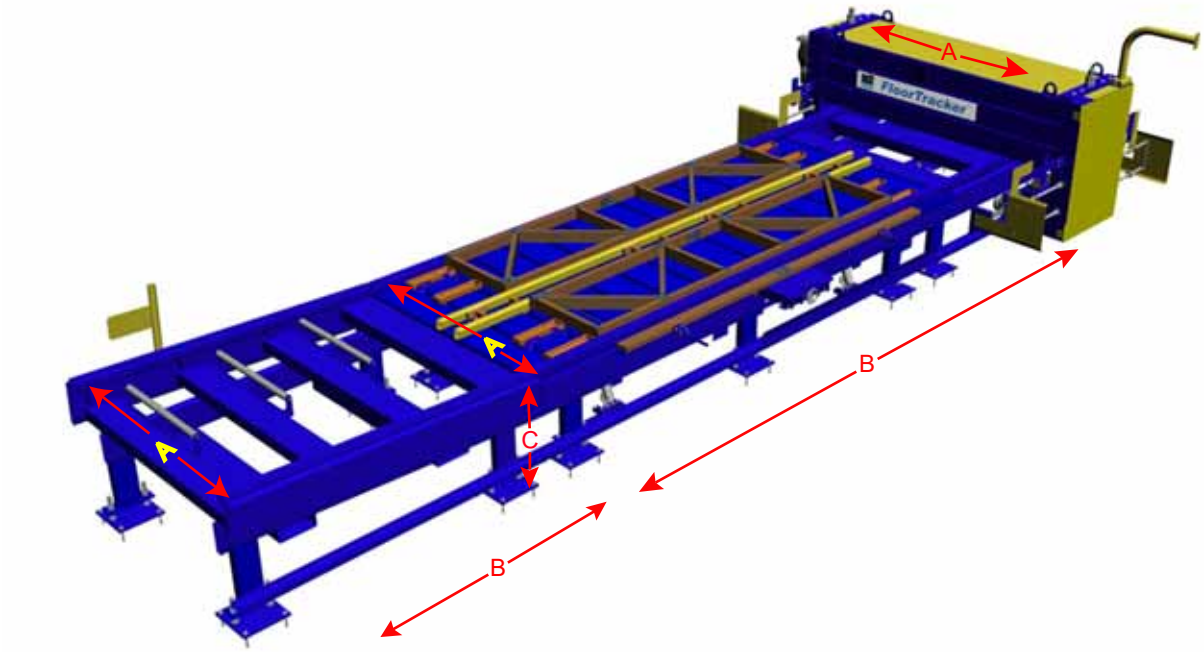


Table 2-2: Approximate Equipment Dimensions

	Dimension A	Dimension B	Dimension C
Gantry Head			
26" Truss, no splice	124-1/2"	76-1/2"	67"
26" Truss, with splice	139-1/2"	76-1/2"	67"
30" Truss, no splice	132-1/2"	76-1/2"	67"
30" Truss, no splice	148-3/4"	76-1/2"	67"
1 Table			
26" Truss, no splice	71-1/2"	168-3/4"	approx. 34"
26" Truss, with splice	88-1/8"	168-3/4"	approx. 34"
30" Truss, no splice	79-1/2"	168-3/4"	approx. 34"
30" Truss, with splice	96-1/8"	168-3/4"	approx. 34"
1 Parking Stand			
26" Truss, side-eject	71-1/2"	84"	approx. 34"
26" Truss, end-eject	71-1/2"	85"	approx. 34"
30" Truss, side-eject	79-1/2"	84"	approx. 34"
30" Truss, end-eject	79-1/2"	85"	approx. 34"

Determining the Space Required for Your System

Width (Dimension A) of Entire System

The greatest width of your system will be the width (Dimension A) of the gantry head.

Length (Dimension B) of Entire System

To find the entire length (Dimension B) of YOUR system,
fill in the blanks using the formula below:

	(**# of tables)** x **Dim. B** of your table		x		=	
+	2 x **Dim. B** of 1 parking stand	+	2	x	=	
	Sum		Sum			
	To convert to feet, divide by 12	÷	12		=	

Space for Operation and Maintenance

Additional space must be allocated for operation and maintenance. Operation space should provide safety, freedom of movement, storage space, and free flow of raw and finished materials. There must also be adequate space for safe handling of the raw and finished materials throughout the process.

Location Requirements

Floor Structure

A level and structurally sound concrete slab must be provided for the installation of the equipment. This slab should be designed and installed in accordance with local building code requirements and, if required, under supervision of a professional engineer. Concrete should be a minimum of 6 in. thick under the gantry head and tables. Five thousand (5000) psi concrete is recommended. Refer to your layout drawing.

Environment

This equipment is durable and weather resistant. All enclosures are Type 4 and UL listed, but all fittings and gaskets must be kept tightly sealed to remain weatherproof. For optimum operation and maintenance, it is recommended that the equipment be operated in a covered area without extreme temperature changes. Lighting should be adequate for safe operation and maintenance.

Electrical Requirements

The standard electrical requirements are shown in Table 2-3. Each machine can be designed for any of the incoming voltages listed.

Table 2-3: Electrical Requirements Prior to Installation

Requirement	Description
Horsepower	10 hp
Voltage	208/230/460/575 VAC
FLA plus control amperage	33.3/30.14/15.08/12.04 amps
Equipment disconnect protection	50/50/25/20 amps
Cycles (frequency)	60 Hz
Phases	3

Compressed Air Requirements

Table 2-4: Compressed Air Requirements

Air Source Tank	Connecting Air Source to System	Pressure	Avg. Flow Rate
Minimum of 60 gal	Minimum of 1-in. diameter tube between air source and air regulator	90 psi	.46 scfm per table

Customer-Supplied Parts

The customer must supply the parts shown in Table 2-5. Some must be installed before installation occurs and some must be available for use at the time of installation.

Table 2-5: Customer-Supplied Parts

Item	Description
Compressed air	Min. 1-in. supply line from air compressor to air regulator Min. 60-gal air compressor that can meet the requirements in Table 2-4 Connector for tube from air source to 3/4-in. NPT port on the air regulator
Electrical equipment	All electrical requirements to provide power to the disconnect enclosure on the gantry head are the customer's responsibility
Transport equipment	Forklift, chains, and spreader bars capable of carrying 8 tons
Tools that may need to be rented	Transit with measuring stick Industrial hammer-drill Hydraulic jack Welding equipment and welder

Shipping Information

Table 2-6 lists the weight of the individual components of a typical system.

Table 2-6: Weight of Components

Contents of Shipment	Weight
Gantry head	approx. 10,000 lb
Tables	approx 6,300 lb each
Parking stands	approx. 2,100 lb
Splice pad	120 lb each

Test Procedure

The following test procedure **MUST** be performed by qualified personnel after **ANY** maintenance, adjustment, or modification. Testing ensures that the light bar, safety system, and machine control system work together to properly stop the machine.

It is recommended that this test be performed weekly to ensure the safety features remain in working order.

Performing the Test

Supplies Required

To perform this test, you will need two (2) pieces of lumber connected in the shape of a T so that the T will independently stand upside down to look like this ⊥ .

Terminology Used in This Procedure

You must be familiar with the following terms to complete this test procedure.

Table 3-1: Definitions of Terminology Used

Wooden T	described in *Supplies Required*
Right light bar set	the pair of light bars on the right side of the gantry head when facing it from the operator end
Left light bar set	the pair of light bars on the left side of the gantry head when facing it from the operator end
RIGHT directional button LEFT directional button	On systems with one (1) electrical enclosure on top of the gantry head and a single-pendant control, the directional buttons are labeled LEFT and RIGHT
REVERSE directional button FORWARD directional button	On systems with two (2) electrical enclosures on top of the gantry head and a single-pendant control, FORWARD is toward the left when facing the disconnect switch and REVERSE is toward the right

	DANGER
	**Never stand directly in front of the gantry head!** **If the gantry head fails to stop when expected, serious injury or death may occur.**

Testing the Light Bars

1. Ensure the disconnect handle is in the ON position.
2. Press the START button on the pendant.
3. While the gantry head is not moving, interrupt the beam on the right light bar set.
4. Verify that the green indicator light labeled RIGHT READY/REVERSE START turns off when the beam is interrupted.
5. Place the wooden T on the table so the T is upside down. Locate it to the right and at least 10 ft away from the gantry head.
6. Press and release the START button to reset the safety indicators. This will tell the Press that it can resume motion.
7. Verify that the green RIGHT READY/REVERSE START lights turn on when the START button is pressed.
8. Press and hold the RIGHT/REVERSE directional button on the pendant control (or push the joystick in the direction you want the gantry head to move).
9. Allow the gantry head to reach the wooden T. The motion of the machine should stop immediately.
10. Ensure the wooden T is continuing to block the light bar beam. If necessary, move the wooden T so it remains in the light bar detection zone.
11. Verify that the machine will not continue to move forward while the wooden T is in its detection zone by pressing the RIGHT/REVERSE directional button.
12. Verify that the brake is working properly by noting any warnings or alarms on the brake monitor.
13. Repeat this test in the LEFT/FORWARD direction.
14. If any of the light bars or bumpers fail this test, refer to the *Correcting a Failed Test* section to repair the problem, then repeat the test in both directions.

15. Continue to the next section to test the bumpers.

	CAUTION
	**The purpose of this test is to ensure that the electrical system is wired correctly so motion stops when a light bar beam is interrupted. It is important that both directions are tested. Failure to perform the test completely may result in injury to personnel or damage to equipment.**

Testing the Bumpers

1. Place a large, heavy, freestanding object (such as a trash can) in the path of the right, operator-side bumper, but at least 10 ft away from the bumper.

2. Press and hold the RIGHT/REVERSE directional button until it hits the heavy object in its path. The gantry head should stop within a safe distance of approximately eight inches, when the bumper hits the object.

3. Test the remaining three (3) bumpers in this manner.

4. If any of the light bars or bumpers fail this test, refer to the *Correcting a Failed Test* section to repair the problem, then repeat the test in both directions.

Correcting a Failed Test

If the gantry head moves in the opposite direction from what you expected, and the light bar on the side it is moving stops motion:

- Switch the two (2) labels on the directional buttons on the pendant. The machine is wired correctly, but the labels on the pendant are backwards.

If the gantry head moves in the opposite direction from what you expected, and only the light bar on the opposite side stops it:

- Swap any two (2) of the wires at the output side of the soft-start.

If the gantry head moves in the expected direction, and only the light bar on the opposite side stops it:

- Check the light bar wiring against the correct drawing:

  Drawing 90524 for 2-enclosure machines

  Drawing 90544 for 1-enclosure machines

- If the wiring does **not** match the drawing, correct it. If the wiring **does** match the drawing, refer to the *Troubleshooting* index.

If a retracted bumper fails to stop the motion of the gantry head:

1. Examine the bumper for bent or damaged parts.
2. Examine all bearings.
3. Examine the location of the collars.
4. Examine the point of intersection between the bumper and the light bar beam.
5. Repair, re-align, or adjust any questionable components.
6. Repeat the bumper test.

	DANGER
	**Before turning on the press, make sure that all personnel and equipment are clear.**

Once the installation and startup procedures are complete, the equipment is ready to operate. The following sections provide instructions for everyday operation of the equipment.

Stopping the Machine

While operating the machine, remove pressure from the directional button and the machine will come to a stop. To cease power to the machine, use the mechanisms described below.

Emergency Stop

Push the red emergency stop (E-stop) button on the pendant control station (or next to the optional joystick) to cease power transmitting to the control circuit. This will stop the motion of the gantry head. To release the E-stop, twist and release the pushbutton. It will return to its raised position and the machine will operate again. The E-stop button on the pendant control station is shown in Figure 4-1.

Disconnect Switch

Turning the disconnect handle to the ON position supplies electrical power to the entire machine. To remove power to the machine, turn the disconnect handle to the OFF position. The disconnect handle should always be turned off when the machine is not in use.

Safety Features

The operation of these features is discussed later in this chapter.

Perimeter Access Guarding (Light Bars) Operation of the light bars is discussed later in this chapter. To stop the machine using the light bars, a solid object must pass through the light beam, interrupting the transmission of the beam between the transmitter bar and receiver bar.

Bumpers A bumper is located on each corner of the gantry head to provide additional safety control. See Figure 4-4. The machine will stop when something causes the bumper to retract.

Indicators

Operating Indicators

There are indicator lights and other features located in an easily-viewed area on the main electrical enclosure. Depending on how your main electrical enclosure is mounted, the indicators are either on the front or the side of the main electrical enclosure.

If your indicator lights are on the front of the enclosure:

1. The green LEFT READY light indicates movement in the left direction is enabled.
2. The green RIGHT READY light indicates movement in the right direction is enabled.
3. The red OVERLOAD light indicates the overload on the motor starter has tripped. Wait 1-2 minutes, then open the main electrical enclosure and press the RESET button.
4. The E-STOP light on the main enclosure indicates an E-stop is active. Check and pull out on all E-stops to deactivate them.
5. There is an hour-meter below the indicator lights that indicates how many working hours are on the machine. Working hours is the amount of time the motor is actually running and the gantry head is moving. Refer to this hour-meter to determine a maintenance schedule.

If your indicator lights are on the side of the enclosure:

1. The green FORWARD START light indicates movement in the left direction is enabled.
2. The green REVERSE START light indicates movement in the right direction is enabled.
3. The red OVERLOAD light indicates the overload on the motor starter has tripped. Wait 1-2 minutes, then open the main electrical enclosure and press the RESET button.

Machines with lights on the side of the enclosure do not have an E-stop indicator or an hour-meter.

Indication of Movement (Beacon)

When a LEFT/FORWARD START or RIGHT/REVERSE START button is pressed, a beacon on top of each main electrical enclosure lights up and a horn sounds warning everyone in the area that movement is about to begin. When the horn stops, the gantry head will begin motion. The beacon remains blinking while the gantry head is moving.

Operating Mechanisms

The *FloorTracker* roller press is operated by the pendant at the pendant control station. The pendant is a hand-held device connected to the machine by a cable. There are four (4) pushbuttons on the pendant. If your machine has the optional joystick, it replaces the pendant control station.

Figure 4-1: Pendant Control

Start

The green START button enables all safety monitoring devices. The operator must press START before the directional indicator lights will come on.

Directional Buttons

When the directional indicator lights on the main electrical enclosure are lit, pushing the black directional buttons on the pendant begins movement of the gantry head.

The buttons are labeled RIGHT and LEFT or REVERSE and FORWARD.

Capabilities

The *FloorTracker* roller press is made in two (2) different sizes. Table 4-1 shows the truss capabilities for both the 26-inch truss and 30-inch truss models.

Table 4-1: Truss Width Capabilities

FloorTracker Roller Press Model	Max. Truss Width	Min. Truss Width	Max. Truss Length	Min. Truss Length
26" model	26"	No minimum, but for anything smaller than 8", use shims	Dependent on table system	No minimum, but on short trusses, use blocking to keep side clamp from being damaged
30" model	30"			

Operating Procedure

Procedure Under Normal Conditions

1. Turn the disconnect handle to the ON (vertical) position.
2. Set up the truss configuration and jigging on the first jig side. Refer to the *Setting Up for Operation—Jigging* section.
3. Verify the following:
   a) The EMERGENCY STOP indicator light is not lit.
      If it is lit, pull out on all E-stops to deactivate them, and the light will go off.
   b) The OVERLOAD indicator light is not lit.
      If it is lit, reset the overload in the main electrical enclosure.
   c) Light bar detection zones are clear and all bumpers are in normal operating condition.
   d) All personnel are out of the restricted zones.
4. Press and release the START button. Both of the green indicator direction lights should come on.
5. Press and hold the correct directional button on the pendant control.

	CAUTION
	**Do not park the gantry head directly above a flipper or pop-up device. These devices will damage the gantry head.**

6. When the gantry head reaches the parking stand, release the directional button to stop the gantry head.

Always park the gantry head on a parking stand to avoid damaging the equipment.

	WARNING
	**Prior to flipping the truss, look across the table and ensure personnel do not have any portion of their body on the table and that the pop-ups are not up. Failure to do so may result in injury and/or damage to the equipment.**

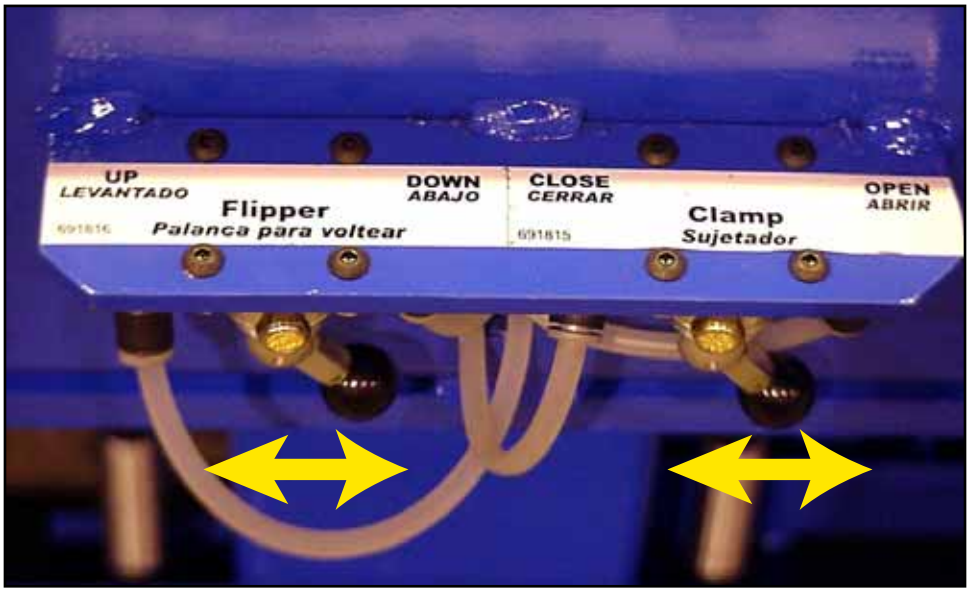
7. Flip the truss to the second jig side.

   a) For systems without pop-ups or flippers, manually pick up the truss, turn it over so the plates just pressed in are facing down and place on the second jig side of the table.

   b) For systems with pop-ups only, actuate the pop-up valve and the pop-ups will raise the truss up off the table to make it easier to grab. Turn the truss and place it plate-side down on the jig side of the table.

   c) For systems with flippers, actuate the flipper valve, and arms will raise and flip the truss so it lands plate-side down on the second jig side of the table.

Figure 4-2: Actuating and Releasing the Flipper, Clamp, and Pop-Up Options



Note that the flipper and pop-up valves must be in their closed positions for the clamping system to operate and vice versa. The clamping system must be released for the flippers and pop-ups to operate.

8. If using pneumatic pop-ups or flippers, turn the pilot valve handle to the DOWN position to retract the pop-ups and flippers.

9. Repeat step 2 through step 6 for the second side of the truss.

10. Remove the truss from the table.

    a) For systems without pop-ups, manually pick up the truss and remove it from the table.

    b) For systems with pop-ups, actuate the pop-up valve and the pop-ups will raise the truss up off the table to make it easier to grab.

       1) On side-eject systems, slide the truss off of the pop-up toward the side of the table.

       2) On end-eject systems, roll the truss toward the end of the table. The truss will pass under the gantry head to exit the table. The roller on the pop-up assists movement in this direction.

On end-eject systems, the gantry head must be parked on the parking stand to exit the truss under the head. The end-eject parking stands raise the gantry head off of the table for this purpose.

    c) Place the truss on a conveyor system, stacker, or pallet.

11. If using pneumatic pop-ups, turn the pilot valve handle back to its original position to retract the pop-ups. Refer to the *Pneumatics Operation* section for more detail.

12. Repeat the steps above for the next truss, or turn the disconnect handle to the OFF position if the machine will not be in use.

Restarting the Machine After it Stops

If the machine stopped because you released the directional button, both directional indicator lights should still be on. You can continue motion in either direction by pressing and holding the directional button again.

If the machine stopped because a safety device was activated, follow the procedure below. While the light beam or bumper experiences an interference on one side of the gantry head, the gantry head can be operated in the opposite direction. It may be necessary to reverse the gantry head to remove the barrier that was detected.

1. Remove the barrier that was detected by the light beam or bumper.

2. Press and release the START button to reset all safety monitoring devices.

3. Press and hold the appropriate directional button.

Setting Up for Operation—Jigging

Jigging Overview

- If you have the pneumatic end stop option, always build the truss from the pneumatic end stop out.
- Use customer-supplied shims for any truss smaller than 8 in. wide.
- Use customer-supplied blocking for any truss shorter than the length of the side clamp.
- This manual contains sufficient information for proper operation and maintenance under most conditions. Certain operating environments may necessitate preventive maintenance at more frequent intervals. Because consistent preventive maintenance is so important for keeping mechanical equipment in good operating condition, MiTek recommends that you stock certain replacement parts to minimize downtime. For preventive maintenance tips, refer to the *Maintenance* chapter of this manual.

	WARNING
	**Do not strike any jigging component with a hammer or heavy object.** **Improper use may cause personal injury and damage fixtures.**

Setting End Stops

End stops are needed to help hold the truss in place. They are placed at each end of the truss, while the side clamp and side rail run along the side of the truss. A standard system comes with eight (8) adjustable end stops (four (4) for each side of the table). They are spring-loaded to fit in any table slot that does not have a flipper/pop-up device. The stop channel can be adjusted from 0 to 12-1/2 in. using a 1/2-in. wrench.

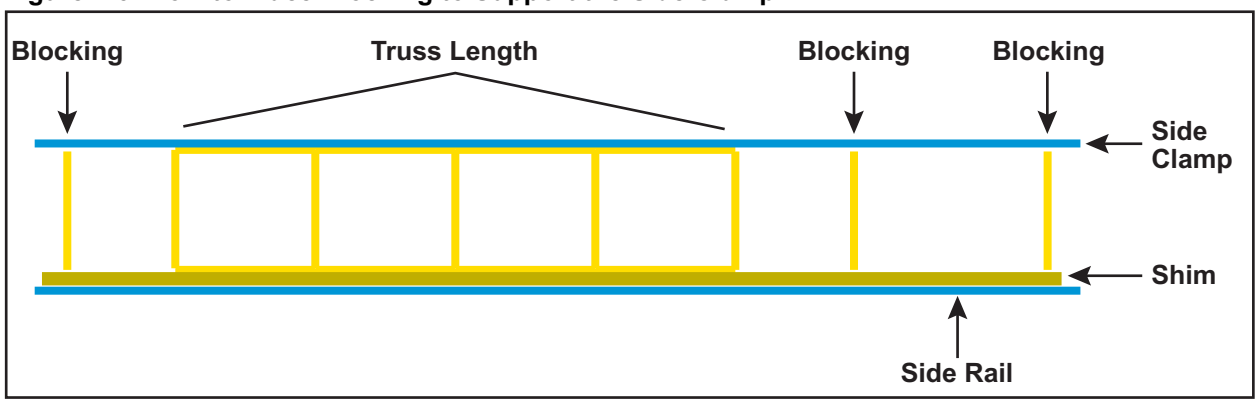
If your system has the optional pneumatic end stops, you will receive fewer adjustable end stops. Use a pneumatic end stop at one end of the setup on each side of the table. You do not need the adjustable end stops where you are using pneumatic end stops. The pneumatic end stops are spring-loaded and fit similarly to the adjustable stops. Each pneumatic end stop uses a cylinder to actuate the guided bar against the end of the truss.

On typical trusses, the stop should only extend about 1/4 in., thus the truss should be built off this stop toward the adjustable one. Only when one side of the truss has a pocket will the pneumatic stop actuate more then 1/4 in. to fill the pocket.

Placing Side Clamp Blocking for Shorter Trusses

There is no minimum limitation for the truss length that you can build on your system, but you must add blocking when building trusses shorter than the length of your side clamp. See Figure 4-3.

Figure 4-3: How to Place Blocking to Support the Side Clamp



Placing Shims for Trusses Under 8" Wide

There is no minimum limitation for the truss width that you can build on your system, but the side clamp will only retract to 8 in. When building trusses smaller than 8 in., use shims on the rail side of the truss so the clamp can reach the truss. If blocking and shims are needed, the shim can cover the complete length of the side clamp, as shown in Figure 4-3, or you can cut the blocking slightly longer than the truss width and use a shim only along the length of the truss.

Pneumatics Operation

The pneumatic system controls the side clamp tubes, pneumatic end stops, flippers, and pop-ups on the tables. The pneumatic system is set up so that the entire length of tables can be controlled by one pilot valve on each side. You can remove any flipper or pop-up from the setup by turning off the ball valve. Refer to Table 4-2 for an overview of the controls for each feature.

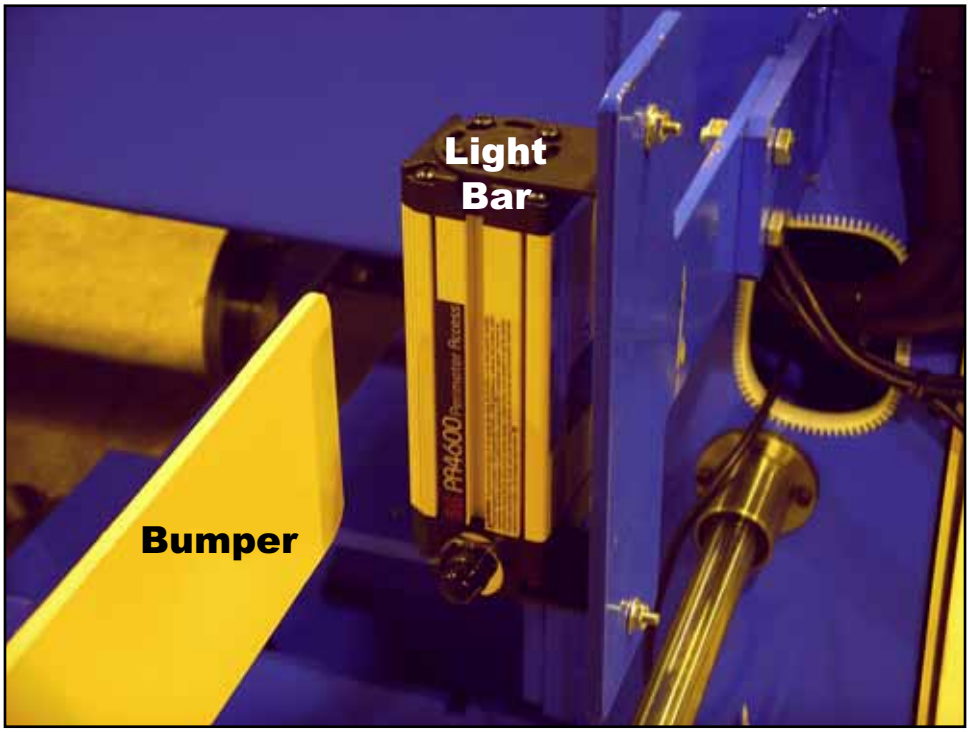
Table 4-2: Pneumatic Control Switches

Pneumatic Component	Control Switch
Side clamp	Toggle switch
Pneumatic end clamp (optional)	If you have this option, it automatically actuates and releases with the side clamp
Flipper (optional)	Toggle switch
Pop-up (optional)	Toggle switch

Perimeter Access Guarding (Light Bars)

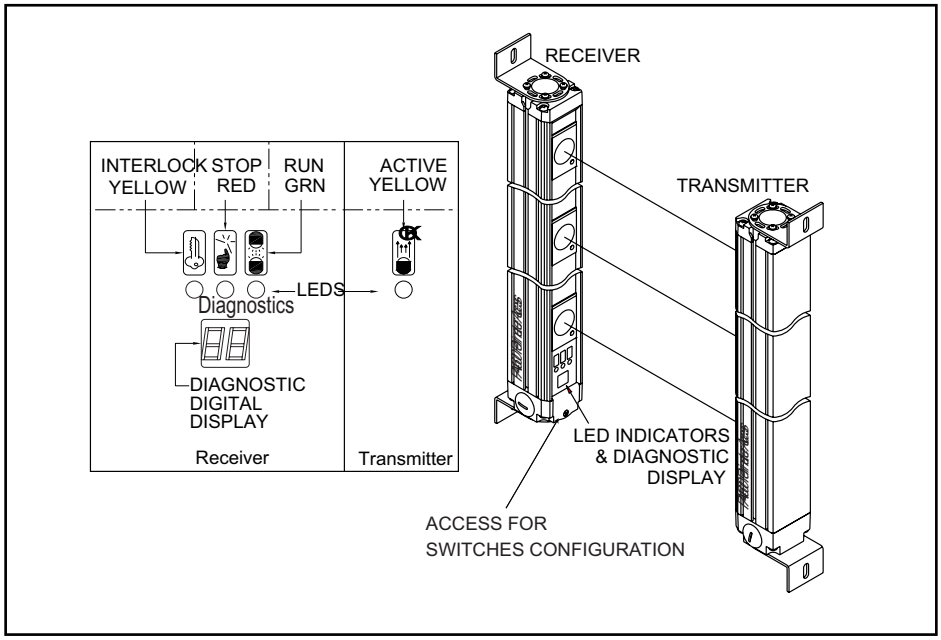
	DANGER
	This safety device is intended for detection of personnel and equipment entering a hazardous area and not for the detection of hands and fingers. **Tampering with or modifying the light bars or safety bumpers can result in property damage, serious injury, or death.**

Figure 4-4: Light Bar and Bumper on the Gantry Head



Perimeter access guarding is a presence-sensing system designed to guard personnel working around moving machinery. The *FloorTracker* roller press uses a one-beam light bar set on both sides of the gantry head. Refer to Figure 4-4 for a photograph of a light bar. A light bar set consists of a receiver bar and a transmitter bar, as shown in Figure 4-5.

Figure 4-5: Light Bar System Indicators (3-Beam System Shown in Diagram)



When a beam between the two bars is broken, the machine will stop its motion in the direction associated with the interrupted light bar set. The rotation of the roller also stops at this time. Once the interruption has been removed, the operator must press the START button and the directional button to restart the machine. When a light beam interruption occurs, the gantry head is still able to move in the opposite direction.

Table 4-3: Finding DIP Switch Settings and Wire Connections for Light Bars

If your indicator lights are...	Refer to Drawing
On the side of the enclosure	90525
On the front of the enclosure	90545

Bumpers

A bumper located on each corner of the gantry head provides additional safety control. When a bumper collapses, it passes in front of the light bar and causes the machine to stop its motion in the direction associated with the collapsed bumper. The rotation of the roller also stops at this time.

	DANGER
	**Tampering with or modifying the safety bumpers or light bars can result in property damage, serious injury, or death.**

To Reset an Overload That Tripped

1. Wait 1 to 2 minutes for the system to cool down.
2. Lockout/tagout the main power source before opening the electrical enclosure.
3. Open the main electrical enclosure and press the red button on the front of the overload.
4. Close the enclosure and remove the lockout/tagout devices.
5. Note how often an overload trips. If it happens consistently, determine the cause and repair it.

It is normal for an overload to occasionally need to be reset. If this occurs more than once a month, determine the cause of the overload failure and take the necessary steps to correct it.

Chapter 5

This manual contains sufficient information for proper operation and maintenance under most conditions. Certain operating environments may necessitate preventive maintenance at more frequent intervals. Because consistent preventive maintenance is so important for keeping mechanical equipment in good operating condition, MiTek recommends that you stock certain replacement parts to minimize downtime. The following appendices will assist you in maintaining your equipment:

- Appendix A *Troubleshooting*
- Appendix B *Maintenance Checklist*
- Appendix C *Replacement Parts*
- Appendix D *Drawing Set*

	DANGER
	**Read this manual completely before using this equipment!** **Do not operate this machine until you have a thorough understanding of all controls, safety devices, emergency stops, and operating procedures outlined in this manual.** **All warnings must be read and observed. Failure to do so may result in personal injury, property damage, and/or economic loss.** **This manual must always be available to personnel operating and maintaining this equipment.**

Test Procedure

The following test procedure **MUST** be performed by qualified personnel after **ANY** maintenance, adjustment, or modification. Testing ensures that the light bar, safety system, and machine control system work together to properly stop the machine.

It is recommended that this test be performed weekly to ensure the safety features remain in working order.

Performing the Test

Supplies Required

To perform this test, you will need two (2) pieces of lumber connected in the shape of a T so that the T will independently stand upside down to look like this ⊥.

Terminology Used in This Procedure

You must be familiar with the following terms to complete this test procedure.

Table 5-1: Definitions of Terminology Used

Wooden T	described in *Supplies Required*
Right light bar set	the pair of light bars on the right side of the gantry head when facing it from the operator end
Left light bar set	the pair of light bars on the left side of the gantry head when facing it from the operator end
RIGHT directional button LEFT directional button	On systems with one (1) electrical enclosure on top of the gantry head and a single-pendant control, the directional buttons are labeled LEFT and RIGHT.
REVERSE directional button FORWARD directional button	On systems with two (2) electrical enclosures on top of the gantry head and a single-pendant control, FORWARD is toward the left when facing the disconnect switch and REVERSE is toward the right.

	DANGER
	**Never stand directly in front of the gantry head!** **If the gantry head fails to stop when expected, serious injury or death may occur.**

Testing the Light Bars

1. Ensure the disconnect handle is in the ON position.
2. Press the START button on the pendant.
3. While the gantry head is not moving, interrupt the beam on the right light bar set.
4. Verify that the green indicator light labeled RIGHT READY/REVERSE START turns off when the beam is interrupted.
5. Place the wooden T on the table so the T is upside down. Locate it to the right and at least 10 ft away from the gantry head.
6. Press and release the START button to reset the safety indicators. This will tell the Press that it can resume motion.
7. Verify that the green RIGHT READY/REVERSE START lights turn on when the START button is pressed.
8. Press and hold the RIGHT/REVERSE directional button on the pendant control (or push the joystick in the direction you want the gantry head to move).
9. Allow the gantry head to reach the wooden T. The motion of the machine should stop immediately.
10. Ensure the wooden T is continuing to block the light bar beam. If necessary, move the wooden T so it remains in the light bar detection zone.
11. Verify that the machine will not continue to move forward while the wooden T is in its detection zone by pressing the RIGHT/REVERSE directional button.
12. Verify that the brake is working properly by noting any warnings or alarms on the brake monitor.
13. Repeat this test in the LEFT/FORWARD direction.
14. If any of the light bars or bumpers fail this test, refer to the *Correcting a Failed Test* section to repair the problem, then repeat the test in both directions.

15. Continue to the next section to test the bumpers.

	CAUTION
	**The purpose of this test is to ensure that the electrical system is wired correctly so motion stops when a light bar beam is interrupted. It is important that both directions are tested. Failure to perform the test completely may result in injury to personnel or damage to equipment.**

Testing the Bumpers

1. Place a large, heavy, freestanding object (such as a trash can) in the path of the right, operator-side bumper, but at least 10 ft away from the bumper.

2. Press and hold the RIGHT/REVERSE directional button until it hits the heavy object in its path. The gantry head should stop within a safe distance of approximately 8 inches, when the bumper hits the object.

3. Test the remaining three (3) bumpers in this manner.

4. If any of the light bars or bumpers fail this test, refer to the *Correcting a Failed Test* section to repair the problem, then repeat the test in both directions.

Correcting a Failed Test

If the gantry head moves in the opposite direction from what you expected, and the light bar on the side it is moving stops motion:

- Switch the two (2) labels on the directional buttons on the pendant. The machine is wired correctly, but the labels on the pendant are backwards.

If the gantry head moves in the opposite direction from what you expected, and only the light bar on the opposite side stops it:

- Swap any two (2) of the wires at the output side of the soft-start.

If the gantry head moves in the expected direction, and only the light bar on the opposite side stops it:

- Check the light bar wiring against the correct drawing:

  Drawing 90524 for 2-enclosure machines.

  Drawing 90544 for 1-enclosure machines.

- If the wiring does **not** match the drawing, correct it. If the wiring **does** match the drawing, refer to the *Troubleshooting* appendix.

If a retracted bumper fails to stop the motion of the gantry head:

1. Examine the bumper for bent or damaged parts.
2. Examine all bearings.
3. Examine the location of the collars.
4. Examine the point of intersection between the bumper and the light bar beam.
5. Repair, re-align, or adjust any questionable components.
6. Repeat the bumper test.

Lubrication

Proper amounts of motor oil and grease must be maintained at all times. The type of lubrication used, frequency of application, oxidation, and contamination of the lubricant affect service life and parts efficiency of gears and bearings. Improved performance will be obtained by following the guidelines in this manual. Lubrication guidelines are given in this chapter for each part or system that requires lubrication. The information is also in the *Maintenance Checklist* appendix.

	CAUTION
	**Never mix synthetic lubricants with mineral lubricants!**

Brake Motor and Gearbox

The brake motor and gearbox allow the gantry head to start and stop motion. The gear motor is an integral right angle hollow shaft gearbox with triple reduction. Power output from the gearbox is 24 rpm.

Certain preventive maintenance steps are required to keep the motor and gearbox in optimal working order.

Adding and Changing Oil

Check the oil in the gearbox reducer at least once a year. When additional oil is needed, use one of the oils recommended in Table 5-2 or a comparable type.

Table 5-2: Recommended Brake Motor Oil

ISO VG	220	
Operating temperature	23ºF-104ºF (-5ºC-40ºC)	
Capacity	16.9 quarts (16 liters)	
Brand and type	Shell	Omala 220
	Mobil	Mobilgear 630 Mobilgear XMP220

Drain and refill the oil in the gearbox every 10,000 working hours. Working hours is the amount of time the motor is actually running and is indicated by the hour-meter located on the side of the electrical enclosure.

Adjusting the Air Gap

CAUTION

Adjusting the air gap improperly may damage the motor. Do not attempt to make this adjustment unless the measured gap is outside the recommended allowance.

If the brake monitor continually trips and other causes have been ruled out, the air gap in the brake motor may need to be adjusted. The recommended air gap allowance is between .016 in. and .043 in. To check the current air gap and to adjust it, refer to Figure 5-1 and the following procedure.

Slotted Screwdriver

Phillips head screwdriver

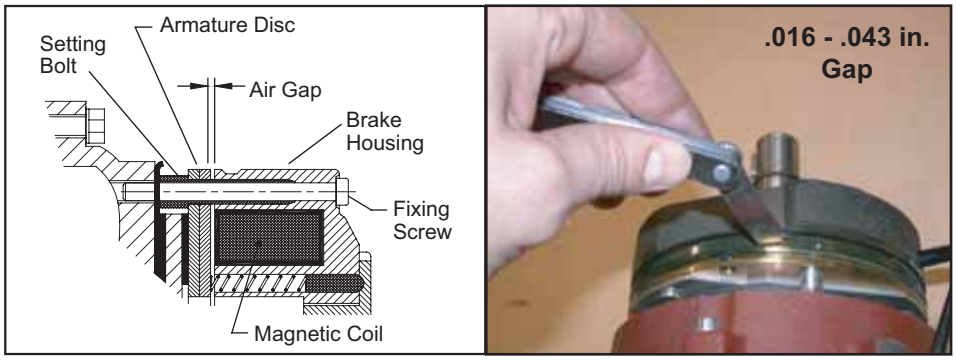
External Snap ring pliers

Metric wrench or pliers

Metric socket head wrench set

1. Unscrew the manual brake handle extending from the side of the brake motor.
2. Remove the four (4) screws around the circumference of the brake motor and remove the fan cover.
3. Using snap ring pliers, remove the snap ring at its hub, and remove the fan blade.
4. Loosen the socket head cap screw that attaches the brake to the motor endbell. It is labeled in red in Figure 5-1.

Figure 5-1: Measuring the Brake Disk Air Gap

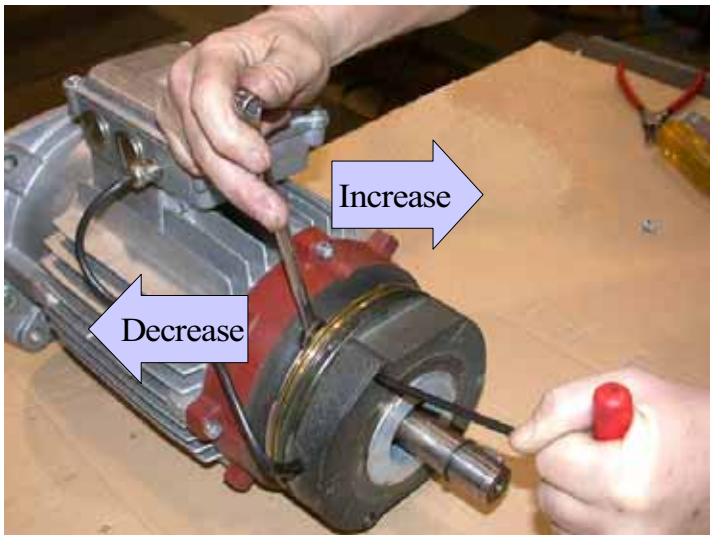


5. Using a feeler gauge, measure the gap around the socket head cap screws, at the location shown in Figure 5-1. Measure completely around the brake and record any variations in the gap measurement.

6. If the measurement is outside the allowance recommended at any point around the circumference of the brake, loosen the nearest fixing screw.

7. Adjust the setting bolt accordingly. A 1/4 or 1/2 turn is usually sufficient for adjusting purposes.
   - To decrease the air gap, turn the setting bolt counterclockwise (viewing from the shaft end of the motor).
   - To increase the air gap, turn the setting bolt clockwise (viewing from the shaft end of the motor).

Figure 5-2: Turning the Setting Bolt



8. Check the air gap again to ensure it is now within the recommended range. It may be necessary to adjust a setting bolt more than once because the other setting bolts may affect it.

The air gap distance must be uniform in all three (3) places!

9. Tighten all of the fixing screws.
10. Re-attach the fan blades, snap ring, fan cover, and handle.

Replacing the Motor

1. Gather the following tools:
   - Socket set (metric and English)
   - Screwdrivers (slotted and Phillips)
   - Rubber mallet
   - Pry bars
2. Lockout/tagout all power to the machine.
3. Verify that there is no load on the reducer so when the brake is removed, the load is not released.
4. Drain oil from the gearbox or rotate the motor so oil will not leak out.
5. Remove the two (2) mounting bolts holding the motor on the gearbox.
6. Remove the existing motor.

Figure 5-3: Brake Motor

7. Remove and clean the gasket surface of the gearbox. Make sure no debris falls into the gearbox during this time.
8. Place the clean gasket back in the gearbox.
9. Slide the new motor into position, making sure the input pinion gear teeth properly mesh with the input gear teeth.
10. Rotate the motor as needed to seat the flange surface and properly align the bolt holes.
11. Re-install the two (2) mounting bolts.
12. If needed, fill the reducer with an oil recommended in Table 5-2.
13. Reconnect power and remove the lockout/tagout devices.

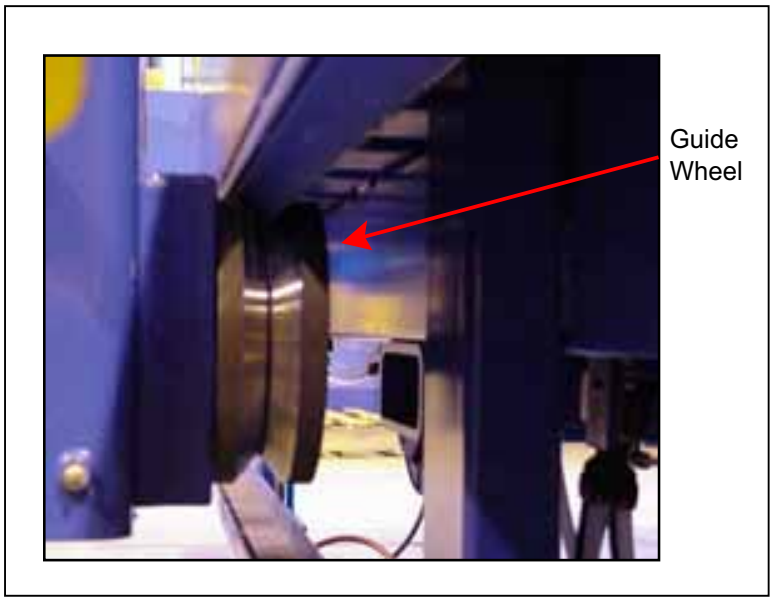
Manually Releasing the Brake

Release the manual brake lever if you need to manually push the gantry head to a different location along the tables. See Figure 5-3.

Guide Wheels

Guide wheels are necessary to keep the gantry head on a straight path when it experiences a force that is not parallel to its forward motion. There are four (4) guide wheels on the *FloorTracker* roller press, two (2) on each end of the gantry head. The guide wheels have sealed bearings and do not require lubrication. To replace a guide wheel, remove the nut in the center of the guide wheel.

Figure 5-4: Guide Wheel



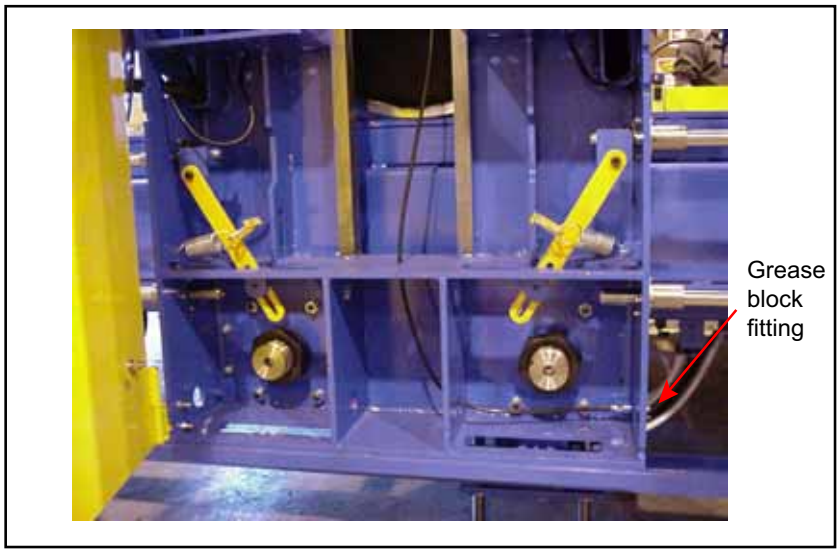
Take-Up Bearing

Lubricating

The take-up bearing allows the roller to turn, resulting in smooth embedment of the connector plates. It should be greased approximately every 150 working hours. Working hours is the amount of time the motor is actually running and is indicated by the hour-meter located on the side of the electrical enclosure (on one-enclosure systems only).

Use a #2 lithium-based grease to lubricate the grease block for the take-up bearing. There is one grease block on both ends of the gantry head and is shown in Figure 5-5. You should be able to reach the grease fitting without removing the end guard.

Figure 5-5: Grease Block Fitting



Adjusting

The procedure for adjusting the take-up bearing to change the height of the roller is described in the section of this chapter titled *Take-Up Bearing*.

Setting the Roller Height

Checking the Roller Height

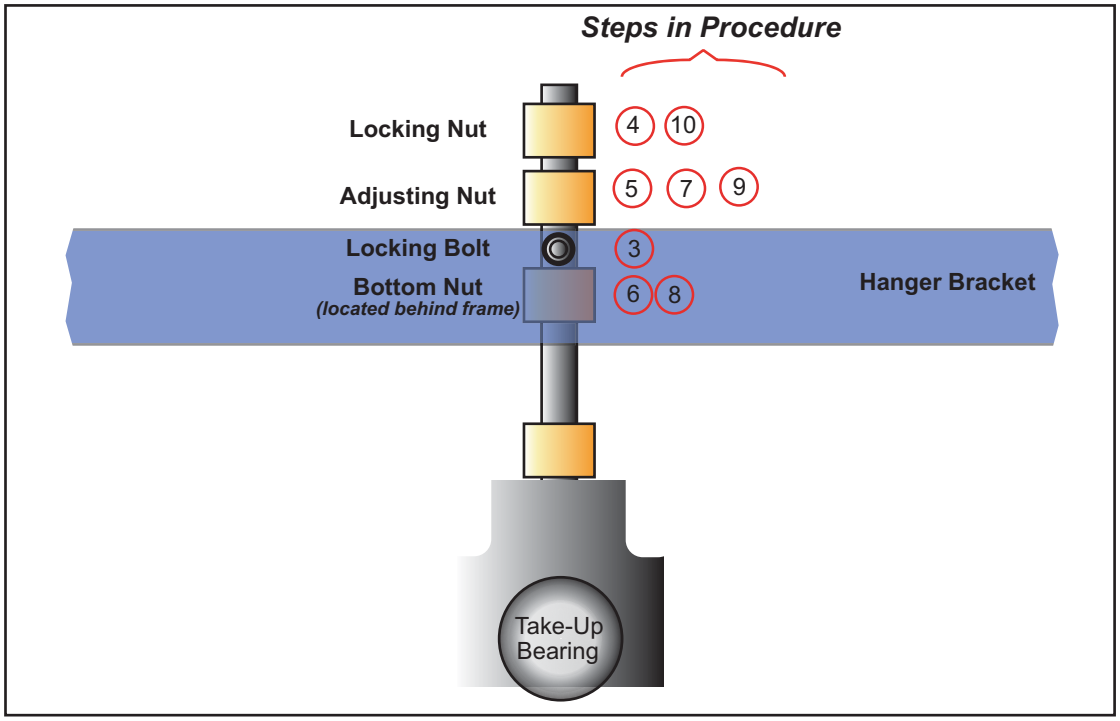
Check to ensure that the roller is sitting flush on the camber rails and that the guide wheels are contacting the angle. The guide wheels should not turn freely by hand.

Adjusting the Roller Setting

	CAUTION
	**Do NOT attempt to lower the roller once it is sitting snugly on the camber rails. Overtightening the roller setting will damage the take-up bearing and reduce the life of the guide wheels.**

1. Refer to Figure 5-6 while performing this procedure.
2. Remove an end guard on the gantry head.
3. Loosen the locking bolt.
4. Loosen the locking nut.
5. Loosen the adjusting nut to make room for adjustment.
6. Back-out the bottom nut located behind the hanger bracket. This nut should be loose enough to back-out by hand.
7. Tighten or loosen the adjusting nut to set the Roller to the desired height.
8. Hand-tighten the bottom nut until it is touching the hanger bracket.
9. Tighten the adjusting nut with a wrench until it is snug.
10. Tighten the locking nut against the adjusting nut to hold it in place.
11. Check the Roller setting adjustment on the opposite end of the gantry head and repeat the steps, if necessary.

Figure 5-6: Adjusting the Roller Height With the Take-Up Bearing



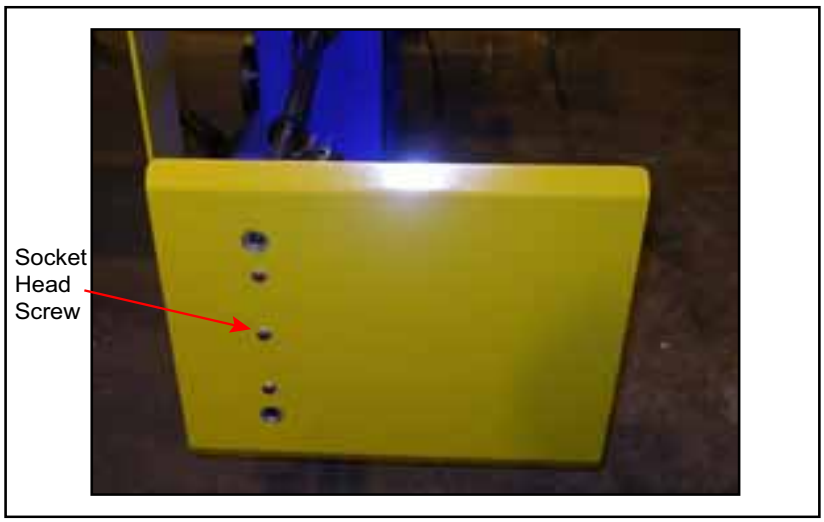
Safety Bumpers

If the entire bumper must be replaced, follow the procedure outlined below while referring to figure Figure 5-7. Keep all original hardware until the replacement is complete.

Replacing the Bumper

If the entire bumper must be replaced, follow the procedure below while referring to Figure 5-7. Keep all original hardware until the replacement is complete.

Figure 5-7: Bumper



1. Lockout/tagout all power to the machine.
2. Remove the three (3) socket head screws holding the bumper on the shaft bar.
3. Attach the new bumper and secure it in place with the removed screws.
4. Test the bumper to ensure smooth travel in and out with the bumper returning to its normal extended position.
5. Remove lockout/tagout devices and run the test procedure outlined on page 31.

Pneumatic System Maintenance

	CAUTION
	**The long flipper cylinder MUST retract before the short flipper cylinder to avoid damaging the flippers.** **A flipper should never extend past 90 degrees.**

The pneumatic system controls the side clamp, pneumatic end stop (optional), and the pop-ups and flippers (optional).

Lubricator

Checking the Oil Reservoir

Check the oil level by viewing the sight gauge located on the reservoir weekly. The sight glass turns red where the oil is contacting it for easy-viewing. The oil will probably need to be refilled every 2-3 months, but this depends on the density of the fog injected into the system.

Filling the Oil Reservoir

Use a misting type oil rated 50 to 200 SSU that is compatible with the materials of construction.

	WARNING
	**To avoid injury, bleed all pressure from the lines before removing the reservoir.** **Ensure that the reservoir is securely attached to the lubricator body before returning pressure to the lines.**

1. Prior to refilling the oil, the system must be free of pressure. To depressurize the system:

   a) Close the shut-off valve on the Regulator that is in the same setup as the lubricator being filled.

   b) Wait a few minutes to ensure that the pressure has bled through the shut-off valve.

2. Remove the reservoir from the lubricator body by twisting approximately 1/4 turn clockwise while pushing up on the reservoir, then pull down and remove the reservoir from the body.

3. Pour the oil into the reservoir to the fill line.

4. Place the reservoir back onto the lubricator body by pushing up and turning counterclockwise. Make sure it is securely attached and the sight gauge can be easily viewed.

5. Open the shut-off valve and verify air pressure is at 90 psi.

Adjusting the Density of the Lubricant Fog

The pneumatic system lubricator is a Micro-Fog® Lubricator. It injects a finely divided fog of oil into a flowing stream of compressed air to provide internal lubrication. The density of the lubricant is controlled by the drip rate adjusting knob. Using a slotted screwdriver, turn the knob counterclockwise to increase the Micro-Fog® density or clockwise to decrease it.

Additional Maintenance

Proper preventive maintenance for the lubricator also includes replacing the O-rings, seals, and gaskets at regular intervals. We recommend that you replace these items every two (2) years. Contact the lubricator manufacturer to purchase the seal kit components.

To perform maintenance on the lubricator, bleed pressure from the lines, then remove the lubricator from the table by removing the two (2) screws on the front side.

Regulator

The regulator can be purchased directly from MiTek. Refer to the *Replacement Parts* appendix for the part number.

	CAUTION
	**To avoid injury, bleed all pressure from the lines before removing the filter guard.** **Ensure that the filter guard is securely attached to the regulator body before returning pressure to the lines.**

Replacing the Filter Element

The regulator uses a 40-micron filter element that must be replaced every six (6) months. This filter can be purchased from MiTek. Refer to the *Replacement Parts* appendix for the part number.

1. When replacing the filter element, the system cannot be pressurized. To depressurize the system:

   a) Close the shut-off valve on the regulator.

   b) Bleed the pressure from all the lines in that setup by opening the shut-off valve. Wait a few minutes to give the pressure time to completely dissipate.

   c) Ensure the gauge reads “0” before unscrewing the filter guard.

2. Remove the bowl from the regulator body by twisting approximately 1/4 turn clockwise while pushing up on the filter guard. Then pull down and remove the filter guard from the body.

3. Unscrew the filter element and remove it from the regulator. Be sure to keep the spring that is resting in the filter element.

4. Place the spring in the new filter element.

5. Screw the new filter element in its place.

6. Place the bowl back onto the regulator body by pushing up and turning counterclockwise. Make sure it is securely attached before returning pressure to the lines.

Adjusting the Pressure

	CAUTION
	**Do not use the operating pressure adjustment knob to change the speed of the clamps, pop-ups, or flippers. Failure to comply may result in damage to the equipment.**

The operating pressure of the pneumatic system should be 90 psi. The pressure adjustment knob controls the operating pressure. Adjustments to individual cylinders can be made using the flow control valves on each cylinder. Refer to the *Cylinders* section for this procedure.

To adjust the system pressure to 90 psi:

1. Unlock the pressure adjustment knob on the Regulator by pulling it straight up.

2. Turn the knob clockwise to increase pressure or counterclockwise to decrease pressure.

3. Once a pressure of 90 psi is achieved, push the knob down to lock it in place.

Manual Drain

At the bottom of the regulator is a thumbscrew that operates a drain. Condensation can form in pneumatic lines due to temperature changes. When condensation gathers, it will show up in the bowl's sight glass. Where the sight glass comes in contact with water, it turns red, indicating the water level. Open this drain periodically to drain fluid from the system. If condensation becomes a serious problem, an air dryer is available.

If the handle on the drain breaks, you can replace it by ordering the valve only. If the entire drain must be replaced, order the valve plus the valve body and O-ring. All three parts can be purchased by contacting the manufacturer directly or MiTek.

Additional Maintenance

If a regulator is not operating at its optimum capacity, we recommend cleaning the regulator and replacing the O-rings, gaskets, diaphragm, and valve assembly. You can order a service kit including these preventive maintenance parts from the manufacturer.

Pilot Control Valve

A set of pilot control valves are located on each jig side to actuate the clamping and lifting mechanisms. On jig side 1, the valves are mounted to a plate on the side tube toward the center of the line. On the jig side 2, depending on the type of system (side or end-eject), the valves are mounted toward the center or to the right end of the line looking from the jig side 1.

If you need to replace a pilot control valve, refer to the *Replacement Parts* appendix to locate the part number for the pilot control valve assembly.

Clamp Valve

Each table has two (2) clamp valves mounted beneath the table to actuate the four (4) clamp cylinders on each side of the table. The clamp valves on each of the tables are connected in series to the clamp pilot control valve on its respectful jig side.

If you need to replace a clamp valve, refer to the *Replacement Parts* appendix to locate the part number for the clamp valve assembly.

Pop-Up and Flipper Valves

If your system has these optional features, each table has two (2) valves, one for the flipper or pop-up on jig side 1 and one for the pop-up on jig side 2. The pop-up/flipper valves on each of the tables are connected in series to the lift pilot control valve on its respective jig side.

If you need to replace a pop-up or flipper valve, refer to the *Replacement Parts* appendix to locate the part number for the clamp valve assembly.

Pilot Tee Assembly

Each jig side has a pilot tee assembly that supplies air from the loop manifold to the pilot control valves. The tee assembly is located in close proximity to the pilot control valve and tees into the 3/4-in. hose line. Interlocks are connection points to the pilot tee assembly that prevent the clamp pilot control valve from working, if the lift pilot valve is actuated and vise-versa.

If you need to replace a pilot tee assembly, refer to the parts list in the *Replacement Parts* appendix to locate the part number for the pilot tee assembly.

Cylinders

Clamp Cylinders

Each table has eight (8) clamp cylinders mounted beneath the table, four (4) for each jig side. They come with adjustable cushions, quick dumps, and speed controls. The rear-head cushion helps decelerate the cylinder and reduces potentially destructive energy. If the clamp tubes seem to stop extremely hard in the retract position, the screw can be turned to adjust the cushion on each cylinder. Both ports on the clamp cylinder come with a quick dump and a speed control. These devices ensure that all the cylinders operate in sequence on a given jig side. To adjust the speed control, loosen the jam nut and use a slotted screwdriver in the set screw to speed up or slow down the cylinders.

If you need to replace a clamp cylinder, refer to the *Replacement Parts* appendix to locate the part number for the clamp valve assembly.

Pop-Up Cylinder with Tee

The pop-up cylinder with tee is used on the pop-up and flipper mechanisms. The pop-up cylinder with tee comes with an adjustable cushion and two (2) flow controls. The rear-head cushion helps decelerate the cylinder and reduces potentially hazardous energy. If the mechanism to which the cylinder is tied seems to stop exceedingly hard in the retract position, the cushion screw can be turned to make adjustments. Both ports have flow control mounted to them to ensure smooth operation.

If you need to replace a pop-up or flipper valve, refer to the *Replacement Parts* appendix to locate the part number for the clamp valve assembly.

Flipper Cylinder (Long Cylinder)

Each table has two (2) flipper mechanisms mounted beneath the tables on jig side 1. The flipper mechanism is comprised of a flipper cylinder and a pop-up cylinder with tee tied to the flipper arm. The flipper cylinder comes with an adjustable cushion, quick dump, speed control, and flow control. The rear-head cushion helps decelerate the cylinder and reduces potentially destructive energy. If the flipper arm seems to stop exceedingly hard in the retract position, the cushion screw can be turned to make adjustments. The quick dump and the speed control are both mounted to the rear port of the cylinder with the flow control on the front port. Adjustments to the speed control and flow control help ensure a smooth flip operation and proper sequencing with the pop-up cylinder with tee when bringing the flipper arm back down. This is accomplished by adjusting the speed control on the quick dump. If you need to replace a

flipper cylinder, refer to the *Replacement Parts* appendix to locate the part number for the flipper cylinder assembly.

	CAUTION
	**The flipper should never extend past 90 degrees.** **If the pop-up cylinder with tee retracts first, this will jam the mechanism causing damage to both cylinders.**

Pop-Up Cylinder

The pop-up cylinder with tee is used on the pop-up mechanism which can be mounted to both jig sides depending on the configuration. The pop-up cylinder comes with an adjustable cushion and a flow control. The rear-head cushion helps decelerate the cylinder and reduces potentially destructive energy. If the mechanism to which the cylinder is associated with seems to stop exceedingly hard in the retract position, the cushion screw can be turned to make adjustments. The low control is mounted to the front port to ensure smooth operation.

If you need to replace a pop-up cylinder, refer to the *Replacement Parts* appendix to locate the part number for the pop-up cylinder assembly.

Pneumatic End Stop Cylinder

The pneumatic end stop cylinder is used on the pneumatic end stop assembly. The cylinder is a single acting cylinder with a spring return.

If you need to replace an end stop cylinder, refer to the *Replacement Parts* appendix to locate the part number for the end-stop cylinder assembly.

Light Bars

Components

The *FloorTracker* roller press is equipped with two (2) sets of light bars, one set on each side of the gantry head. A set consists of a transmitter bar and a receiver bar. The transmitter bar transmits the signal for the light beam and the receiver bar receives the signal.

Inspecting

Inspect and test the light bars prior to starting the machine to ensure they are operating correctly. The following statement is in the light bar's manual from the manufacturer.

	WARNING
	**The test must be performed at installation, according to the employer's regular inspection program, and after any maintenance, tooling change, set up, adjustment, or modification to the PA4600 system or the guarded machine. Where a guarded machine is used by multiple operators or shifts, it is suggested that the test procedure be performed at each shift or operation change. Testing ensures that the light curtain and the machine control system work properly to stop the machine. Failure to test properly could result in serious injury to personnel.**

Ensure the front filter on both the transmitter and receiver are clean.

Check the LED display area on the light bars to ensure no errors are showing. Refer to Table 5-3 for information on the error codes and the indicators on the light bars.

Cleaning

Oil, dirt, and grease accumulating on the front filter of the transmitter or receiver bar can affect the operation of the light bar system. Clean the filters with a mild detergent or glass cleaner and a soft cloth. Surfaces that are painted can be cleaned with a mild soap and water or a mild de-greasing cleaner.

Realigning

Each light beam mount has a slotted mounting hole to allow for adjustment. Loosen the screws, move the bar until the -0 on the receiver bar turns to a -1. Tighten the screws and press the green START button on the pendant control station or joystick panel to reset the light bars.

When a light bar set is out of alignment, the signal will not be received from the transmitter to the receiver, which will cause an IBI to light up and a diagnostic code of -0 to display on the receiver bar. The machine will not operate until the light bars are aligned.

Light Bar Operating States

The indicators on the receiver bar tell the operator what operating state the light bar set is detecting. The different operating states are described in Table 5-3.

Table 5-3: Light Bar Operating States

Operating State	Description
Machine Run	The two receiver bar safety outputs are in the ON state, the green machine run indicator is lit, diagnostic displays "--", and the auxiliary output is in a state consistent with its configuration. The protected machine is allowed to operate.
Machine Stop	The two receiver bar safety outputs are in the OFF state, the red machine stop indicator is lit, diagnostic displays "-0", and the auxiliary output is in the OFF state. The protected machine is **not** allowed to operate.
Interlock	The two receiver bar safety outputs are in the OFF state, the red machine stop indicator and yellow interlock indicator are lit, diagnostic displays "-1", and the auxiliary output is in the OFF state. The protected machine cannot operate until the detection zone is clear of obstructions and the start button is pressed and released.
Alarm	The two receiver bar safety outputs are in the OFF state, the red machine stop indicator is lit, and the yellow interlock indicator is flashing. The auxiliary output is in a state consistent with its configuration. The diagnostic displays a diagnostic code to aid in troubleshooting. The alarm state does **not** allow the protected machine to operate. The primary difference between alarm and interlock is that the light bar system will remain in the alarm state until the fault is corrected, regardless of power cycling or if the start button is pressed and released.

Light Bar Diagnostic and Test Features

	WARNING
	**Electrocution hazard: disconnect power before opening end caps! Failure to comply can result in serious injury or death.**

Individual Beam Indicators (IBI)

The light bar system has a visible, red individual beam indicator (IBI) adjacent to each receiver bar infrared beam. An IBI will light when the infrared beam fails to meet the conditions necessary to remain in the machine-run state. When the synchronization beam is broken, all of the IBIs will light. An IBI failure will not cause an alarm condition and the light bars will continue to operate, but the gantry head will fail to move in the same direction it was moving when the safety device was activated.

Synchronization Beam

Synchronization between the transmitter bar and receiver bar is optical. The beam closest to the cable connector supplies this signal. When this beam is blocked, the system will enter a machine-stop state and all of the IBIs will light. When the beam is cleared, the system will re-synchronize itself and enter a state consistent with its operating mode.

Machine Primary Control Element (MPCE) Monitoring

MPCE monitoring is an important safety function. It monitors the light bar system interface to the guarded machine and checks to ensure that the control elements (switching devices such as contactors) are responding correctly. The MPCE function is hard-wired in the machine. Do NOT attempt to change the setting.

Diagnostic Display

The Receiver unit has a two-digit numeric display that displays diagnostic codes identified by the internal control circuits. This display is visible from the front of the Receiver bar. The diagnostic codes indicate normal operation, dip switch setting faults, safety output faults, MPCE faults, and internal controller faults. See Table 5-4.

Table 5-4: Diagnostic Codes for the Light Bar System

Code Group	Code Number	Meaning of Diagnostic Code
Normal Operation	88/V#	When powered-up, all of the segments are lit and then the software version number is displayed
	--	RUN state
	-0	STOP state
	-1	In the Interlock state and waiting for Start Input
Configuration Switch Faults	21	Invalid Mode selection setting
	22	Switch settings changed during operation
	26	Invalid Code setting
Safety Output (OSSD) Faults	31	Safety Output A & B are shorted together
	32	Safety Output A shorted to Power
	33	Safety Output B shorted to Power
	34	Safety Output A shorted to Ground
	35	Safety Output B shorted to Ground
MPCE Faults	41	MPCE signal was in Wrong state BEFORE entering the Machine RUN state
	42	PCE signal was in Wrong state AFTER entering the Machine RUN state
	43	MPCE signal was in Wrong state during power-up of the PA4600
Receiver Fault	50	A fault internal to the PA4600 was detected
Setup Error	60	Receiver in view of multiple transmitters set to same scan code

Replacing Light Bars

Light bars can be replaced as a set of two, or just the transmitter or receiver may be ordered by itself. Refer to the *Replacement Parts* appendix for part numbers.

1. Determine if you need to replace a transmitter, receiver, or both. Locate the part number in the *Replacement Parts* appendix.

2. To install a new light bar or set, remove the cable from the bottom of the damaged light bar by unscrewing the quick disconnect.

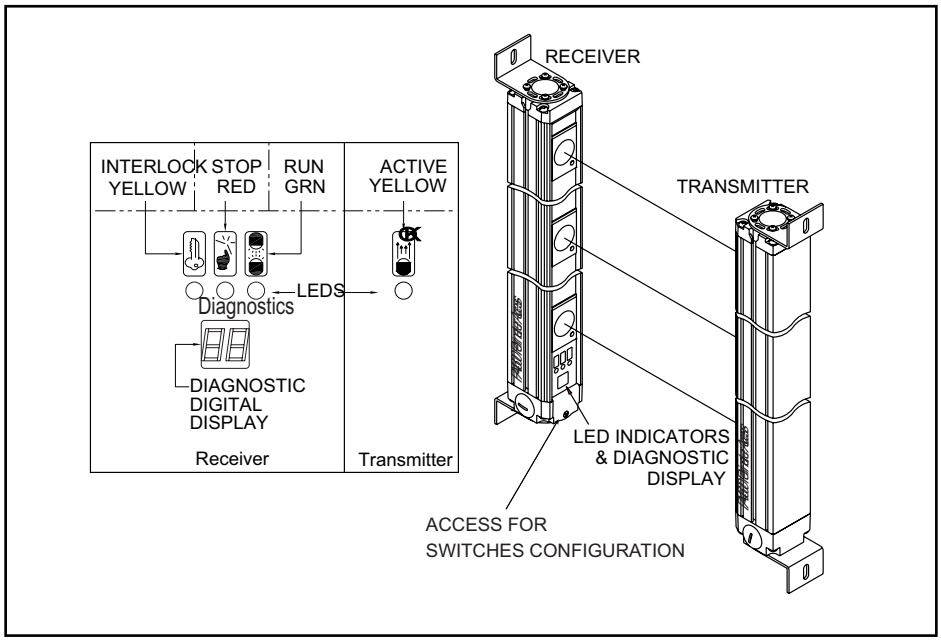
3. Carefully hold the damaged light bar while unscrewing the socket head set screws on the light beam mount. Keep the socket head screws for use with the new bar.

4. Set the damaged light bar aside and hold the new bar in place.

5. Use the same set screws to attach the new bar to the light beam mount.

6. Whether replacing one or both bars in a set, the dip switches on both bars must be set to match each other. The original dip switch code is shown in Figure 5-8. Refer to Table 5-5 for the drawing that applies to your machine.

Figure 5-8: Light Bar System Indicators (3-Beam System Shown in Diagram)



When a beam between the two bars is interrupted, the machine will stop its motion in the direction associated with the interrupted light bar set. The rotation of the roller also stops at this time. Once the interruption has been removed, the operator must press the START button and the directional button to restart the machine. When a light beam interruption occurs, the gantry head is still able to move in the opposite direction.

Table 5-5: Finding DIP Switch Settings and Wire Connections for Light Bars

If your indicator lights are...	Refer to Drawing
On the side of the enclosure	90525
On the front of the enclosure	90545

Indicator Lights and Sounding Device

Main Electrical Enclosure

To remove the light cover, simply unscrew it. To replace the light bulb under the light cover, gently push in and turn the light bulb counterclockwise. It will come loose within 1/2 turn. Refer to the *Replacement Parts* appendix for a part number.

Beacon

There are two (2) beacons on top of the gantry head. To remove the light cover, unscrew the small screw on the top of the light cover. Unscrew the bulb to remove it for replacement. Refer to the *Replacement Parts* appendix for a part number.

Sounding Device

The *FloorTracker* roller press has a sounding device installed to alert personnel that the machine is in operation. For safety reasons, they must be kept in working order. To replace the sounding device, refer to Drawing 90544 (for a one-enclosure system) or Drawing 90524 (for a two-enclosure system) for part numbers and an electrical schematic.

	DANGER
	**Do NOT attempt to change the time delay between the horn and movement or the volume of the horn. Without these safety features, serious injury or death could occur.**

Hour-Meter

The hour-meter on the electrical enclosure (for one-enclosure systems) logs the amount of time that the motor is running. Refer to this meter to schedule preventive maintenance. The hour-meter cannot be reset, but if use exceeds the number of digits on the meter, it will roll back to 0 and continue to log time.

Appendix A

Navigating the Troubleshooting Appendix

This appendix is divided into tables according to the nature of the issue that is being addressed. The issues are categorized according to the symptoms that can be observed.

The tables are presented in the order listed below.

Table A-1: Troubleshooting Appendix Quick Reference Guide

Table Number	Troubleshooting Category
Table A-2	Symptoms of the mechanical system
Table A-3	Symptoms of the pneumatic system
Table A-4	Symptoms of the electrical system

Table A-2: Troubleshooting the Mechanical System

Problem	Possible Cause	Possible Solution
Gantry head won't move at all (Refer to Table A-4 for electrical problems.)	Gantry head or a wheel is jammed with a foreign object	Check the perimeter of the gantry head and around each wheel for blockage
	Brake motor is broken	Repair or replace brake motor
Gantry head won't move in one direction after the machine has been stopped	Vibration of stopping causes bumper to trip safety switch temporarily	Press the START button to reset the safety switch
	Bumper spring or bearing is damaged so normal vibration of stopping causes bumper to move and block light beam	Move the bumper away from the light beam, then press the START button to reset the safety switch; to prevent this from continuing, replace the bumper spring or bearing
Gantry head tracking is crooked or uneven	Guide wheel is damaged or low on lubricant	Replace guide wheel
	Tables are out of alignment Tables are damaged	Align tables Replace tables
Press is stopping too slowly	Brake motor is worn or damaged	Check lubricants in brake motor Adjust air gap in brake motor Replace brake motor
	Brake pad is worn	Replace brake pad
	Guide wheels are worn or damaged	Replace guide wheels
Nail plates are not properly embedded into the truss	Guide wheels have a gap	Adjust roller height with the take-up bearing
	Table surface is damaged	Repair tabletop
Nail plates are not embedded evenly	Roller height on one end differs from the opposite end	Level the roller height
	Table surface is damaged	Repair tabletop
First nail plate pressed is not embedded correctly	Pressure wheels are worn out	Replace pressure wheels
Gantry head or roller is making extraordinary noise or vibration as it travels	Take-up bearing is not lubricated	Grease the take-up bearing Replace damaged take-up bearing
	Parts are damaged: guide wheels, roller shaft	Inspect location of noise for parts damage
Roller is not turning smoothly	Take-up bearing is not lubricated	Grease the take-up bearing Replace damaged take-up bearing

Table A-2: Troubleshooting the Mechanical System (Continued)

Problem	Possible Cause	Possible Solution
Gantry head crashes against tables	Table is bent or damaged	Replace table
	Table is out of alignment	Align tables
	Table leg is bent or broken	Replace leveling screws in table feet

Table A-3: Troubleshooting the Pneumatic System

Problem	Possible Cause	Possible Solution
End fitting blown off hose	Improper assembly procedures, improper skiving, incorrect hose-end series, mixing competitor's components with *Weatherhead*® components	Ensure that the hose-end is the correct fitting and is properly installed; never intermix components
Hose end appears to have been pinched on one side	Collet is becoming worn	Replace the collet
Hose tube has cracked or burst	Abrasion, hose tube is twisted or kinked	Remove possible abrasives and twists or kinks in the hose tube
	Incompatible lubricant in lubricator	Always use a recommended lubricant in lubricator
	Excessive pressure	Check pressure relief for damage or improper setting
	Excessive heat	Lubricator reservoir is low on oil
Clamps not actuating at same time	Speed controls need adjustment	Adjust speed controls on clamp cylinder
Flipper/pop-up do not have enough power to lift truss off table	System pressure set too low	Increase pressure regulator to recommended 90 psi
	Air loss in system	Check all connections and hoses for air leaks
Tube blowing out of fitting	Improper assembly or bad collet	Push tube into fitting and pull to see if set correctly. May have to replace fitting
Air leaking around collet	Bad collet	Replace fitting
Air leak in hose tube	Hose tube damaged	Replace hose tube; ensure area is free and clear of debris including nail plates

Check all bulbs on indicator lights to ensure they are still in working order before attempting any troubleshooting.

Table A-4: Troubleshooting the Electrical System

Problem	Possible Cause	Possible Solution
E-stop button is depressed, but all indicator lights are not on	Main disconnect switch is in OFF position	Switch the disconnect switch handle to ON position
	Secondary or primary transformer fuses are open	Check primary and secondary transformer fuse
E-stop button is released, but indicator lights are not on	Main disconnect switch is in OFF position	Switch the disconnect switch handle to ON position
	Machine has not been started	Press and release START button
E-stop button is released, but E-stop light is on	DC output fuse is open	Check DC output fuse
Only RIGHT READY/ REVERSE START indicator light is on	An object on the left of the machine is sensed entering the detection zone	Clear the detection zone on the left side of the machine and press and release START button
	Left side light bar receiver has fault	Read LED display on the light bar; refer to light curtain diagnostic code for fault message; check dip switch settings
	Left side light bar transmitter has no power	
Only LEFT READY/FORWARD START indicator light is on	An object on the right of the machine is sensed entering the detection zone	Clear the detection zone on the right side of the machine and press and release START button
	Right side light bar receiver has fault	Read LED display on the light bar; refer to light curtain diagnostic code for fault message; check dip switch settings
	Right side light bar transmitter has no power	
Either LEFT READY/FORWARD START or RIGHT READY/ REVERSE START button is pressed, horn keeps sounding for more than 5 seconds and the machine is not moving	The timing relay has loose connections or is bad	Check timing relay for loose connections or replace the timing relay
Either LEFT READY/FORWARD START or RIGHT READY/ REVERSE START button is pressed, the horn sounds and then stops, but the machine is not moving	The control relay has loose connections or is bad	Check control relay and the soft-start for loose connections or replace the control relay
Press head travels the opposite direction of the directional button pressed	The electrical wires are connected to the wrong terminals	Swap the wires on the contactor inside the electrical enclosure; or switch the wires at the motor

Appendix B

Section Tables

This appendix is divided into three (3) sections, which are presented in the same order as the tables below. Each section is shown in its own table and sorted by the Part Location categories. Within each Part Location category, the part descriptions are arranged in alphabetical order.

The check mark in the last column indicates that this part should be kept in stock at all times to minimize downtime.

Table B-1: Mechanical Replacement Parts

Appendix Section	Part Location Category
Mechanical replacement parts	Gantry head
	Jigging
	Splice
	Table

Table B-2: Pneumatic Replacement Parts

Appendix Section	Part Location Category
Pneumatic replacement parts	Ball valve assembly
	Cylinder assembly receivers
	Cylinder assembly table
	Filter/regulator
	Pilot valve assembly
	Pressure source, main
	Set-up valve assembly

Table B-3: Electrical Replacement Parts

Appendix Section	Part Location Category
Electrical replacement parts	Cable assembly
	Electrical enclosure
	Fuses
	Gantry head
	Gantry head light bar (optional)

Table B-4: Mechanical Replacement Parts

Location of Part	Part Description	*MiTek* Part #	Keep in Stock
Gantry head	Bumper flange bearing	416076	✔
	Bumper mounting bar	56463	
	Bumper shaft	56467	
	Bumper spring	371816	✔
	Bumper weldment - splice side	56445-501	
	Bumper weldment - motor side	56410-501	
	E-chain bracket	56470-501	
	Gantry roller 26" truss	56440-503	
	Gantry roller 26" truss with splice	56440-501	
	Gantry roller 30" truss	56440-504	
	Gantry roller 30" truss with splice	56440-502	
	Gearmotor with brake 575V	480391	
	Gearmotor with brake 208V	480390	
	Gearmotor with brake 230V	480389	
	Gearmotor with brake 460V	480388	
	Guide wheel	412245	✔
	LH light bar mounting bracket	56512-501	
	LH bumper divot assembly	56465-501	
	RH bumper divot assembly	56465-502	
	RH light bar mounting bracket	56512-502	
	Take-up bearing assembly (to adjust press roller height)	56435-501	
	U-wheel housing weldment	56420-501	
Jigging	LH adjustable stop	56450-501	
	RH adjustable stop	56450-502	
	LH pneumatic stop	56505-501	
	RH pneumatic stop	56505-502	
Splice	Splice fixture assembly	56485-501	
	Splice plate support assembly	56399-501	✔
Table	Clamp roller Assembly	56340-501	✔
	End eject stationary roller	591074	✔
	Flipper arm 26" truss	56322-001	✔
	Flipper arm 30" truss	56322-002	✔
	Flipper pop-up mounting bracket	56321	
	LH long clamp tube assembly	56366-501	
	Parking stand fixed stop	56333-501	✔

Table B-4: Mechanical Replacement Parts (Continued)

Location of Part	Part Description	*MiTek* Part #	Keep in Stock
Table	Pop-up cylinder mounting bracket	56318	
	Pop-up end eject lift roller bar 26" truss	56364-501	
	Pop-up end eject lift roller bar 30" truss	56364-502	
	Pop-up long roller for 26" truss	591070	✔
	Pop-up long roller for 30" truss	591073	✔
	Pop-up short roller for 26" truss	591071	✔
	Pop-up short roller for 30" truss	591072	✔
	Pop-up side eject lift bar 26" trussg	56380-501	
	Pop-up side eject lift bar 30" truss	56380-502	
	RH long clamp tube assembly	50344-501	

Table B-5: Pneumatic Replacement Parts

Location of Part	Part Description	*MiTek* Part #	Keep in Stock
Ball valve assembly	Ball valve	See Drawing 84873	
	Tees, connectors, and hoses	See Drawing 84873	✔
Cylinder assembly receivers	Cylinder, connectors, and hoses	See Drawing 84871	✔
Cylinder assembly tables	Cylinder, connectors, and hoses	See Drawing 84870	✔
Filter/Regulator	Filter for Regulator	438575	✔
	Filter/Regulator Assembly	56356-501	
Pilot valve assembly	Clamp valve assembly	56358-501	
	Hose reel assembly	56362-501	✔
	Pilot control valve	56359-501	
	Pilot tee assembly	56352-501	
	Pop-up/flipper valve assembly	56357-501	
Pressure source, main	Air regulator, hose, and connectors	See Drawing 84869	
Setup valve assembly	Cylinder, connectors, and hoses	See Drawing 84870	
	Entire installation kit, JHFM-84868-501	84868-501	
	Lubricator	See Drawing 84868	
	Pilot valve	See Drawing 84868	
	Setup valve	See Drawing 84868	
	Tees, connectors, and hoses	See Drawing 84868	✔

Table B-6: Electrical System Replacement Parts

Location of Part	Part Description	MiTek Part #	Keep in Stock
Cable assembly	Cable carrier 3 table	56305-530	
	Cable carrier 4 table	56305-540	
	Cable carrier 5 table	56305-550	
	Cable carrier 6 table	56305-560	
	Cable carrier 7 table	56305-570	
	Cable carrier end, set	503123	
Electrical enclosure	Beacon lens	513522	
	Beacon light bulb	513523	
	Contactor	509219	
	Hour-meter	504700	
	Hour-meter gasket	504701	
	Indicator lights covers	red-513594 green-513596	
	Light bulbs for indicator lights on electrical enclosure.	513168	
Fuses	Brake fuses (contains 2)	208/230 V—none 460 V—516388 575 V—516383	✔
	Disconnect fuses (contains 3)	208/230 V—516494 460 V—516491 575 V—516490	✔
	Transformer fuses—primary side (contains 2)	208 V—516389 230/460 V—516394 575 V—516384	✔
	Transformer fuses—secondary side (contains 1)	208/230/460 V—516387 575 V—516350	✔
Gantry head	Cable grip (used where pendant attaches to junction box)	511623	
	Pendant	513220	
	Pendant cable.530 OK, 16/12	508422	
Gantry head light bar (optional)	Light bar cable (for receiver bar)	515841	
	Light bar cable (for transmitter bar),	515840	
	Light bar set (transmitter and receiver)	515835	
	Light bar mounting bracket, right-hand	56512-501	
	Light bar mounting bracket, left-hand	56512-502	

Maintenance Checklist

Appendix C

FloorTracker™ System

Checklists for Preventive Maintenance

Daily Checklistt	page 64
Checklist by Working Hours	page 65

Maintenance Checklist

Daily Checklist

Month and Year: _____ Week:_____

Preventive Maintenance Action	Dates Completed				
Check oil level in air lubricator					
Test light bars and bumpers					

Notes	Date

Maintenance Checklist

Checklist by Working Hours

Year: _____

Preventive Maintenance Action	Working Hours	Sign and Date When Action is Performed				
Inspect and dust brake motor	150					
Check regulator filter	150					
Grease the take-up bearing	150					
Check oil level in brake motor	300					
Grease the drive wheels	300					
Grease the guide wheels	300					
Drain and change gearbox oil	10,000					
Repaint jigging	Annually					
Lubricator service kit	Every 2 years					

Notes	Date				

Appendix D

Drawing Set

Drawings are inserted at the back of the manual.

Table D-1: Attached Drawings

Drawing Description	Drawing Number
FloorTracker assembly	56300
Air Layout - 5 table, flipper/pop-up/2-zone	56376-501
Air Layout - 3 table, flipper/pop-up/side eject	56382-501
Floor Tracker Gantry Assembly	56400
Pneumatic Drawings	56501-501
	56515-511
	56532-501
	56532-601
Electrical—For machines with indicator lights on the side of the enclosure	90525
Electrical—For machines with indicator lights on the front of the enclosure	90545

Document Evaluation Form

Appendix E

This appendix contains a form to provide MiTek with feedback on the usefulness of this manual. Please follow the instructions on the form to provide us with comments or suggestions that will improve the quality of our documentation services.

Document Evaluation Form

We invite your comments to make this document more useful.

Document Identification:

FloorTracker™ Roller Press	Operation and Maintenance Manual	001076

General Ratings:

	Poor	Fair	Good	Excellent
Content	❑	❑	❑	❑
Organization	❑	❑	❑	❑
Accuracy	❑	❑	❑	❑
Clarity	❑	❑	❑	❑
Completeness	❑	❑	❑	❑
Examples/Illustrations	❑	❑	❑	❑
Readability	❑	❑	❑	❑

Compared to other truss machinery manufacturers' documentation, how would you rate this document?

❑ Poor ❑ Fair ❑ Good ❑ Excellent

Rate the quality of service you were given on the following topics:

	Poor	Fair	Good	Excellent
Delivered on time	❑	❑	❑	❑
Installation process	❑	❑	❑	❑
Service technician	❑	❑	❑	❑
Does the machine work as promised?	❑	❑	❑	❑
Does it handle the production load?	❑	❑	❑	❑

General Comments:

Document Evaluation Form

Instructions Please provide as much information as possible. Identify the page and paragraph, and include a proposed rewrite if possible. Attach extra sheets as needed.	*FloorTracker*™ Roller Press Operation and Maintenance Manual 001076
Recommendation	
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Glossary

Appendix F

actuate	to activate, put into action
adjustable end stop	a portable end-stop that can be manually adjusted to hold the truss in place at its end, no pneumatic functionality exists on this end stop
amperage	the strength of an electric current, expressed in amperes
anchor plate	a steel plate that holds the tables in place; it is anchored to the concrete floor and the tables are welded to it
bumper	a safety device on each corner of the gantry head (for a total of 4); when the bumper is depressed, the gantry head motion stops
clamp cylinder	each table has eight clamp cylinders mounted beneath the table that operate the side clamps on both sides of the table
clamp valves	actuates the 4 cylinders that operate the side clamps
connector plate	the nail-plate that is embedded into the ends of the tie
cushion	an attribute of a hydraulic cylinder that allows adjustment of the pressure in each cylinder
directional buttons	the 2 black buttons on the pendant control station that tell the gantry head which direction to move
end-eject	a system that allows the truss to be manually slid off the table at the end of the table, running underneath the raised gantry head
fixed stop	a bar attached to the parking stand that activates the light bar stop system to stop the gantry head on the parking stand
flipper	optional pneumatic feature that flips the truss from jig side 1 to jig side 2 on the table
gantry head	the entire traveling weldment that houses the Roller to embed the connector plates
jigging	any of several devices used to hold the truss in place on the tables
layout	a scaled diagram of the location of components and the space that they occupy

light bar	the perimeter access guarding device that uses a light beam to detect when an object is in the way of the gantry head and stops the machine to prevent injury or damage
limit switch	an electro-mechanical device that consists of an actuator mechanically linked to a set of contacts; when an object comes into contact with the actuator, the device operates the contacts to make or break an electrical connection
lockout/tagout	a means of isolating a piece of equipment from its energy source so maintenance can safely occur; guidelines provided in OSHA 29 CFR 1910.147
motor end	the end of the gantry head (or side of the tables) that the motor is on
on-table splice	see splice pad
operator end	the end of the gantry head (or side of the tables) that the pendant control station is generally on
parking stands	two (2) fixtures, one at each end of the table system, that the gantry head should be parked on when not in use
pendant control station	where the operator stands to use the pendant that controls movement of the gantry head
pilot tee assembly	each jig side has a pilot tee assembly that supplies air from the loop manifold to the pilot control valves
plate	see *connector plate*
pneumatic end stop	an end stop that is controlled with pneumatics to hold the truss in place at its end
pop up	optional pneumatic feature that raises the truss off of the table so it can easily be removed from the table
port	a connection point for a peripheral device
proximity switch	also called proxy switch; a switch that uses an electromagnetic field to detect when an object is near, there is no physical contact between the object and the switch; inductive proximity switches detect only metal objects, capacitive proximity switches can sense both metallic and non-metallic objects

qualified person	a person or persons who, by possession of a recognized degree or certificate of professional training, or who, by extensive knowledge, training, or experience, has successfully demonstrated the ability to solve problems relating to the subject matter and work—ANSI B30.2-1983; one who has skills and knowledge related to the construction and operation of the electrical equipment and installations and has received safety training on the hazards involved—NEC2002 Handbook
receiver bar	the light bar that receives the signal from the transmitter bar; every light bar set consists of a receiver bar and a transmitter bar
regulator	a component of the pneumatic system that connects to the main air source and regulates the air pressure allowed into the system
roller	the large roller inside the gantry head that initially embeds the plates into the truss
side clamp	two (2) tubes running the length of the tables that hold the trusses in place during plate embedment; one (1) clamp is used for each side of the table
side-eject	a system that is configured to remove the truss from the tables off the side of the tables
solenoid	an assembly used as a switch consisting of a coil and a metal core free to slide along the coil axis under the influence of the magnetic field
splice pad	a steel plate that is attached to the side of the table for on-table splicing capabilities, optional feature
take-up bearing	adjusts the height of the roller
torque	a turning or twisting force
transmitter bar	the light bar that transmits the signal to the receiver bar; every light bar set consists of a receiver bar and a transmitter bar
voltage	Equal to the difference of electric potential between two points on a conducting wire carrying a constant current of one ampere when the power between the points is one watt