Operation and Maintenance Manual

RoofGlider®

Roof Truss Roller Press

001046 Rev. E

Operation and Maintenance Manual

RoofGlider®

Roof Truss Roller Press

U.S. and other patents pending.

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001046	
Revision	001046 Rev. E
Revision date	12 Sept 2018
Revised by	R. Tucker
Approved by	R. Tucker

Contents

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Legal Notice

Patents

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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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Notice of Change

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

Operation and Maintenance Manual

RoofGlider®

Service Bulletin or Notice #	Dated	Title

Safety (English)

For safety information in Spanish, refer to page xvii.

Be Careful.
Be Safe.

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 for each symbol or signal word. The definitions below can also be found in ANSI z535.4-2002.

Failure to comply with the instructions accompanying each safety alert symbol may result in property damage, personal injury, or even death. Personnel must follow all safety procedures and practices to ensure the safest possible operation 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 CAUTION is used ***with*** the safety alert symbol shown here, it indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

When CAUTION is used ***without*** the safety alert symbol shown here, it 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 do not have an immediate, direct effect on personnel or equipment.

Safety Rules

Because it is impossible to anticipate every circumstance that might involve a hazard, the safety information provided in this equipment manual and on the machine is 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!

Know Your Equipment

- 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 operating procedures outlined in this manual.
- Read and follow all safety notes. Failure to comply with these instructions may result in economic loss, property damage, and/or personal injury including death.
- Refer to the lockout/tagout guidelines on the following pages to safely perform maintenance and troubleshooting of this equipment.
- Observe and obey all safety labels. Replace worn labels immediately.
- Use this equipment solely for the purpose described in this manual.
- Only qualified personnel should attempt to operate or perform maintenance on this equipment. “Qualified personnel” is defined as:

> *...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*

Personal Safety

- Always wear safety glasses and hearing protection in an industrial environment.
- Utilize a filtering facepiece (dust mask) when working near sawdust.
- Wear proper clothing and appropriate personal protective equipment (e.g., safety glasses and hearing protection.) Do not wear loose clothing or jewelry. Confine long hair by tying it back.
- Use caution when lifting heavy parts or material.

Installing the Equipment

- Follow installation instructions completely.

Lockout/Tagout

- Before performing maintenance on the pneumatic or hydraulic systems, bleed the lines to eliminate pressure.
- Lockout/tagout all energized systems before performing maintenance on them. Refer to the *Lockout/Tagout Guidelines* section on page ix.

Keeping a Safe Environment

- Keep children away. All visitors should be kept a safe distance from the work area. Hazards may not be apparent to individuals unfamiliar with the machine.
- Keep work areas well lit.
- Keep the work area clean and free of any trip or slip hazards.
- Do not use the equipment in damp or wet locations, or expose it to rain or snow.

Operating and Maintaining the Equipment

- Ensure that all people, tools, and foreign objects are clear of the restricted zones before operating this equipment. The restricted zones are shown on page xiv.
- Perform safety tests to ensure all E-stops are working properly before operating the equipment at the initial startup, after performing any maintenance, and in accordance with the maintenance schedule.
- In case of machine malfunction, stop the machine immediately using an E-stop and report the malfunction to a supervisor.
- 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.
- Check for worn or damaged parts regularly. Repair or replace them immediately.
- 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.
- 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.
- Periodically inspect the quality of the finished product.

Electrical Safety

- Do not use any liquids in the interior of electrical cabinets.
- When using solvents on and around the machine, remove power to the machine to eliminate the chance of sparking, resulting in explosion or fire. Wear a respirator approved for use with solvents. Wear protective clothing, gloves, and safety glasses.

Lockout/Tagout

Lockout/Tagout Guidelines

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

The term "lockout," as used in this manual, means placing a lockout device on any and all energy sources to ensure that the energy isolating device and the equipment being controlled cannot be re-energized or operated until the lockout device is removed. The photos on the next page show where the electrical disconnects are located for this machine.

- Energy sources include electrical, mechanical, hydraulic, pneumatic, chemical, thermal, or other energy.
- In the case of electrical energy sources, the main power and control power to the machinery must be turned off and physically locked in the "off" position.
- A lockout device is usually a keyed padlock.
- If more than one person is working in a restricted zone, use a group lockout device 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.

Electrical Lockout/Tagout Procedures

When Working on a Machine Outside the Machine's Main Electrical Enclosure

If working on the electrical transmission line to the machine, follow the procedure on page xii.

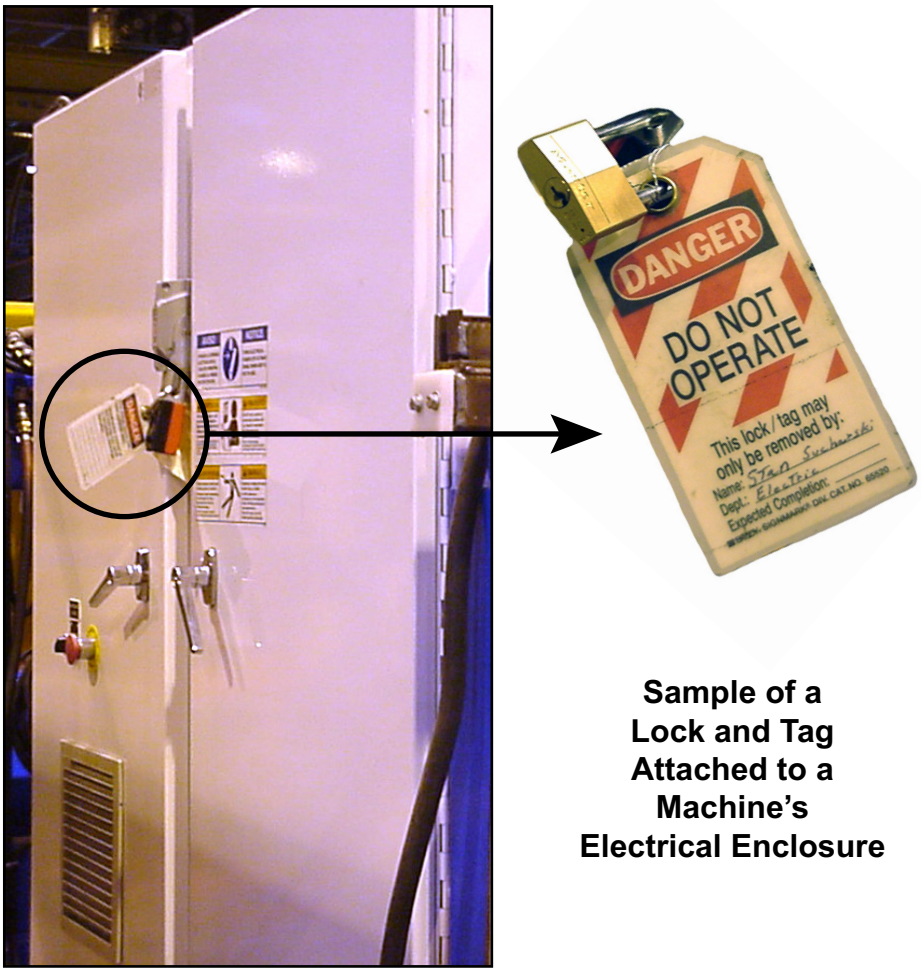
Before performing maintenance on any machine with electrical power, lockout/tagout the machine properly. When working on a machine outside of the machine's main electrical enclosure, not including work on the electrical transmission line to the machine, follow your company's approved lockout/tagout procedures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

1. Engage an E-stop on the machine.
2. Turn the disconnect switch handle to the "off" position. See Figure IV-1.

	WARNING
	**ELECTROCUTION HAZARD.** **When the disconnect switch is off, there is still live power within the disconnect switch's enclosure. Always turn off power at the building's power source to the equipment before opening this electrical enclosure!**

3. Attach a lock and tag that meet OSHA requirements for lockout/tagout.
4. Restrain or de-energize all pneumatic components, hydraulic components, and other parts that could have live or stored power.

Figure IV-1: Lockout/Tagout on the Main Electrical Enclosure



Sample of a Lock and Tag Attached to a Machine's Electrical Enclosure

When Working on a Machine Inside the Machine's Main Electrical Enclosure or in the Electrical Transmission Line to the Machine

Before opening the main electrical enclosure, or attempting to repair or replace an electrical transmission line to the machine, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures which should include, but are not limited to the steps here.

1. Engage an E-stop on the machine.
2. Shut the power to the machine off at the machine's power source which is usually an electrical service entry panel on the facility wall. One example of a locked-out power source panel is shown in Figure IV-2.
3. Attach a lock and tag that meets OSHA requirements for lockout/tagout.
4. Open the door to the enclosure in which you need access, and using a multimeter, verify that the power is off.

Figure IV-2: Lockout/Tagout on the Power Source Panel

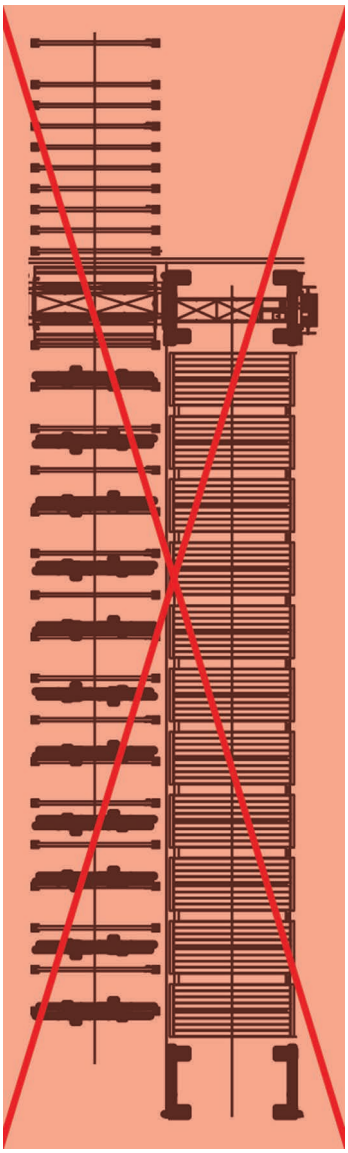
Troubleshooting With an Energized Machine

Only a qualified electrician, using the personal protective equipment and following the procedures recommended in NFPA 70E should ever attempt service or repair of or near an energized area or component of the machine.

Whenever maintenance is performed while the equipment is electrically energized, there is a potential electric arc flash hazard. Refer to NFPA 70E for the personal protective equipment required when working with electrically energized components. Pneumatic and hydraulic components may move unexpectedly if not de-energized. Physically restrain any components capable of movement when working on or near those components.

Restricted Zone

	DANGER
	Stay clear of the restricted zone when equipment is in use. Serious injury or death may result if personnel are in the restricted zone



Seguridad (Español)

Sea cuidadoso.

Protéjase.

Indicadores de seguridad

Los siguientes símbolos de alerta de seguridad y palabras de advertencia se utilizan a lo largo de este documento para indicar riesgos de seguridad. Preste suma atención cuando los vea. Cada símbolo o palabra indica un nivel de gravedad diferente. Las definiciones incluidas a continuación también pueden consultarse en la norma ANSI z535.4-2002.

El no cumplimiento de las instrucciones que acompañan a cada símbolo de alerta de seguridad puede producir daños a la propiedad, lesiones personales e incluso la muerte. El personal debe seguir todos los procedimientos y prácticas de seguridad establecidos para asegurar el uso más seguro posible de este equipo. No obstante, en ningún caso este documento reemplaza el sentido común. El personal debe asegurarse de que el entorno de trabajo sea seguro y esté libre de distracciones.

PELIGRO

Indica una situación de riesgo inminente que, si no se evita, producirá la muerte o lesiones graves.

ADVERTENCIA

Indica una situación potencialmente peligrosa que, si no se evita, podría producir la muerte o lesiones graves.

PRECAUCIÓN

Cuando la PRECAUCIÓN se utiliza ***con*** el símbolo de alerta de seguridad aquí ilustrado, indica una situación potencialmente peligrosa que, si no se evita, puede producir lesiones menores o moderadas.

Cuando PRECAUCIÓN se utiliza ***sin*** el símbolo de alerta de seguridad aquí ilustrado, indica una situación potencialmente peligrosa que podría producir daños al equipo.

AVISO

Llama la atención a información importante para entender la operación que se desea realizar.

AMBIENTAL

Se aplica a condiciones que pueden afectar el entorno pero que no tienen un efecto inmediato o directo sobre el personal o el equipo.

Reglas de seguridad

Debido a la imposibilidad de anticipar todas las circunstancias que podrían constituir un riesgo, la información de seguridad suministrada en este manual del equipo y sobre la máquina no es exhaustiva. Si se utiliza o realiza el mantenimiento de esta máquina utilizando un procedimiento no recomendado específicamente por el fabricante, el procedimiento deberá ser aprobado por un ingeniero profesional para asegurarse de que no afecte la seguridad del equipo. ¡Manéjese! siempre con suma precaución y sentido común!

Conozca su equipo

- Lea este manual en su totalidad antes de utilizar o mantener el equipo. No utilice esta máquina a menos que esté perfectamente familiarizado con los controles, los dispositivos de seguridad, los frenos de emergencia y los procedimientos operativos que se describen en este manual.
- Lea y siga todas las notas de seguridad. El no cumplimiento de estas instrucciones podría producir pérdidas económicas, daños a la propiedad y lesiones personales, incluida la muerte.
- Refiérase a las pautas de bloqueo/etiquetado proporcionadas en las siguientes páginas para realizar el mantenimiento y solucionar problemas de este equipo en forma segura.
- Observe y cumpla con todas las etiquetas de seguridad. Cambie las etiquetas gastadas inmediatamente.
- Utilice este equipo únicamente para el propósito que se describe en este manual.
- Sólo personal calificado debe intentar utilizar o realizar el mantenimiento de este equipo. Por "personal calificado" se entiende:

> *...una persona o personas que, por el hecho de poseer un título o certificado de capacitación profesional reconocido o que, por sus amplios conocimientos o experiencia, han demostrado con éxito estar capacitados para resolver problemas relacionados con el tema y el trabajo en cuestión —ANSI B30.2-1983*
>
> *...una persona que posee habilidades y conocimientos relacionados con la construcción y uso de equipos e instalaciones eléctricas y que ha recibido capacitación en seguridad sobre los riesgos posibles—NEC 2002 Handbook*

Seguridad personal

- Use siempre anteojos de seguridad y protección auditiva en un entorno industrial.
- Utilice una máscara protectora cuando trabaje cerca de aserrín.
- Utilice ropa adecuada y equipo de protección personal apropiado (por ejemplo, anteojos de seguridad y protección auditiva.) No use ropa suelta ni joyas. Si tiene el cabello largo, áteselo para atrás.
- Proceda con precaución cuando levante piezas o materiales pesados.

Instalación del equipo

- Siga las instrucciones de instalación al pie de la letra.

Procedimientos de Bloqueo/Etiquetado

- Antes de realizar el mantenimiento de los sistemas neumáticos o hidráulicos, purgue las líneas para eliminar la presión.
- Bloquee y etiquete todos los sistemas energizados antes de realizar tareas de mantenimiento en ellos. Refiérase a la sección *Pautas de bloqueo/etiquetado* en la página xx.

Cómo mantener un entorno seguro

- Mantenga alejados a los niños. Todos los visitantes deben mantenerse a una distancia segura del área de trabajo. Los riesgos pueden no ser evidentes a las personas no familiarizadas con la máquina.
- Mantenga las áreas de trabajo bien iluminadas.
- Mantenga el área de trabajo limpia y libre de cualquier riesgo de tropiezo o resbalamiento.
- No utilice el equipo en lugares húmedos o mojados y no lo exponga a la lluvia o a la nieve.

Uso y mantenimiento del equipo

- Asegúrese de que no haya personas, herramientas y objetos extraños en las zonas restringidas antes de utilizar este equipo. Las zonas restringidas se indican en la página xxvi.
- Realice pruebas de seguridad para verificar que todos los frenos de emergencia funcionen adecuadamente antes de utilizar el equipo por primera vez, después de realizar cualquier tarea de mantenimiento y según la frecuencia de mantenimiento establecida.
- En caso de que la máquina no funcione correctamente, deténgala inmediatamente utilizando un freno de emergencia e informe el problema a un supervisor.
- No deje nunca la máquina encendida si no está junto a ella. ¡Apáguela!. No abandone la máquina hasta que todas las piezas se detengan completamente y hasta que se haya apagado la alimentación eléctrica.
- Verifique periódicamente que no haya piezas gastadas o dañadas. Repárelas o cámbielas inmediatamente.
- Mantenga los sistemas hidráulicos, neumáticos y eléctricos en buen funcionamiento en todo momento. Repare las fugas y las conexiones sueltas inmediatamente. No exceda nunca la presión ni potencia eléctrica recomendadas.

- Verifique que todos los dispositivos de seguridad estén en buen funcionamiento al comienzo de cada turno. Todos los dispositivos protectores y de seguridad deben estar en su lugar antes y durante el uso de la máquina. No desconecte ni evite nunca ningún dispositivo de seguridad ni interbloqueo eléctrico.
- Inspeccione periódicamente la calidad del producto terminado.

Seguridad eléctrica

- No utilice líquidos en el interior de los gabinetes eléctricos.
- Cuando utilice disolventes sobre o alrededor de la máquina, desconecte la alimentación para eliminar las probabilidades de chispas, que pueden producir una explosión o incendio. Use un respirador aprobado para el uso con disolventes. Use ropa protectora, guantes y anteojos de seguridad.

Lockout/Tagout

Pautas de bloqueo/etiquetado

Deben cumplir con todas las pautas de bloqueo/etiquetado conforme a la norma OSHA 29 CFR 1910.147. El programa de control de energía de la compañía debe incluir un procedimiento específico. El objetivo de este manual no es reemplazar el procedimiento de desenergización o bloqueo/etiquetado requerido por la OSHA, sino proporcionar pautas orientativas generales.

El término "bloqueo", según se utiliza en este manual, se refiere a la colocación de un dispositivo de bloqueo en las fuentes de energía para asegurar que el dispositivo aislador de energía y el equipo controlado por éste no puedan reenergizarse o utilizarse hasta que se retire dicho dispositivo. Las fotos de la página siguiente muestran los lugares en los que se encuentran los interruptores de desconexión eléctrica de esta máquina.

- Las fuentes de energía incluyen energía eléctrica, mecánica, hidráulica, neumática, química, térmica y otras.
- En el caso de fuentes de energía eléctrica, la alimentación principal y la alimentación de control a la maquinaria deben apagarse y bloquearse físicamente en la posición "off" (apagado).
- Por lo general, como dispositivo de bloqueo se utiliza un candado con llave.
- Si hay más de una persona trabajando en una zona restringida, utilice un dispositivo de bloqueo grupal que permita a cada persona utilizar un candado que sólo pueda ser retirado por la persona que realiza el mantenimiento.

"Etiquetado" significa que debe colocarse una advertencia fácil de ver en un dispositivo aislador de energía que indique que el equipo no debe utilizarse.

Procedimientos de bloqueo/etiquetado eléctricos

Cuando trabaja en una máquina fuera del gabinete eléctrico principal de la máquina

Si trabaja en la línea de transmisión eléctrica a la máquina, siga el procedimiento de la página xxiii.

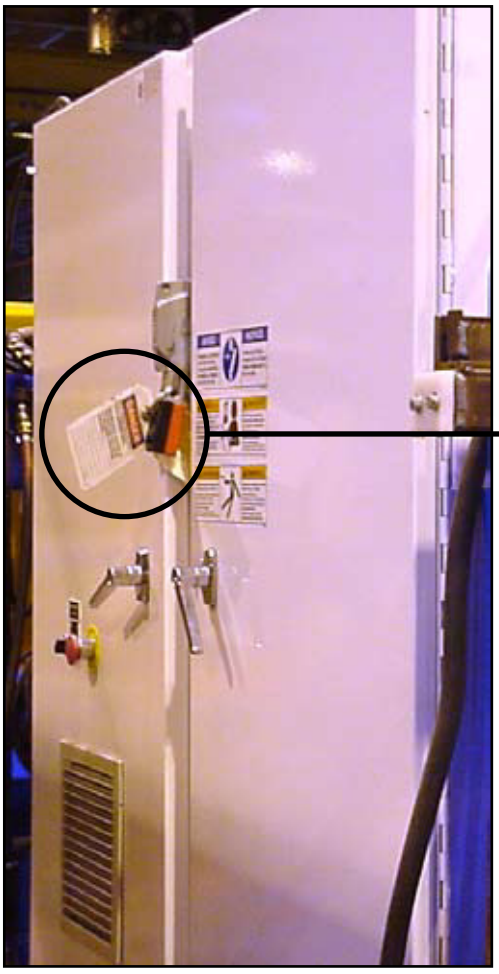
Antes de realizar el mantenimiento de cualquier máquina con alimentación eléctrica, bloquee y etiquete la máquina de forma adecuada. Cuando trabaje en una máquina fuera del gabinete eléctrico principal de la máquina, salvo en el caso de trabajos en la línea de transmisión eléctrica a la máquina, siga los procedimientos de bloqueo/etiquetado aprobados por la compañía, los cuales deberían incluir, entre otros, los pasos aquí indicados.

1. Coloque un freno de emergencia sobre la máquina.
2. Coloque el mango del interruptor con fusibles en la posición "apagado/apagada". Vea la figura 2-1.

	ADVERTENCIA
	RIESGO DE ELECTROCUCIÓN. **Cuando el interruptor con fusibles está apagado, sigue habiendo energía dentro del gabinete del interruptor. ¡Apague siempre la alimentación en la fuente de alimentación del edificio antes de abrir este gabinete eléctrico!**

3. Coloque un candado y una etiqueta que cumplan con los requisitos de bloqueo/etiquetado de la OSHA.
4. Trabe o desenergice todos los componente neumáticos, componentes hidráulicos y otras piezas que tengan alimentación directa o almacenada.

Figura V-1: Bloqueo/etiquetado en el gabinete eléctrico principall



Ejemplo de un candado y etiqueta fijados al gabinete eléctrico de una máquina

Cuando trabaje en una máquina dentro del gabinete eléctrico principal de la máquina o en la línea de transmisión eléctrica a la máquina

Antes de abrir el gabinete eléctrico principal o intentar reparar o reemplazar una línea de transmisión eléctrica a la máquina, bloquee y etiqueta la máquina en forma adecuada. Siga los procedimientos de bloqueo/etiquetado aprobados por la compañía, los cuales deberían incluir, entre otros, los pasos aquí indicados.

1. Coloque un freno de emergencia sobre la máquina.

2. Apague la alimentación a la máquina en la fuente de alimentación, que, por lo general, es un panel de entrada de suministro eléctrico que se encuentra en una pared de las instalaciones. En la figura 2-2 se muestra un ejemplo de panel de fuente de alimentación bloqueado.

3. Coloque un candado y una etiqueta que cumplan con los requisitos de bloqueo/etiquetado de la OSHA.

4. Abra la puerta del gabinete al que necesita acceder y usando un multímetro verifique que la alimentación esté apagada.

Figura V-2: Bloqueo/Etiquetado del panel de fuente de alimentación

Procedimiento de bloqueo/etiquetado de sistema hidráulico

Cuando no se requiere bloqueo/etiquetado

Si trabaja con componentes que no son del sistema hidráulico pero que requieren su presencia en la proximidad de componentes hidráulicos móviles, debe, como mínimo, trabar físicamente estos componentes para que no se muevan. Si no es posible, bloquee/etiquete todo el sistema hidráulico.

Cuando se requiere bloqueo/etiquetado

Antes de intentar reparar o realizar el mantenimiento de una línea o componente hidráulico, bloquee y etiquete la máquina en forma apropiada. Siga los procedimientos de bloqueo/etiquetado aprobados por la compañía.

Procedimiento de bloqueo/etiquetado del sistema neumático

Cuando no se requiere bloqueo/etiquetado

Si trabaja con componentes que no son del sistema neumático pero que requieren su presencia en la proximidad de componentes neumáticos móviles, debe, como mínimo, trabar físicamente estos componentes para que no se muevan. Si no es posible, bloquee/etiquete todo el sistema neumático.

Cuando se requiere bloqueo/etiquetado

Antes de intentar reparar o realizar el mantenimiento de una línea o componente neumático, bloquee/etiquete la máquina en forma apropiada. Siga los procedimientos de bloqueo/etiquetado aprobados por la compañía.

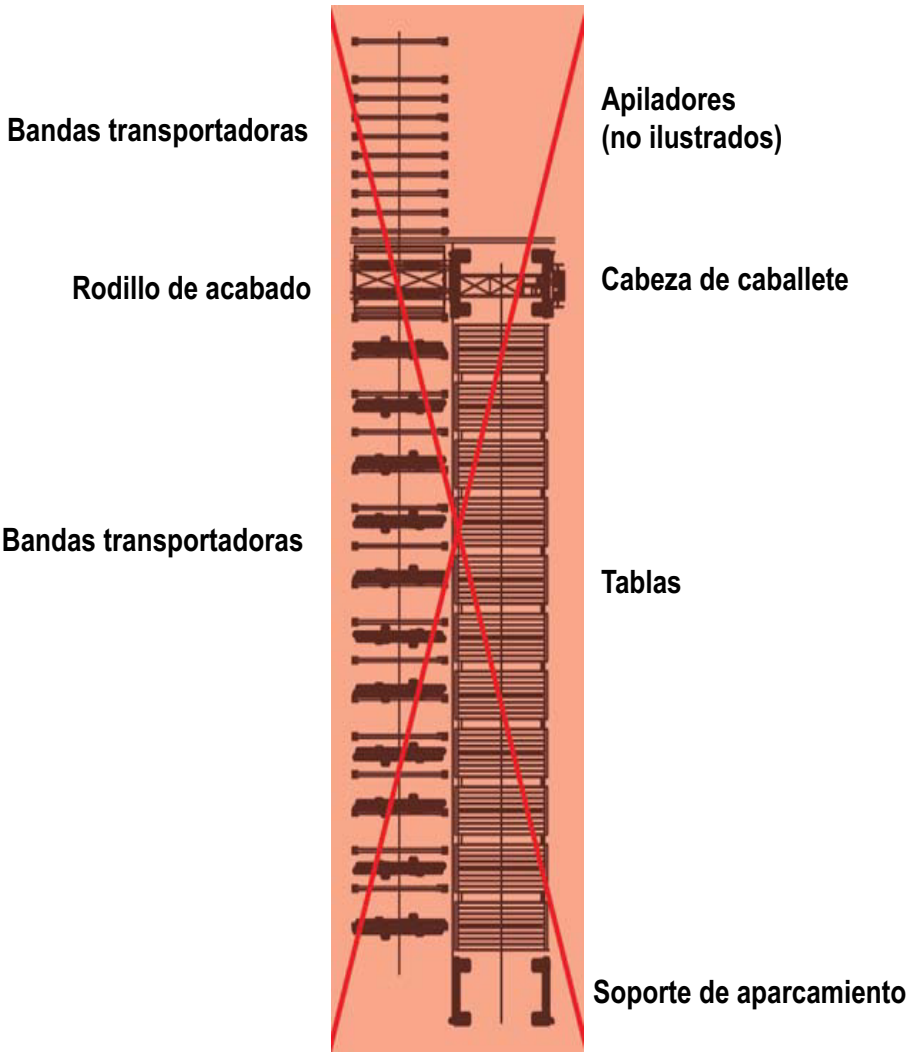
Solución de problemas con una máquina energizada

Sólo un electricista calificado que utilice el equipo de protección personal y siga los procedimientos recomendados en la norma NFPA 70E debe intentar realizar tareas de reparación o mantenimiento en un área o componente energizados de la máquina o en su proximidad.

Cada vez que se realizan tareas de mantenimiento mientras el equipo está eléctricamente energizado, existe un riesgo potencial de formación de un arco eléctrico. Consulte en la norma NFPA 70E el equipo de protección personal requerido para trabajar con componentes eléctricamente energizados. Los componentes neumáticos e hidráulicos pueden moverse de manera imprevista si no se desenergizan. Trabe físicamente cualquier componente que pueda moverse cuando deba trabajar en ellos o en su proximidad.

Zonas restringida

	PELIGRO
	Manténgase alejado de la zona restringida cuando el equipo esté en uso. Pueden producirse lesiones graves o incluso la muerte si el personal está en la zona restringida



General Information

Chapter 1

Purpose of Chapter

This chapter introduces you to this manual and provides an overview of your equipment and the means to identify it.

	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, personal injury and/or death.** **This manual must always be available to personnel operating and maintaining this equipment.**

Introduction to This Manual

Purpose of This Manual

This manual provides the information necessary to operate and maintain the *RoofGlider*® system, which includes the gantry head, parking stands and tables.

In order for this manual to be useful, it must be kept with the machine so the operators and maintenance personnel have easy access to it. You can order the most recent revision of this manual by referring to the part number 001046. If you require a previous revision, talk to a Customer Service Technician.

Most questions that will arise about maintenance, troubleshooting, and part numbers are answered in this manual. If you cannot locate the answer or solution, contact the MiTek Machinery Division Customer Service Department using the contact information in Figure 1-1.

Figure 1-1: Contacting MiTek

MiTek Machinery Division
Customer Service Department
301 Fountain Lakes Industrial Drive
St. Charles, MO 63301

Parts Orders (with part number)
E-mail: mitekparts@mii.com

Technical Assistance
Phone: 800-523-3380
Fax: 636-328-9218
machinerysupport@mii.com

Web Site
www.mitek-us.com

Using This Manual

Review the Table of Contents to understand the organization and content of the chapters and appendices. The glossary and index are also valuable tools that will help you get the most out of your equipment.

To follow the procedures in this manual, you must first understand the formatting cues used. Table 1-1 describes how to read the cues provided in this text.

Table 1-1: How to Read the Formatting Cues

If Text Looks Like...	It Indicates...	Example in Text
All caps	Key on keyboard or button on touch screen	Press ENTER
Initial cap and italic	Menu or field or virtual button that you must find or select	Click on the *File* menu
Initial cap only, no italics	Menu or field or virtual button when simply referring to it	While in the Main Menu
Plus sign (+)	Hold buttons at the same time	CTRL+ALT+DELETE
Greater Than sign (>)	Next selection	*File>Open*

Introduction to This Equipment

Purpose of the Equipment

The primary function of the *RoofGlider* system is designed for the fast, accurate, and economical production of metal plate constructed wood trusses.

Overview of the Equipment

The *RoofGlider* system fabricates wood trusses with a two-stage connector plate embedment process. In the first stage, a traveling gantry head performs the initial plate embedment by partially seating the connector plates into the wood fiber. In the second stage, a finish roller completes the plate embedment process.

The traveling gantry head of the *RoofGlider* system includes a 24-inch diameter roller and is equipped with manual controls. The gantry head is supported on eight drive wheels that roll along steel tubes mounted on the jig tables.

The eight-wheel drive system provided enables the *RoofGlider* head to smoothly travel from one truss table to the next is a series of special aligned truss tables.

The electrification system consists of either a "festoon-type" electrical cord or a bussbar. The electrical cord is supported by wire rope stretched twelve (12) ft above the floor with suitable masts, rollers, turnbuckles, etc. The bussbar is supported by brackets hanging from the ceiling (12 ft above the floor). The bussbar hanger brackets are to be supplied by the customer.

Specifications

Table 1-2: Specifications for the *RoofGlider*® System

General	
Speed (press capacity)	0-200' per minute
Direction	Left/right
Height adjustment	0"-6"
Roller diameter	24" nominal (outside)
Roller wall thickness	3/4" nominal
Baffles per roller	Four (completely welded
Throat opening	14' 1-1/2" wide
Shaft diameter	4" outside diameter
Bearing size	3-7/16" heavy duty
Weight	11,600 lb
Gearbox - Sumitomo Series 4165	
Ratio	35:1
Rpm input	1,750
Rpm output	50
Hp maximum	10
Frame	4165
Motor - Electric	
Horsepower rating	10 hp
Motor speed	1750 rpm
Starting switch	Joystick - Control box
Voltage	208/230/460 VAC
Amperage	32.0/28.0/14.0 amps
Cycles	60
Phase	3
Frame	F-132M
Brake	Electrical magnetic disk (industrial)
Controls	Variable frequency drive
Wheels	8 drive wheels, 8 pressure wheels
Chain Drive	#100 and #80

Note: Standard motors are furnished unless otherwise specified by customer. Non-standard motors are subject to additional cost.

NOTICE

The customer is responsible for supplying disconnects.

Prior to Installation

Chapter 2

Purpose of Chapter

This chapter covers what you must consider or complete before this equipment can be installed.

MiTek's Responsibilities

MiTek will provide the following items and information prior to the installation date:

A Prior to Installation package that:

- Outlines this chapter and requests your signature of agreement.
- Gives dates to expect shipment, delivery, and installation.
- Explains the number of people required to help with installation.
- Provides guidelines on providing an electrician, welder, and other specialists.
- Describes payment information.

Customer's Responsibilities

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 these items. Each topic listed in the table is explained in detail in the text following the table.

If these requirements are not satisfied before the scheduled installation date, it may be necessary to reschedule the installation. Any additional cost may be the customer's responsibility.

Table 2-1: Summary of the Customer's Responsibility

Space Requirements	This equipment requires enough space to allow for the machine dimensions listed in Table 2-2, plus additional working space for operation and maintenance. Space should have adequate lighting.
Location Requirements	Concrete, a minimum of 6 in. thick 5000 psi, is required under the weight of the press head, tables, and stand-alone conveyors. The gantry head, ejectors, receivers, 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. The stand-alone conveyors are designed to be used outdoors, but their electrical enclosures are not.
Electrical Requirements	The standard electrical requirements are shown in Table 2-3. Contact your MiTek representative immediately if custom power specifications need to be arranged.
Pneumatic Requirements (Compressed Air)	See Table 2-4.
Shipping Weights	See Table 2-5.
Customer-Supplied Items Required	The customer is responsible for having the supplies listed in Table 2-6 available at the time of installation.

Space Requirements

Refer to these guidelines when planning your space allocation. MiTek can provide help with plant layout and space utilization upon request.

Space for the Equipment

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

Table 2-2: Approximate Equipment Dimensions

System	Physical Space Requirement	Length
Side Eject system	36' wide x length of system	Varies per installation
End Eject system	19' wide x length of system	Varies per installation

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 or “sidewalks” must be provided for the installation of the *RoofGlider* system. For anchoring purposes, this slab should be made out of 3,000 psi concrete (minimum). It is recommended that the slab be designed and installed in accordance with local building code requirements and, if required, under the supervision of a local professional engineer.

Concrete should be a minimum of 6 in. thick under the gantry head, tables, stand-alone conveyors, and Finish Roller. Five thousand (5,000) psi concrete is recommended. Refer to your layout drawing.

Environment

The press head, Ejectors, Receivers, and tables must be used in dry conditions under a roofed area according to Type 1 electrical enclosure requirements.

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

Horsepower	10 hp
Voltage	208/230/460 VAC
FLA Plus Control Amperage	32.0/28.0/14.0 amps
Cycles (Frequency)	60 Hz
Phases	3

Temporary and permanent electrical power service lines must be provided by the customer. A 110 Volt, 20 amp temporary power service line should be run lengthwise to the mid-point of one side of the gantry system. It should have a fused disconnect switch and three (3) grounded plug-in outlets for power tool connections. The permanent power

service will be either the bus bar or SO cable assembly. Please see the corresponding manual for additional information

	WARNING
	**ELECTROCUTION HAZARD.** **Always turn the power off by activating an E-stop when the equipment is not in operation.** **Always verify that all power to the machine has been turned off and follow approved lockout/tagout procedures (OSHA 29 CFR 1910.147) before performing any maintenance on this equipment.**

Run a 32 amp minimum power supply through a fused service disconnect switch to within hookup distance of the *RoofGlider* connections.

The customer should pre-check voltage supply options available in the locality and notify MiTek of the type of power available so that, if necessary, revisions to motors, etc. may be made before shipment.

The machine should be installed in a well-lighted area for proper operation, periodic maintenance, and safety.

The *RoofGlider* is pre-wired, and all wires terminate at an electrical enclosure on the machine.

A disconnect for the *RoofGlider* control panel is included. The disconnect and fuse size is dependent on the voltage and will vary from system to system. The amps drawn by the components determines the proper disconnect size. Your local electrician will need to verify the amp requirement and disconnect size. Components are rated for 230 and 460 V as standard and 208 V as optional. The *RoofGlider* components and panels will be supplied to match each situation.

NOTICE
Due to electrical code differences throughout the country, the customer must supply the conduit, wiring, and related materials to make the final connections between the building power supply and the bus bar/SO cable and the machine.

Mechanical Requirements

The *RoofGlider* will be supplied complete with all mechanical components. The *RoofGlider* is an independent stand-alone unit that is set in place on the jig tables.

Pneumatic System Requirements

This equipment uses compressed air, also referred to as pneumatic power. The air source must be supplied and installed prior to the scheduled installation date of the MiTek equipment. Table 2-4 describes the pneumatic system requirements.

Table 2-4: Pneumatic System Specifications

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; discuss location of air regulator with your *MiTek* representative before installation	100 psi	0.14 scfm per table

Shipping Information

When the equipment arrives, you must have the proper transport and lifting equipment available to remove it from the truck and place it in your facility. Table 2-5 lists the weight of the individual components of a typical system.

	WARNING
	**CRUSH HAZARD.** **Failure to lift the equipment in the prescribed manner may cause serious injury, including death, or equipment damage.** **Personnel not involved in the off-loading from the truck shall remain clear of the area.** **Transport and lifting equipment such as forklifts and cranes must be designed and rated for the load and application. The weight of each major component is given in Table 2-5.**

Table 2-5: Shipping Information

Contents of Shipment	Approximate Weight
RoofGlider gantry head	11,600 lb
Tables	5,500 lb each
Stand-Alone Conveyors	185 lb each (assembled)
Finish Roller	14,000 lb

Customer-Supplied Parts

The customer must supply the parts shown in Table 2-6. Some must be installed before installation occurs and some must be available for use at the time of installation.

Table 2-6: Customer-Supplied Parts

Compressed Air	Min. 1” 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” 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 Electrical requirements for the stand-alone conveyors include hard conduit, junction boxes, flex conduit, and 1/2” connectors	
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	
General Tools	Tape measures (2) Soft tape measures (2) (longer than total length of tables) Adhesive tape Thin rope, longer than the total length of tables Pliers to cut skid bands Chalk line Hammers (2) Sledge/mallet for concrete anchors	Pry bars, 6’, wedge on one end (2) Sockets: 3/4”, 9/16” Long hex head wrench 1-1/2” Short hex head wrench 1-1/2” Allen wrenches: 1/8”, 5/32” 1/2” masonry drill bit C-clamps (2) #21 drill bit (.159") for steel

Training Provided

In the case where MiTek is overseeing the installation of your equipment, the MiTek representative will ensure that your operators and maintenance personnel understand how to operate and maintain this equipment. They will explain warranty information and ensure that the Operation and Maintenance Manual is present.

Purpose of Chapter

This chapter describes the entire installation process in detail. The instructions assume that the prior-to-installation requirements are satisfied.

Responsibilities During Installation

MiTek will provide installation supervision to ensure that the system is installed properly and operates correctly. MiTek will also provide operating and maintenance training at the time the equipment is installed. The customer is responsible for providing all labor and equipment needed to complete the installation. These requirements are explained in the *Prior to Installation* chapter.

All customer responsibilities before and during installation are described in the *Prior to Installation* chapter!

Delivery

Unloading and Unpacking

Even if a MiTek representative is present, it is the customer's responsibility to provide equipment and labor for unloading, uncrating, placement, and wiring of the *RoofGlider*. Exercise extreme caution to avoid damage or misalignment during unloading. Do not apply pressure on any moving parts or fittings. Weight should be supported on the bottom of the gantry frame (**not the roller**); shim between the 10 x 2 tube frame and the forklift when lifting the machine. An 8-ton forklift will be required to move the gantry.

NOTICE
Do not drop or drag/push the machine across the floor. Set the machine on wooden blocks, not on the floor.

	WARNING
	**CRUSH HAZARD.** **Failure to lift the equipment in the prescribed manner may cause serious injury, including death, or equipment damage.** **Personnel not involved in the off-loading from the truck shall remain clear of the area.** **Transport and lifting equipment such as forklifts and cranes must be designed and rated for the load and application.**

After successful unloading, remove the protective crating material from the pallets. Detach and set aside all loose parts. Move the equipment to the desired location using a forklift or crane appropriate to the weight of each unit. Lift the equipment to remove the pallet, and gently place each unit in its new location.

Assembly & Transportation

Assembling the Components

Assembly and installation of the complete *RoofGlider* system can be supervised by a MiTek representative. They can supervise layout, dimensioning, aligning, leveling, connecting, assembling, and complete installation of the equipment. They can make pre-operational checks and final adjustments as needed, and instruct personnel in the proper operation and maintenance of the equipment.

MiTek recognizes that the installation can be disruptive to the production schedule. For this reason, we request the most efficient people to assist with the installation. These people can complete their work quickly, efficiently, and with a high degree of quality. The end result is a system that will operate at maximum efficiency.

1. Move the *RoofGlider* in place using a forklift and supporting the machine by the frame (**not the roller**); shim between the 10 x 2 tube frame and the forklift. The machine is heavier on the end with the drive and the forklift operator must position the forklift to compensate for the offset load. Two forklifts, one at each end of the machine, can be used if a single lift is not large enough.

	WARNING
	**CRUSH HAZARD.** **Do not drop the roller gantry, and do not lift the machine by the roller.** **Failure to lift the machine with caution and in the prescribed manner may result in serious injury and damage to the equipment.**

2. Place the *RoofGlider* on the jig table tubes, centering the drive wheels.
3. The jig tables must be placed 20 in. or less apart.
4. Wire the *RoofGlider* into the building's power system. A licensed electrician must make the connections between the machine and the Bussbar/SO Cable and the building.
5. Adjust the Roller to the desired height for satisfactory plate embedment. Standard embedment is 75% on top and 50% on the bottom.

CAUTION

Exceeding the embedment specifications described in the previous steps may result in premature motor wear, overload damage, roller bearing damage and/or roller shaft damage.

Transporting With a Forklift

One heavy-duty forklift of not less than an 8-ton capacity is required. An operator will be required for unloading and moving the *RoofGlider* to the installation site.

If there are any questions, please contact your MiTek Customer Service Representative.

Electrical System

	WARNING
	**ELECTRICAL HAZARD!** **All electrical work must be performed by a qualified electrician.** **Follow approved lockout/tagout procedures (OSHA 29 CFR 1910.147).**

Checking Existing Wiring

Heavy gauge wire can work loose during shipping and handling. Before power is connected to the machine, conduct a pull test on all pre-wired connections inside the electrical enclosures.

Connecting Power to the Equipment

All electrical work is the customer's responsibility and must be performed by a qualified electrician. The machine design addresses electrical components starting with the disconnect enclosure. Installation and maintenance of all electrical requirements up to the disconnect enclosure are the responsibility of the customer. Your MiTek representative can provide guidance regarding when the electrical will need to be available during the installation.

	WARNING
	**ELECTROCUTION, HIGH PRESSURE, CRUSH, CUT, AND CHEMICAL HAZARDS!** **Do not attempt to start the system without a MiTek representative present!** **Serious injury and/or equipment damage may result.**

Purpose of Chapter

This chapter describes the procedures required before operating your equipment.

Checking Motor Rotation

Check the motor rotation of all motors to ensure they are rotating in the same direction as the arrow on their housing. Refer to the electrical schematic to remedy a motor rotating in the wrong direction.

Installing Restricted Zone Tape

It is recommended that restricted zone tape be installed around the machinery before operation. See the following procedure for information on installing restricted zone tape.

Cleaning the Floor

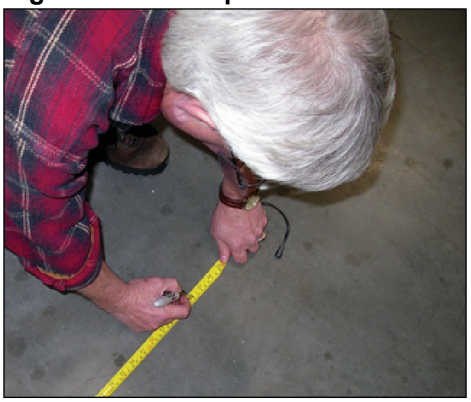
Before installing the restricted zone tape, you must clean the floor thoroughly to ensure the adhesive properly sticks to the floor.

1. Sweep the floor around the machine where the tape will be applied. Refer to the layouts included in the Drawing Set for tape locations.
2. Mop the floor where the tape will be applied.
3. Wait for the floor to dry completely before continuing the procedure.

Marking Tape Location

1. Beginning at a corner of the machine on one end, measure directly outward three (3) ft.
   - If marking around a stacker, measure outward 3 ft from the back of the stacker arms if the stacker arms are down, or 18 ft with them up. Measure outward to each side 3 ft beyond the end of the longest truss you intend to build.
   - If marking around a gantry, run the gantry to one end of the line and mark outward 3 ft from the gantry platform.
   - If marking around a piece of equipment that does not have a layout included at the end of this procedure, mark outward 3 ft from the machine.
2. Make a mark on the floor at the proper location. Refer to the layouts included at the end of this procedure for tape locations. See Figure 1.

Figure 1: Mark Tape Location



3. Measure directly outward three (3) ft from the other end corner.
   - If marking around a stacker, measure outward 3 ft from the back of the stacker arms if the stacker arms are down, or 18 ft with them up. Measure outward to each side 3 ft beyond the end of the longest truss you intend to build.
   - If marking around a gantry, run the gantry to one end of the line and mark outward 3 ft from the gantry platform.
   - If marking around a piece of equipment that does not have a layout included in the Drawing Set, mark outward 3 ft from the machine.
4. Make a mark on the floor at the proper location. Refer to the layouts included at the Drawing Set for tape locations.
5. Using a chalk line, make a line on the floor that connects the marks made in steps 2 and 4.
6. Repeat this procedure until a chalk line has been made all the way around the machine.

Placing the Tape

The person pressing the tape to the floor may want to wear gloves.

1. Peel the backing off of the end of the tape.
2. Place the end of the tape with the wording facing out at an outside corner of the chalk line.
3. Press the tape firmly onto the floor. See Figure 2. Ensure all bubbles and wrinkles are out to get the best adhesive retention.

Figure 2: Placing the Tape

4. Continue to remove the backing, unroll the tape and press it firmly onto the floor until the entire perimeter has been marked with tape.
5. Remove the lockout/tagout devices and restart the machine.

Train all employees who work in the facility to stay outside the tape when the machine is operating.

Purpose of Chapter

This chapter describes the operating mechanisms on this equipment and the procedure to operate it in most circumstances.

Things to Know Before You Begin

	DANGER
	**READ THIS MANUAL COMPLETELY BEFORE OPERATING 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, personal injury and/or death.** **This manual must always be available to personnel operating and maintaining this equipment.**

Do not allow the gantry head to sit in one place for a long period of time after installing it on the table and parking stand assembly. This may cause flat spots to form on the polyurethane wheels.

Move the gantry head at least every three (3) days to prolong the life of the wheels.

Safety Hazards During Operation

	WARNING
	ELECTROCUTION, CRUSH, AND CUT HAZARDS! Read this section AND the safety section in the preliminary pages before operating or maintaining this equipment. Do not operate this machine until you have a thorough understanding of all controls, safety devices, E-stops, and operating procedures outlined in this manual. Read and observe all warnings. 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.

	WARNING
	ELECTRICAL HAZARD! All electrical work must be performed by a qualified electrician. Follow approved lockout/tagout procedures (OSHA 29 CFR 1910.147).

	WARNING
	CRUSH AND CUT HAZARD. Guards must always be in place during operation to avoid serious injury and possibly death. Always replace guards after maintenance is complete and before removing the lockout/tagout device.

	WARNING
	CRUSH AND CUT HAZARD. Before turning on the equipment, make sure that all personnel and equipment are clear. Never stand in an aisle while the machine is in operation.

Stopping the Machine

Emergency Stop (E-Stop) Pushbuttons

A typical E-stop pushbutton is shown in Figure 5-1. Note the E-stop button locations before operating this equipment:

Push one of the red emergency stop (E-stop) buttons to cease power transmitting to the control circuit. To release the E-stop, twist and release OR pull straight up on the pushbutton. It will return to its extended position and the machine will operate again.

Figure 5-1: E-Stop Pushbutton

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.

When the disconnect switch is OFF, there is still live power up to the disconnect switch's enclosure. Always turn off power at the main power source before opening this enclosure!

Operator Control Interface

The control interface is pictured in Figure 5-3 and described in Table 5-2.

Figure 5-2: Overview of Control Mechanisms

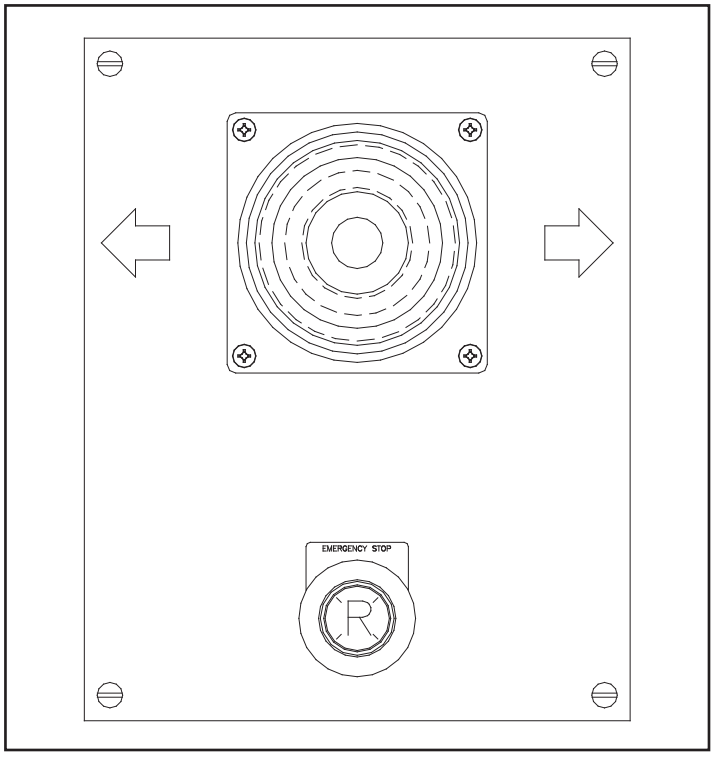


Table 5-1: Functions of Control Mechanisms

Mechanism	Function
Joystick	Controls the directional motion of the gantry head
Emergency stop button	Stops all motion of the machine

Operating Procedure

Move the gantry head at least every three (3) days to prolong the life of the wheels. Sitting in one place may cause flat spots to form on the polyurethane wheels.

Procedure Under Normal Conditions

1. Inspect the area around the *RoofGlider* before turning it on.
2. Turn the disconnect handle to the ON (vertical) position.
3. Check the location of both E-stop push bars. They should be in the extended position, making contact with the E-stop limit switches. If they are not, research the cause and correct it before extending the push bars.
4. Push and hold the button on top of the joy stick while you move and hold the joy stick in the direction you wish to run the *RoofGlider*.

The button on top of the joystick sends a signal to the Variable Frequency Drive to start running. Movement of the joystick controls the speed and direction of travel of the roller gantry.

5. Release the joy stick to stop the *RoofGlider*.

NOTICE

Press the E-stop pushbutton or either push bar to stop the *RoofGlider* in an emergency situation.

NOTICE

Standard operating procedure is to move and hold the joy stick one time per truss. Unnecessarily starting and stopping the gantry places extra wear and tear on the machine and its components and should be avoided.

NOTICE
When an E-stop is pressed, it will stop all motion by removing all control power to the VFD and motor starter. This is accomplished by interrupting the 120 VAC control power line.

Safety

The *RoofGlider* is equipped with pushbars and emergency stop (E-stop) controls. The operator must become familiar with the location and operation of these devices by inspecting the machine and testing each function. (Do not turn the machine on and off without allowing the machine to run at least a few seconds to prevent excessive wear on the motor.) Move and hold the joy stick, wait ten seconds and release the joy stick. The machine will stop immediately. Move and hold the joy sticks again, wait ten seconds and press the E-stop pushbutton. The machine will stop immediately. Move and hold the joy stick again, wait ten seconds and push one of the E-stop push bars upwards against the machine. The machine will stop immediately. Repeat the last step with the other E-stop push bar. Each of the E-stop devices will turn the machine off immediately.

	WARNING
	**CRUSH AND CUT HAZARD.** **Guards must always be in place during operation to avoid serious injury and possibly death.** **Always replace guards after maintenance is complete and before removing the lockout/tagout device.**

	WARNING
	**LABELS MUST BE LEGIBLE AT ALL TIMES.** **Never remove or paint over safety labels. If labels become deteriorated or damaged, replace immediately.**

Purpose of Chapter

This chapter provides step-by-step instructions as well as information to help you understand how your equipment works to enable you to make repairs and perform preventive maintenance.

Introduction to Maintaining Your Equipment

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.

	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.**

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 (see Table 6-3). The information is also in the *Maintenance Checklist* appendix.

CAUTION

Never mix synthetic lubricants with mineral lubricants!

The following are recommended lubricants for the speed reducer gear box.

Table 6-1: Recommended Lubricants

Manufacturer	Lubricant	Lubricant	Lubricant	Lubricant
Mobil Oil Co.	Mobilgear 626	Mobilgear 627	Mobilgear 629	Mobilgear 630
Shell Oil Co.	Omala Oil 68	Omala Oil 100	Omala Oil 150	Omala Oil 220
Texaco, Inc.	Regal RO-68	Regal RO-100	Regal RO-150	Regal RO-220
Ambient Temperature	14° to 32°F	32° to 95°F		95° to 122°F
AGMA Viscosity Grade	2 EP	3 EP	4 EP	5 EP
Viscosity @ 100°F (38°C) SSU	284-347	417-510	626-765	916-1122
Viscosity @ 40°C (104°F) cST	61.2-74.8	90-110	135-165	198-242
Approx. SAE Oil Grade	20W	30	40	50

Electric Motor

	WARNING
	**ELECTROCUTION HAZARD!** **Verify that all power to the machine has been turned off and follow approved lockout/tagout safety procedures (OSHA 29 CFR 1910.147) before performing any maintenance.** **All electrical work must performed by a qualified electrician.** **If it is absolutely necessary to troubleshoot an energized machine, follow NFPA 70E for proper procedures and personal protective equipment.**

Periodically inspect your electric motor for excessive dirt, friction, or vibration. Dust may be blown from inaccessible locations using compressed air. Keep the ventilator openings clear to allow free flow of air

	WARNING
	**AIRBORNE PARTICLES, CHEMICALS, AND LOUD NOISE HAZARD.** **Wear ear and eye protection for all cleaning activities.** **When using cleaning and lubrication solutions, use a properly rated respirator, gloves, and other required personal protective equipment.**

	CAUTION
	**PERSONAL INJURY HAZARD.** **The 10 hp motor weighs approximately 132 lb.** **Use caution when lifting or moving the motor to prevent personal injury.**

Replacing the Motor

Removing the Motor

1. Turn off and lock out main source of electricity to the *RoofGlider*.
2. Remove the drive guard.
3. Disconnect the electric wires from motor to brake and motor to control panel.

4. Remove the drive chain and drive sprocket.

5. Remove the four nuts, four lock washers, eight washers, and four bolts from the motor and mount.

	CAUTION
	**PERSONAL INJURY HAZARD.** **The 10 hp motor weighs approximately 132 lb.** **Use caution when lifting or moving the motor to prevent personal injury.**

6. Remove the motor from the mounting plate.

Installing the Motor

1. Install the drive sprocket on the new motor and position the motor on the mounting plate.

2. Install the four nuts, four lock washers, eight washers, and four bolts to the motor and mount.

3. Carefully align the drive sprockets and tighten the QD bushing.

4. Connect the wires to the motor and brake.

5. After checking that the key is secure, operate the motor free of load and check the direction of rotation. If the motor rotates in the wrong direction, interchange any two line leads.

6. Replace the drive chain.

7. Replace the guard.

8. Operate for a minimum of one hour. During this period, check for any unusual noise and thermal conditions. Check the actual operating current to be sure that the nameplate current times service factor is not exceeded for steady continuous loads.

Brake

Inspecting the Brake

1. Inspect the brake disc every 3,000 cycles or six months, whichever comes first.
2. Inspect the disc for general condition and signs of unusual wear. Remove any build-up of wear particles.
3. Inspect the bolts, hub set screws, etc., for tightness.

NOTICE

Brake failure may be caused by improper application, voltage fluctuations, and/or lack of maintenance.

CAUTION

Do not energize brake with armature assembly removed. Do not energize brake with cover assembly removed. Damage will result to wound stator, voiding warranty.

4. The air gap must not exceed .050". Use feeler gage between stationary core and armature plate.

Adjusting the Air Gap

1. Remove the fan cover.
2. Remove the dust proof seal.
3. Remove the plug located on top of the motor housing in front of the solenoid coil.
4. Install an M8 by 30mm long brake adjusting bolt.
5. Turn the brake adjusting bolt clockwise until the brake is completely released.
6. Tighten the restraining nut until the lining just about contacts the brake wheel.

7. Remove the brake adjusting bolt installed in step 4. The air gap should now measure .030" or less.

	WARNING
	**CRUSH HAZARD.** **Failure to remove the brake adjusting bolt will result in an inoperative brake on the gantry press, which could result in personal injury.**

8. Install the dust proof shield, cover, and plug.

Replacing the Magnetic Disc Brake Lining

Removing the Magnetic Disc Brake Lining

1. Turn off all electricity to the *RoofGlider*.
2. Disconnect the electric wires from the motor to brake and the motor to control panel.
3. Remove the four nuts, four lock washers, eight washers, and four bolts from the motor and mount.
4. Disconnect the motor and brake loads.

	CAUTION
	**PERSONAL INJURY HAZARD.** **The 10 hp motor weighs approximately 132 lb.** **Use caution when lifting or moving the motor to prevent personal injury.**

5. Remove the brake housing.
6. Remove the fan.
7. Remove brake shoe.
8. Remove the brake lining from the housing assembly.
9. Clean and inspect the disc for .475" thickness.

Installing the Magnetic Disc Brake Lining

1. Install the new brake lining.

2. Install the brake shoe.
3. Install the fan.
4. Install the brake housing.
5. Install the four nuts, four lock washers, eight washers, and four bolts to motor and mount.

Adjustments

Adjusting the Speed Reducer/Gearbox Chain

Check the #100 drive chain tension. Drive chain play should be 1/2 inch (1/4-inch movement to both sides of center).

Check the drive sprocket alignment; the sprockets should be in the same plane. If they are not, see *Adjusting/Aligning the Sprocket* on page 33.

If gearbox chain tension is required:

1. Loosen the reducer/gearbox mounting plate bolts (4).
2. Tighten the adjustment bolts (jack screws) on the reducer mounting plate to slide the entire drive assembly outwards until the drive chain play is 1/2 inch (1/4 movement to both sides of center). **It is critical to keep the drive centerline parallel with the roller centerline.**
3. Tighten the reducer/gearbox and the motor mounting plate bolts.

Adjusting the Drive Wheel Chain

Check the #80 drive wheel chain tension. Drive chain play should be 1/2 in (1/4 movement to both sides of center).

If drive wheel chain adjustment is required:

1. Remove the side and end guards from the Roller Gantry.
2. Loosen the mounting bolts on the idler sprocket.
3. Tighten the take up mechanism to slide the idler sprocket upwards to obtain drive chain play of less than 1/2 inch (1/4 movement to both sides of center).
4. Tighten the mounting bolts on the idler sprocket.
5. Check the drive wheel chain adjustment on the other end of the *RoofGlider*. Repeat steps 1 through 4 if required.

Adjusting/Aligning the Sprocket

- Drive wheel sprockets and #80 chain take-up sprocket:

  Both are pre-set at the factory and should not require adjusting. If something is wrong, please consult a Technical Representative in Customer Service at MiTek.

- #80 sprocket on the Roller:

  This sprocket must be in the same plane as the drive wheel sprockets. The sprocket is a special bored to size unit with a QD bushing holding it in place on the Roller shaft. Loosen the screws and move the sprocket as required. Use a straight edge (level, steel bar) to define the correct location.

- #100 sprocket on the Roller:

  This sprocket must be in the same plane as the drive sprocket on the gearbox. The location of these two sprockets is dependent on the #80 sprocket on the Roller. The #100 sprocket on the Roller will be very close to the #80 sprocket (they can touch hub to hub). Locate the #100 sprocket on the roller and tighten the set screws in the hub.

- #100 sprocket on the Reducer/Gearbox:

  Use a straight edge to align the two sprockets. If the QD bushing/drive sprocket (on the gearbox) requires moving:

Adjusting the QD Sprocket

1. Remove all cap screws.
2. Install cap screws into threaded jack holes.
3. Tighten all jack screws alternately and evenly, beginning with screw farthest from bushing saw slot, until bushing grip is released. Slide unit off shaft.

CAUTION

DO NOT OVERTIGHTEN SCREWS.

Excessive screw torque may cause damage to either bushing and/or product.

Uneven pressure on jack screws may also damage the bushing flange making removal difficult without damage to the product.

Installing the QD Sprocket

1. Clean shaft, product bore, bushing tapered surface and bushing bore of oil, paint dirt, etc.

CAUTION

DO NOT USE LUBRICANTS.

The use of lubricants can cause product breakage during installation.

2. QD bushing sizes JA through S (see Table 6-2) may be assembled in either conventional or reverse mounting.

CAUTION

When mounting a product on size M through S bushings, the hub jack holes should be positioned away from the bushing saw slot to reduce the possibility of bushing breakage. Insert the cap screws through the drilled holes in the hub.

Failure to mount the product correctly may result in equipment damage.

- *Conventional Mounting*: Place bushing in the hub. Tighten the cap screws finger tight into the threaded holes in the bushing flange.
- *Reverse Mounting*: Place the bushing in the hub and insert the cap screws through the drilled holes in the bushing flange. Tighten the cap screws finger tight into the threaded holes in the hub.

3. With the key on the shaft, slide the loosely assembled unit onto the shaft so that the cap screw heads are on the outside. Locate unit in the desired position on the shaft. When installing large or heavy parts in the conventional position, it may be easier to mount the key and bushing on the shaft first, and then place the sprocket on the bushing aligning the holes and installing the cap screws.

4. Tighten the cap screws alternately and evenly to the wrench torque specified in the Table 6-2.

When tightened there will be a 1/8" to 1/4" gap between bushing flange and the hub. Should this gap close then either undersize shafting or wrong bushing shaft size is indicated.

CAUTION

Excessive screw torque may cause damage to either bushing and/or product.

5. Tighten setscrew over key to torque value listed in Table 6-2.

Table 6-2: Recommended Torque Values

Bushing	Recommended Torque				Bushing	Recommended Torque			
	Cap Screws		K. S. Set Screw			Cap Screws		K. S. Set Screw	
	Size	lb-in	Size	lb-in		Size	lb-in	Size	lb-in
H	1/4-20x7/8	90	—	—	F	9/16-12x3-5/8	900	3/8-16	290
JA	#10-24x1	60	—	—	J	5/8-11x4-12	1620	1/2-13	620
SH	1/4-20x1-3/8	108	1/4-20	87	M	3/4-10x6 -3/4	2700	1/2-13	620
SDS	1/4-20x1-3/8	108	1/4-20	87	N	7/8-9x8	3600	5/8-11	1325
SD	1/4-20x1-7/8	108	1/4-20	87	P	1-8x9-1/2	5400	5/8-11	1325
SK	5/16-18x2	180	1/4-20	87	W	1-1/8-7x11	7200	3/4-10	2400
SF	3/8-16x2	360	3/8-16	290	S	1-1/4-7x 5	9000	1-8	7200
E	1/2-13x2-3/4	720	3/8-16	290	R	3/8-16x1-3/4	384	5/16-18	192

Adjusting the *RoofGlider* Roller Setting

Check roller setting with standard 2" 4c(1-1/2" thick) lumber and 1/16" shim. Shim should slide between bottom of roller and the 1-1/2" thickness of 2"x 4" at each end of the roller. If satisfactory plate embedment (75% into top and 50% into bottom of the truss) is not present, repeat with only the 2 x 4 lumber.

CAUTION

Exceeding the embedment specifications described in the *Adjusting the RoofGlider Roller Setting* section may result in premature motor wear, overload damage, roller bearing damage and/or roller shaft damage

If roller settings requires adjustment:

1. Loosen the 1-3/4" “lock” nut located below the hanger bracket by hand.
2. Loosen the top 1-3/4" nut 1 turn.
3. Tighten or loosen the 1-3/4" nut above the hanger bracket to set the roller height.
4. Obtain desired roller height/clearance (see step 5-a).
5. Hand tighten the 1-3/4" nut below the hanger bracket against the hanger bracket.
6. Tighten the top 1-3/4" nut against the adjusting nut.
7. Check roller setting adjustment on other side of *RoofGlider*. Repeat steps 1-6 if required.

RoofGlider Operational Check

	WARNING
	**ELECTROCUTION, CRUSH, AND CUT HAZARDS!** **Do not operate the *RoofGlider* press unless all guards are in place.** **Be sure all electrical box covers are in place.** **Periodically check the gantry stop push bars to be sure they are operating correctly.** **Observe that track and tables are clear of obstructions and persons before movement of the RoofGlider.**

1. Visually check the *RoofGlider* during operation to see how it runs on the tables. If it moves faster on one side of the table than the other, or moves sideways on tables, check the drive wheel chain tension adjustment on both sides of the machine for equal tightness.

Table 6-3: *RoofGlider* Lubrication Chart

Areas to Be Lubricated	Lubricant	Mfg.'s No. & Grade	Hours of Operation					
			8	16	40	200	500	1,000
Reducer/gearbox - Drain fluid and refill after first 150 hrs of service and every six months thereafter. Suggested times: spring and fall—time to change seasonal oil viscosity (light for winters, heavy for summer).	Use oil recommended by manufacturer of speed reducer/ gear-box					X		
Drive wheel bearing with zerk (16 each)	No. 2 lithium-based grease					X		
Roller bearing with zerk (2 each)	No. 2 lithium-based grease					X		
Chain		Chain Lube		X				

CAUTION
Do not start the machine without checking the oil level in the reducer/gearbox. **Injection of excess grease into sealed bearings may rupture seals.**

Movement of grease through bearings can be checked visually by the appearance of grease at the ends of the bearings. Old grease should be forced out with shot of new grease. When greasing bearing, wipe the fittings clean. More bearing failures are caused by dirt introduced during greasing than from insufficient grease.

Jigging

The jigging is designed for durability and accuracy with minimal maintenance. It is important, however, to promptly remove from service any damaged fixtures or components. Damage may occur if the jigging is hit with a heavy object, dropped on the floor, or from daily wear. If damaged components are not replaced immediately, they may cause damage to other threaded parts as well as inaccuracies in the trusses built with those components. The *Operation* chapter has detailed instructions on the components in a standard jigging kit and how to operate each component.

Repainting the Target Lines

Target lines (on jigging designed for laser-projection systems) should be repainted at regular intervals using a fine-point white paint pen available at most office supply stores.

Stocking Replacement Jigging

It is a good idea to stock extra jigging to ensure the jigging in operation is in optimum condition. See the *Replacement Parts* appendix. As part of your annual preventive maintenance, we recommend taking inventory of all jigging you are currently using or have in stock. Replace any damaged jigging at this time.

Checking the Jigging

All jigging hardware should be checked and inventoried monthly.

Tables

The tables should be checked annually to make sure they are level. If the tables are not level, make the appropriate adjustments.

Table slots and scale beds should be checked monthly.

Appendix A

Troubleshooting Information

The following Troubleshooting section may serve as a helpful guide in identifying, finding, and correcting operational malfunctions.

Table A-1: *RoofGlider* Troubleshooting Glide

Problem	Possible Cause	Possible Solution
No power to system—gantry does not operate	No power	Connect power to system
	Tripped circuit breaker(s), or blown fuse(s) in disconnect	Reset circuit breaker(s), or replace fuse(s)
	Control current fuse blown	Replace control current fuse
	Joy stick controls not working properly	Check joy stick control wiring to VFD
		Check VFD for faults to Reset
	Push bar limit switches not properly adjusted or damaged	Adjust or replace push bar limit switches
Machine jumps or violently reacts during starts and stops	Chains not properly adjusted or aligned	Adjust chain (proper chain adjustment is 1/4" movement to both sides of center)
Traveling gantry will not progress across truss	Roller set too low	Adjust roller in Gantry
Unsatisfactory plate embedment	Pressure wheels worn	Replace pressure wheels
	Roller height not properly adjusted	Adjust roller height
Reducer/gearbox overheating	Improper lubrication	Check oil level
	Insufficient oil	
	Too much oil causes churning—excessive heat generated by fluid friction of churning oil	Flush and refill to proper oil level with grade specified on reducer name plate
	Wrong grade of oil	
Noise and vibration in reducer/ gearbox	Loose mounting bolts	Check mounting bolts and lock washers and tighten
	Insufficient oil—low oil level reduces muffling effect of oil	Check oil level
		Flush and clean reducer and replace oil
	Failed bearings—wear of bearings can be caused by dirt in oil	Replace reducer or worn bearings
	Loose parts	Inspect reducer for broken parts, loose bolts, nuts
		Check keys for proper fit
Oil leakage from reducer/ gearbox	Excessive oil	Check oil level and drain to proper level
	Seal worn	Replace seal
Motor runs but machine does not move and roller does not turn	Drive chain loose	Adjust drive chain

Reports and Research

To benefit fully from maintenance experience, a good system of reports and records is essential. These reports and records, if analyzed frequently, will indicate areas that require special attention as well as recurring troubles that may be corrected before breakdown occurs. Records should include:

- The date detected and description of the symptoms.
- A description of the preliminary investigation and the conclusions drawn.
- The date of and the corrective action taken, replacement parts required, and length of downtime.
- A record of when fluid is added or changed, filters replaced, or strainer cleaned.

Appendix B

Drawings are inserted at the back of the manual.

Table B-1: Attached Drawings

Description	Drawing Number
RoofGlider 14' Assembly	82700
Pushbar Assembly	82660
Layout Table Side Eject	82795
Layout Buss-Bar Typical	L0416
Layout Anchor Plates	82984
RoofGlider w/VFD Electrical	90145
RoofGlider w/VFD Electrical Conduit Run	90145
RoofGlider w/VFD Electrical Assembly	90145
2-Head Interlock Option Electrical	91228
3-Head Interlock Option Electrical	91229
RoofGlider Dual Controls Option Electrical	90157 (Figures 1 & 2)

Document Evaluation

Appendix C

A form is included in this appendix so you can provide MiTek with feedback on the usefulness of this manual. We make an ongoing effort to improve the value of our documentation, and your views are important to us.

Please follow the instructions on the form to provide us with comments or suggestions that will help us improve the quality of our documentation services.

Document Evaluation Form

We appreciate your comments on how we can make this document more useful.

Document Identification:

RoofGlider®	Equipment Manual	001046 Rev. C

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 (cont'd)

Instructions	***Identification Information***
Please provide as much information as possible. Identify the page and paragraph, and include a proposed rewrite if possible. Attach extra sheets as needed.	*RoofGlider*®
	Equipment Manual
	001046
Recommendation	
Reason for Recommendation	
Your Name:	Date:
Company Name:	Address:
Phone:	Email:
Please mail this form to: MiTek Machinery Operations 301 Fountain Lakes Industrial Drive St. Charles, MO 63301 Attn: Engineering Manager	***Or fax this form to:*** 636-328-9218 Attn: Engineering Manager

If you do not receive a reply within 45 days, please call our Customer Service Department and ask for the Documentation Specialist or Engineering Manager: 800-523-3380.

Glossary

actuate	to activate, put into action
aisle pad	a type of jigging used when a connector plate needs to be embedded where the table surface gives way to a walk-through aisle
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
auto-eject	a pneumatic system that raises the truss off the tables and automatically places the truss on the stand-alone conveyors with the use of a transfer roller
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
bus bar	an electrical device that allows multiple gantry heads to be used simultaneously
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 pneumatic system that raises the truss off the tables and allows the truss to be manually pushed or pulled off the end of the tables; this system requires that the gantry head rolls back over the truss or a device must be installed to raise the gantry head when it is parked
gantry head	the entire traveling weldment that houses the Roller to embed the connector plates
hour-meter	a gauge on the gantry head on a 1-enclosure system that tells the amount of time the motor is actually turning and the gantry head is moving; 2-enclosure systems do not have an hour-meter

Glossary

inner side	refers to the end of the gantry head housing; the side closest to the tables; both ends have an inner side—one can see the inner side of both ends when standing on or between the tables
jigging	any of several devices used to hold the truss in place on the tables
joystick	an option that replaces the pendant control station to control movement of the gantry head
layout	a scaled diagram of the location of components and the space that they occupy
leveling screws	large cap head screws that thread into the table legs and allow the table height to be adjusted and leveled
light bar	the perimeter access guarding device that uses multiple light beams to detect when something is in the way of the gantry head and stops the machine to prevent injury or damage; the RoofTracker uses a set of 3-beam light bars on both sides of the gantry head
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
lubricator	a device that allows controlled amounts of lubricants into the pneumatic system
motor end	used to indicate which end of the gantry head is being discussed; the end of the gantry head that houses the motor
outer side	refers to the end of the gantry head housing; the side farthest from the tables; both ends have an outer side—one can see the outer side of the one end when standing at the pendant control station

Glossary

pendant control station	where the operator stands to use the pendant that controls movement of the gantry head
pilot valve	a pneumatic valve that operates the setup valve to control the release or cessation of air in each setup; it is located on the bottom-chord end of one table in each setup
plate	see *connector plate*
PLC	Programmable Logic Controller; a solid-state control device that can be programmed to control process or machine operations. It consists of five basic components: processor, memory, input/output module, the power supply, and the programming device.
port	a connection point for a peripheral device
proximity 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
puck	a type of jigging that is small and round
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

Glossary

Roller	the large roller inside the gantry head that innately embeds the plates into the truss
setup valve	a component of the pneumatic system that control the flow of air to the rest of the setup
side-eject	a pneumatic system that raises the truss off the tables and allows the truss to be manually pushed or pulled off the side of the table and onto the stand-alone conveyors
slider pad	a type of jigging used when a connector plate needs to be embedded where the table surface gives way to a slot for the Ejector
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
Stand-Alone Conveyor	the conveyor system that carries the truss from the tables to the Finish Roller and out to the stacker
stop	a type of jigging that is long and straight
take-up bearing	adjusts the height of the roller
torque	a turning or twisting force
transfer roller	a motorized roller sitting perpendicular to the tables on an auto-eject system; it automatically transfers the truss from the Ejectors to the stand-alone conveyors
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
VFD	Variable Frequency Device; controls the speed of the cycle
voltage	Equal to the difference of electric potential between two point on a conducting wire carrying a constant current of one ampere when the power between the points is one watt

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RoofGlider ® Roof Truss Roller Press

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