

Safety (English)

Safety Indicator Signal Words



Refiérase a la página 26 para español.

For safety information in Spanish, refer to page 26.

The following signal words and colors are used throughout this document to indicate safety hazards. Pay careful attention when you see them. The level of severity differs for each signal word and color.

Signal words are accompanied by graphics showing what personnel should or should not do. The graphics are called safety symbols and are defined starting on [page 16](#), but more specific text is provided every time a graphic is used throughout the manual. Everyone near the machine must be trained on how to read these safety indicators.

Failure to comply with the instructions accompanying each signal word 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, is likely to result in death or serious injury.
Warning	Indicates a potentially hazardous situation, which, if not avoided, may result in death or serious injury.
Caution	Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.
Notice	Calls attention to information that is significant to understanding the operation at hand or the potential for property damage.
Environmental	Applies to conditions that may affect the environment but do not have an immediate, direct effect on personnel or equipment.



Signal words are used in conjunction with safety symbols to give hazard messages throughout this manual. Common safety symbols are defined starting on page xx.

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General Safety & Equipment 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 personal protective equipment (for example, safety glasses and hearing protection) in an industrial environment.
- Utilize a filtering face piece (dust mask) when working near sawdust.
- Wear proper clothing. 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.
- Use proper lifting equipment rated for the proper weight.
- This equipment is not for use in a residential area.

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Keeping a Safe Environment

- Pay attention to your surroundings.
- 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.
- Minimize dust clouds and protect your equipment by cleaning dust in this manner:
 - a) Shut down electrical power and sources of ignition

	NOTICE
	<p>Never use compressed air inside an electrical enclosure. It may force contaminants into electrical connections.</p> <p>Use a vacuum to remove dust from electrical enclosures. Canned air is acceptable after vacuuming.</p>

- b) Vacuum dust prior to blowing with air
- c) Powered cleaning equipment such as vacuums must be consistent with local governmental codes for use in dusty conditions.

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 15](#).**
- 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.
- Always push an E-stop button before approaching a machine for any reason. An E-stop may cause components to move without warning.
- Only use procedures described in this manual. Any other procedures should be discussed with MiTek to verify it is done safely. For topics not covered in this manual or online, contact MiTek for advice.
- In case of machine malfunction, stop the machine immediately using an E-stop, lockout/tagout, 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. If an equipment manual specifies a machine is designed for automated use, ensure safety devices prevent unauthorized entry before moving away from the machine.
- Check for worn or damaged parts regularly. Repair or replace them immediately.

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- Only use exact replacement parts specified. Using unapproved parts may void the warranty and can be a safety risk.
- 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 guards and safety devices are in place and 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.
- Torque bolts and fasteners to the specifications given by MiTek. If no torque specification is given, use industry standards.
- Only qualified maintenance personnel shall make adjustments or remove, repair, or install safety devices. Only qualified electricians should perform electrical work.
- Periodically inspect the quality of the finished product.
- Document all preventive and repair maintenance over the life of the machine to improve machine efficiency and reduce the risk of accidents.

Electrical Safety Notes

- 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.

E-Stop Locations

See [Controlled Stop Methods on page 55](#) for E-stop locations.

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General Warnings

	 WARNING
	<p>HIGH VOLTAGE ELECTRICITY!</p> <p>May cause serious personal injury or death. Ensure only qualified electricians perform electrical service work.</p>

	 WARNING
	<p>Read the equipment manual, safety labels, and all safety information provided before operating or maintaining this equipment.</p>

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

	 WARNING
	<p>Many components are manufactured from high carbon, heat-treated steel. Do not attempt to straighten, bend, or weld these components, as they may fail under load causing serious personal injury or death.</p>

Lockout/Tagout



Lockout/Tagout Guidelines

Lockout/tagout all energized systems before performing maintenance on them.

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, such as a keyed padlock, 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. See [Electrical Lockout/Tagout Procedures on page 7](#) and [Pneumatic System Lockout/Tagout Procedure on page 10](#) for more information about each type of lockout/tagout procedure.

- Energy sources include electrical, mechanical, 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.
- Before performing maintenance on the pneumatic systems, bleed the lines prior to lockout/tagout to eliminate pressure.

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.

Whenever you see this symbol in the margin, lockout/tagout!



Electrical Lockout/Tagout Procedures



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



If you are working on the electrical transmission line to the machine, follow the procedure on [page 9](#).

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 1-1](#).

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

Figure 1-1: Example of a Disconnect Switch in Off Position



3. Attach a lock and tag that meet OSHA requirements for lockout/tagout.

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Figure 1-2: Example of a Lockout/Tagout Mechanism on an Electrical Enclosure



4. Restrain or de-energize all pneumatic components, and other parts that could have live or stored power. See [Pneumatic System Lockout/Tagout Procedure](#) on page 10.

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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 1-3](#).
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 1-3: Sample of a Lockout/Tagout Mechanism on a Power Source Panel



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Pneumatic System Lockout/Tagout Procedure

Before working on or near pneumatic components, bleed the lines of pressure.

When Lockout/Tagout Is Not Required

If working on components other than the pneumatic system, but that requires you to be near the vicinity of movable pneumatic components, you must, at a minimum, physically restrain those components from moving. If this is not possible, lockout/tagout the entire pneumatic system.

When Lockout/Tagout Is Required

Before attempting repair or performing maintenance on a pneumatic line or component, lockout/tagout the machine properly. Follow your company's approved lockout/tagout procedures.



Figure 1-4: How to Lockout/Tagout the Pneumatic System Example

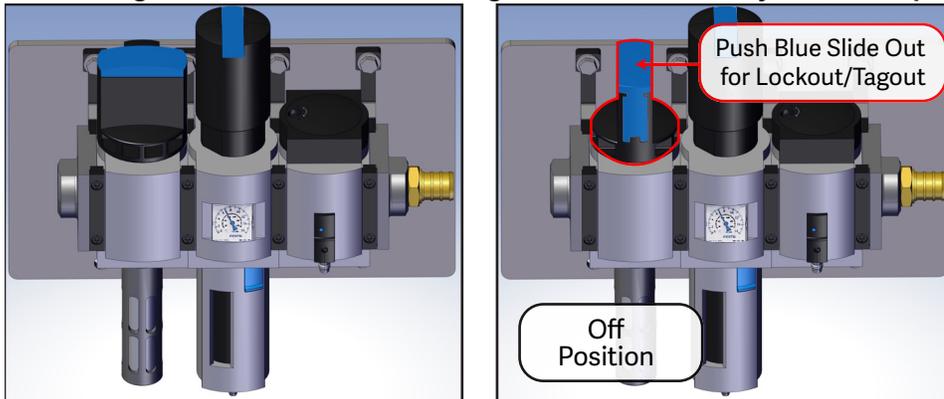
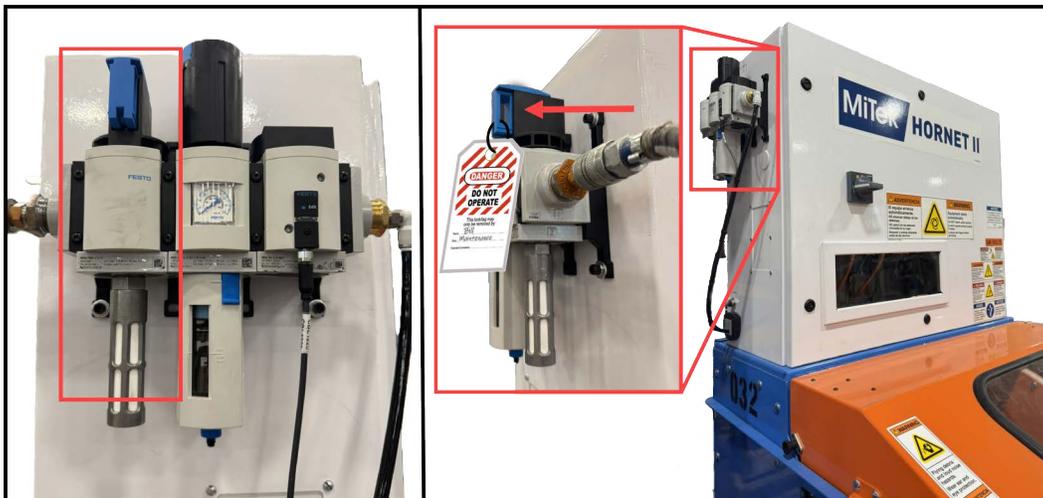


Figure 1-5: How to Lockout/Tagout the Pneumatic System - Hornet II



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.

Treatment for Hazardous Substances

	 WARNING
 	<p>PRINTER INK AND CLEANER IS HIGHLY FLAMMABLE!</p> <p>Keep away from extreme heat, sparks, or open flame.</p> <p>No smoking near these substances.</p>

Table 1-1: Hazardous Substances Used in Normal Maintenance

	Printer Ink	Printer Cleaner
Primary Hazards	Flammable	Flammable
Method of extinguishing fire	Alcohol-resistant foam, carbon dioxide, dry powder, water fog-- NOT water	Alcohol-resistant foam, carbon dioxide, dry powder, water fog-- NOT water
Protective Equipment	Gloves Goggles Eyewash station	Gloves Goggles Eyewash station

Table 1-2: How to Treat Contact With a Hazardous Substance

If Substance Gets On...	Then Do This...	
	Printer Ink	Printer Cleaner
Skin/Clothing	Rinse, remove clothing, then wash skin w/soap	Rinse, remove clothing, then wash skin w/soap
Hair	Wash with soap and water	Wash with soap and water

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If Substance Gets On...	Then Do This...	
	Printer Ink	Printer Cleaner
Eyes	Flush with water	Flush with water, remove contact lenses if possible, continue flushing
Ingested	Do NOT induce vomiting; consult physician immediately	Do NOT induce vomiting; consult physician immediately.
Inhalation	Move to fresh air	Move to fresh air

Safety Tests

This test procedure **MUST** be performed by qualified personnel at daily startup and after ANY maintenance, adjustment, or modification. Testing ensures that the safety system and machine control system work together to properly stop the machine.

⚠ CAUTION	
 	<p>CRUSH AND CUT HAZARD.</p> <p>Before turning on the equipment, make sure that all personnel and equipment are clear.</p>



General Inspection

1. Lockout/tagout the machine.
2. Make sure sharp objects are clear of all pneumatic and electrical system cables.
3. Check the Hornet II saw for debris or tools that would block the path of moving parts. Remove any that you may find. The following locations are especially important:
 - Auto Loading Live Deck (if equipped)
 - Infeed rail
 - Infeed pusher
 - Outfeed table
 - Outfeed sweeper

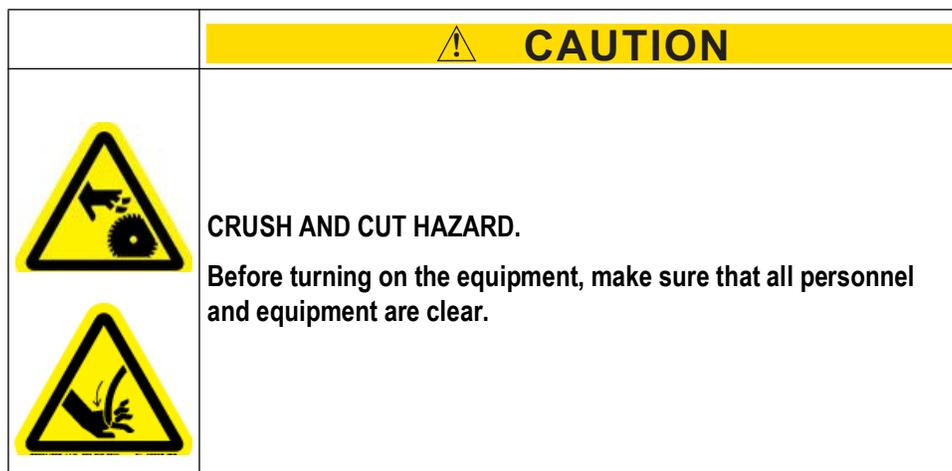
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- Saw chamber
4. Check saw blade condition (See [Replacing a Saw Blade on page 112](#)).
 5. Remove lockout/tagout and return electrical power and pneumatic pressure to the machine. See [Daily Startup on page 62](#).
 6. Press the illuminated blue Reset button. The Reset button light should turn off to indicate the machine is ready for normal operation.
 7. The main filter / regulator and other sub-regulators should match the pressure ratings detailed in [Pneumatic System on page 140](#).
 8. Pull on the door handle of the front and rear saw chamber doors (2 total) to verify both doors are closed and locked.

Inspecting Labels/Guards

1. Verify that all safety labels are present and legible.
2. Verify that all guards are present and secure.

E-Stop Test



1. Start running the saw and all integrated components.
 - a) Power up the saw using the instructions in [Powering Up or Down on page 62](#).
2. Initiate a cut cycle using the Load Set function. The infeed pusher (or auto loading live deck, if equipped) will begin to move, as will the saw blade.
3. Activate any one of the E-stops listed here:
 - Operator interface E-stop
 - Auto Loading Live Deck E-stop (if equipped)
 - Infeed E-stop
 - Outfeed E-stop
4. Ensure that the following happens in a timely manner:

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- The infeed pusher and auto loading mechanism stop
- All illuminated E-stops are solid red
- The bolt that stops the saw blade from raising is engaged
- If the saw blade and integrated components stop as expected, repeat the procedure to test all E-stops listed in step 3.

Testing Movement While E-Stop is Active

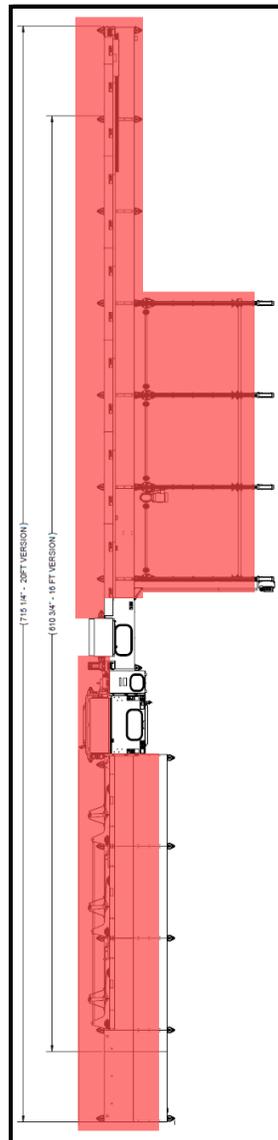
	 CAUTION
 	<p>CRUSH AND CUT HAZARD. Before turning on the equipment, make sure that all personnel and equipment are clear.</p>

1. With an E-stop activated, use the Manual Mode menu in CutBuilder to attempt to manually move the infeed pusher or the outfeed sweeper.
2. Watch the mechanism that was chosen to see if it moves. Because an E-stop is activated, no movement should occur.
3. If movement does occur, Lockout/Tagout immediately and contact Automation Support.

Restricted Zone

	 DANGER
	<p>Stay out of the restricted zone when equipment is in use. Serious injury or death may result if personnel are in the restricted zone.</p> <p>Always look for personnel in the restricted zone before operating equipment.</p>

Figure 1-6: Know the Restricted Zone



Marking the Restricted Zone

The restricted zone must be marked so everyone near the equipment can clearly see the area where danger may exist.

Safety Symbol Definition

The safety symbols shown in this section are found throughout the manual to indicate hazards related to this machine. All personnel expected to operate or maintain this machine should be familiar with these safety symbols and their meanings.



User caution. It indicates a condition where equipment damage resulting in injury could occur if operational procedures are not followed. To reduce risk of damage or injury, refer to accompanying documents, and follow all steps or procedures as instructed.



Electrical hazard. It indicates dangerous high voltages inside of an enclosure and/or the presence of a power source. To reduce the risk of fire or electric shock, do not attempt to open the enclosure or gain access to areas where you are not instructed to do so. Refer servicing to qualified service personnel only.

This equipment should be operated only from the type of source indicated on the manufacturer's identification label. Installation should be in compliance with applicable sections of the national electric code. Consult your local building code before installing.



Crush hazard. Keep hands and other body parts clear.



Noise hazard. Equipment produces loud noise in excess of 100 DBA during operation. Use appropriate PPE to protect hearing when in the vicinity of this equipment.

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Slip hazard. Use of appropriate footwear is required.



Trip hazard. Pay attention when walking in this area.



Kickback hazard.



Keep hands clear of cutting parts.



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Keep hands and body clear.



Crush hazard from above.



Hot surface. Surface temperature can exceed 158°F (70°C) during normal operation. Do not touch.



Ventilate. Slots and openings in the cabinet are provided for ventilation to ensure reliable operating of the equipment. To protect the equipment from overheating, those openings must not be blocked or covered. This equipment should not be placed in a built-in installation, such as a wall cutout, unless proper ventilation is provided because hot temperatures result.



Operation of this equipment may result in flying debris and excessive noise. To reduce the risk of eye injury, wear only approved PPE.

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Keep hands away from moving parts.



High pressure hose. Use appropriate PPE when working on equipment. Maintain safe pressure level at all times.



High pressure hydraulic hose. Use safe operating procedures at all times.



Equipment has automatic restarting capability. Lockout/tagout on the upstream disconnect before servicing.

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The operation of this equipment requires the use of PPE.
Do not operate without wearing the required protective clothing.



Refer to manual. After installation, read the user's guide carefully
before operating. Follow all operating and other instructions
carefully.



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Circuits are live. Lockout/tagout on the upstream disconnect prior to servicing.



Lockout in a de-energized state.



Lift point. In order to decrease the likelihood of damage to the equipment, use only the lift points indicated in the manual.



Open switch before adjusting equipment.



To reduce the risk of equipment damage or injury to personnel, maintain pressure at safe levels.



Use of a safety harness is mandatory when working above ground floor.

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Use of lift equipment is mandatory.



Consult material safety data sheet.



Unplug equipment before servicing.



No open flames in this area.



No smoking in this area.



Hazardous moving parts are located behind this access panel. Do not operate this equipment without all guards and covers in place.



Do not place containers with liquids such as coffee, water, soda, etc. on this equipment.
Do not operate this equipment in a wet environment.
Do not expose to water.



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No lift point. Do not lift this device with a hook/crane assembly. Equipment damage occurs. Refer to the installation instructions.



Do not step or stand upon this equipment. Stepping or standing on this equipment may result in serious injury. Not a step. Do not step or stand at this location.



Do not use a fork lift when moving this equipment. Use of a fork lift may result in equipment damage. Refer to installation procedures.



Do not use unapproved lubricants in this equipment.



Unauthorized personnel are not allowed beyond this point.



Do not operate without guards in place.



Do not weld.

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Do not discard into the municipal waste stream.



Indicates notes regarding lubrication.

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Declaration of Safety Conformity

Conforms electrically to the following:

- NFPA 79
- NEC Electrical Code
- Relevant electrical enclosures carry UL 508A and the CUL for Canada
- Safety circuit conforms to Category 4 redundant monitoring

Conforms mechanically to the following:

- 10CFR 1910
- ANSI B 11.19

Declaration of Noise Emissions

Decibel level of ambient and machine operation sound levels:

- Ambient - 90 dB
- Machine operation - 100 dB