Part #601183 Date : Sept 2022

THAWZALL

Tamarack Industries



E-XHR100Operators Manual



As a new customer of Tamarack we would like to welcome you! We are looking forward to providing you with technical support for your Thawzall unit. Whatever you need we are here to help.

Ways to contact us for support

By Phone: 1-888-757-3545

The main Technical support phone line is staffed monday-friday 7:00 AM to 4:30 PM excluding holidays.

After hours support

Calls received outside of regular hours are directed to the On-call technician. After hours support is reserved for issues that cannot wait until the next business day for resolution. If no answer please leave a message and we will get back to you as soon as possible.

By Email: support@tamarack-ind.com

Feel free to email us at any time with technical questions or parts inquiries. Please include the year make and model of your unit if you have a specific question about your machine so we can better help you. If it is an emergency please call 1-888-757-3545

For more information please visit our website

www.thawzall.com

For model:

E-XHR100

Please record the following information from your new Thawzall for future reference. This information is required for all warranty claims.

Purchase date:	/	/	
Machine model:	_E-XHR_		
Machine serial num	nber:		

Manufactured by Thawzall, LLC

A DIVISION OF TAMARACK INDUSTRIES

2736 Latoka Lane Unit B Alexandria, MN 56308 Phone 320.759.1588

Fax: 320.759.1583

Tech Support 800.661.0304

Website:www.Thawzall.com

E-Mail: support@tamarack-ind.com



WARNING



CALIFORNIA - Proposition 65 Warning

Engine exhaust and some of its constituents and some dust created by power sanding, sawing, grinding, drilling and other construction activities contains chemicals known to the State of California to cause cancer, birth defects and other reproductive harm.

Some examples of these chemicals are:-

Lead from lead-based paints
Crystalline silica from bricks
Cement and other masonry products
Arsenic and chromium from chemically
treated lumber

Your risk from these exposures varies, depending on how often you do this type of work. To reduce your exposure to these chemicals:

ALWAYS work in a well ventilated area, and work with approved safety equipment, such as dust masks that are specially designed to filter out microscopic particles.

INTRODUCTION

Congratulations on your choice of a Tamarack Industries Thawzall E-XHR100 to complement your construction operation. This equipment has been designed and manufactured to meet the needs of the buyer for the efficient heating of construction sites.

Safe, efficient and trouble free operation of your E-XHR requires that you and anyone else who will be operating or maintaining the Heater, read and understand the Safety, Operation, Maintenance and Trouble Shooting information contained in the Operator's Manual.



This manual is applicable to the E-XHR built by Tamarack Industries. Use the Table of Contents as a guide when searching for specific information.

These are IMPORTANT INSTRUCTIONS, please SAVE THESE INSTRUCTIONS and pass along to anyone operating the unit.

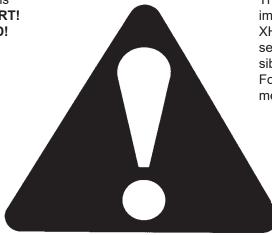
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SAFETY

SAFETY ALERT SYMBOL

This Safety Alert symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!



The Safety Alert symbol identifies important safety messages on the E-XHR and in the manual. When you see this symbol, be alert to the possibility of personal injury or death. Follow the instructions in the safety message.

Why is SAFETY important to you?

3 Big Reasons

Accidents Disable and Kill **Accidents Cost Accidents Can Be Avoided**

SIGNAL WORDS:

Note the use of the signal words DANGER, **WARNING** and **CAUTION** with the safety messages. The appropriate signal word for each message has been selected using the following guide-lines:

DANGER -

Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury. This signal word is to be limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING - Indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

Indicates a potentially hazardous situa-**CAUTION** - tion that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Safety, Installation & Operation

SAFETY

YOU are responsible for the SAFE operation and maintenance of your Tamarack Industries Heat King. YOU must ensure that you and anyone else who is going to operate, maintain or work around the Heat King be familiar with the operating and maintenance procedures and related SAFETY information contained in this manual. This manual will take you step-by-step through your working day and alerts you to all good safety practices that should be adhered to while operating the Heater.

Remember, **YOU** are the key to safety. Good safety practices not only protect you but also the people around you. Make these practices a working part of your safety program. Be certain that **EVERYONE** operating this equipment is familiar with the recommended operating and maintenance procedures and follows all the safety precautions. Most accidents can be prevented. Do not risk injury or death by ignoring good safety practices.

- Heater owners must give operating instructions to operators or employees before allowing them to operate the machine, and at least annually thereafter.
- The most important safety device on this equipment is a SAFE operator. It is the operator's responsibility to read and understand ALL Safety and Operating instructions in the manual and to follow these. Most accidents can be avoided.
- A person who has not read and understood all operating and safety instructions is not qualified to operate the machine. An untrained operator exposes himself and bystanders to possible serious injury or death.
- Do not modify the equipment in any way.
 Unauthorized modification may impair the function and/or safety and could affect the life of the equipment.
- Think SAFETY! Work SAFELY!

GENERAL SAFETY

 Read and understand the Operator's manual and all safety signs before operating, maintaining, adjusting, servicing or cleaning the Heater.



- 2. Only trained competent persons shall operate the Heater. An untrained operator is not qualified to operate the machine.
- 3. Have a first-aid kit available for use, should the need arise and know how to use it.



- 4. Do not allow riders.
- 5. Have a fire extinguisher available for use should the need arise and know how to use it.



- 6. Wear appropriate protective gear. This list includes, but is not limited to:
 - A hard hat
 - Protective boots with slip resistant soles
 - Protective goggles
 - Heavy gloves
 - Hearing protection



- Place all controls in their OFF position, disconnect power cords and wait for all moving parts to stop before servicing, adjusting or maintaining
- Wear appropriate hearing protection when operating for long periods of time.



- 9. Wear protective gloves
- Ventilation ~ Never operate in a poorly ventilated or enclose area. Avoid prolonged breathing of exhaust gases.





 Hot surface ~ Avoid contact with hot exhaust and glycol system.
 Allow to cool before performing repairs or service.



12. Electrocution Hazard ~ Always use proper size grounded extension cord. Inspect all extension cords for cuts, frayed wires and broken connectors. Do not use cords if not in good condition.



 Fire Hazard ~ Do not operate machine in the vicinity of open flames, sparks or while smoking.



ELECTRICAL SAFETY

- Place all controls in their OFF position, disconnect power cords and wait for all moving parts to stop before servicing, adjusting or maintaining.
- 2. Place all controls in their OFF position before plugging in power cords.
- 3. Keep all electrical components in good repair before starting.
- Do not lay power lines or connectors in water or on a wet surface. Dry connectors and raise power lines out of the water before and during operation.
- Do not operate machine if there are electrical malfunctions. Correct problem before resuming work.

STORAGE SAFETY

- Store unit in an area away from human activity.
- Do not permit children to play on or around the stored Heater.

MAINTENANCE SAFETY

- Review the Operator's Manual and all safety items before working with, maintaining or operating the Heater. Service should be performed by an authorized service representative.
- Place all controls in their OFF position, disconnect power cords and wait for all moving parts to stop before servicing, adjusting or maintaining.
 - Keep service area clean and dry.
 - Be sure electrical outlets and tools are properly grounded.
 - Use adequate light for the job at hand.



- 3. Follow good shop practices:
- 4. Keep hands, feet, clothing and hair away from all moving and/or rotating parts.
- Always wear heavy gloves to prevent burns when handling hot components. Wait until components have cooled before working on them.
- Do not attempt any adjustment or maintenance to any system of the Heater unless the power wires are disconnected.
- Make sure that all guards, shields and hoods are properly installed and secured before operating the Heater.
- 8. Securely support the machine using blocks or safety stands before working beneath it.
- 9. Store and transfer solvents, cleaners or any flammable liquids only in safety standard ap-



- 1. Read and understand the Operator's Manual and all safety signs before operating, servicing, maintaining or adjusting the Heater.
- Place all controls in their OFF position, disconnect power cords and wait for all moving parts to stop before servicing, adjusting or maintaining.
- 3. Do not allow riders in or on machine during transport.
- 4. Clear the area of bystanders, especially small children, before starting and operating.
- Keep the working area clean and free of debris to prevent slipping or tripping. Clean up fuel spills immediately if they occur.
- Slow down. Use care when working around unit - the steps, frame or floor may be wet and/or slippery.
- Do not allow personnel that are taking drugs, alcohol or any medications that impair the senses or when excessively tired or stressed to operate the Heater.
- 8. Do not operate unit in a poorly ventilated or enclosed area to prevent asphyxiation when the heaters are operating.
- 9. Do not smoke when connecting fuel source or when working around machine.
- Always wear heavy gloves when working on the machine to prevent burns when touching hot components.
- 11. Use the foot pedal switch to engage the hose reel take up or extend function and guide the hose by hand.
- Keep all electrical lines and components in good working order. Do not operate in wet conditions or when standing in water. Damp or wet conditions can cause shocks or trip the breakers.
- 13. Keep all components in good condition.
- 14.Do Not plug or block access doors or vents. Keep 2 foot of clearance around unit.
- 15. Review safety instructions with operators annually.

SIGN-OFF FORM

Tamarack Industries follows the general Safety Standards specified by the Society of Automotive Engineers (SAE) and the Occupational Safety and Health Administration (OSHA). Anyone who will be operating and/or maintaining the Heat King must read and clearly understand ALL Safety, Operating and Maintenance information presented in this manual.

Do not operate or allow anyone else to operate this equipment until such information has been reviewed. Annually review this information before the season start-up.

Make these periodic reviews of SAFETY and OPERATION a standard practice for all of your equipment. We feel that an untrained operator is unqualified to operate this machine.

A sign-off sheet is provided for your record keeping to show that all personnel who will be working with the equipment have read and understand the information in the Operator's Manual and have been instructed in the operation of the equipment.

SIGN-OFF FORM

DATE	EMPLOYEES SIGNATURE	EMPLOYERS SIGNATURE

TAMARACK INDUSTRIES THAWZALL

WARRANTY REGISTRATION FORM & INSPECTION REPORT

WARRANTY REGISTRATION (please print)
This form must be filled out by the dealer and signed by both the dealer and the customer at the time of delivery.

Customer's Name	Distributor Name	
Address	Address	
City, State, Code	City, State, Code	
Phone Number ()	Check One:	
Contact Name	Private	
THAWZALL Model	Contractor	
Serial Number	<u>Other</u>	
Delivery Date	_	
DISTRIBUTOR INSPECTION REPORT	SAFETY	
Tire Pressure Checked Wheel Bolts Torqued Brakes Work Check Fluid Levels (Fuel and Glycol) Lubricate Machine Check That All Controls Function	 Emergency Stop Switch Works All Decals Installed and Legible Lights and Reflectors Installed, Clean and Working Review Operating And Safety Instructions 	
	ve described equipment which review included the Opents, safe operation and applicable warranty policy.	
Date Dealer'	s Rep. Signature	
The above equipment and Operator's Manual having instructed as to care, adjustments, safe operation	ve been received by me and I have been thoroughly and applicable warranty policy.	
Date Owner'	Owner's Signature	

Tamarack Industries CONDITIONS OF SALES & LIMITED WARRANTY

All sales made by Tamarack Industries, here after refered to as Tamarack, a Division of ELJO Industries Inc. are subject to these conditions unless otherwise agreed in writing with a duly authorized officer of Tamarack. In all cases of conflict between these conditions and the requirements of the purchase order, these conditions shall prevail.

- (1) SALES POLICY: Nothing herein shall be construed as abridging the right of Tamarack to sell directly or indirectly to: (a) Federal, State or Provincial Governments or Agencies thereof, or to Agencies employing Federal, State or Provincial Government aid; (b) Purchasers who buy Tamarack's products for sale as integral or assembled parts of their products; (c) Firms operating on a national scale; (d) Any other class of purchaser to whom Tamarack may from time to time, elect to sell.
- (2) PRICES: All prices are F.O.B. our warehouses, freight allowance as specified on Distributor Net Price Lists. The suggested list prices and discounts schedules are established by Tamarack and are intended to act as a guide for our distributors. Unless otherwise stated in writing, prices are subject to change without notice and will be applied as in effect at time of shipment.
- (3) TERMS: Unless otherwise agreed upon in writing by an officer of Tamarack, all invoices become due and payable net 30 days following the date in invoice. Interest at the maximum legal rate will be charged on all overdue accounts. Minimum net charge per invoice is \$75.00
- (4) CANCELLATION AND CHANGES: No orders or sales may be cancelled or changed without the consent of Tamarack. At Tamarack's option cancelled/changed orders are subject to payment of cancellation charges equal to all costs incurred by Tamarack up to the date of cancellation/change.
- **(5) DELAYED DELIVERIES:** Tamarack shall not be liable for any delay of merchandise for any cause whatsoever.
- (6) CLAIMS: All goods shall be deemed delivered to purchaser at the time they are placed in the hands of carrier and consigned to purchaser: loss, damage or destruction of any said merchandise is assumed by purchaser. No claims may be made for shortages unless made in writing within ten days from receipt of merchandise.
- (7) **RETURN OF GOODS:** Written permission from Tamarack must be obtained before returning any merchandise. All transportation charges must be borne by the purchaser. Credit for returned goods will be based on the original price paid, less 20%. Special parts or custom-built items cannot be returned for credit.
- (8) LIMITATION OF LIABILITY: Tamarack's liability on any claim of any kind, including negligence, for any loss or damage arising out of, connected with, or resulting

from contract, or the performance or breach thereof, or the design, manufacture, sale, delivery, resale, installation, technical direction of installation, inspection, repair, operation or use of any equipment covered by or furnished under contract shall in no case exceed the price paid by the purchaser for the equipment. Tamarack also disclaims all purchaser for the equipment. Tamarack also disclaims all liability, whether in contract, tort, warranty, or otherwise, to any party other than purchaser.

(9) All Price Lists, Catalogues and other material shall remain the property of Tamarack and are subject to return on demand. The Suggested List Prices are established by Tamarack and are intended to act as a guide. All shipping weights shown are approximate.

LIMITED TAMARACK WARRANTY

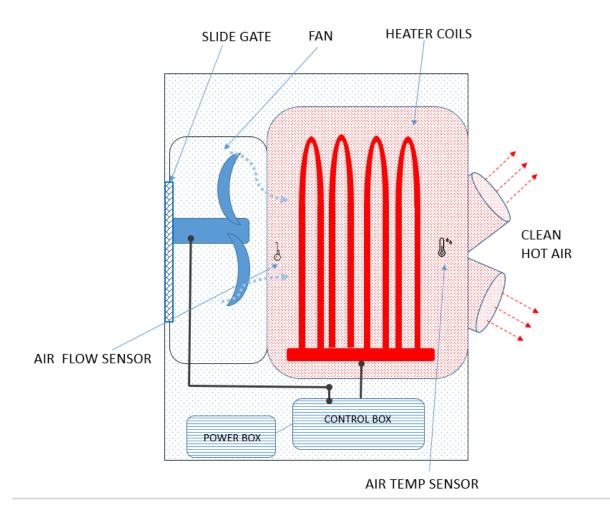
For two years from date of purchase, Tamarack will replace or repair for the original purchaser, free of charge, any part or parts, found upon examination by any Tamarack Authorized Service Depot or by the Tamarack factory, to be defective in material or workmanship or both. Equipment and accessories not manufactured by Tamarack are warranted only to the extent of the original manufacturer's warranty. All transportation charges on parts submitted for replacement or repair under this warranty must be borne by the purchaser. For warranty service contact your nearest Tamarack Authorized Service Depot.

THERE IS NO OTHER EXPRESS WARRANTY, IMPLIED WARRANTIES, INCLUDING THOSE OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE ARE LIMITED TO ONE YEAR FROM PURCHASE AND TO THE EXTENT PERMITTED BY LAW. LIABILITY FOR CONSEQUENTIAL DAMAGES UNDER ANY AND ALL WARRANTIES ARE EXCLUDED TO THE EXTENT EXCLUSION IS PERMITTED BY LAW. (THIS WARRANTY IS AN ADDITION TO ANY STATUTORY WARRANTY.)

WARRANTY VOID IF NOT REGISTERED

P.O. Box 234, Station "L" Winnipeg, Manitoba Canada R3H 0Z5

How It Works



Flameless Heater:

This equipment was designed for space heating of buildings under construction.

The E-XHR is a fully electric flameless heater. External air is drawn into the enclosure, this air is then heated by the heating elements. This flameless application is well suited for use in hazard-ous areas where flamed heaters cannot be used. The unit is automated by an onboard computer sytem with user settable temperature and air speed.

Protective devices

The E-XHR is equipped with the following protective devices to protect the user and the machine:

Emergency stop switch

The emergency stop switch is monitored by the controller inputs. In the event of an e-stop condition the system mode is set to OFF and all output functions are shut down by the controller.

Air Flow Sensor

The air flow switch is designed to protect the heater elements. In the event that the air flow switch doesnt detect flow it will turn the heaters off to prevent them from overheating.

Air Temperature Sensor

The Air temperature switch is in place to monitor the outgoing air temperature, this provides feedback to the controller for user control.

High Limit Switch

The high limit switch is in place to be a backup to the other safety devices. It is an analog switch that is set to 225°F, In the event that the heating coils were to heat up past the user set point the High limit switch cuts the power to avoid overheating of the coil. The switch has a manual reset button on it. The switch is located inside the lower outlet duct on the right.



Tilt Switch

The tilt switch is designed to shut the unit down if it tilts past 25°

Controls



1. TACTILE KEY'S



Used for screen navigation & button activation

2. TOUCHSCREEN

Displays machine graphics & parameters Touch activation as described in Screen Operation Section

3. HMI INDICATORS



Power Indication & Mode Status



USB Connected



Network Connected



CPU Processing

4. DIAL ENCODER



Parameter Adjustment

5. HOME KEY



Returns To Previous Screen

6. ESCAPE KEY



Returns To Previous Screen

7. USB PORT



Software Update & Factory Use

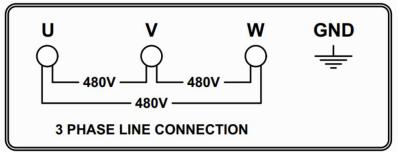
Electrical Connections

Requires 480VAC 3 Phase power supply

- 1. Turn power disconnect switch to "OFF" position.
- 2. Open cover by rotating the 1/4 turn locks.
- 3. Route cable through opening at bottom.
- 4. Connect wires as shown in the diagram below.
- 5. Connect ground wire to the grounding lug.
- 6. Close and fasten cover on disconnect switch and turn switch to the "ON" position.

*Note: For your safety the E-XHR contains phase loss module. In the event that a phase is dropped, "Phase Loss" alarm will occur preventing unit from operating.





IMPORTANT:

Upon first power up check the rotation of the fan. If air is blowing out of the intake duct the rotation is INCOR-RECT.

Power the unit down and reverse two of the phases to





The E-XHR is equipped with a remote thermostat connection. To use plug in remote thermostat to the connector below the main electrical panel then select remote thermostat on HMI screen.

E-XHR Operating instructions

BEFORE STARTING THE UNIT

*Ensure there is at least 2 feet (0.7 Meters) of clearance around machine

*Ensure machine is level and stable

TO START THE UNIT

- Turn Main Disconnect to ON position (Controller will boot up).
- 2. Press start button (Top left corner of controller) (Start cycle begin, warning will sound).
- 3. The blower will kick on.
- 4. 10 Seconds after blower starts, the #1 heater element will turn on.
- 5. Three seconds later, #2 heater element will turn on.
- 6. Three seconds later, #3 heater element will turn on.
- 7. Heater elements will automatically turn on & off to maintain set temperature.

TO STOP THE UNIT

- 1. Press stop button (Right top corner of controller).
- 2. The elements will turn off and Fan will RUN FOR 3 MINUTES In order to cool down.
- 3. Turn Main Disconnect to OFF position.

Maintenance

Tne E-XHR requires very little maintenance. However the following should be checked regularely.

Description	Operation	Daily	Every 6 Months
Electrical connections	Check		X
Inlet duct screen	Clean	Х	

NOTES

Alarms

WARNING	Low Battery Voltage De- tected	Screen VIM is less than 10 volts
SHUTDOWN CY- CLE	Active	System was turned off or alarm triggered shut- down
STARTUP CYCLE	Active	System On was pressed - blower and heater startup
CYCLE POWER	TILT Shutdown	Tilt input is true - system estop
CYCLE POWER	E-Stop Shutdown	E-stop pressed
CYCLE POWER	Duct Flow Shutdown	Blower is on but did not detect any air flow
WARNING	Duct Overtemp	Duct temp is greater than oem duct over temp setting
FAULT	Duct Temp Sensor	Analog input not seeing 4-20 ma signal
FAULT	Remote Temp Sensor	Analog input not seeing 4-20 ma signal

E-XHR Specifications

General Capacities and Component Specifications

Height	63"
Width	44"
Length	71"
Weight	1330 LBS
Air Ducts	2 x 12"
Heater Element	480V Electric
Blower Motor	5 HP

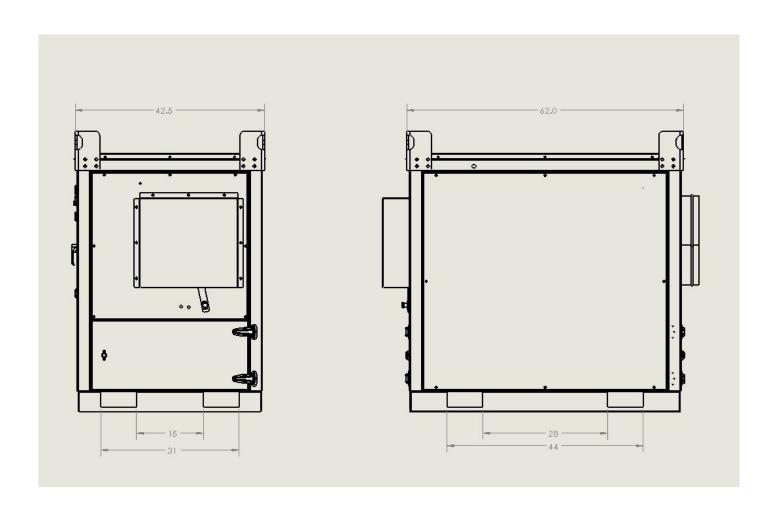
Performance Specifications

Heat Capacity	342,000 BTU/H
Electrical Requirement	480 V 3 PH 60 HZ
Air Flow	Variable 3000-5000 CFM

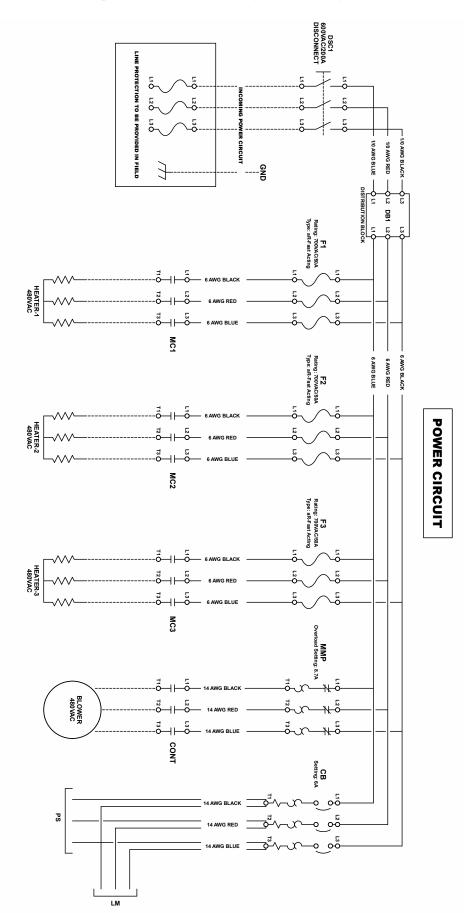
Lifting

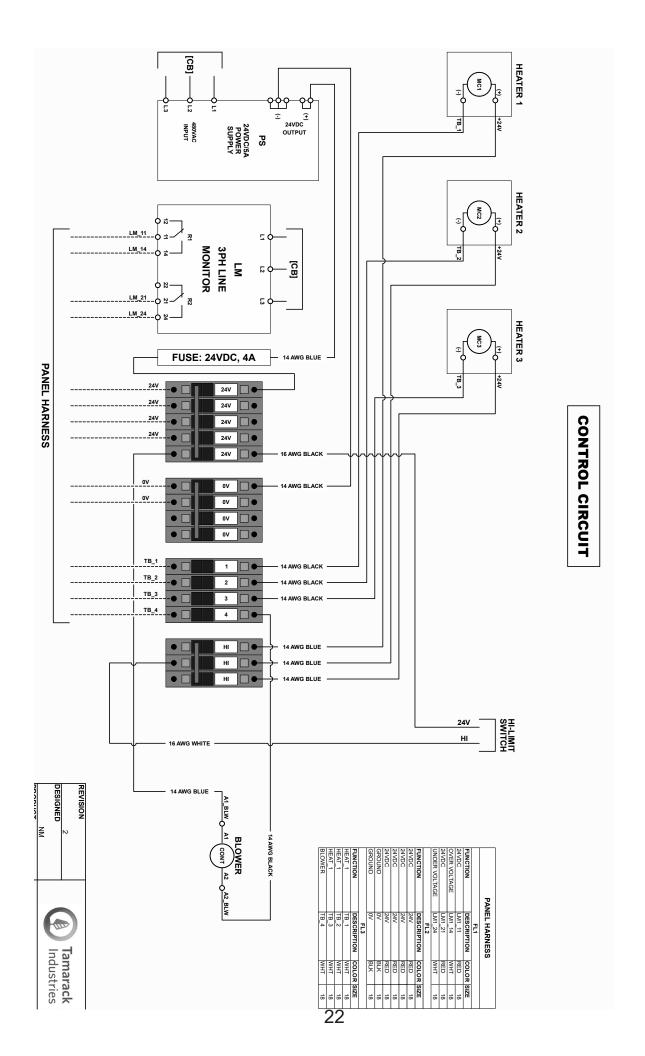
LIFTING SAFETY

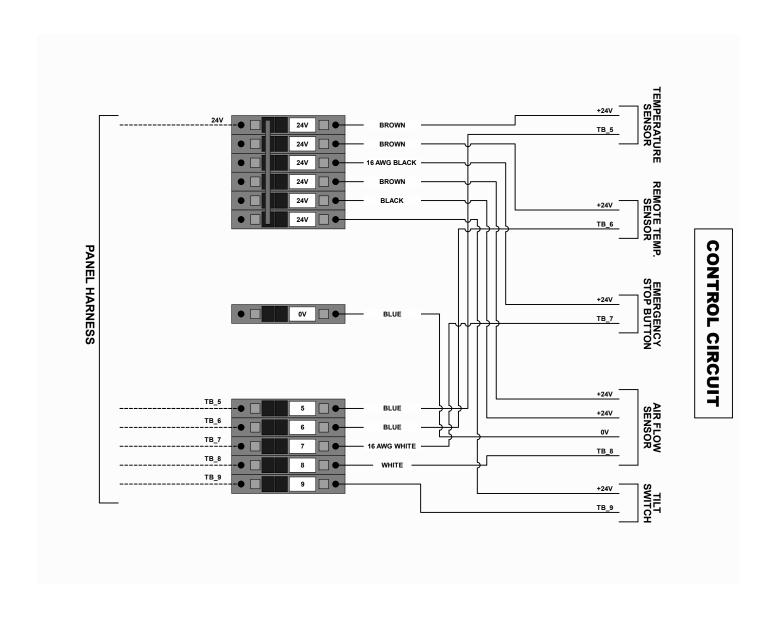
- 1. Follow safe lifting procedures.
- 2. Use properly rated lifting equipment.
- 3. Secure all doors and panels.
- 4. Use only designated lifting points.

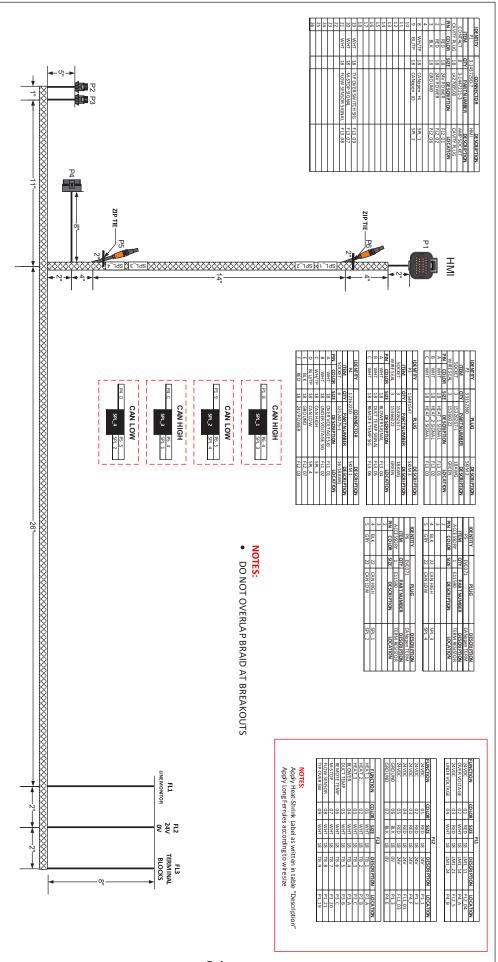


Schematics













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