Owner's Manual and Instructions

# Volt 150
## Ductable Electric Heater

| | |
|---|---|
| **CE150** | 150 kW / 512,000 Btuh |
| Electric | |

View this manual online at www.lbwhite.com

## Attention

This heater has been tested and evaluated by the UL Solution in accordance with the requirements of Standard UL 2021 • CSA C22.2 No. 46 and is listed and approved by the OMNI Test Laboratories as a ductable electric forced-air construction heater with application for the temporary heating of buildings under construction, alteration, or repair.

FOR INDUSTRIAL USE ONLY

**www.lbwhite.com**


Report No.: TBD

## Congratulations!

You have purchased the finest electric air heater available.
Your new L.B. White heater incorporates the benefits from the most experienced manufacturer of heating products using state-of-the-art technology.

We, at L.B. White, thank you for your confidence in our products and welcome any suggestions or comments you may have...contact us at 1-(800)-345-7200, or email us at customerservice@lbwhite.com.

## NOTICE

**The herein installation instructions are the L.B. White Co. LLC suggested recommendations and guidelines for temporary or permanent installation of the L.B. White Co. LLC heaters. Local, state, and electrical and safety code requirements supersede these guidelines. In the absence of local codes, see page 6 for installation in the U.S. or Canada.**

## SCAN THIS

with your smartphone or visit http://goo.gl/5j21G to view maintenance videos for L.B.White heaters.*

** Requires an app like QR Droid for Android or for iPhone*

**WORLD PROVIDER - INNOVATIVE CLIMATE SOLUTIONS**

411 Mason Street, Onalaska, WI 54650 • 800-345-7200 • 608-783-5691 • 608-783-6115 (fax) • www.lbwhite.com

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## ⚠ GENERAL HAZARD WARNING

- FAILURE TO COMPLY WITH THE PRECAUTIONS AND INSTRUCTIONS PROVIDED WITH THIS HEATER CAN RESULT IN:
  - — DEATH
  - — SERIOUS BODILY INJURY OR BURNS
  - — PROPERTY DAMAGE OR LOSS FROM FIRE OR EXPLOSION
  - — ELECTRICAL SHOCK
- READ THIS OWNER'S MANUAL BEFORE INSTALLING OR USING THIS PRODUCT.
- ONLY PERSONS WHO CAN READ, UNDERSTAND, AND FOLLOW THE INSTRUCTIONS SHOULD USE OR SERVICE THIS HEATER.
- SAVE THIS OWNER'S MANUAL FOR FUTURE USE AND REFERENCE.
- REPLACEMENT OWNER'S MANUALS ARE AVAILABLE. SEE WEBSITE, OR FOR ASSISTANCE, CONTACT L.B. WHITE AT 1-800-345-7200.

## ⚠ WARNING

- EXTREME CAUTION IS NECESSARY WHEN ANY HEATER IS USED BY OR NEAR CHILDREN OR INVALIDS AND WHENEVER THE HEATER IS LEFT OPERATING AND UNATTEDED
- DO NOT OPERATE THE HEATER AFTER IT MALFUNCTIONS. DISCONNECT POWER AT SERVICE PANEL AND HAVE HEATER INSPECTED BY A REPUTABLE ELECTRICIAN BEFORE REUSING.
- TO DISCONNECT HEATER, TURN CONTROLS TO THE OFF POSITION, AND TURN OFF POWER TO HEATER CIRCUIT AT MAIN DISCONNECT PANEL.
- DO NOT INSERT OR ALLOW FOREIGN OBJECTS TO ENTER ANY VENTILATION OR EXHAUST OPENING AS THIS MAY CAUSE AN ELECTRIC SHOCK OR FIRE, OR DAMAGE THE HEATER.
- USE THIS HEATER ONLY AS DESCRIBED IN THIS MANUAL. ANY OTHER USE NOT RECOMMENDED BY THE MANUFACTURER MAY CAUSE FIRE, ELECTRIC SHOCK, OR INJURY TO PERSONS.
- PREVENT A POSSIBLE FIRE, DO NOT BLOCK AIR INTAKES OR EXHAUST IN ANY MANNER.

## ⚠ WARNING

**FIRE AND EXPLOSION HAZARD**

- NOT FOR HOME OR RECREATIONAL VEHICLE USE.
- INSTALLATION OF THIS HEATER IN A HOME OR RECREATIONAL VEHICLE MAY RESULT IN A FIRE OR EXPLOSION.
- FIRE OR EXPLOSIONS CAN CAUSE PROPERTY DAMAGE OR LOSS OF LIFE.

## ⚠ WARNING

**FIRE, BURN, INHALATION, AND EXPLOSION HAZARD**

- KEEP SOLID COMBUSTIBLES A SAFE DISTANCE AWAY FROM THE HEATER.
- SOLID COMBUSTIBLES INCLUDE WOOD, PAPER, OR PLASTIC PRODUCTS, BUILDING MATERIALS AND DUST.
- DO NOT USE THE HEATER IN SPACES WHICH CONTAIN OR MAY CONTAIN VOLATILE OR AIRBORNE COMBUSTIBLES.
- VOLATILE OR AIRBORNE COMBUSTIBLES INCLUDE GASOLINE, SOLVENTS, PAINT THINNER, DUST PARTICLES OR UNKNOWN CHEMICALS.
- FAILURE TO FOLLOW THESE INSTRUCTIONS MAY RESULT IN A FIRE OR EXPLOSION.
- FIRE OR EXPLOSIONS CAN LEAD TO PROPERTY DAMAGE, PERSONAL INJURY OR DEATH.

## FOR YOUR SAFETY

- DO NOT STORE OR USE GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN THE VIVINITY OF THIS OR ANY OTHER APPLIANCE.
- STORE THE HEATER IN A CLEAN DRY AREA WHEN NOT IN USE.

## WARNING

**ARC FLASH AND SHOCK HAZARD**

- PROPER PERSONAL PROTECTIVE EQUIPMENT MUST BE WORN WHEN SERVICING THE HEATER.
- ALWAYS UNPLUG THE HEATER WHEN NOT IN USED.
- FAILURE TO COMPLY CAN RESULT IN DEATH OR INJURY.

## ⚠ WARNING

Cancer and reproductive harm.
See **www.P65Warnings.ca.gov**.

# Specifications

| | | CE150 |
|---|---|---|
| Fuel Type | | Electric |
| Maximum Input (kW / Btuh) | | 150 / 512,000 |
| Minimum Input (kW / Btuh) | | 50 / 170,607 |
| Motor Characteristics | | 5 HP 3 PH 480V |
| Blower Speed (RPM) | | 1755 |
| Electrical Supply (Volts/Hz/Phase) | | 480/60/3 or 600/60/3 |
| Amp Draw | Continuous | **480VAC**<br>50 kW: 62<br>100 kW: 123<br>150 kW: 188<br>**600VAC**<br>50 kW: 47<br>100 kW: 94<br>150 kW: 144 |
| Flanged Inlet Type | | 400A Female Camlock (x4) |
| Dimensions L x W x H (Inches/cm) | | 72.5 X 35 X 67 / 184 X 89 X 170 |
| Minimum Safe Distances from Nearest Combustible Material (Feet/Meters) | Top | 1 / 0.3 |
| | Sides | 1 / 0.3 |
| | Back | 1 / 0.3 |
| | Blower Outlet | 6 / 1.8 |
| Minimum Power Supply Cable Gauge: | | 2/0 Type W cable up to 100ft.<br>Consult electrician for >100ft. |
| Minimum Operating Ambient Temperature | | -20°F / -29°C |
| Net Weight (lbs./kg) | | 1025 / 465 |
| Certification - OMNI Test Laboratory | | UL 2021, CSA C22.2 No. 46 |

# General Information

This Owner's Manual includes accessories commonly used on this heater. These accessories must be ordered separately.

When calling for technical service assistance, or for other specific information, **always** have model number and serial number available. This information is contained on the dataplate.

This manual will instruct you in the operation and care of your unit. Have your installer review this manual with you so that you fully understand the heater and how it functions.

Contact your local L.B. White distributor or the L.B. White Company, LLC for assistance, or if you have any questions about the use of the equipment or its application.

The L.B. White Company, LLC has a policy of continuous product improvement. It reserves the right to change specifications and design without notice.

# General Installation Instructions

**SAFETY**

**Electrical Requirements**

- Wiring procedures and connections shall be in accordance with the National and Local Codes having jurisdiction.
- The appliance, when installed, must be electrically grounded in accordance with Local Codes.
- In the absence of Local Codes, refer to the National Electrical Code, ANSI/NFPA 70; or the Canadian Electrical Code, CSA C22.1.

1. Read all safety precautions and follow L. B. White recommendations when installing this heater. If during the installation or relocating of heater, you suspect that a part is damaged or defective, call a qualified service agency for repair or replacement.

2. Make sure the heater is level (use a level) and properly positioned before use. Observe and obey all minimum safe distances of the heater to the nearest combustible materials. Safe distances are given on the heater dataplate and on page 4 of this manual.

3. This heater may be operated in either indoors or outdoor application and is approved for used with or without ductwork.
   - For indoor application, optional duct can be attached to the heater air inlet ring to provide preheated clean air to the heater. Contact your local L.B. White's dealer or the L.B. White Co. for details.
   - For outdoor application, additional accessories are needed to properly provide heated air to the inside. See ducting option on page 7.

4. Only the ducting accessories as supplied and specified by the heater's manufacturer shall be used.

**DO NOT USE ANY OTHER DUCT-WORK, FIELD FABRICATED DUCT, TARPS, OR STOVE PIPE, ETC. ON THIS HEATER.**

■ When using the ducting, ensure the bends in the duct are kept to a minimum.

■ Reducing the number of bends will ensure that the warm air exiting the heater flows freely, thereby preventing overheating. If there are excessive bends, the high limit switch may open.

5. Heaters used in the vicinity of combustible tarpaulins, canvas, plastics, wind barriers, or similar coverings shall be located at least 10 ft./3.05 meters from the coverings. The coverings shall be securely fastened to prevent ignition or upsetting of the heater due to wind action on the covering or other material.

6. Always lock the swivel wheels before operating or servicing the heater.

7. Do not handle, move, or service the heater while in operation, connected to power supply, or hot.

8. The heater must be installed so as not to interfere with or obstruct normal exits, emergency exits, doors and walkways.

9. Railing, fencing or suitable substitute materials must be used to keep the heating equipment from any people using and visiting the structure.

10. The heater shall be located so that rain, ice, or snow drainage from the structure does not affect equipment operation. If the heater is outside, it must be position above any pooled or standing water. If the unit is to be located on the ground, a surrounding trench is recommended to drain any rain, ice, or snow away from the unit.

11. The ground and surrounding terrain must be cleared of any combustible vegetation and other combustible materials when the heater is utilized outside.

12. Take time to understand how to operate and maintain the heater by using this Owner's Manual. In case of emergency, make sure you know how to properly shut off the heater.

13. Any defects found in performing any of the service or maintenance procedures must be eliminated and defective parts replaced immediately. The heater must be retested by properly qualified service personnel before placing the heater back into use.

# Optional Accessories

**Must be ordered separately**

Contact your local L.B. White distributor or the L.B. White Co., 1-800-345-7200 for assistance.

## Ducting

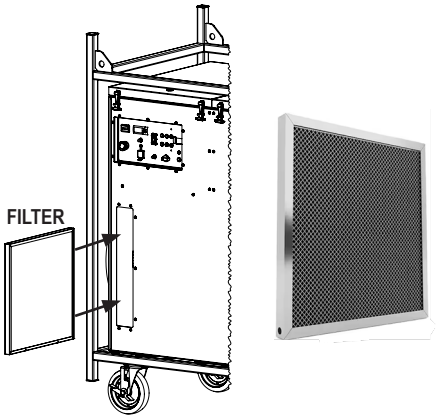
| | |
|---|---|
| **DISCHARGE OUTLET** | 500-133767 |
| **SUPPLY AIR INLET** | 24 in. X 25 ft. (609.6 mm X 7.62 m) |

The heater can be operated with or without duct work attached to the inlet or discharge outlet. Ducting up to 100 ft. / 30.48 m can be conected to the heater as long as the outlet static pressure does not exceed 3 in. W.C. The less the restriction (less bends) the longer the duct run. If you are experiencing frequent high limit tripping or air pressure switch cycling, reducing the duct length or straightening the duct will be required.

## Filter (20x20x1, MERV 4 or equivalent)

**500-135003**

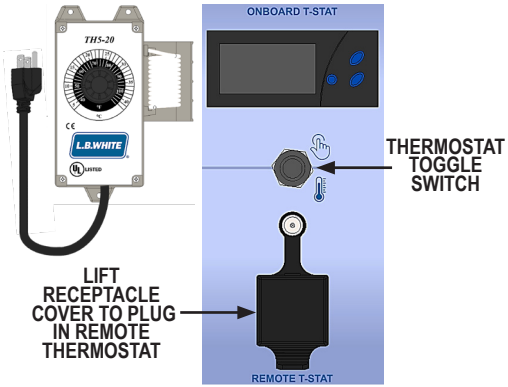
An optional air filter can be use to reduce air contamination entering the heater. Using an air filter is strongly recommended in environments with high levels of dust or air pollution. It plays a vital role in enhancing indoor air quality and protecting critical heater components from dust accumulation. However, using the air filter will reduce your overall CFM. If applicable, the air filter should be replace every 3 months or as needed.




## Remote Thermostat

**500-132976**

An optional remote single stage thermostat can be plug into the thermostat receptacle. An standard 16-18 GA extension cord may be used to extend the remote thermostat location. When operating with a remote thermostat, ensure the thermostat toggle switch is set to the 'Remote Thermostat' position.




## Stacking Option

The Volt 150 can be stacked 2 units high for storage. See Fig. 1 for stacking detail.

**WARNING**

**Tipping Hazard**

Failure to follow these warnings can result in serious injury or death.

- Heaters must be stacked on a solid, stable, level surface.
- Never stack on dirt or other soft surfaces.
- Never try to move stacked heaters.
- Never stack more than 2 heaters high.
- Do not operate the heaters while they are stacked together.

## Stacking Kit

**500-135004**

When stacking heaters, a stacking base kit is required for each unit. This kit ensures stability between the heaters and shifts the weight off the wheels of the bottom unit, helping to prevent flat spots on the wheels.

## Lifting Options Instructions

The Volt 150 can be lifted using either the optional forklift pocket (Part No. 500-134005) or the built-in four-point lifting system.

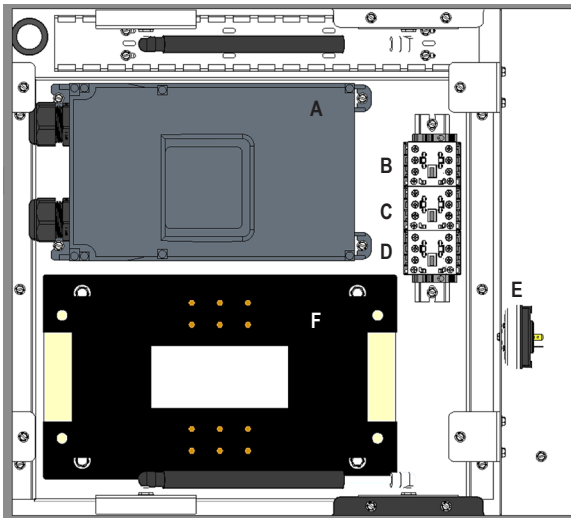
When lifting the heater with a forklift:

- The use of the optional forklift pockets is strongly recommended. It provides enhanced stability and helps prevent the heater from tipping off the forks.
- Align the forklift forks evenly beneath the heater, positioning them through the designated pockets to maintain balance.
- Set the fork spacing to match the width of the lifting pockets for secure engagement.
- Raise the unit in a controlled manner, avoiding abrupt or uneven movements that could destabilize the heater.
- Keep the heater level throughout the lift to prevent tipping or damage.
- Always operate the forklift according to workplace safety guidelines and manufacturer recommendations.

When using the four-point lifting system to lift the heater:

- Verify that all four designated lifting points are secure and structurally sound before proceeding.
- Attach appropriate lifting equipment or hooks to each designated lifting point, ensuring the load is evenly distributed.
- Verify that the lifting device (e.g., crane or hoist) is properly positioned to maintain balance and prevent tilting during the lift.
- Raise the unit slowly and steadily to avoid swinging or sudden movements.
- Always adhere to manufacturer guidelines and site safety procedures during the lift.

# Variable Frequency Drive Cabinet




**(A) Variable Frequency Drive (VFD)**
Changes output voltage frequency and magnitude to vary the speed, power, and torque of the motor to meet the load conditions.

**(B) Contactor**
480V to VFD

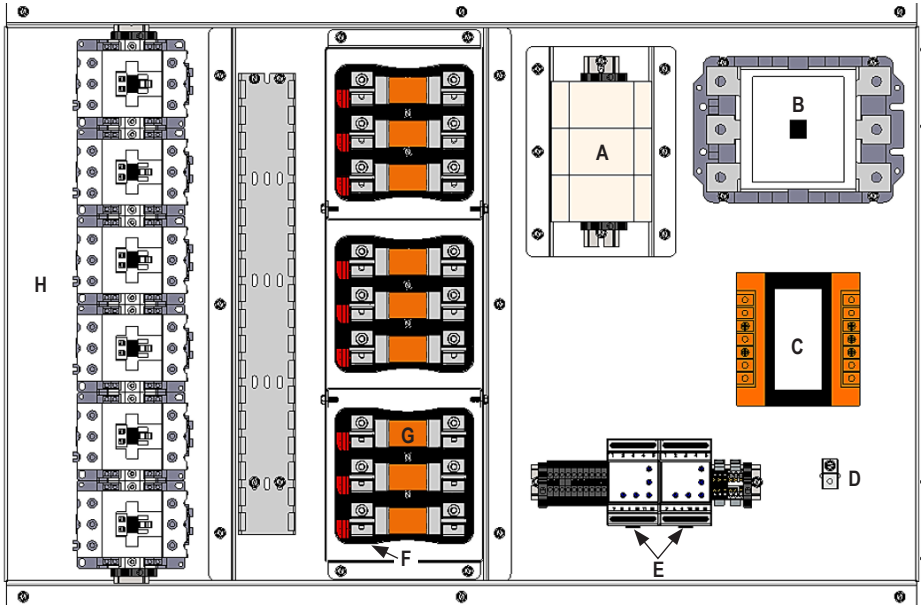
**(C) Contactor**
600V to transformer

**(D) Contactor**
Transformer to VFD

**(E) Air Pressure Switch**
Measures the air pressure within the combustion chamber.

**(F) Transformer**
Reduce 600V to 480V

# Main Electrical Cabinet




**(A) Power Distribution Block, 1500VAC, 310A**

**(B) AC Contactor, 3-Poles 110V Coil, 220A**

**(C) Transformer, 480/600V-120VAC**

**(D) Ground Lug**

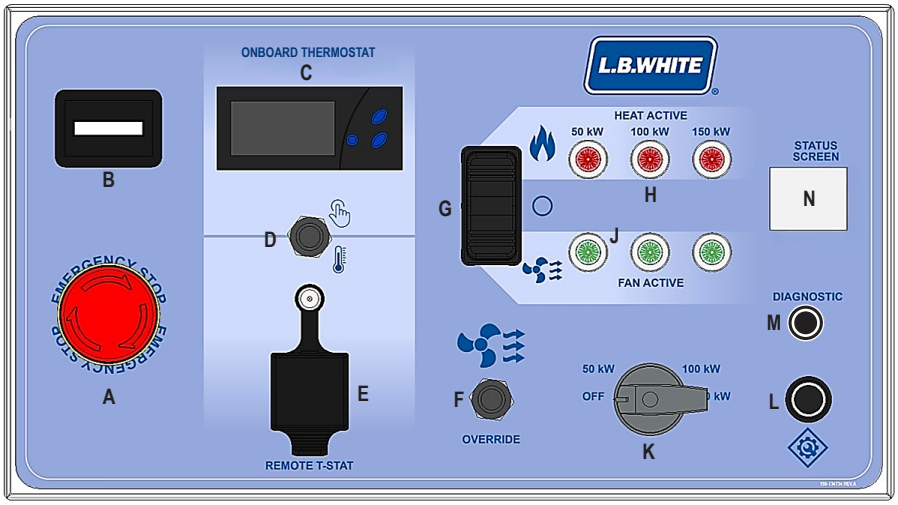
**(E) Relay, Phase Monitor, DPDT, 10A**

**(F) Fuse Block**

**(G) Fuse, 80A, 600VAC, Class J**

**(H) Contactor, 3 Poles, 65A, 120V Coil**

# Control Panel




| ITEM | DESCRIPTION |
|---|---|
| A | EMERGENCY STOP BUTTON |
| B | HOUR METER |
| C | ONBOARD THERMOSTAT CONTROL |
| D | THERMOSTAT TOGGLE SWITCH, ONBOARD OR REMOTE THERMOSTAT |
| E | REMOTE THERMOSTAT RECEPTACLE |
| F | FAN SPEED OVERRIDE, AUTO FAN SPEED OR DEFAULT TO HIGHEST CFM |

| ITEM | DESCRIPTION |
|---|---|
| G | HEAT/OFF/VENT ROCKER SWITCH |
| H | ACTIVE HEATING OUTPUT LED |
| J | ACTIVE FAN LED |
| K | HEAT/FAN SPEED OUTPUT SELECTOR, OFF-50kW/LOW-100kW/MEDIUM-150kW/HIGH |
| L | VFD FAULT LED |
| M | DIAGNOSTIC BUTTON FOR STATUS SCREEN |
| N | STATUS SCREEN, TROUBLESHOOTING |

**A. EMERGENCY STOP BUTTON (E-Stop)**
- A safety switch that immediately disconnect voltage to the PLC . FOR EMERGENCY ONLY.

**B. HOUR METER**
- Tracks and displays the total operating time of the motor in hours and tenths of hours. It is used for essential maintenance.

**C. ONBOARD THERMOSTAT**
- Local temperature control with a digital display showing the current ambient temperature and allowing users to set a desired temperature (Set Point, (SP). See Onboard Temperature sections for setup instructions.

**D. THERMOSTAT TOGGLE SWITCH**
- Allows selection between the onboard thermostat or a remote thermostat for temperature control.

**E. REMOTE T-STAT**
- When selecting remote thermostat option, connect the NEMA 5-15P plug from the L.B. White remote thermostat to the receptacle.

**F. FAN OVERRIDE SWITCH**
- FAN SPEED MODE: The fan speed automatically adjusts base on the heat output selection.
- OVERRIDE MODE: The fan operates at maximum speed regardless of heat output settings.

**G. HEAT/OFF/VENT SWITCH**
- A selector switch to select between HEAT or VENT operating modes, or to turn the unit OFF.

**H. HEAT ACTIVE LED**
- Red LED indicator that display which heat output level is currently active.

**J. FAN ACTIVE LED**
- Green LED indicator that shows the current fan speed in operation.

**K. HEAT/FAN OUTPUT SELECTOR**
- HEAT MODE: To select between OFF, 50kW, 100kW, or 150kW heat output.
- FAN MODE: To select motor speed. OFF, Low, Medium, or High.

**L. VFD FAULT LED**
- LED will illuminate if the Variable Frequency Drive (VFD) is faulty.

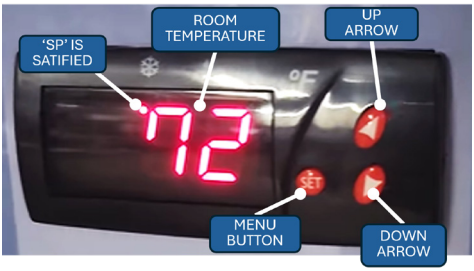
**M. DIAGNOSTIC BUTTON**
- Button used to navigate the STATUS SCREEN.

**N. STATUS SCREEN**
- A real-time status and troubleshooting screens, each indicated by a specific screen color:
- White screen: Standby mode
- Green screen: Normal operation
- Red screen: Fault mode (refer to fault diagnostics)

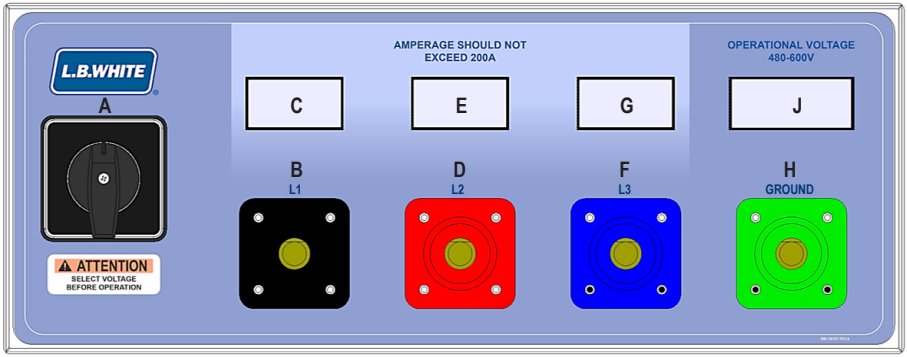
**FAULT MODE DIAGNOSTICS**
- See page 18 for troubleshooting details.

## Onboard Temperature Setting Instructions

1. Press the SET button twice.
2. Use the UP or DOWN arrow buttons to select the desired temperature.
3. Press the SET button again to confirm and store the new set point.
4. Press the SET and DOWN arrow buttons simultaneously to exit the programming screen.




## Electrical Panel




| ITEM | DESCRIPTION |
|---|---|
| A | VOLTAGE TOGGLE SWITCH, 480V-0-600V |
| B | POWER SUPPLY L1 CONNECTION |
| C | AMPERAGE DISPLAY FOR L1 CONNECTION |
| D | POWER SUPPLY L2 CONNECTION |
| E | AMPERAGE DISPLAY FOR L2 CONNECTION |
| F | POWER SUPPLY L3 CONNECTION |

| ITEM | DESCRIPTION |
|---|---|
| G | AMPERAGE DISPLAY FOR L3 CONNECTION |
| H | GROUNDING CONNECTION |
| J | OPERATION VOLTAGE, 480V OR 600V |

# Start-Up Instructions

**FOR INITIAL START-UP**

- Ensure the main power supply breaker is in the OFF position.
- Apply Lockout Tagout (LOTO) procedures to secure the breaker and prevent accidental re-energization.
- Connect the power supply cables to the designated power connectors. For safety, connect the ground cable first.
- Secure all power cables properly before restoring power.
- Switch ON the main power supply breaker to energize the heater.
- Set the desired voltage using the Voltage Selector Switch (480V/3Ø or 600V/3Ø).
- Verify the operational voltage on the Operational Voltage Display to ensure proper power is supplied.

**HEATING MODE**

Follow either the STATUS SCREEN instructions or the steps listed below for normal start-up procedure.

1. Select the thermostat control mode using the toggle switch: choose either LOCAL T-STAT or REMOTE T-STAT, depending on your setup.

2. Adjust the thermostat set point (SP) to a value above the current room temperature. (Refer to LOCAL T-STAT operation instructions for detailed guidance.)

3. Set the fan override switch to either auto fan speed or maximum fan speed based on application requirements.

4. Set the HEAT/VENT selector switch to HEAT mode to initiate heating operation.

5. Choose the desired heat/fan output level by selecting from 0 to 50kW-100kW-150kW on the heat output selector switch.

**VENTILATION MODE**

When the HEAT/VENT selector switch is set to FAN mode, the fan motor will activate, while the heating elements remain de-energized. Fan speed can be controlled using either the Heat/Fan Output Selector Switch or the Fan Override Toggle Switch, depending on the desired airflow.

**OFF (O)**

Position the switch to midpoint. O

# Shut-Down Instructions

The Volt 150 heater includes a mandatory 30-second cool-down cycle upon shutdown. To ensure safe and optimal operation, do not disconnect the power supply or interrupt the cool-down cycle unless in an emergency. Repeated shutdowns without completing the cool-down cycle may result in activation of high-limit safety mechanisms, premature failure of heating elements, or potential damage to the heater or surrounding property. Adhering to the cool-down protocol helps maintain equipment longevity and operational safety.

**Important:** Do not use the Emergency Stop button to shut down the heater. The Emergency Stop button is intended only for emergency situations. Do not use it for routine shutdowns.

1. Initiate shutdown by setting either the HEAT/VENT selector switch or the Heat Output Selector to the OFF position.

2. The heater will automatically enter a 30-second cool-down cycle. Do not disconnect the power supply until the cool-down process is fully completed.

3. Once the cool-down cycle is complete, set the Voltage Selector Switch to the OFF (O) position to fully de-energize the unit.

4. Turn off the main power supply at the panel and apply Lockout/Tagout (LOTO) procedures to secure the electrical panel.

5. Disconnect the power cables from the heater, starting with the L1 cable and ending with the ground cable.

# Cleaning Instructions

**WARNING**

**Fire, Burn and Explosion Hazard**

- This heater contains electrical and mechanical components safety and airflow systems.
- Such components may become inoperative or fail due to dust, dirt, wear, or aging.
- Periodic cleaning and inspection as well as proper maintenance are essential to avoid serious injury or property damage.

1. Before cleaning disconnect the electrical power supply to the heater and the heating elements are cold.

2. The heater should have dirt or dust removed periodically:

a. Before each use give the heater a general cleaning using compressed air or a soft brush or dry rag on its case andinternal components. At this time, dust off the motor case to prevent the motor from over-heating.

b. At least once a year, give the heater a thorough cleaning. At this time, remove the fan wheel and brush or blow off dirt from the fan wheel fins. Additionally, make sure the heating elements are free of dust accumulation.

**WARNING**

Do not use a pressure washer, water, or liquid cleaning solution on any electrical components. Use of a pressure washer, water, or liquid cleaning solution on on any electrical components can cause severe personal injury or property damage due to water and/or liquids:

- In electrical components, and wires causing electrical shock or equipment failure.
- On electrical controls causing corrosion which can result in the components damages or multifunction.

Clean all components of the heater with pressurized air, a dry brush, or a dry cloth.

# Maintenance Instructions

BEFORE EACH USE:

- Check the area surrounding the heater to ensure it is clear and free of combustible materials, gasoline, and other flammable vapors and liquids.

- Check all wiring associated terminals and electrical components within the heater for corrosion, frayed, burnt,or cut insulation, tight connections, etc. Repair or replace as necessary.

- If applicable, clean or replace the air inlet filter. The air filter should be replace every 3 months or as needed.

- The heater's fan wheel should be checked periodically for damage and cleanliness.

- Review all heater markings (i.e. wiring diagram, warnings, start-up, shut-down, troubleshooting, etc.) at the time of maintenance for legibility. Make sure none are cut, torn, or otherwise damaged. Any damaged markings must be replaced immediately by contacting the L.B. White Co., LLC. Data plate, startup and shut-down instructions and warnings are available at no cost.

MONTHLY:

- Inspect caster wheels and fan wheel for damages.

- Clean/remove any dust build up on the motor.

- Check motor mounting bolts for tightness.

ANNUALLY:

- Inspect the heating elements for any signs of corrosion, burns, or damage.

- Grease the swivel caster wheels ball bearings with a Lithium based grease.

- Check all electrical connections, both factory-made and field-made, and tighten them if loose.

- Test the resetable high limit switch to ensure proper operation. See page 21.

## Service Instructions

**⚠ WARNING**

**Burn Hazard**

- Heater surfaces are hot for a period of time after the heater has been shut down.
- Allow the heater to cool before performing service, maintenance, or cleaning.
- Failure to follow this warning will result in burns causing injury.

**⚠ WARNING**

**Fire and Explosion Hazard**

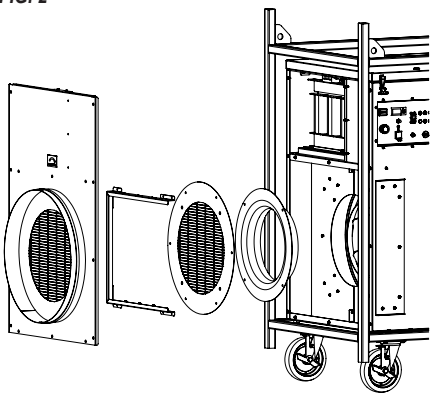
- Appropriate Personal Protective Equipment (PPE) must be worn prior to servicing or troubleshooting the heater.
- Do not proceed without verifying that all safety protocols are in place.
- Do not disassemble or attempt to repair any heater components.
- All component parts must be replaced if defects are found.
- Failure to follow this warning will result in fire or explosions, causing property damage, injury, or death.

1. Disconnect the electrical power supply to the heater before servicing it.
2. Any non-routine maintenance must be performed by a certified and authorized service personnel. For assistance, please contact an authorized L.B. White Co. dealer.
3. The high limit switch and the air pressure switch can be tested for continuity. If defective, replace the switch.
4. Open the respective case panel for access to the related components.
5. For reassembly, reverse the respective service procedure.
6. After servicing, start the heater to ensure proper operation.

## Fan Wheel

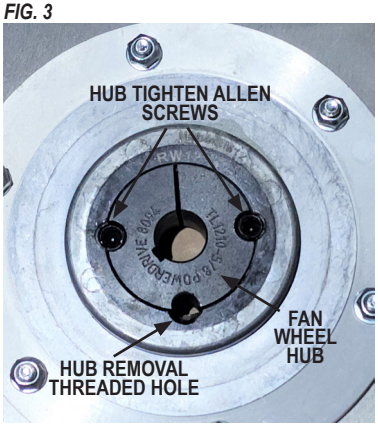
1. Remove the rear panel, filter holder bracket, the air inlet grate,and the air inlet cone as shown in Fig. 2.

***FIG. 2***



2. Using a 3/16 in. allen wrench, loosen one of the allen screw half way out of the fan wheel hub.
3. Remove the other allen screw and screw it into the hub removal threaded hole. See Fig. 3.

***FIG. 3***




4. Screw down the allen screw until the fan wheel's hub is loose from the motor shaft.
5. Remove the screw and install it back to the previous removed threaded hole
6. Pull the fan wheel off of the motor shaft.

7. Do not lose the motor shaft key during the fan wheel removal.

8. When installing the fan wheel, ensure the fan wheel hub is flush with the motor shaft before tighten the two allen screws.

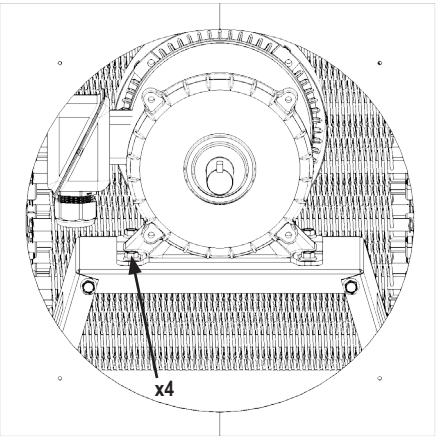
9. Tighten the screws by alternating them until 20 ft. lbs. (27.1 Nm) of torque has been applied.

## Motor

1. Perform the Fan Wheel removal instructions.

2. Remove the four bolts from the motor mount. flanges. See Fig. 4.

***FIG. 4***




3. Rotate the motor and open the electrical access panel on the motor.

4. Disconnect the motor cord wires from the motor.

## High Limit Switch

**⚠ WARNING**

**Burn Hazard**

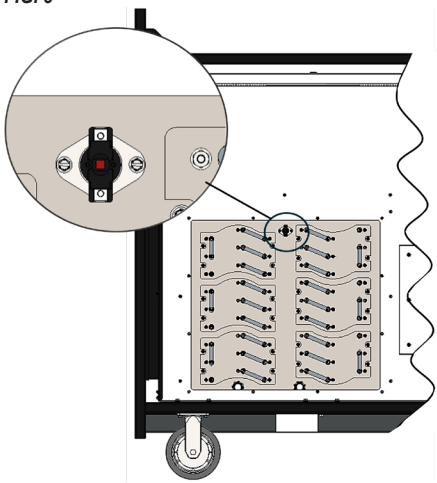
- Do not operate the heater with the high limit switch bypassed.
- Operating the heater with the hight limit switch bypassed may lead to overheating, possibly resulting in a fire, with subsequent damage to the heater or property damage.

The high limit switch is a manual reset normal closed type switch. It's purpose is to de-energize the input of the Programmable Logic Controller (PLC) if the heater should overheat. Reset the high limit switch by pushing the red reset button. If replacing the switch is necessary, the high limit switch is located on the side of the heater behind an access panel. See Fig. 5.

1. Remove the access panel to gain access to the high limit switch. See Fig. 5.

2. Disconnect the wires from the high limit switch.

***FIG. 5***



3. Remove the high limit switch from the heater.

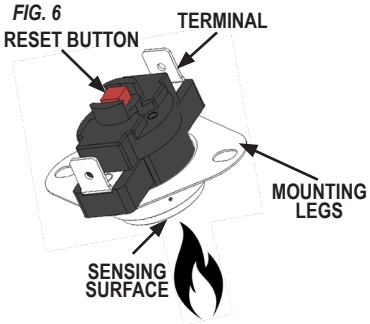
4. Holding the switch by one of its mounting legs, apply a small flame only to the sensing portion on the back of the switch. See Fig. 6. Be careful not to melt the plastic housing of the switch when conducting this test.

5. Within a minute, you should hear a "click" indicating the contact of the switch opened.

6. Allow the switch to cool for about a minute before firmly pressing its reset button.

7. Check for electrical continuity across the switch terminals to make sure the contacts have closed.

*FIG. 6*




## Heating Elements

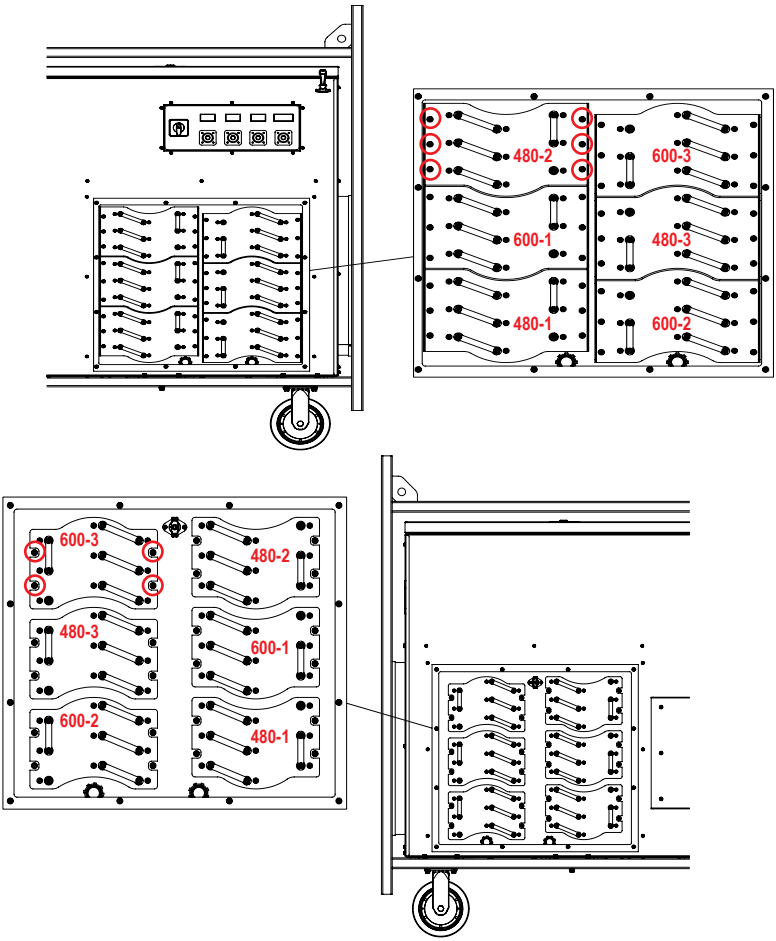
**⚠ WARNING**

**High Voltage Hazard**

- Ensure all power sources are disconnected and properly locked out/tagged out (LOTO).
- Failure to do so may result in serious injury or death due to electrical shock or arc flash.
- Only qualified personnel should perform this procedure using appropriate personal protective equipment (PPE).
- Follow all applicable safety standards and manufacturer guidelines.

1. Remove both the left and right side panels to access the heating element banks, as shown in Fig 7.

*FIG. 7*

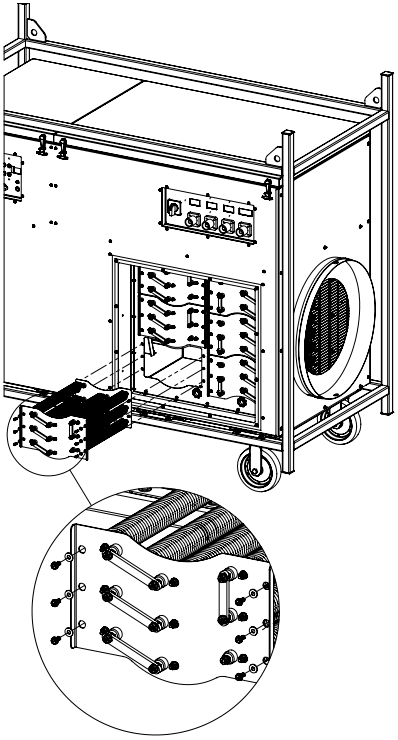


2. Determine which heating element bank requires replacement.

3. Remove the designated bolts and washers securing the heating element bank to release it from the unit as shown in Fig. 7.

4. Pull the heating element bank out per left side as shown in Fig. 8.

***FIG. 8***



5. Replace either the entire heating element bank or individual heating elements as needed.

Caution: Avoid direct contact with the heating coil during replacement, as this may reduce the lifespan of the element.

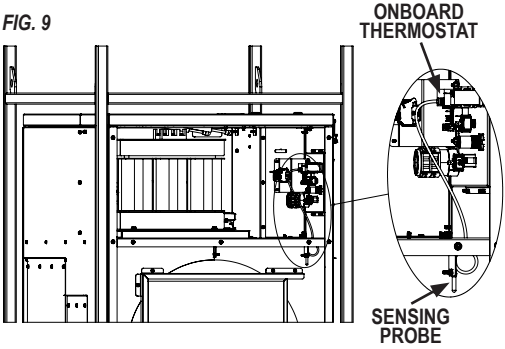
# Temperature Sensor Probe

The air inlet temperature sensor probe is a precision device designed to measure incoming air temperature. It continuously monitors the air inlet temperature and transmits the data to the onboard thermostat for display. Replacement of the sensor probe may be required if it becomes faulty or damaged.

1. If a duct is attached to the inlet ring, disconnect the duct from it.

2. Remove the air inlet panel from the heater.

***FIG. 9***




3. Loosen the screw securing the clamp holding the sensing probe. See Fig. 9.

4. Push the probe up into the VFD cabinet.

5. Disconnect the probe wires from the onboard thermostat.

6. Replace the sense probe.

# Troubleshooting Guide

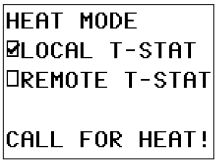
**READ THIS ENTIRE SECTION BEFORE BEGINNING TO TROUBLESHOOT PROBLEMS.**

This guide is intended for use by a QUALIFIED SERVICE PERSON. **DO NOT ATTEMPT TO SERVICE THIS HEATER UNLESS YOU HAVE BEEN PROPERLY TRAINED.**

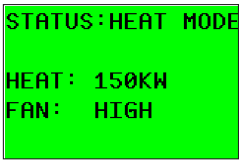
- Visually inspect equipment for apparent damage.
- Checking all wiring for loose, broken, and worn connections.

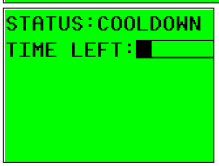
Refer to the following Status Screens for Self-Diagnostic Troubleshooting. The system utilizes three color-coded status screens and consists of eight individual screens designed to assist with heater troubleshooting.

**White Screen: Standby mode or a call for heat.**

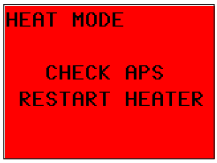


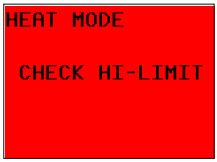

**Green Screen: Normal operation or cool down cycle.**




**Red Screen: Alarm condition.**





When the status screen displays a red alarm, allow the heater to complete its cooldown cycle before initiating any troubleshooting procedures. After the cooldown cycle is complete, note the alarm code displayed on the status screen and service the heater accordingly.

The Volt heater also features a series of diagnostic monitoring screens.

- To access these screens, press the DIAGNOSTIC button on the control panel.

Each press of the DIAGNOSTIC button will cycle through the eight available screens, each displaying real-time information about specific components being monitor or the current operating condition of the heater.

For further assistance with troubleshooting, contact Tech. Support at 800-345-7200.

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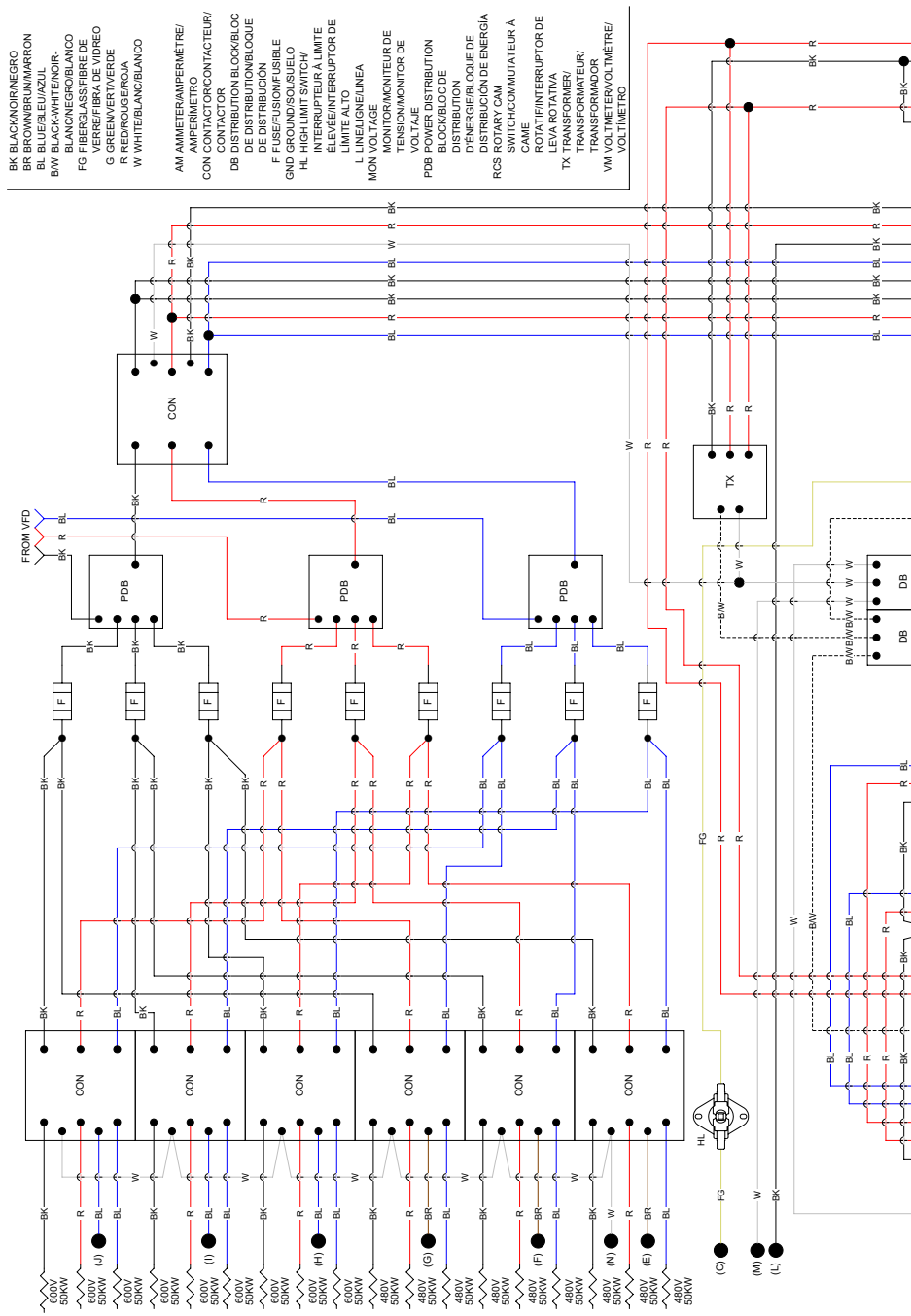
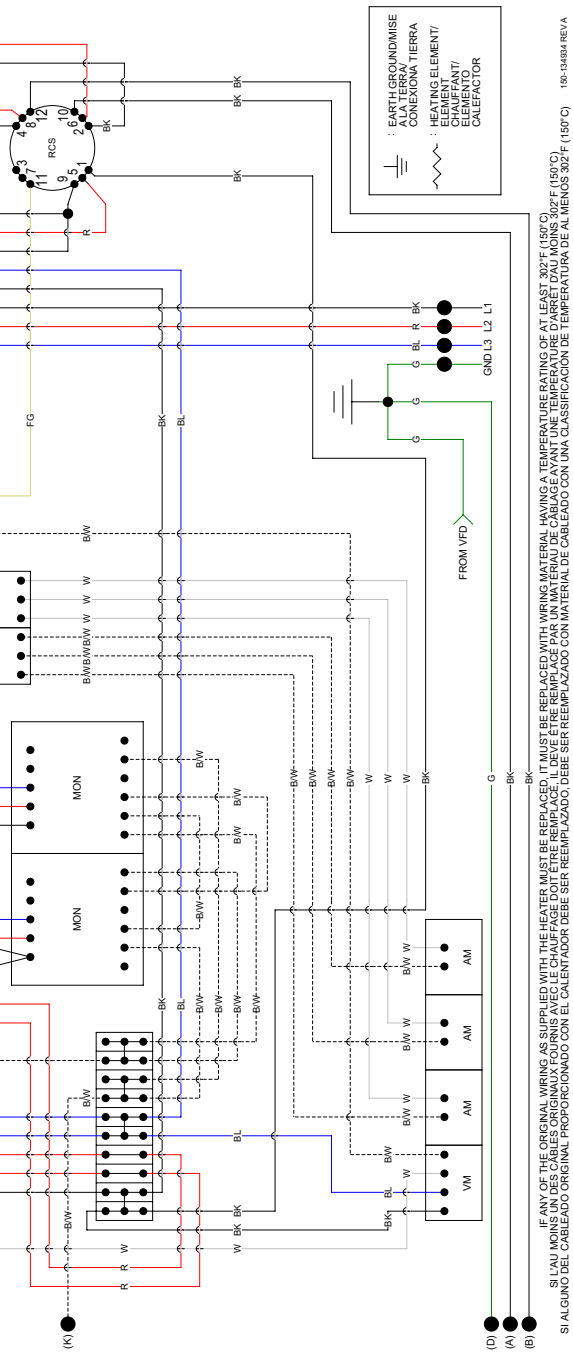
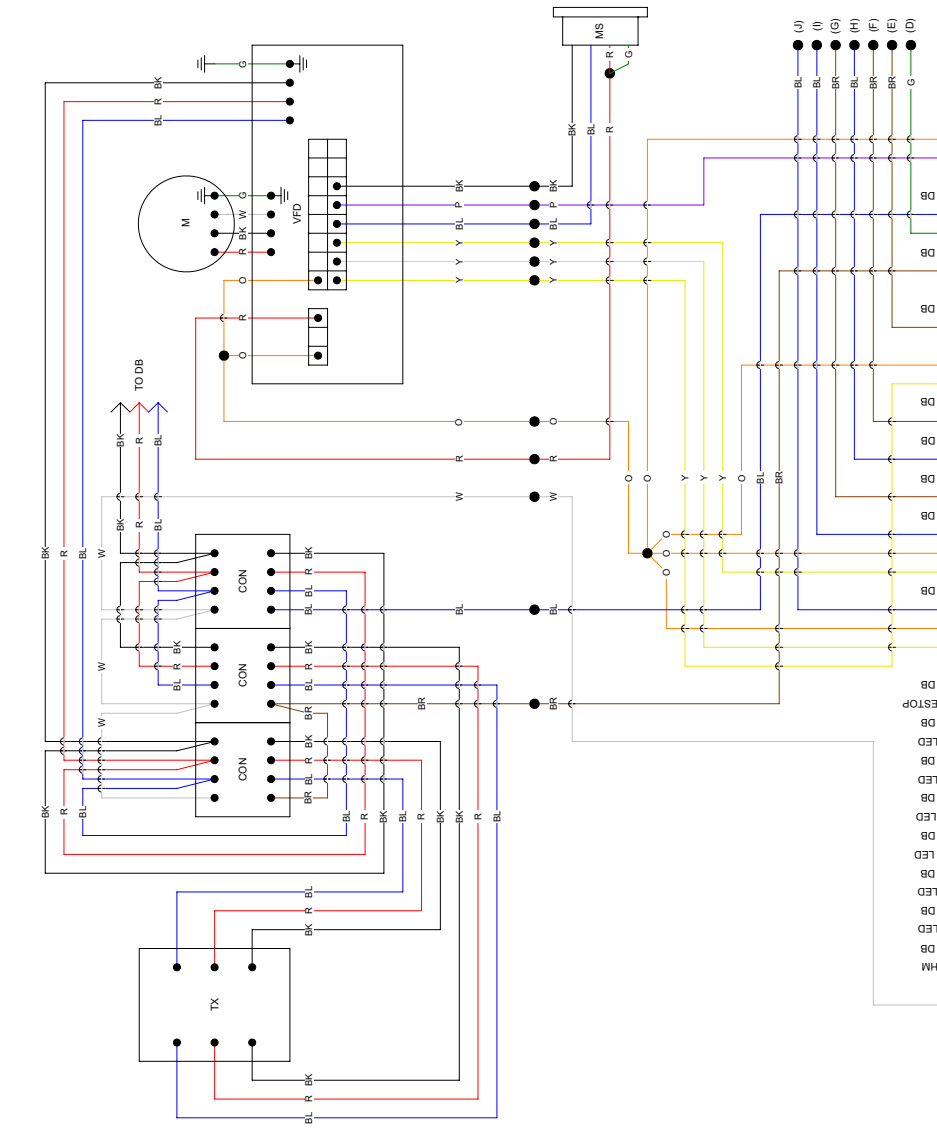
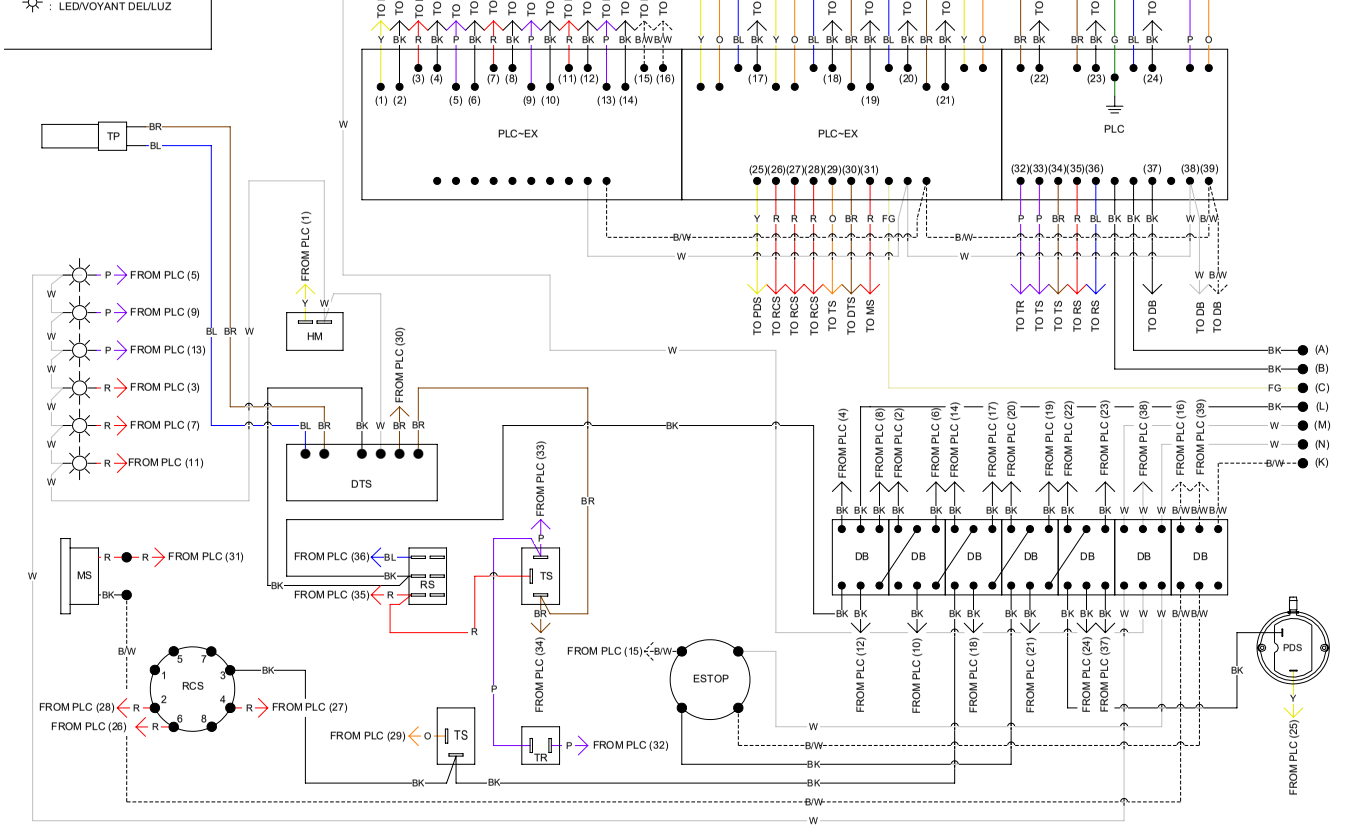
# Electrical Wiring Diagram, Main Cabinet




: EARTH GROUNDMISE À LA TERRA/ CONEXIONA TIERRA
: HEATING ELEMENT/ ELEMENT CHAUFFANT/ ELEMENTO CALEFACTOR
RCS
MON
MON
VM
AM
AM
AM
FROM VFD
GND L3 L2 L1
(K)
(D)
(A)
(B)
IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THE HEATER MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 302°F (150°C).
SI L'AU MOINS UN DES CÂBLES ORIGINAUX FOURNIS AVEC LE CHAUFFAGE DOIT ÊTRE REMPLACÉ, IL DEVE ÊTRE REMPLACÉ PAR UN MATÉRIAU DE CÂBLAGE AYANT UNE TEMPERATURE D'ARRÊT D'AU MOINS 302°F (150°C).
SI ALGUNO DEL CABLEADO ORIGINAL PROPORCIONADO CON EL CALENTADOR DEBE SER REEMPLAZADO, DEBE SER REEMPLAZADO CON MATERIAL DE CABLEADO CON UNA CLASIFICACIÓN DE TEMPERATURA DE AL MENOS 302°F (150°C)
190-134894 REV A

# Electrical Wiring Diagram, VFD Cabinet






IF ANY OF THE ORIGINAL WIRING AS SUPPLIED WITH THE HEATER MUST BE REPLACED, IT MUST BE REPLACED WITH WIRING MATERIAL HAVING A TEMPERATURE RATING OF AT LEAST 302°F (150°C)
SI L'AU MOINS UN DES CÂBLES ORIGINAUX FOURNIS AVEC LE CHAUFFAGE DOIT ÊTRE REMPLACÉ, IL DEVE ÊTRE REMPLACÉ PAR UN MATÉRIAU DE CÂBLAGE AYANT UNE TEMPERATURE D'ARRÊT D'AU MOINS 302°F (150°C)
SI ALGUNO DEL CABLEADO ORIGINAL PROPORCIONADO CON EL CALENTADOR DEBE SER REEMPLAZADO, DEBE SER REEMPLAZADO CON MATERIAL DE CABLEADO CON UNA CLASSIFICACIÓN DE TEMPERATURA DE AL MENOS 302°F (150°C)

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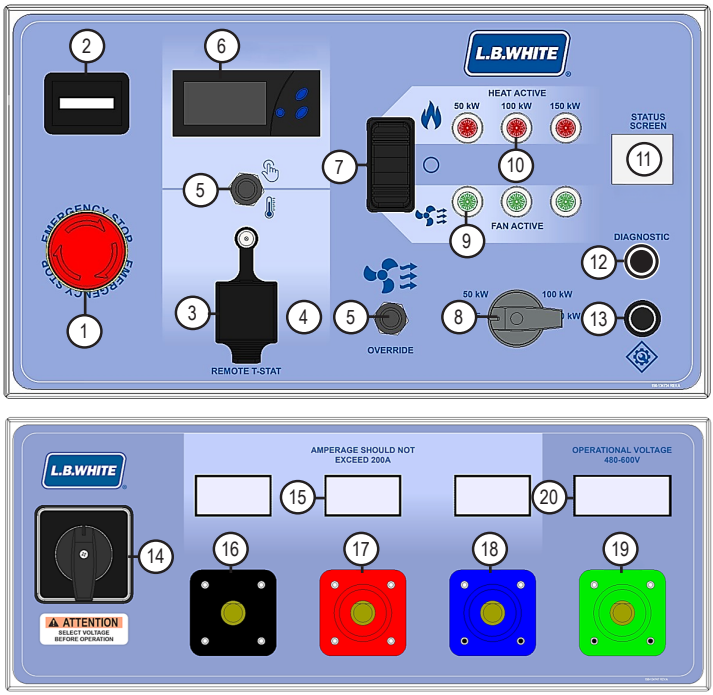
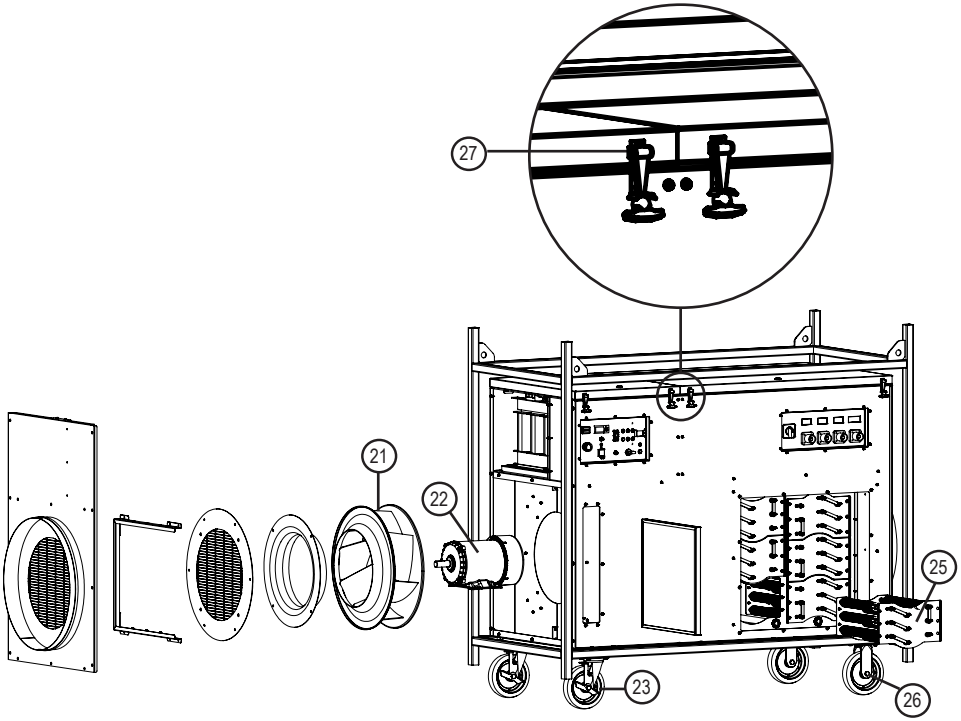
# Parts Identification Schematic
# Electrical and Control Panel




| Item | Description | Part No. |
|---|---|---|
| 1 | Emergency Stop Button | 574688 |
| 2 | Hour Meter | 574121 |
| 3 | Cover, T-stat Receptacle | 574138 |
| 4 | T-stat Receptacle, NEMA 5-15R | 573570 |
| 5 | Toggle Switch w. Boot | 570456 |
| 6 | Thermostat, Onboard | 574246 |
| 7 | Rocker, Switch, ON/OFF/ON | 574122 |
| 8 | Rotary Cam Switch, 32A | 574689 |
| 9 | Green LED, Snap-In, 120V | 573770 |
| 10 | Red LED, Snap-In, 120V | 573564 |

| Item | Description | Part No. |
|---|---|---|
| 11 | Control Relay, PLC, Easye4 | 574691 |
| 12 | Momentary Switch, 12mm | 574690 |
| 13 | Mementary Switch, 16mm | 574609 |
| 14 | Rotary Cam Switch, 50A | 574607 |
| 15 | Ammeter, Panel | 574692 |
| 16 | Cam, Male, Black | 574693 |
| 17 | Cam, Male, Red | 574694 |
| 18 | Cam, Male, Blue | 574695 |
| 19 | Cam, Male, Green | 574696 |
| 20 | Voltmeter, Panel | 574697 |

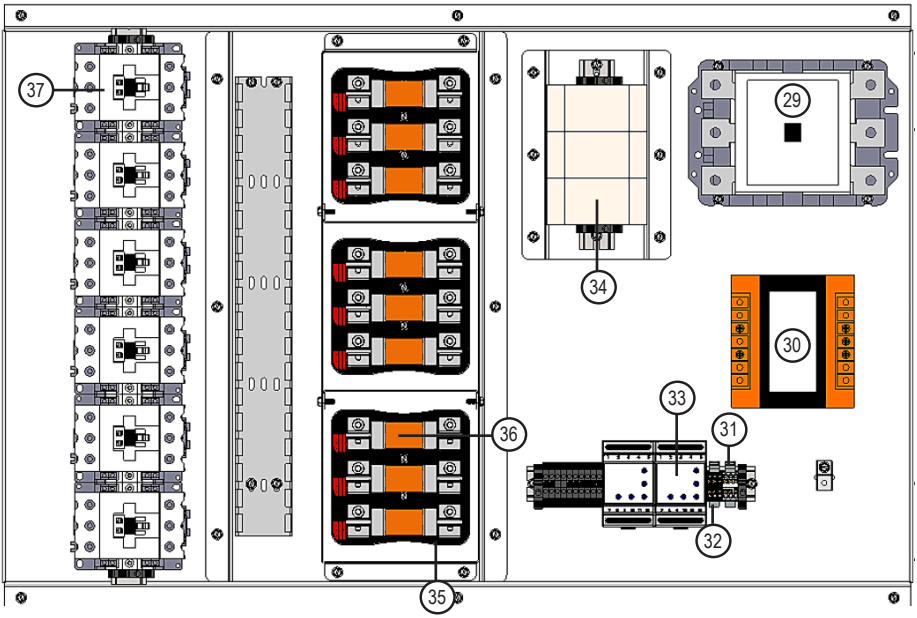
# Parts Identification Schematic
# Heater's Components




| Item | Description | | Part No. |
|---|---|---|---|
| 21 | Fan, Plenum, 7 Blade | | 574597 |
| 22 | Motor, 5HP, 3 PH, 230/460 | | 574594 |
| 23 | Caster, Wheel, 8 in., Swivel | | 571193 |
| 24* | High Limit Switch | | 571671 |
| 25 | Heating Element, | 480V | 574710 |
| | per bank | 600V | 574711 |
| 26 | Caster, Wheel, 8 in., Rigid | | 574484 |
| 27 | Latch, Draw, Rubber | | 574477 |
| 28* | Sensor Temperature, Probe | | 574252 |

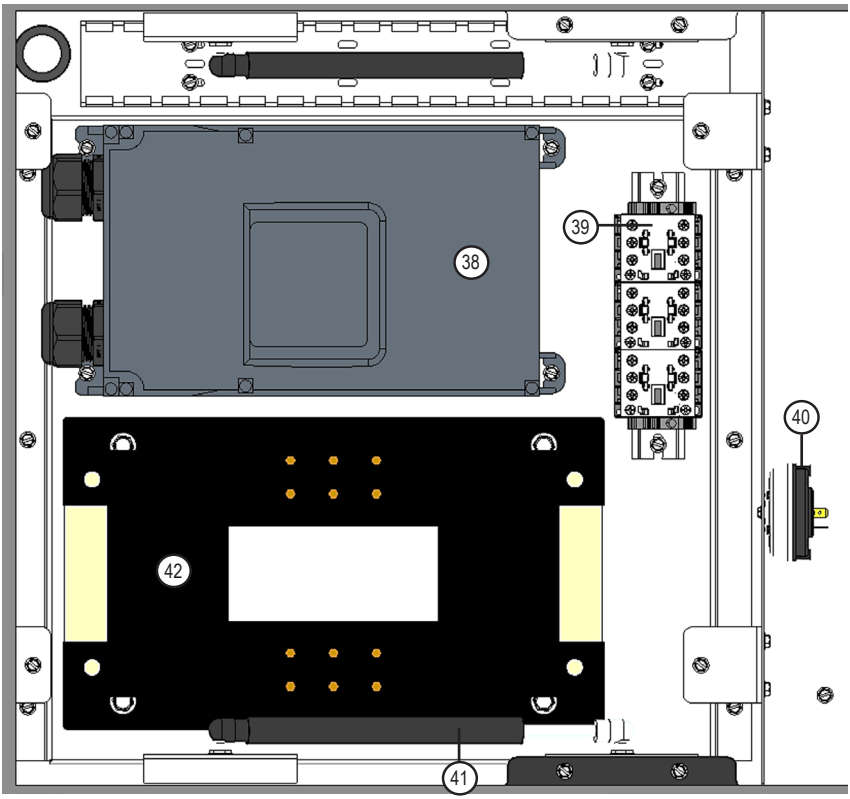
* Not illustrated

# Identification Schematic - Electrical Cabinet, Main




| Item | Description | Part No. |
|---|---|---|
| 29 | AC Contactor, 3 Poles, 220A | 574698 |
| 30 | Transformer, 480/600-120VAC | 574699 |
| 31 | Distribution Terminal Block, White | 574706 |
| 32 | Distribution Terminal Block, Black | 574705 |
| 33 | Relay, Phase Monitor | 574704 |
| 34 | Power Distribution Block | 574700 |
| 35 | Fuse Block | 574702 |
| 36 | Fuse, 80A, Class J | 574701 |
| 37 | AC Contactor, 3 Poles, 65A | 574703 |

# Parts Identification Schematic - Electrical Cabinet, VFD




| Item | Description | Part No. |
|---|---|---|
| 38 | Variable Frequency Drive | 574713 |
| 39 | Mini Contactor, 22A | 574471 |
| 40 | Air Pressure Switch, 0.60 " w.c. | 574709 |
| 41 | Gas Spring, 5" Stroke, 20 lbs. | 574476 |
| 42 | Transformer, 3 Phase, 600-480VAC | 574707 |

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# Manual Rev./Changes

| Date | Rev. | Revision Change | Description |
|---|---|---|---|
| 11/10/2025 | A | No | Released |
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# Warranty Policy

**HEATER (LIMITED WARRANTY)**

L.B. White electric fan heater products are professional construction heaters. They are warranted for twelve (12) months from original date of purchase. The warranty does not cover products modified outside our factory, damage or failure caused by acts of God, abuse, misuse, use on other than rated voltage, abnormal usage, faulty or improper installation, failure to provide recommended maintenance or any repairs other than those provided by an authorized L.B. White service center.

THERE ARE NO OBLIGATIONS OR LIABILITIES ON THE PART OF L.B. WHITE COMPANY, LLC FOR CONSEQUENTIAL DAMAGES ARISING OUT OF OR IN CONNECTION WITH THE USE OR PERFORMANCE OF THE PRODUCT OR OTHER INDIRECT DAMAGES WITH RESPECT TO LOSS OF PROPERTY, REVENUES, OR PROFIT, OR COST OF REMOVAL, INSTALLATION OR REINSTALLATION.

THIS WARRANTY CONSTITUTES THE EXCLUSIVE REMEDY OF ANY PURCHASER OF EQUIPMENT SOLD BY THE MANUFACTURER AND ITS DEALERS AND DISTRIBUTORS AND IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED. During the warranty period, L.B. White will, at its sole option, repair or replace any defective parts or products returned, freight prepaid, to L.B. White or such other location as L.B. White may designate.

Returned products must be packaged carefully, and L.B. White shall not be responsible for damage in transit. When returning parts, the owner must provide the model number of the product and the nature of difficulty being experienced. This warranty does not oblige L.B. White to bear the cost of labour in replacing any assembly, unit or component or part thereof, nor does the company assume any liability for secondary charges, expenses of removal or installing, freight or damages. There will be charges rendered for product repair after our warranty period has expired. Proof of purchase, including date, must accompany request for in-warranty service.

**PARTS**

L.B. White Company, LLC warrants that replacement parts purchased from the company and used on the appropriate L. B. White equipment are free from defects both in material and workmanship for 12 months from the date of purchase by the end user. Warranty is automatic if a component is found defective within 12 months of the date code marked on the part. If the defect occurs more than 12 months later than the date code but within 12 months from the date of purchase by the end user, a copy of a bill of sale will be required to establish warranty qualification.

The warranty set forth above is the exclusive warranty provided by L.B. White, and all other warranties, including any implied warranties or merchantability or fitness for a particular purpose, are expressly disclaimed. In the event any implied warranty is not hereby effectively disclaimed due to operation of law, such implied warranty is limited in duration to the duration of the applicable warranty stated above. The remedies set forth above are the sole and exclusive remedies available hereunder. L.B. White will not be liable for any incidental or consequential damages directly or indirectly related to the sale, handling or use of the equipment, and in any event L.B. White's liability in connection with the equipment, including for claims based on negligence or strict liability, is limited to the purchase price.

Some states do not allow limitations on how long an implied warranty lasts, so the above limitation may not apply to you. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation or exclusion may not apply to you. This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.
To register your product and ensure full warranty, go to http://www.lbwhite.com/customer_care_center/product-registration/. Please have the serial number(s) and model(s) handy for the products you are registering.

# Service

Contact your local L.B. White dealer for replacement parts and service. You may also call the L.B. White Company, LLC at 1-800-345-7200, for assistance, or email us at customerservice@lbwhite.com. Be sure that you have your heater model and serial number when calling.

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