

Quest Power Electric Heat EHS 31 Pro

Installation, Operation and Maintenance Instructions

– *Read and Save These Instructions* –

The Power Electric Heat EHS 31 Pro portable, heavy duty electric heater features a built-in 50-amp twist lock receptacle designed to work with standard 30 or 50 amp power sources—select the setting using the HIGH/LOW switch.

At the 50-amp setting, the Power Electric Heat EHS 31 Pro produces 31,000 BTU's—that's 360 CFM with a 80°F temperature rise. Using the 30-amp setting the Power Electric Heat EHS 31 Pro produces 18,000 BTU's—giving a 46°F temperature rise. Internal temperature cutouts prevent the Power Electric Heat EHS 31 Pro from overheating an area, while the Power Electric Heat EHS 31 Pro's included remote thermostat provides a means to control the heat from anywhere in the space.

Quest Power Electric Heat EHS 31 Pro:

- **Listed by ETL to UL Safety Standards, NEC Compliant**
- **30 or 50 Amp operation (18,000 BTU/31,000 BTU)**
30 Amp = 24 Actual Amp Draw and 46°F Temperature Rise
50 Amp = 40 Actual Amp Draw and 80°F Temperature Rise
- **Two 8' Power Cords**
(1 dryer, 1 range) included with unit
- **Remote Thermostat**
(with 25' connecting wire) included with unit
- **Multiple air filter options**
Standard MERV-11, MERV-14 Optional
- **Multiple ducting options**
12" intake, 12" supply
- **Detachable 12" Duct Collar stores in lid with room for power cords**
- **Stainless steel cabinet**



Quest Power Electric Heat EHS 31 Pro
PN 4030220



Therma-Stor LLC

Driven by performance. Powered by design.™

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Serial No. _____

Purchase Date ____/____/____

Dealer's Name _____

Read the operation and maintenance instructions carefully before using this unit. Proper adherence to these instructions is essential to obtain maximum benefit from your Quest Power Electric Heat EHS 31 Pro.



WARNING

- Unit Intended for INDOOR USE ONLY; DO NOT USE OUTDOORS
- Device is HOT when in use. To prevent burns, avoid skin contact with hot surfaces.
- Use handle when moving device
- Maintain 36" minimum clearance between device outlet and any combustible materials such as furniture, pillows, bedding, papers, clothes and curtains. Keep such items away from sides and rear of device.
- Extreme caution is necessary when device is used by or near children or invalids and whenever device is left operating unattended.
- Always unplug unit when not in use
- DO NOT OPERATE with damaged cord, plug, or after unit malfunctions, has been dropped or damaged in any manner. Return to authorized service facility for adjustment or repair.
- Device not intended for use directly in an area where it may fall into a bathtub or other water container.
- DO NOT run cord under carpeting or other floor covering. Arrange cord away from traffic area and where it will not be tripped over.
- To disconnect device, turn controls off, then remove plug from outlet.
- Connect ONLY to properly grounded outlets.
- DO NOT insert or allow foreign objects to enter any ventilation or exhaust openings as this may cause an ELECTRIC SHOCK or FIRE, or damage the heater.
- To prevent a possible fire, do not block air intakes or exhaust in any manner. Do not use on soft surfaces, like a bed, where openings may become blocked.
- Device has hot and arcing or sparking parts inside. Do not use in areas where gasoline, paint, or flammable liquids are used or stored.
- Use device only as described in this manual. Any other use not recommended by the manufacturer may cause fire, electric shock, or injury to persons.
- Avoid use of an extension cord because the extension cord may overheat and cause a risk of fire. However, if you have to use an extension cord, the cord shall be No. 6 AWG minimum size and rated not less than 9600 Watts.



1 Specifications

| | |
|---------------------|---|
| Part No. | 4030220 |
| Power | User selectable 30/50 A operation 220/240 VAC 50/60 Hz, 1 Phase 30 Amp = 46°F temperature rise; 18,000 BTUs 50 Amp = 80°F temperature rise; 31,000 BTUs |
| Blower | 360 CFM |
| Filters | Pleated Media MERV-11 |
| Duct Options | Intake – 12" Flex-Duct Supply – 12" Flex-Duct |
| Warranty | 1 year 100% of Parts and Labor |

Dimensions

| | Machine | Shipping |
|--------|----------------|-----------------|
| Width | 20.25" | 27.5" |
| Height | 40" | 45.25" |
| Depth | 21.4" | 25.5" |
| Weight | 90 lb | 115 lb |

2 Operation

2.1 Transporting

The Quest Power Electric Heat EHS 31 *Pro* must always be upright when transported by vehicle. It may be tipped onto its handle and back for loading and moving by hand. The Quest Power Electric Heat EHS 31 *Pro* features a high-impact plastic skid plate which protects the unit while navigating obstacles such as curbs, stairways, and while loading into vehicles.

2.2 Electrical Requirements

The Quest Power Electric Heat EHS 31 *Pro* requires 220/240VAC. The Power Electric Heat EHS 31 *Pro* outlet is 240VAC with ground. When properly installed, it provides a ground connection through the cord to the heater to protect the operator from electric shock. The Quest Power Electric Heat EHS 31 *Pro* comes equipped with two 8' long cords for connection to grounded residential range and dryer receptacles. An accessory extension cord is also available (see Accessories).

2.3 Ducting

The Quest Power Electric Heat EHS 31 *Pro* can be ducted at the inlet, the outlet or both using the included round outlet adapter. The Power Electric Heat EHS 31 *Pro* lid and outlet adapter are designed to accommodate 12" flexible duct. When selecting flexible ducting keep in mind anticipated outlet temperatures. Air temperature increase is typically 50 to 80 degrees F for low and high power settings respectively. Adding ducting decreases airflow which can increase outlet temperatures by up to 20 additional degrees F.

Install the 12" duct adapter by lining up the notch of the adapter with the rivet on the cabinet, then push in the directions shown to engage fasteners.



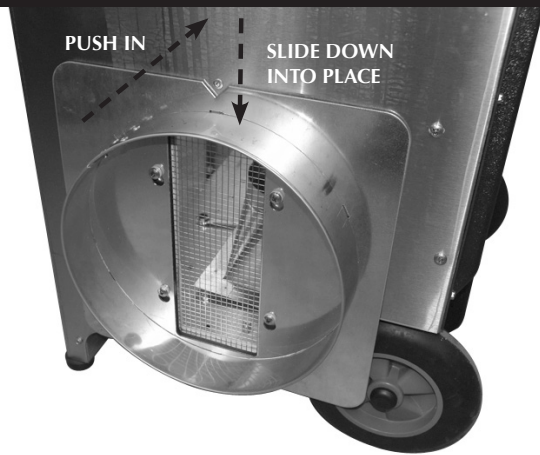
2.4 Power Switch

Master POWER Switch: The master power switch located on the back of the Power Electric Heat EHS 31 Pro can be used to turn the unit ON, OFF, or set the unit to be controlled by an external thermostat.

When set to ON, the Power Electric Heat EHS 31 Pro will energize the blower relay and heater element(s) continuously. In this mode, the heaters are thermostatically limited to 140 degree F incoming air temperature with an automatic switch.

When set to THERMOSTAT, the blower and heater will run when the thermostat terminals (located under the lid) are connected by a switch, remote thermostat, timer, etc.

HIGH/LOW POWER Switch: This switch selects either high or low power operation. If this switch is set to HIGH POWER operation, the Power Electric Heat EHS 31 Pro MUST be connected to a minimum 50 Amp source.



2.5 Hour Meter

The digital hour meter measures the cumulative time that the unit is turned on to tenths of an hour. It stores and displays the total when the unit is unplugged. It resets to zero after 99,999.9 hours of operation.

2.6 Remote Thermostat Connection

To connect the included remote thermostat, first locate the thermostat terminals under the lid of the Power Electric Heat EHS 31 Pro. There are 2 spring loaded terminals for connecting the thermostat wiring. Connect one wire to each terminal. If the Power Electric Heat EHS 31 Pro is placed inside the space to be heated, place the thermostat on top of the unit. For applications where the Power Electric Heat EHS 31 Pro is placed outside the space to be heated (e.g. ducting heat into a chamber), the 25' cord allows you to place the thermostat inside the heated space.

In addition to the included thermostat, any dry-contact switch or other type of control that connects the terminals together will cause the heater to run. The thermostat circuit is low voltage (24VAC). **DO NOT CONNECT POWER TO THE THERMOSTAT TERMINALS.** Always press terminal levers to release spring pressure before disconnecting thermostat wiring. Failure to do so will lead to excessive wear on spring loaded terminal connector.

3 Maintenance

3.1 Air Filter

The Quest Power Electric Heat EHS 31 Pro is equipped with a pleated fabric air filter that must be checked regularly. The standard filter is a MERV-11 high efficiency filter. Operating the Power Electric Heat EHS 31 Pro with a dirty or obstructed filter will reduce airflow eventually causing the heating element to shut off. Installing a clean filter or removing the obstruction to restore airflow will allow the heating element to operate again.

The filter can generally be vacuumed clean several times before needing replacement. Replacement filters can be ordered from the factory or purchased locally if available.

WARNING: DO NOT operate the unit without the filter or with a less effective filter as the heating coils inside the unit could become clogged and require disassembly to clean.



4 Service

WARNING

WARNING: Servicing the Quest Power Electric Heat EHS 31 Pro, with its high voltage circuitry, presents a health hazard which could result in death, serious bodily injury, and/or property damage. Only qualified service people should service this unit.

Do not operate the unit without the front panel in place. High voltage is present, heater burnout may result.

4.1 Technical Description

The Quest Power Electric Heat EHS 31 Pro uses a two stage wound nichrome heating element to provide two heat settings depending on application requirements or available power. One element provides low power operation and both elements together provide high power operation. The heating elements and the blower are operated by a 24VAC control circuit and a number of relays and contactors. For safety, there is an air pressure switch that will shut the heating elements off or prevent the heating elements from coming on if airflow is restricted at either the inlet or the outlet. An additional safety switch limits the incoming air temperature to 140°F. This switch shuts off the heating elements and automatically resets when the temperature falls to 130°F.

4.2 Troubleshooting

NOTE: High Power setting requires an external 50A circuit. Connecting to a 30A circuit with unit set to High Power will result in an external circuit breaker trip.

Blower not running

1. Unit unplugged, no power to outlet, blown fuse (located behind front cover)
2. Power switch not working or set to "THERMOSTAT" and no thermostat connected, or thermostat not calling for heat
3. Blower Relay not operating
4. Wiring fault inside device
5. Defective blower or blower capacitor

Blower running but no heat

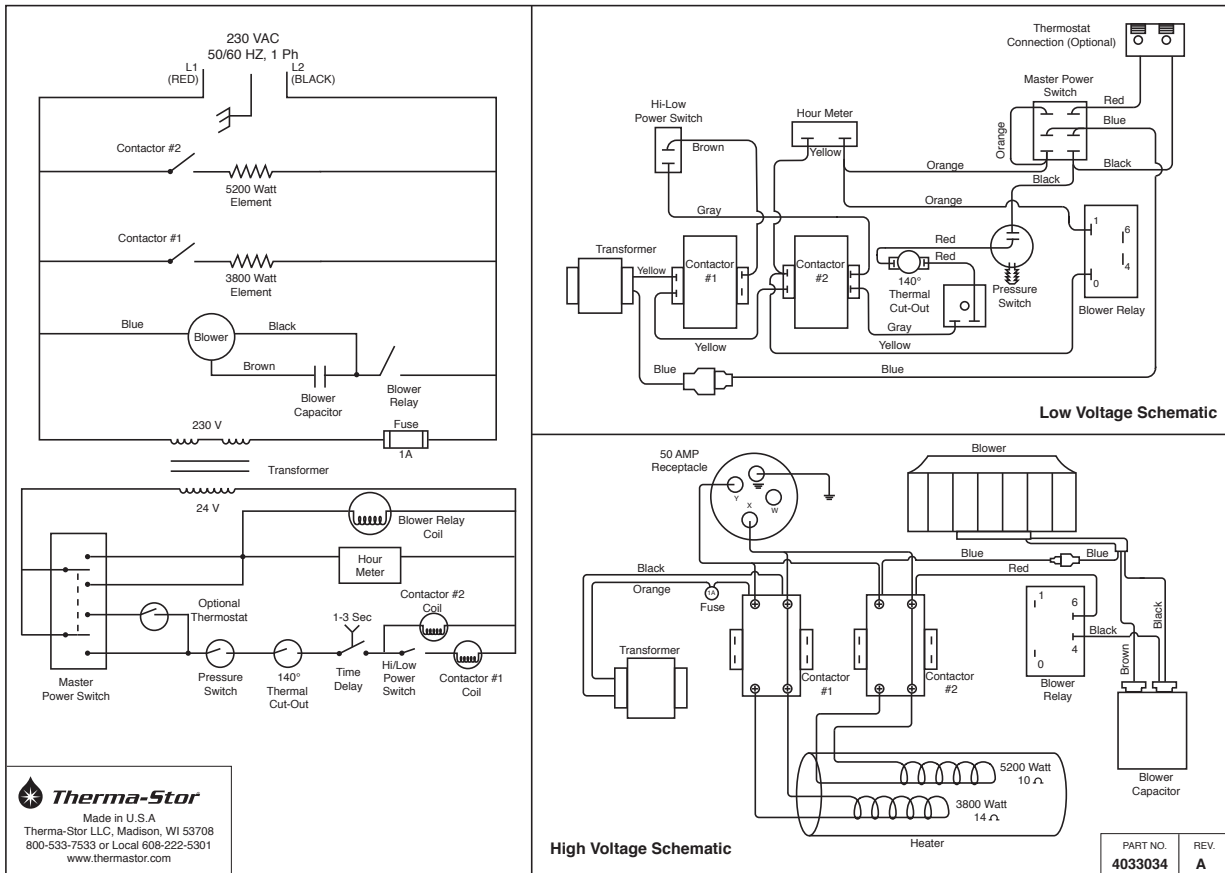
1. Airflow restricted at inlet or outlet
2. High temperature limit reached (140°F)
3. Heating contactor(s) not operating
4. Wiring fault inside device
5. Defective heating element, pressure switch, or temperature limit switch



5 Options and Accessories

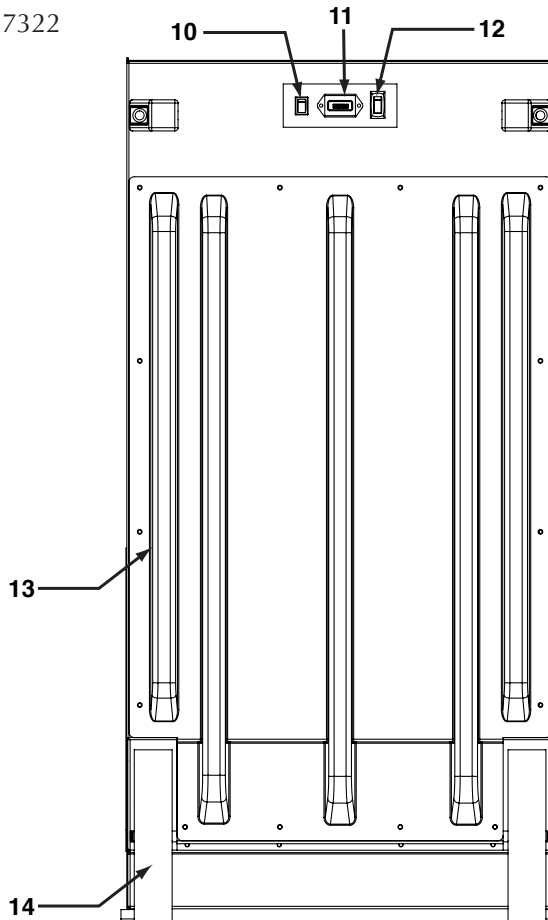
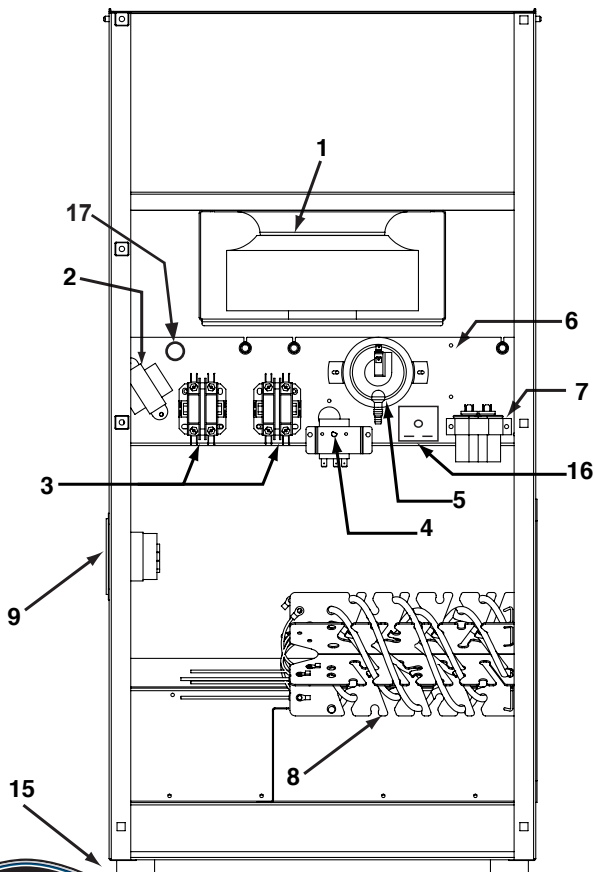
- 4024750 12" x 25' Intake Flex Duct
- 4024969 16" x 20" x 2" Pleated Media MERV-8
- 4021475 16" x 20" x 2" Standard Pleated Media MERV-11
- 4022164 16" x 20" x 2" Optional Pleated Media MERV-14
- 4027326 25' 240V Cord Kit
- 4031045 50' 240V Cord Kit
- 4031046 75' 240V Cord Kit
- 4031047 100' 240V Cord Kit
- 4030115 Reed LM 8000 Multi-Meter
- 4033669 12" Duct Collar
- 4027322 Remote Thermostat

6 Wiring Diagram



7 Service Parts

| Item | Description | Qty | Part No. |
|------|-------------------------------|-----|----------|
| 1 | Blower | 1 | 4027304 |
| 2 | Transformer | 1 | 4033029 |
| 3 | Contactors | 2 | 4031101 |
| 4 | Thermostat | 1 | 4030614 |
| 5 | Pressure Switch | 1 | 4027305 |
| 6 | Blower Relay | 1 | 4022484 |
| 7 | 5mf Capacitor | 1 | 4027315 |
| 8 | Heating Element | 1 | 4027317 |
| 9 | Flanged 50A Inlet | 1 | 4027308 |
| 10 | Master Power Switch | 1 | 4027331 |
| 11 | Hour Meter | 1 | 4028795 |
| 12 | High/Low Power Switch | 1 | 4027330 |
| 13 | Skidplate | 1 | 4025691 |
| 14 | Wheel | 2 | 4025676 |
| 15 | Foot | 2 | 4024073 |
| 16 | Delay Timer | 1 | 4031099 |
| 17 | 1A Fuse | 1 | 4033033 |
| | 12" Duct Collar (not shown) | 1 | 4033669 |
| | Remote Thermostat (not shown) | 1 | 4027322 |



Quest Power Electric Heat EHS 31 Pro Limited Warranty

Warrantor:

Therma-Stor LLC
4201 Lien Rd
Madison, WI 53704
Telephone: 1-866-933-7486

Who Is Covered: This warranty extends only to the original end-user of the Quest Power Electric Heat EHS 31 Pro, and may not be assigned or transferred.

Year One: Therma-Stor LLC warrants that, for one (1) year the Quest Power Electric Heat EHS 31 Pro will operate free from any defects in materials and workmanship, or Therma-Stor LLC will, at its option, repair or replace the defective part(s), free of any charge.

End-User Responsibilities: Warranty service must be performed by a Servicer authorized by Therma-Stor LLC. If the end-user is unable to locate or obtain warranty service from an authorized Servicer, he should call Therma-Stor LLC at the above number and ask for the Therma-Stor Service Department, which will then arrange for covered warranty service. Warranty service will be performed during normal working hours.

The end-user must present proof of purchase (lease) upon request, by use of the warranty card or other reasonable and reliable means. The end-user is responsible for normal care. This warranty does not cover any defect, malfunction, etc. resulting from misuse, abuse, lack of normal care, corrosion, freezing, tampering, modification, unauthorized or improper repair or installation, accident, acts of nature or any other cause beyond Therma-Stor LLC's reasonable control.

Limitation and Exclusions: If any Quest Power Electric Heat EHS 31 Pro part is repaired or replaced, the new part shall be warranted for only the remainder of the original warranty period applicable thereto (but all warranty periods will be extended by the period of time, if any, that the Quest Power Electric Heat EHS 31 Pro is out of service while awaiting covered warranty service).

UPON THE EXPIRATION OF THE WRITTEN WARRANTY APPLICABLE TO THE Quest Power Electric Heat EHS 31 Pro OR ANY PART THEREOF, ALL OTHER WARRANTIES IMPLIED BY LAW, INCLUDING MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, SHALL ALSO EXPIRE. ALL WARRANTIES MADE BY THERMA-STOR LLC ARE SET FORTH HEREIN, AND NO CLAIM MAY BE MADE AGAINST THERMA-STOR LLC BASED ON ANY ORAL WARRANTY. IN NO EVENT SHALL THERMA-STOR LLC, IN CONNECTION WITH THE SALE, INSTALLATION, USE, REPAIR OR REPLACEMENT OF ANY Quest Power Electric Heat EHS 31 Pro OR PART THEREOF BE LIABLE UNDER ANY LEGAL THEORY FOR ANY SPECIAL, INDIRECT OR CONSEQUENTIAL DAMAGES INCLUDING WITHOUT LIMITATION WATER DAMAGE (THE END-USER SHOULD TAKE PRECAUTIONS AGAINST SAME), LOST PROFITS, DELAY, OR LOSS OF USE OR DAMAGE TO ANY REAL OR PERSONAL PROPERTY.

Some states do not allow limitations on how long an implied warranty lasts, and some do not allow the exclusion or limitation of incidental or consequential damages, so one or both of these limitations may not apply to you.

Legal Rights: This warranty gives you specific legal rights, and you may also have other rights which vary from state to state.

