

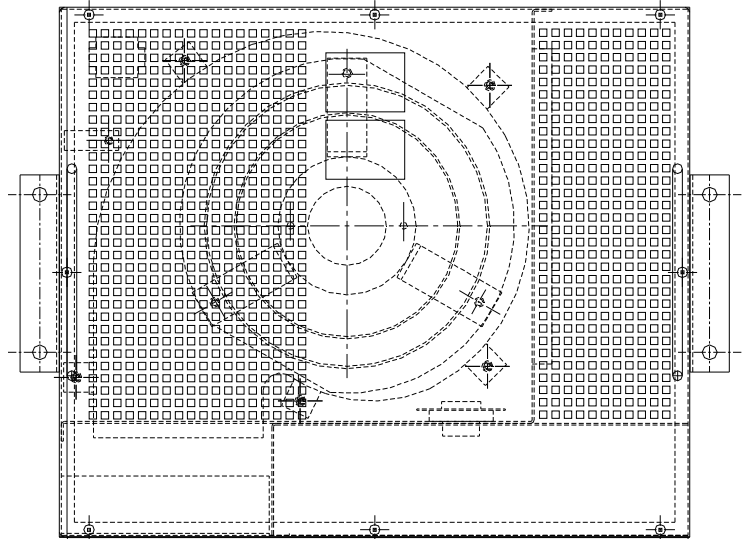
**WARNING!** Read all important information notices.



Transit Duty Cab Heater

# RCH16225

Installation, Operation, & Maintenance Instructions



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## A. IMPORTANT NOTICES



**WARNING.** Disconnect heater from the power supply before opening enclosures or servicing heater.

This heater should only be serviced by qualified personnel with electrical heating equipment experience.



**WARNING.** Read and adhere to the following. Failure to do so may result in severe or fatal injury/

1. Read and follow all instructions in this manual.
2. Heater is not to be used in hazardous atmospheres where flammable vapors, gases, liquids or other combustible atmospheres are present.
3. Heater is to be connected and serviced only by a qualified electrician.
4. Installation and wiring of the heater must adhere to all applicable codes.
5. Before opening any enclosures, disconnect the heater from the power supply. Lock the switch in the “OFF” position and/or tag the switch to prevent unexpected power application.
6. The heater is not to be operated with the high-limit disconnected from the control circuit.
7. Elements get hot during operation. Contact can cause burns.
8. Use factory replacement parts only.
9. Maximum ambient operating temperature is 40°C (104°F).
10. If there are any questions or concerns regarding the heater, please refer to contact info on the back cover.

## B. HEATER MAINTENANCE CHECKLIST

Heater Model \_\_\_\_\_ Date of Maintenance \_\_\_\_\_  
Serial Number \_\_\_\_\_ Maintenance Done By \_\_\_\_\_  
Comments \_\_\_\_\_

### B.1 Clean

- Calvane™ elements
- Discharge grill
- Motor
- Inlet grill
- Fan

### B.2 Check

- Motor for smooth, quiet operation

### B.3 Electrical

- Check all terminal connections and conductors. Tighten loose connections. Conductors with damaged insulation must be replaced.

### B.4 Mechanical

- Check motor shaft bearing play. Replace motor if play is excessive, or if motor does not run quietly and smoothly. Bearings are permanently lubricated.
- Check fan. Replace immediately if cracked or damaged.
- Check tightness of all hardware. All fasteners must be tight.
- Turn heater on for a minimum of five minutes. Check for warm air exiting heater through discharge grill.

## C. INSTALLATION

The installation instructions provide a general guideline for the installation and wiring of the heater. All applicable codes must be adhered to.

### C.1 Mechanical

1. Location
  - 1.1 The heater's inlet and discharge areas must not be obstructed.
  - 1.2 The air discharge is not to be directed at a thermostat.
  - 1.3 The air discharge is directed across areas of heat loss.
2. Mounting
  - 2.1 The mounting surface must be strong enough to:
    - Support the heater's weight;
    - Provide sufficient stiffness to prevent excessive vibration, and
    - Withstand abusive situations such as transportable installations of the heater.

### C.2 Electrical



**WARNING.** Disconnect heater from the power supply before opening enclosures or servicing heater.

Lock the switch in the **“OFF”** (open) position and/or tag the switch to prevent unexpected power application.

Installation and wiring of the heater must adhere to all applicable codes.

1. General
  - 1.1 Use only copper conductors.
  - 1.2 Supply voltage is to be within 10% of the data plate voltage.
  - 1.3 External over-current protection is required and must meet data plate ratings for voltage, amperage and frequency.
2. Field Wiring
  - 2.1 Heater is supplied with an enclosure that has mate-n-lock connector.
  - 2.2 Heater requires external thermostat and controls. Thermostat and controls used with this heater must be:
    - Listed for approved;
    - Rated at 208 volt minimum and 5 amp minimum.

### 3. Final Inspection

Before application of electrical power:

- 3.1 Check that all connections are secured and comply with the applicable code requirements;
- 3.2 Confirm that the supply voltage is compatible with the data plate specifications;
- 3.3 Remove any foreign objects from the heater;
- 3.4 Ensure all external fittings and enclosure covers are secured;
- 3.5 Ensure that the fan rotates freely.

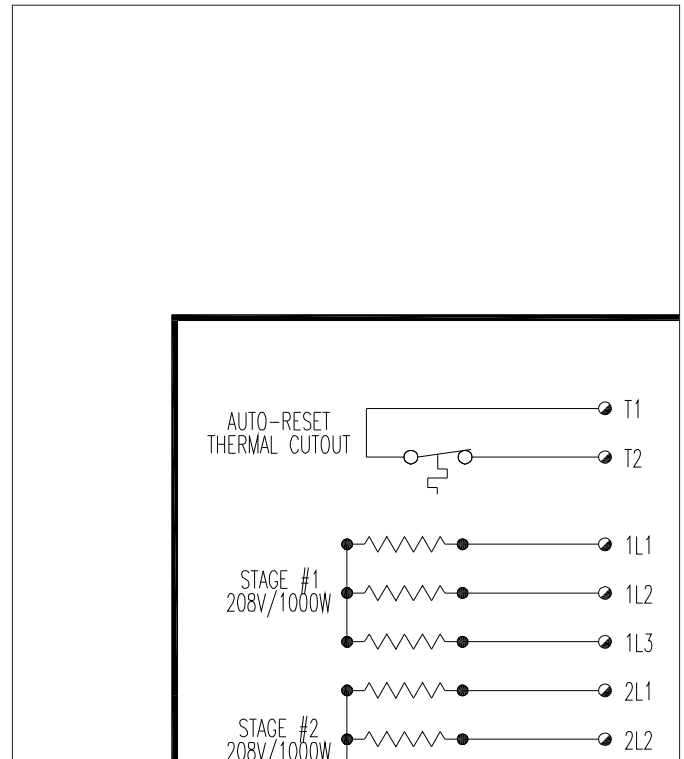


Figure 1

## D. OPERATION

### D.1 General

1. To operate heater, make sure power supply is properly connected as specified in the wiring schematic.
2. Ensure that the thermostat controlling the heater is set above the ambient temperature.
3. During normal operation, the high-limit control should not cycle the heater ON and OFF. If cycling occurs, check to see if there is an airflow blockage. If there are no obstructions, the heater must be examined by qualified personnel to determine the cause of the high-limit cycling.

## E. REPAIR & REPLACEMENT



**WARNING.** Disconnect heater from the power supply before opening enclosures or servicing heater.

This heater should only be serviced by qualified personnel with electrical heating equipment experience.

**NOTE:** ONLY USE FACTORY SUPPLIED REPLACEMENT PARTS OF THE SAME SPECIFICATION.

### E.1 Heating Elements

1. Remove discharge grill from heater. Disconnect all wires connected to the element terminals and remove all bus bars. Remove element brackets from heater.
2. Remove elements, noting their proper placement.
3. Install factory-supplied replacement elements. Ensure that the element brackets are in place and in good condition.
4. Reinstall all bus bars, wires, brackets, and discharge grill.

### E.2 Fan

1. Remove grill from heater. Remove the screws securing the fan to the fan hub attached to the motor.
2. Replace fan with factory-supplied fan.

### E.3 Temperature High-Limit

1. Remove discharge grill from heater.
2. Remove the wires connected to the high-limit.
3. Remove the screws securing the high-limit.
4. Install factory-supplied high-limit.
5. Reinstall wires, high-limit screws and discharge grill.

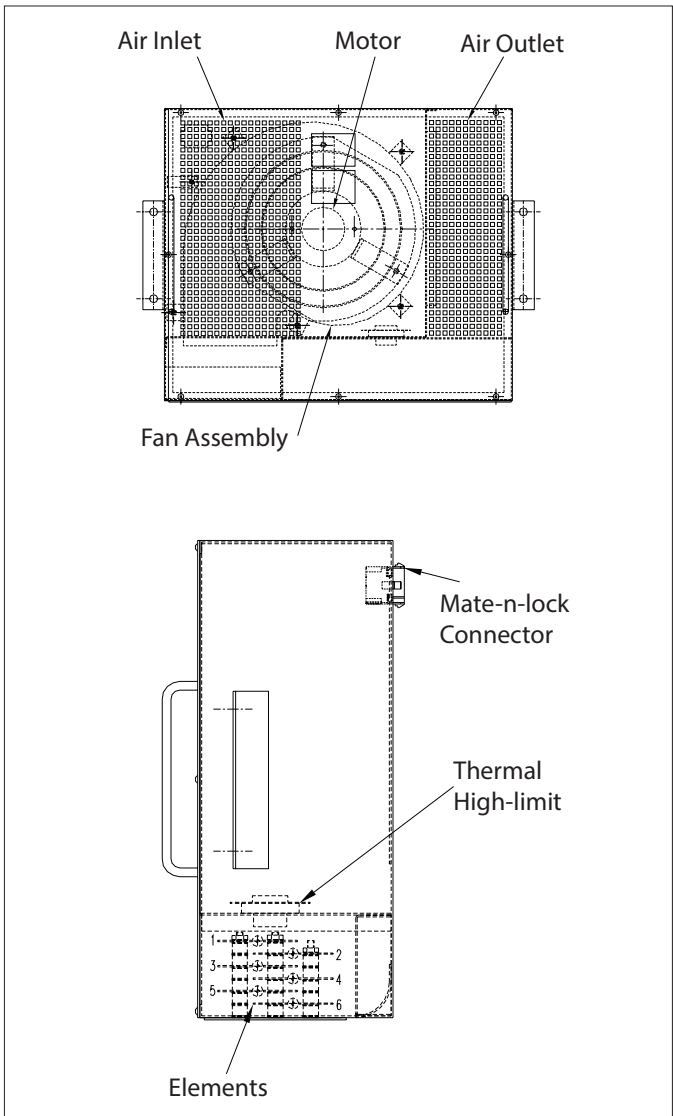


Figure 2

## F. PARTS LIST

DET	Description	Part No.	Qty
31	Insulating sleeve 3/8" O.D. x 12" LG.	A15399-06	1
30	Nylon cable clamp 3/4"	A10687-133	1
29	Pin, connector ground 14–18 AWG	770255-1	1
28	Label: Caution	C12390-02	1
27	Label: Danger High Voltage	A11903-01	1
26	Nameplate	C10090-94	1
25	Pin, connector 14–18 AWG AMP	770248-1	11
24	Screw #10-32UNF x 1/4 LG. 304SSS	A10683-71	12
23	Hex nut #10-32UNF Zn PL Steel	A10685-03	6
22	Lock washer #10, Split Zn PL Steel	A10686-08	18
21	Hex nut #8-32UNC Zn PL Steel	A10685-02	3
20	Lock washer #8, Split Zn PL Steel	A10686-05	3
19	Motor support Painted Steel	40A132527G1	1
18	Motor	B16254-01	1
17	Inlet ring	40A132754P3	1
16	Blower wheel	40A132754P2	1
15	Housing blower	40A132754P1	1
14	Mate-n-lock II connector, 12 Pin AMP	770029-1	1
13	Push-on connector	PQ14R258B	2
12	Ring connector	YAV14	15
11	Wire #14 AWG	SEW14B	12 ft
10	Hi-limit, auto reset 140°F	B11035-04	1
9	Screw #8–32UNC x 1/2 LG. Zn PL Steel	A10682-02	20
8	Cover #18 GA. Alum.	B16251-01	1
7	Housing assembly #18 GA. Alum.	D16248-01	1
6	Lock washer #10, split 304SS	A10686-66	6
5	Hex nut #10-32UNF 304SS	A10685-12	6
4	Flat Washer #10	A10686-27	50
3	Insulator, ceramic	161V349P43	34
2	Element mounting bracket	B16250-01	1
1	Calvane™ element 120 V / 333 W	FV16249-01	6

## G. TEMPERATURE TEST RESULTS

THS Catalog No.	Heater Stage	Rated Volts	Phase	Rated Watts	Fan Speed	Approx. Airflow Rate	Ambient	Average Outlet Air Temp.	Approx. Temp. Rise
RCH16225-01	1	208	3	1000	Low	110 CFM	21°C / 70°F	35°C / 95°F	14°C / 25°F
	2			2000	High	150 CFM	24°C / 75°F	48°C / 75°F	24°C / 43°F

## H. GENERAL SPECIFICATIONS

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Heater Model	RCH16225-01
Voltage	208 V
Power	2000 W
Phases / Connection	3 / wye
Heating Element	Transit duty Calvane™ heaters
Protections	High-limit, auto reset
Airflow Control	Variable, two speed fan
Front Cover	Aluminum
Frame / Enclosure	Aluminum
Plug Connection	Female Mate-n-lock quick connector
Approx. Weight	23 lbs
Dimensions	16" L x 13.5" H x 6.5" W (including handle)
Heater Drawing	C16225. Rev.7
Surface Front Grill	304SS14
Grill Drawing	B16252 Rev.2



**PLEASE ADHERE TO INSTRUCTIONS IN THIS MANUAL**  
Failure to do so may be dangerous and may void certain provisions of your warranty.

For further assistance, please call 24-hr hotline: 1-877-325-3473 (U.S.A. and Canada)  
Please have model and serial numbers available before calling.

**WARRANTY:** Under normal use the Company warrants to the purchaser that defects in material or workmanship will be repaired or replaced without charge for a period of 18 months from date of shipment, or 12 months from the start date of operation, whichever expires first. Any claim for warranty must be reported to the sales office where the product was purchased for authorized repair or replacement within the terms of this warranty.

Subject to State or Provincial law to the contrary, the Company will not be responsible for any expense for installation, removal from service, transportation, or damages of any type whatsoever, including damages arising from lack of use, business interruptions, or incidental or consequential damages.

The Company cannot anticipate or control the conditions of product usage and therefore accepts no responsibility for the safe application and suitability of its products when used alone or in combination with other products. Tests for the safe application and suitability of the products are the sole responsibility of the user.

This warranty will be void if, in the judgment of the Company, the damage, failure or defect is the result of:

- Vibration, radiation, erosion, corrosion, process contamination, abnormal process conditions, temperature and pressures, unusual surges or pulsation, fouling, ordinary wear and tear, lack of maintenance, incorrectly applied utilities such as voltage, air, gas, water, and others or any combination of the aforementioned causes not specifically allowed for in the design conditions or,
- Any act or omission by the Purchaser, its agents, servants or independent contractors which for greater certainty, but not so as to limit the generality of the foregoing, includes physical, chemical or mechanical abuse, accident, improper installation of the product, improper storage and handling of the product, improper application or the misalignment of parts.

No warranty applies to paint finishes except for manufacturing defects apparent within 30 days from the date of installation.

The Company neither assumes nor authorizes any person to assume for it any other obligation or liability in connection with the product(s).

The Purchaser agrees that all warranty work required after the initial commissioning of the product will be provided only if the Company has been paid by the Purchaser in full accordance with the terms and conditions of the contract.

The Purchaser agrees that the Company makes no warranty or guarantee, express, implied or statutory, (including any warranty of merchantability or warranty of fitness for a particular purpose) written or oral, of the Article or incidental labour, except as is expressed or contained in the agreement herein.

**LIABILITY:** Technical data contained in the catalog or on the website is subject to change without notice. The Company reserves the right to make dimensional and other design changes as required. The Purchaser acknowledges the Company shall not be obligated to modify those articles manufactured before the formulation of the changes in design or improvements of the products by the Company.

The Company shall not be liable to compensate or indemnify the Purchaser, end user or any other party against any actions, claims, liabilities, injury, loss, loss of use, loss of business, damages, indirect or consequential damages, demands, penalties, fines, expenses (including legal expenses), costs, obligations and causes of action of any kind arising wholly or partly from negligence or omission of the user or the misuse, incorrect application, unsafe application, incorrect storage and handling, incorrect installation, lack of maintenance, improper maintenance or improper operation of products furnished by the Company.

Visit [www.thermon.com](http://www.thermon.com) to contact a Thermon representative near you.

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