

HEAT CONTROLLER, INC.

# INSTALLATION INSTRUCTIONS

## **7800-D Series Electric Heater Kits for HDG Series Air Handlers**

## GENERAL

This electric heater series is engineered, designed, and approved to be installed in the HDG series air handlers. Before proceeding, check the heater label for the correct voltage and KW requirements.

**Installation and servicing of this equipment should only be performed by trained and qualified personnel.** Before proceeding with the heater installation, inspect thoroughly for shipping damage. Notify the shipper immediately if any damage is found. Check all porcelain insulators for breakage and inspect heater element wire to see that none have been deformed. Clean all dirt, dust and moisture from equipment. **Check for proper clearances of live parts, between phases, and to ground.** Make sure that all required barriers are in place. Check conductors run in multiple to insure that they are properly wired. Refer to base installation instructions for complete unit installation details. **Verify that all elements are properly secure in their ceramic holders.**

### **WARNING**

Before performing service or maintenance operations on system, turn off all main power switches. There may be more than one disconnect. Turn off accessory heater power switch if applicable. Electrical shock can cause personal injury. **TAG DISCONNECT SWITCH(ES) WITH A SUITABLE WARNING LABEL.** When installed in a garage, heater elements should have a clearance of 18" from the floor, insure that the area is ventilated. Refer to air handler Installation instructions for suitable installation and application instructions.

## HEATER INSTALLATIONS

1. Refer to the base unit installation instructions as required. Affix installer label to the equipment access panel. Be sure to check the box next to the appropriate air handler model number the heater is installed in.
2. Remove blower access panel of the air handler unit.
3. Remove cover plate from back panel of air handler control and wiring compartment.
4. The use of heater alignment tabs is optional. These alignment tabs are located on the endcap. To use the tabs, bend these 90 degrees out and slide into the alignment holes of the air handler (see fig 1 & 2. )
5. Position and slide heater assembly into blower section through the access opening (mounting position is important, check the label for correct position). Secure heater into place with screws removed from cover plate (see fig. 3).
6. Carefully separate wires from bottom section of terminal block or breaker bracket. Secure bracket to cabinet mounting rail with screws provided. Use wire tie to fasten loose wires around the bracket area (see fig. 4).
7. Remove the conduit knockout in unit cabinet for electrical connections. Install the appropriate size conduit connector.
8. Apply the wiring diagram to the cabinet for future reference.

### **HEATERS WITH CIRCUIT BREAKERS:**

9. Remove circuit breaker knockout(s) in unit access panel as required and cut insulation from the breaker knockout area.

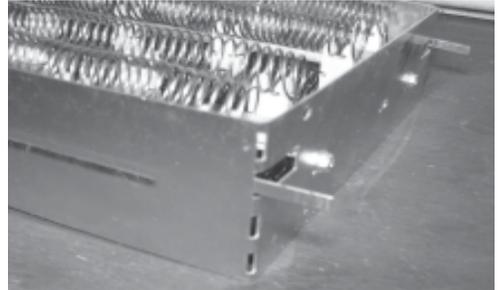


Fig. 1 - Alignment tabs.

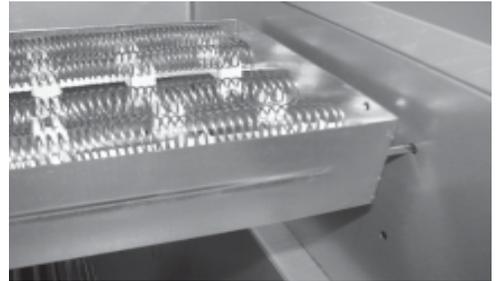


Fig. 2 - Alignment tab insertion.

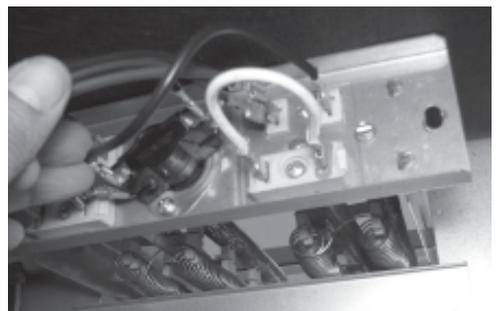


Fig. 3 - Heater insertion.

**WARNING**

Before performing service or maintenance operations on system, turn off all main power switches. There may be more than one disconnect. Turn off accessory heater power switch if applicable. Electrical shock can cause personal injury. **TAG DISCONNECT SWITCH(ES) WITH A SUITABLE WARNING LABEL.** When installed in a garage, heater elements should have a clearance of 18" from the floor, insure that the area is ventilated. Refer to air handler installation instructions for suitable installation and application instructions.

**ELECTRICAL CONNECTIONS**

1. All electrical connections, wire sizes and type and conduit sizes shall meet the National Electric Code, State and Local Codes. Main power supply, minimum wire sizes, circuits, fusing, etc. is shown on schematic wiring diagrams. Use copper wire only.
2. Power may be brought into the unit through the top when unit is vertical position or through the left or right side panel.
3. Refer to air handler unit instructions for recommended wiring procedures.
4. For electric heat installations connect the supply power to the circuit breaker or terminal block supplied with the heater (see fig. 4).
5. Connect the 6-pin adaptor plug to the 6-pin socket connector of the heater. Connect the 3-pin plug to the control circuit board of the air handler. Use wire nuts to connect the Black and Red wire leads from the adaptor harness to the AHU incoming power leads.
6. Separate all wires from incoming power leads.
7. **Be sure that all electrical terminal connections, clamps, screws, etc. are tight before proceeding. Verify that there are no possible shorts to ground.**
8. Check wiring diagram supplied with heater for specific connections and information.
9. Check operation as described in start-up section.



Fig. 4 - Electrical connections

**START-UP AND CHECK-OUT**

**CAUTION:** Before proceeding, verify that all wiring is correct per factory approved schematic. Notify factory immediately of any discrepancies.

1. Refer to base unit installation instructions as required.
2. **Check for loose terminal connections.**
3. Check that all fuse and circuit breaker short circuit interrupting ratings are adequate.
4. Turn on unit and heater power.
5. Set thermostat to call for heat.
6. Check operation of heater.
7. **Check that air flow across heater is at or above minimum recommended fan speed. Refer to air handler instructions for Air Flow Data Tables and/or adjustment of motor speed taps.**

**CAUTION:** When commissioning any air handler unit with electric heat, **ALWAYS** check to see if the heater is cycling on its automatic reset high temperature limit when the system is producing the highest temperature leaving the air handler unit coil. If the heater is cycling, increase the air flow by increasing the fan speed or lowering the ductwork static pressure until cycling stops.

**HEATER KIT CONTENTS**

1. Heater assembly
2. Installation Instructions
3. Installer label
4. Wiring diagram
5. (1) wire tie
6. Adapter harness

**USER CAUTION:** The use of improperly selected air filters/ and or operation with dirty filters may result in insufficient airflow which may result in abnormal operation of electric heaters and tripping of temperature safety limits. Also, insufficient airflow will degrade the efficiency of the system (SEER rating) and excessive wear and premature failure of the system compressor may result. Other conditions, such as undersized or obstructed ductwork, may also cause insufficient airflow. It is recommended that a qualified technician be consulted to ensure proper airflow and air filtration selection and application.

Design, material, performance data and components  
subject to change without notice.

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