

<b>Electric Heater Model</b>  <b>CBK discharge Series</b>	<b>INSTALLATION INSTRUCTIONS</b>  <b>Date: 07/24/2020</b>	<b>Models: 208/240/480V</b>
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## **GENERAL**

This Warren Technology electric heater is designed to be compatible with close couple applications requirements. The minimum air velocity shown on the heater wiring diagram is required for proper operation. The temperature of air entering the heater must not exceed 77° F. Before proceeding, check the heater label for correct voltage and KW requirements.

Before installing the heater, inspect thoroughly for shipping damage. Notify carrier 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 ground connection) and verify that all required barriers are in place. Check that conductors run in multiple to ensure that they are properly phased.

## **HEATER INSTALLATION**

1. Refer to base unit installation instructions as required.
2. Allow sufficient clearance around the heater for airflow, wiring, and service after mounting of the base unit. We recommend a minimum of one inch be maintained on all sides of the supply duct.
3. These heaters are to be mounted on the supply duct(s) of the air handler (See fig. 1) and should be oriented taking in consideration that the heater baffled section must be aligned with the blank-off section of the fan blower baffle.
4. The control box should be positioned for easy service access. The heater cover should open freely for maintenance and service. Position the heater flanged portion to the turned out flanges of the unit. Fasten heater flange to duct flange by means of sheet metal screws or bolts. Fasten control panel to side of duct by means of sheet metal screws.
5. Connect supply ductwork to the heater discharge opening(s). The air duct system should be designed and installed in accordance with the standards of the National Protection Association for the installation of Air-conditioning and Ventilation systems (pamphlet 90A or 90B). Provide an access panel in the supply duct to allow service access to the heater elements.

## **ELECTRICAL CONNECTIONS**

**CAUTION: Disconnect all electrical power before installation  
Failure to do so may result in electrical shock.**

1. Connect power wiring as shown in schematic diagram. All connections should be made inside the air handler and comply with the National Electric Codes, State and Local Codes. Refer to heater data plate specifications for correct wire size to use. Heaters with factory installed fuses or circuit breakers may be installed on a branch circuit protected by either a fuse or a circuit breaker. For all other heaters, the branch circuit must be protected by a fuse or a circuit breaker supplied by others.
2. Refer to air handler unit instructions for recommended wiring procedures.
3. Connect low voltage control wires as shown in schematic diagram. Run control wiring from the control box directly to the thermostat.
4. Make all wire spliced connections inside air handler unit. Separate all wires from incoming power leads.
5. Be sure that all electrical terminal connections, clamps, screws, etc., are tight before proceeding.
6. Replace all access panels. Check operation as described in start-up section.

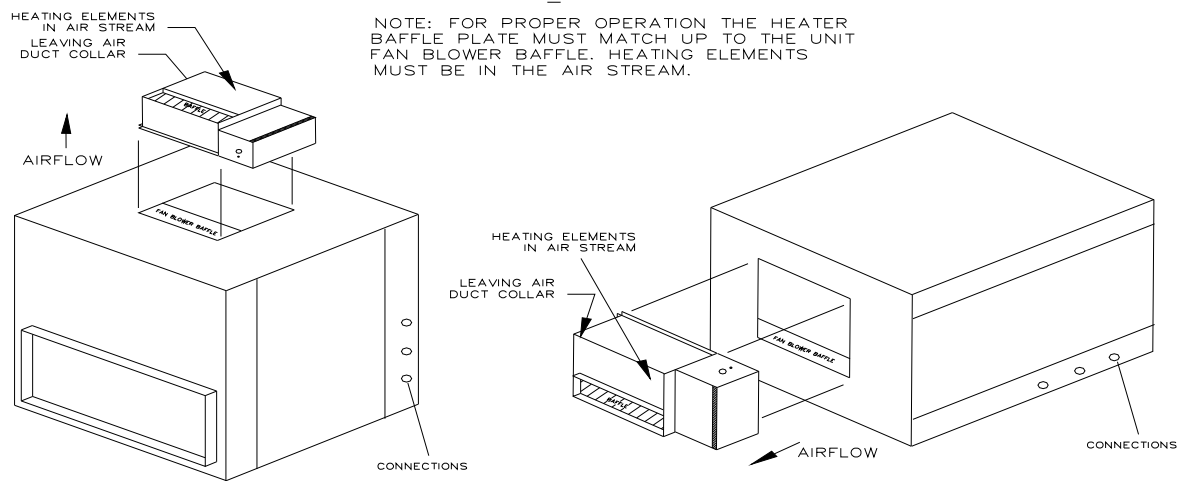


Fig. 1 – Heater mounted on single blower unit.

## **START-UP and CHECKOUT**

Before energizing this equipment for operation be sure that all electrical terminal connections, clamps, screws, etc. are tight as these may have become loose in shipment. It is advisable to retighten all electrical connections after the equipment has been in operation and the components have reached operating temperature. In addition to the above, the following tests and procedures should be followed.

- A) Clean all dirt, dust and moisture from equipment.
- B) Check for loose terminal connections.
- C) Check for proper clearances of live parts, between phases and to ground and make sure that all required barriers are in place.
- D) Check for missing insulation in equipment and on conductors.
- E) Check for any modifications, alterations, for the use of unapproved parts.
- F) Check that all fuse and circuit breaker short circuit interrupting ratings are adequate.
- G) The equipment room or area should be dried of all dampness and moisture accumulations.
- H) Check conductors run in multiple to ensure that they are properly phased.
- I) Conduct a "megger" test of all equipment and wiring.
- J) Turn on unit and heater power.
- K) Check operation of heater.
- L) Check that airflow across heater is at or above minimum recommended fan speed. Adjust as required.

For maximum safety on fused feeders of 200 amperes and over, it is recommended that a low amperage test fuse (15 amps or less) be used and the circuit energized without load. This will ensure the safe interruption of the circuit if a fault exists.

Any modifications or repairs to the equipment without written permission from the factory will be done at the installer's own risk and expense.

Leaving air, thermostats or other devices which may cause short-cycling of the contactors are not recommended for use with this equipment.

**WARNING:** The use of discharge air sensing devices to control this heating unit is NOT factory recommended, and may void the warranty. IF discharge air sensing devices are used, they should only be used with SCR type control devices, AND should always be located far enough downstream of the heating coil in order to sense an average discharge temperature.