

Warren Electric  
Heater Model

WCB Series

## INSTALLATION AND OPERATING INSTRUCTIONS

Date: 07-28-94

WARREN ELECTRIC HEATERS  
FOR LENNOX

Lennox ECB/CB24 Series

### GENERAL

This Warren Technology electric heater is engineered, designed, and approved to be installed in the **Lennox ECB/CB24 Series**. Before proceeding, check the heater label for correct voltage and KW requirements.

Installation and servicing should be performed by trained service personnel. Before installing the heater, inspect thoroughly for shipping damage.

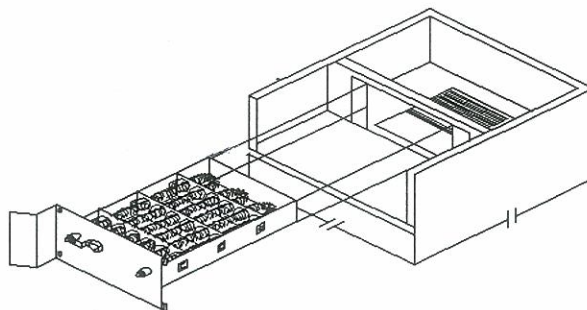
Notify the shipper immediately if any damage is found. Check all porcelain insulators for breakage and inspect heater element wire to see that none have been deformed. Clean all dirt, dust, and moisture from equipment. Check for proper clearances of live parts, between phases, and to ground. Make sure that all required barriers are in place. Check conductors run in multiple to insure that they are properly phased.

### HEATER INSTALLATION

#### INSTALL HEATER AS FOLLOWS:

**WARNING:** Disconnect all electrical power before installation. *FAILURE TO DO SO MAY RESULT IN ELECTRICAL SHOCK*

1. Refer to the base unit installation instructions as required.
2. Remove access plate of air handler.
3. Remove internal heater cover plate. Save sheet metal screws.
4. Install heater assembly into the air handler access opening. Secure with sheet metal screws from cover plate.
5. Connect heater pigtail leads to corresponding terminals in the air handler.
6. Remove the conduit knockout in blower cabinet for electrical connections. Install the appropriate size conduit connector.



#### HEATERS WITH CIRCUIT BREAKERS

Remove circuit breaker knockout(s) in unit access panel as required. Cut out insulation in opening. After replacing the air handler door, secure circuit breaker cover plate with screws provided.

**NOTE:** When applied in the horizontal left hand discharge position, some local codes may require that the circuit breakers be rotated to the up position. Follow the procedure below:

1. Disconnect power to the unit.
2. Remove (4) four screws securing the circuit breaker bracket to the breaker extension plate.
3. Rotate the entire bracket assembly 180 degrees.
4. Re-secure the breaker bracket to the breaker extension plate with the original screws.

## ELECTRICAL CONNECTIONS

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Refer to air handler unit instructions for recommended wiring procedures.

All electrical connections, wire sizes and conduit sizes must comply with the requirements of State and Local codes and the National Electrical Code. Use copper conductors only.

Check that all electrical terminal connections, clamps, screws, etc. are tight before start-up.

### HEATERS WITH CIRCUIT BREAKERS ONLY

Heaters with circuit breakers that do not meet local code requirements for a unit disconnect switch must include a separate disconnect switch(es) located within sight of the unit.

All power within the cabinet will be "off" when circuit breakers are in the "off" position (except for power supply connections to the circuit breaker).

### GROUNDING

Permanently ground heaters in accordance with State and Local Codes and the National Electrical Code. Connect copper conductor, supplied with the heater, to ground connection. For multiple circuit models, connect a ground for each circuit.

For all other heaters, the branch circuit must be protected by a fuse or a circuit breaker supplied by others.

Make all wire spliced connections inside air handler unit. Separate all wires from incoming power leads.

### OVERCURRENT PROTECTION

Recommended sizes for fuses or circuit breakers are listed in the *ELECTRICAL DATA TABLE* in the column labeled "Maximum Overcurrent Protection".

### STAGING

Sequencers control the staging for the heater elements in 10kW increments (or less, for odd multiples of 5kW).

The wire that control the electric heat stages are identified on the wiring diagrams. Some electronic indoor thermostats can be used to stage the heater for multiple stages of electric heat. When using the electronic indoor thermostat, refer to the wiring diagram to select wires to connect for proper staging sequence.

### NOTE

When using an indoor thermostat for staging, make sure that staging occurs by breaking the 24V "common leg" and not the "hot" leg.

## START-UP and CHECK-OUT

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

## SERVICE

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**Fuses / Circuit Breaker** - Malfunction will interrupt power to unit. *Check for cause of failure, correct and replace fuses or reset circuit breaker.*

**Limit Switch / Fusible Link** - Malfunction prevents heating element(s) from being energized. *Replace switch if malfunction occurs.*

**Sequencer** - Malfunction will cause heater to not come on or shut off. *Replace faulty sequencer.*