Electric Heater Model W4K Series 208/240-1-60 208/240-3-60 480-3-60	INSTALLATION INSTRUCTIONS Date: 03/29/12	YORK Air Handler Models AHP 18-60, AHX 18-60, AVY 24-60, AVG 24-60, SVY 48-60, SHP 48-60, MA 12-20, MV 12-20, MX 36-60, F6FP 60.

GENERAL

This Warren Technology electric heater is engineered, designed, and listed to be installed in the York air handler(s) referenced above. 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 to ground and make sure that all required barriers are in place. Check conductors run in multiple to insure that they are properly phased. **Verify that all elements are properly secured in their ceramic holders.** The information contained in this document is intended for use by a qualified technician, familiar with the safety procedures and equipped with required tools and test instruments. Failure to follow instructions contained in this manual may result in malfunction, property damage, personal injury and/or death.

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.***

HEATER INSTALLATION

Installation for up-flow, down-flow and horizontal right is the same. Reference base unit installation instructions for additional details. If unit is installed in any of those positions, proceed to step 1.

1. Refer to base unit installation instructions as required. Affix Warren installer label to equipment access door.
2. Installation of heater should be done prior to unit installation.
3. Remove blower access panel(s) of the air handler.
4. If the heater assembly incorporates circuit breakers:
   a. Remove circuit breaker panel from blower access panel.
   b. Cut the insulation behind the circuit breaker plate. For 2 and 3 circuit breakers, additional insulation may need to be removed.
   c. Install filler plate provided by aligning filler plate cut-out with upper breaker(s) edge. Press filler plate firmly. Reference Figure 2.
   d. Apply even pressure to all sides of the filler plate. Check that it is wrapped around the top edge of the breaker.
   e. Clean area around the circuit breaker hole (on blower access panel) and apply the circuit breaker cover.
5. Remove air handler heater cavity cover plate and discard.

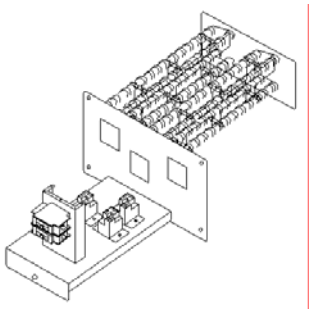

Figure 1

Note: Some 15 kW and all 18, 20 and 25 kW heater assemblies require the removal of knockouts on the air handler's heater cavity.
Note: Prior to electric heater assembly installation, some wire hold-downs may need to be removed. Save screws and plastic hold-downs.
Note: **480V models with single point transformer.** – This part can be externally mounted or internally mounted inside the air handler cabinet. The AUTOFORMER wiring is color coded (Refer to schematic for color coding) and is to be used with 480V heater models being wired into 208/240 Volt, single phase Air Handlers.

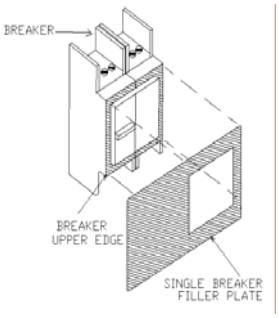

Figure 2

6. Insert the heater assembly into the heater compartment cavity of the air handler. Carefully pass the heating element thru the heater cavity.
7. For installation simplicity, the control board may be rotated. Remove and save one screw from the controller's base bracket. Bracket will rotate around remaining screw.
8. Secure the heater to the air handler using five screws. Use 4 screws on the heater compartment and one on the front heater tab flange. Reference Figure 3.
9. Secure control boards using screw removed in step 7.
10. Connect the heater's assembly's 6 pin socket to its corresponding connector on the control board. The connector's end terminals are D-shaped for proper installation.

11. Remove the heat enable jumper from control board and re-position to the HEAT position. Reference Figure 4.
12. Remove the appropriate knockouts in the air handler for making electrical connections to the heater.
13. **A. <u>240V heater models:</u>** Connect the Yellow and Black wire leads from the heater assembly to the Power supply. Use wire nuts provided with the heater kit. Power supply is factory wired for 230V.
    B. <u>480V "A" heater models:</u> Connect the Brown and Black wire leads from AUTOFORMER to the Brown and Black wire leads from the heater. Connect the Yellow and Black wires from the AUTOFORMER to the Power supply Yellow and Violet wires. Check the Power supply voltage setting (must be factory wired for 230V.)
    C. <u>MA air handlers with voltage code "41" and 480V heaters:</u> Connect the Yellow and Black wire leads from the heater assembly to the Power supply Yellow and Violet wires. Check the Power supply voltage setting (must be factory wired for 480V). The use of an AUTOFORMER is not required.
14. Refer to schematic provided for wiring information and electrical connections. Make all wiring connections per applicable field wiring diagrams.
All electrical connections should be made inside the air handler and comply with the National Electrical Code (NEC), State and Local Codes. Main power supply, minimum wire sizes, circuits, fusing, etc. is shown on the corresponding schematic wiring diagram and/or installer label. Be sure all electrical terminal connections are tight and secure.
Replace access panel(s) of the air handler, removed in step 3.

Figure.3

FOR HORIZONTAL LEFT

Reference base unit installation instructions for additional details regarding position orientation. For horizontal left hand application with circuit breakers, perform steps below. In order to comply with NEC, circuit breakers operated in the vertical position must be oriented such that the "on" position points upwards. These modifications and installation of the electric heater assembly should be done prior to unit installation.

A. Remove 3 screws from the circuit breaker bracket.
B. Rotate circuit breaker bracket 180 degrees and re-attach using 3 screws removed in A.
C. Verify all connections are secure.
D. Confirm that circuit breaker handle(s) will be in the up position when installed.
E. Proceed with the standard installation procedure referenced above.

KW	*MINIMUM FAN SPEED						
	018	**024**	**030**	**036**	**042**	**048**	**060**
5 KW	LO	LO	LO	LO	LO	LO	#4
7.5 KW	MED	MED	MED	MED	MED	MED	#4
10 KW	N/A	HI	HI	HI	HI	HI	#4
15KW	N/A	N/A	HI	MED	MED	MED	#4
18KW	N/A	N/A	N/A	HI	HI	HI	#4
20KW	N/A	N/A	N/A	N/A	N/A	HI	#4

* Maximum Static Pressure = 0.50", except 15KW / 030 Maximum Static Pressure 0.40"

TABLE 1. – Minimum Fan speed Chart.

LINE VOLTAGE CONNECTIONS

Reference base unit installation instructions for power entry location. To minimize air leakage, seal field wiring entry point.

START-UP and CHECKOUT

Refer to base unit installation instructions as required.
Check that all circuit breakers short circuit interrupting ratings are adequate.
Check for loose terminal connections.
Verify position of the HEAT enable jumper on the control board.
Adjust FAN speed if required (Refer to TABLE 1 - Minimum Fan Speed Chart).
Verify that the 6 pin socket plug is seated correctly in control board.
Turn on unit and power heater.
Check that airflow across heater is at or above the minimum recommended.
Set thermostat to call for heat.
Check operation of heater.

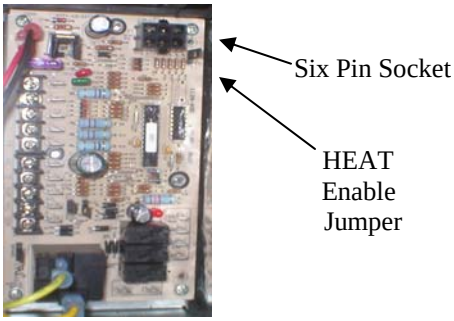

Fig. 4

SERVICE

CAUTION: Verify that all wiring is correct per the factory approved schematic before proceeding. Notify factory immediately of any discrepancies.

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

Circuit Breakers - Malfunction will interrupt power to unit. *Check for cause of failure, correct, and reset circuit breaker.*

Limit Switches - Malfunction prevents heating element(s) from being energized. *Replace switch if malfunction occurs.*

Contactor - Malfunction will cause heater to not come on or not shut off. *Replace faulty contactor. Do not attempt to replace coil or dress contacts.*

ELECTRIC HEATER PACKAGE CONTENTS

1. Heater assembly
2. Installation instructions
3. Installer label
4. Schematic
5. Screws and wire nuts
6. Breaker cover