WARREN ELECTRIC HEATER MODEL WKS SERIES	INSTALLATION INSTRUCTIONS Date: 10/10/2022	GOODMAN MANUFACTURING CO. / AMANA / DAIKIN ARUF*14, ARPT*14, AVPTC*14, ASPT*14 ASUF*14, DVPTC, AVPEC, DVPEC, DVPVC, AMST, DVFEC SIZE 18 - 61 AIR HANDLERS

GENERAL

This electric heater series is engineered, designed, and approved to be installed in the Goodman / Amana ARPT, ARUF, AVPTC, ASPT, ASUF, AMST / Daikin ARUF, ASPT, ASUF, DVPTC, DVPEC, AVPEC, DVPVC, DVFEC, AMST 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.**

HEATER INSTALLATION

1. Refer to the base unit installation instructions as required Affix Warren Installer label to the equipment access panel.
2. Remove blower section access panel of the air handler or package unit.
3. Remove cover plate in front of blower assembly.
4. Slide heater assembly into blower section through the access opening (mounting position is important, check the Air Flow label for correct position). Secure heater into place with (4) screws from cover plate.
5. Remove the conduit knockout in unit cabinet for electrical connections. Install the appropriate size conduit connector.
6. **480V models with single point transformer -** This part can be externally mounted or internally mounted inside the air handler cabinet. Autoformer wiring is color coded (see schematic for color coding) and is to be used on 480V heaters being wired into 208/240 Volt, single phase Air Handlers.

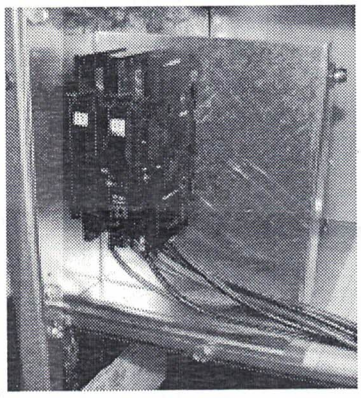


FIG. 1 Breaker Bracket installation.

HEATERS WITH CIRCUIT BREAKERS:

A BREAKER FILLER PLATE IS INCLUDED WITH ALL HEATER UNITS, PLEASE DO NOT DISCARD.

7. Remove the plastic circuit breaker knockouts and residual gasket from the Air Handler door and replace with transparent breaker boot cover provided (Fig. 3).
8. For units with SQD breakers **install the filler plate** provided **(see filler plate installation instructions).**
9. **AIR HANDLERS:** Mount the circuit breaker mounting bracket in the upper LEFT side corner of the cabinet. Insert (4) mounting screws through the control panel flange and into the cabinet left corner post (see fig 1).
10. The breaker must be inserted with the "OFF" position down. When installing in the horizontal position the orientation of the breaker is not important.

NOTE: FOR HEATERS USING SQD TYPE BREAKERS A BREAKER FILLER PLATE MUST BE USED TO SEAL TIGHT THE BREAKER OPENING. CIRCUIT BREAKERS MUST BE COVERED AND SEALED TIGHT TO AVOID ELECTRICAL SHOCK.

11. Apply the wiring diagram to the cabinet for future reference.
12. Remove circuit breaker knockout(s) in unit access panel as required and cut insulation in opening.

FILLER PLATE INSTALLATION INSTRUCTIONS (see fig. 2):

- ***A. Align breaker filler plate cut-out with the upper edge section of the breaker.***
- ***B. Press the filler plate firmly around the upper edge of the breaker(s). Apply even pressure to all sides of the filler plate. Check that the filler plate is wrapped around the top edge of the breaker(s)***

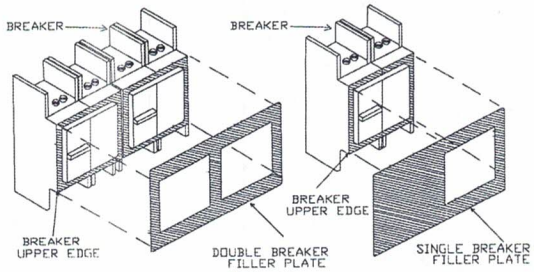
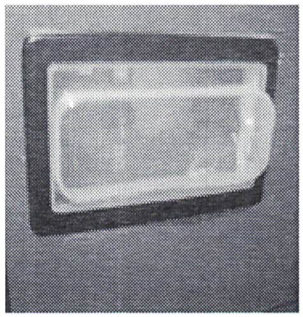


FIG. 2

ELECTRICAL CONNECTIONS

WARNING FOR HEAT KITS WITH PACKAGE UNITS

Separate and properly polarized incoming L1 and L2 connections must be made at both the unit contactor **and** the electric heater when electric heat is used with package units.



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.
   NOTE: Use copper wire only.
2. Refer to base unit instructions for recommended wiring procedures.
3. Remove the multi-pin connector with the jumper wire and discard. Connect the 9-pin plug to the 9-pin receptacle of the air handler.
4. Separate all wires from incoming power leads.
5. Connect Ground wire from the power supply to the ground provided in the air handler. Dual breaker heater models are equipped with (1) groundlug on the breaker bracket.
6. **480V "A" model:** The transformer is for use on applications were 480V heaters are being wired into 208/240 volt single phase AHU.The single point transformer must be externally mounted and secured with screws onto the air handler unit. Use the louvered transformer cover (provided) for protection of this part. For wiring purposes the wiring on the transformer is labeled and color coded (refer to schematic).
7. 480V "non transformer" model: Dual source circuit is required to power the electric heater and unit separately.
8. **Be sure that all electrical terminal connections, clamps, screws, etc. are tight before proceeding. Verify that there are no possible shorts to ground.**
9. Check wiring diagram supplied with heater for specific connections and information .
10. Check operation as described in start-up section.

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.**

Note: The electric heater in this system contains a manually resettable over-temperature safety limit. In the event of a "NO HEAT" limit trip, check for possible issues with dirty filters, blocked outlets, or possible fan failure prior to resetting. To reset the limit circuit, simply turn the system off at the thermostat (or at the unit power circuit breaker) and then immediately turn the system back on. If a limit reset is required more than 2 times in a short period of time, consult a service technician before reenergizing the system.

CAUTION: When commissioning any AHU 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 AHU coil (Heat pump on, etc.). **If** the heater is cycling, increase the air flow by increasing the fan speed or lowering the ductwork static pressure until cycling stops.

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

HEATER KIT CONTENTS

1. Heater assembly
2. Installation Instructions
3. Installer label
4. Wiring diagram
5. Mounting screws
6. Breaker filler plate (breaker units only)

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. See (www.lowairflow.com) for more information.