

INSTALLATION INSTRUCTIONS

HKS Electric Heat Accessory

WARNING

Improper installation, adjustment, alteration, service, or maintenance can cause injury or property damage. For assistance or additional information, consult a qualified installer or service agency.

WARNING

Installation and servicing of air conditioning equipment can be hazardous due to internal refrigerant pressure and live electrical components. Only trained and qualified service personnel should install or service this equipment. Installation and service performed by unqualified persons can result in property damage, personal injury, or death.

These instructions are intended as a general guide only, for use by qualified personnel and do not supersede any national or local codes in any way. Installation must conform with the local building codes and with the latest editions of the National Electrical Code.

Read these instructions thoroughly before starting installation. Only qualified installers or technicians should install the electric heat section and all other equipment used in HVAC systems. Federal, state, and local codes must be followed when installing this or any other HVAC equipment.

WARNING

If this unit is to be installed in a mobile or manufactured home application, the ductwork must be sized to achieve static pressures within the manufacturer's guidelines. All other installation guidelines must also be followed. Failure to do so may result in equipment damage, personal injury, and improper performance of the unit.

WARNING

If these instructions and/or codes are not followed or if the equipment is not properly installed, possible injury or death could occur during installation or operation.

WARNING

Sharp metal edges can cause injury. When installing the unit, use care to avoid sharp edges.

WARNING

Be sure to disconnect all power to the unit while installing and servicing this equipment. Turn off accessory heater power switch if applicable. Be mindful that there may be more than one disconnect servicing this equipment. Use proper tools and protective equipment during installation and service. TAG Disconnect switch(es) with a suitable WARNING LABEL.

CAUTION

The installation of this appliance must conform to the requirements of the National Fire Protection Association; the National Electrical Code, ANSI/NFPA No.70 (latest edition) in the United States; the Canadian Electrical Code Part 1, CSA 22.1 (latest edition) in Canada; and any state or provincial laws or local ordinances. Local authorities having jurisdiction should be consulted before installation is made. Such applicable regulations or requirements take precedence over the general instructions in this manual.

Inspection of Shipment

Before proceeding with the heater installation, inspect thoroughly for shipping damage. Notify the shipper immediately if any damage is found. Check all ceramic 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 ensure that they are properly wired. Refer to base installation instructions for complete unit installation details.

WARNING

- When installing in a garage, the elements must be at least 18" above the floor.
- If this appliance is installed in an enclosed area such as a garage or utility room with any carbon monoxide (CO) producing appliance (i.e. Automobile, Furnace, Water-Heater etc.), ensure the area is properly ventilated.
- A means of strain relief and conductor protection must be provided at the supply wire entrance.

Attention Installing Personnel

As a professional installer, you have an obligation to know the product better than the customer. This includes all safety precautions and related items.

Prior to actual installation, thoroughly familiarize yourself with the Instruction Manual. Pay close attention to all safety warnings. Often during installation or repair, it is possible to place yourself in a position which is more hazardous than when the unit is in operation.

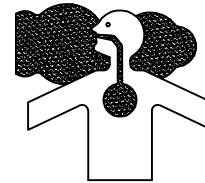
Remember, it is Your responsibility to install the product safely and to know it well enough to be able to instruct a customer on its safe use.

Safety is a matter of thinking before acting. Most dealers have a list of specific good safety practices ... follow them.

The precautions listed in this installation manual are intended as supplemental to existing practices. However, if there is a direct conflict between existing practices and the content of this manual, the precautions listed here are to take precedence.



**DANGER
PELIGRO**



Carbon Monoxide Poisoning Hazard

Special Warning for Installation of Furnaces or Air Handling Units in Enclosed Areas such as Garages, Utility Rooms or Parking Areas.

Carbon monoxide producing devices (such as automobile, space heater, gas water heater, etc.) should not be operated in enclosed areas such as unventilated garages, utility rooms or parking areas because of the danger of carbon monoxide (CO) poisoning resulting from the exhaust emissions. If a furnace or air handler is installed in an enclosed area such as a garage, utility room or parking area and a carbon monoxide producing device is operated therein, there must be adequate, direct outside ventilation.

This ventilation is necessary to avoid the danger of CO poisoning which can occur if a carbon monoxide producing device continues to operate in the enclosed area. Carbon monoxide emissions can be (re)circulated throughout the structure if the furnace or air handler is operating in any mode.

CO can cause serious illness including permanent brain damage or death.



WARNING

Reminder: If these instructions and/or codes are not followed or if the equipment is not properly installed, possible injury or death could occur during installation or operation.



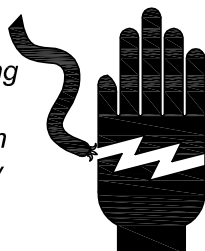
CAUTION

TO AVOID PORPERTY DAMAGE OR PERSONAL INJURY DUE TO FIRE, USE ONLY COPPER CONDUCTORS.

⚠ WARNING

HIGH VOLTAGE

Risk of electrical shock. Before installing or servicing unit, be sure ALL power to the units is OFF. More than one disconnect switch may be present. Failure to disconnect power supplies can result in property damage, personal injury, or death.



⚠ CAUTION

To avoid possible personal injury, use extreme caution if using power tools to remove the small breaker mounting brackets. The brackets may quickly rotate and cause injury.

Reminder: The power must be in the OFF position. There may also be more than one means of disconnect servicing this product.

**Electric Heat Accessory Installation
(for standar air handler equipment)**

- 1.) *If physical damage is observed during the inspection DO NOT install this kit.*
- 2.) *Before installing the unit, check the information on the unit rating plate to ensure that the unit meets the job specification, proper electrical power is available, and the proper duct clearances are maintained.*
- 3.) *Refer to figure 3 for additional clarity of the following instructions. Also, refer to base unit installation instructions as required.*
- 4.) *Remove appropriate Blower section access panel of air handler.*
- 5.) *Remove the block-off plate from the air handler & retain screws for mounting heater.*
- 6.) *Slide the heater kit into the slot following the direction of airflow decal attached to the heater faceplate and secure with screws.*
Note: Be careful not to damage the heater elements or any other components when sliding the heater through the slot provided.

for Heaters without Circuit Breakers
7a.) *The power leads must be routed through a means of strain relief as they enter the cabinet.*

8a.) *Remove the multi-pin connector with the jumper wire and discard at installer's discretion. Insert the one contained in the kit. It can be inserted in one position only.*

9a.) *Insert ground wire into the lug(s) provided for that purpose.*

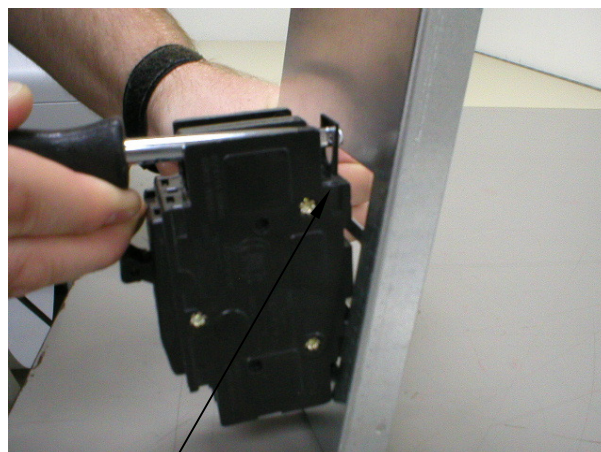
10a.) *Apply wiring diagram to cabinet for future reference. Replace panel and check operation. (Also refer to note 17b for 3ph & 25kw heat kits)*

for Heaters with Circuit Breakers

Note: A breaker filler plate is included with all heater kits containing circuit breakers, please do not discard.

Note: For downflow applications with electric heat kits that have circuit breakers, the circuit breakers must be rotated 180° (such that the ON position will be with the circuit breaker switch up).

7b.) *Remove the circuit breaker mounting bracket from heater carton and insert the circuit breakers into the bracket if required. (See fig. 1)*



To Insert: Simply place the breaker into the cutouts provided (as the final breaker position is required). Then lift up on the spring tab located on the back of the breaker and snap the breaker into place.

Fig. 1

8b.) *The breaker must be inserted with the "OFF" position down. When installing in the horizontal position the orientation of the breaker is not important.*

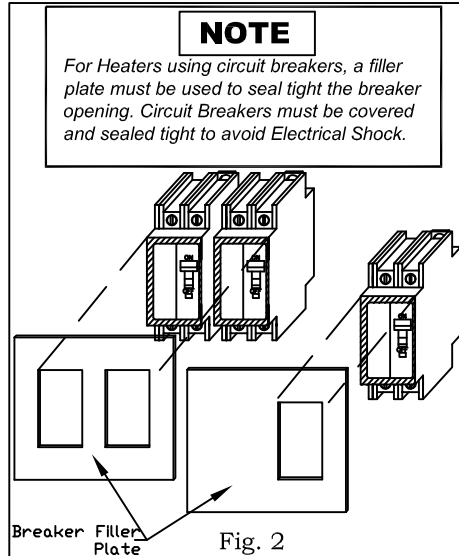
Note: In some cases it is easier to wire the breakers before inserting them into the mounting bracket.

9b.) Mount the circuit breaker mounting bracket in the lower left-hand side of the heater/control section of the cabinet (see fig. 3). Insert the mounting screws through the control panel flange & cabinet corner post with screws provided with heater kit.

10b.) The power leads must be routed through a means of strain relief as they enter the cabinet.

11b.) Insert power leads into the lugs provided on the circuit breaker and tighten.

12b.) For units with circuit breakers, install the filler plate provided. The filler plate is to cover the breaker wiring connection area creating a dead front plate between the breaker and the access panel. [See Fig. 2 (Dimensions may vary)]



13b.) Remove the multi-pin connector with the jumper wire and discard at installer's discretion. Insert the one contained in the kit. It can be inserted in one position only.

14b.) Insert ground wire into the lug(s) provided for that purpose.

15b.) Break out the appropriate area of the plastic circuit breaker cover on the access panel on the air handler. (**For 3ph & 25kw heater kits, see fig. 4 for cut-out details**)

16b.) Apply wiring diagram to cabinet for future reference. (**FOR 25kw & 3ph HEATER KIT APPLICATIONS: Install the wiring diagram provided with the heat kit in a prominently visible location on the exterior of the unit**).

Mark an "X" on the wiring diagram according to the number of heater element rows installed. Replace panel and check operation.

for 3 Phase Heaters

1.) Follow previously listed steps 1 through 6.

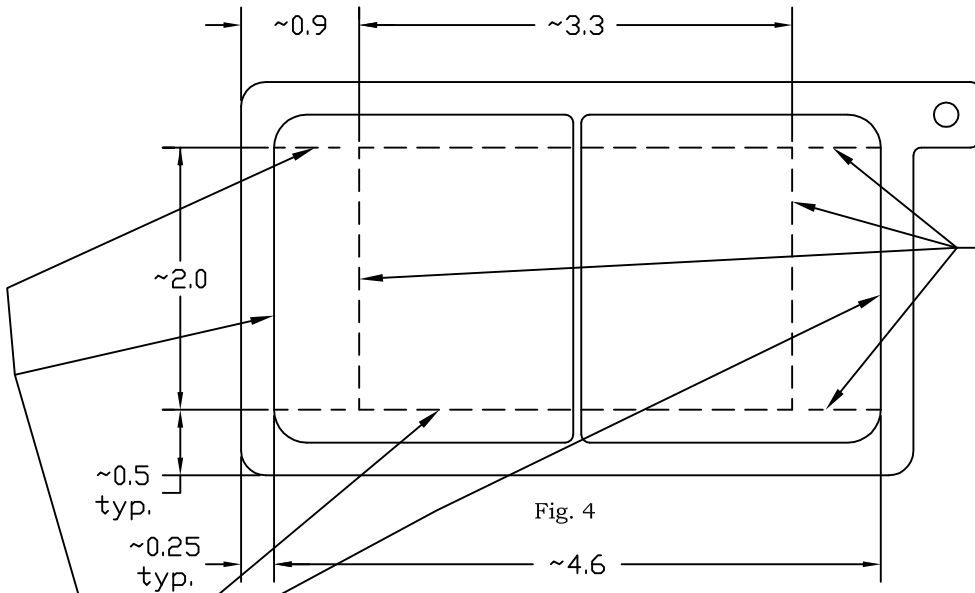
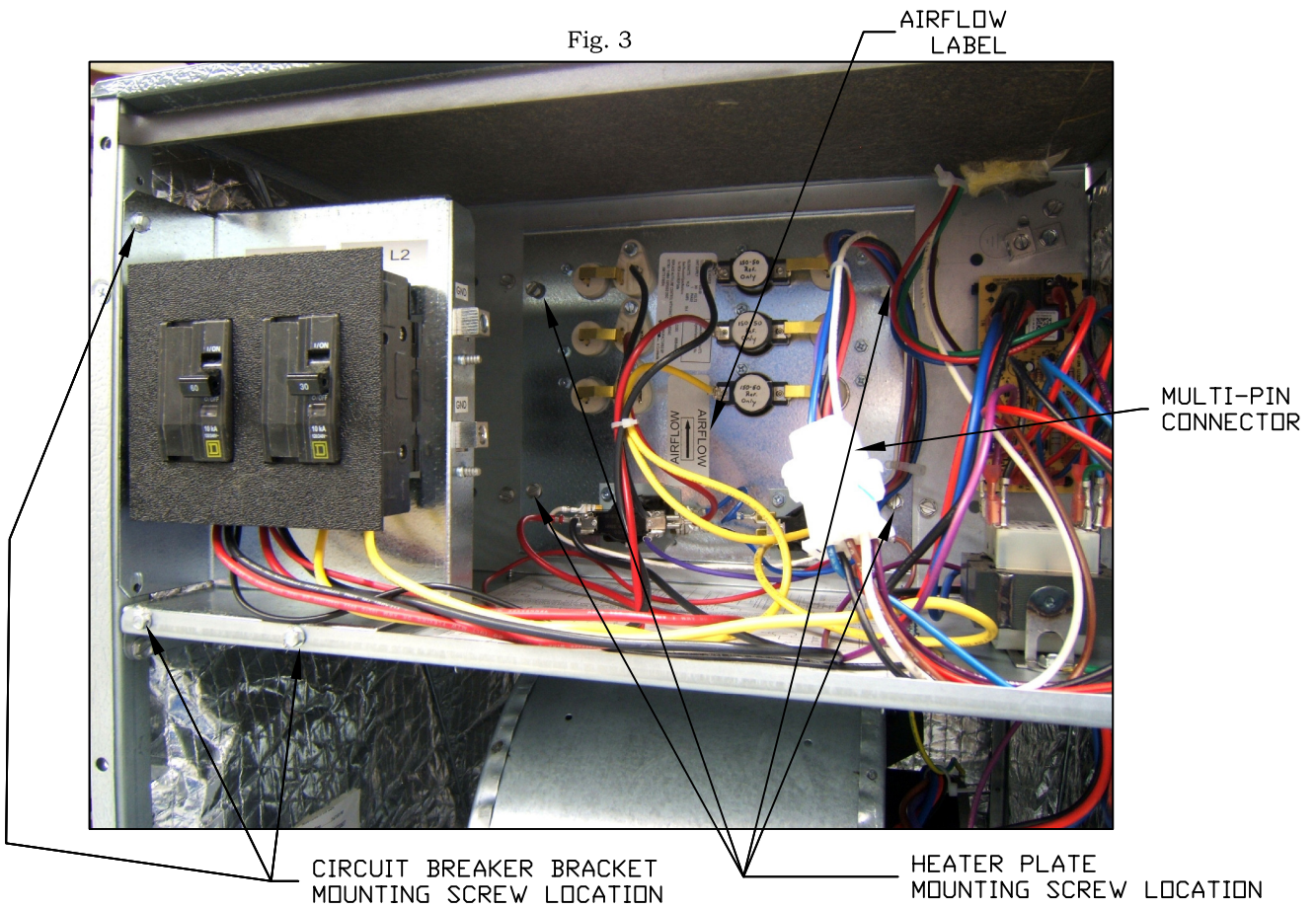
2.) Wire the terminal block leads (supplied in heater kit carton) to the transformer as per the unit & heater kit wiring diagram.

3.) Insert 1 phase power leads into lugs provided on the heater kit terminal block and tighten.

4.) Insert 3 phase power leads into lugs provided on the circuit breaker and tighten.

5.) Follow steps 7b through 16b above.

Fig. 3



For all 3ph applications, cut the circuit breaker cover along the dotted lines as shown.

Fig. 4

For the 25kw heater kit, cut the circuit breaker cover along these lines.