INSTALLER'S GUIDE

18-GJ28D1-1C-EN

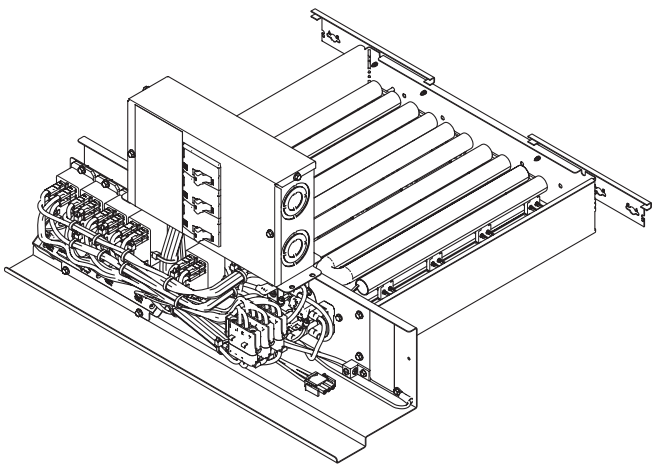
ALL phases of this installation must comply with NATIONAL, STATE AND LOCAL CODES

Models:
BAYEVCC25BK1B

25 kW Supplementary Electric Heater

for Air Handler Installations

IMPORTANT *— This Document is customer property and is to remain with this unit. Please return to service information pack upon completion of work.*



Section 1. Safety Information

⚠ WARNING

SAFETY HAZARD! This information is intended for use by individuals possessing adequate backgrounds of electrical and mechanical experience. Any attempt to repair a central air conditioning product may result in personal injury and/or property damage. The manufacturer or seller cannot be responsible for the interpretation of this information, nor can it assume any liability in connection with its use.

⚠ WARNING

HAZARDOUS VOLTAGE! Disconnect all electric power, including remote disconnects before servicing. Follow proper lockout/tagout procedures to ensure the power can not be inadvertently energized. Failure to disconnect power before servicing could result in death or serious injury.

⚠ WARNING

LIVE ELECTRICAL COMPONENTS! During installation, testing, servicing, and troubleshooting of this product, it may be necessary to work with live electrical components. Failure to follow all electrical safety precautions when exposed to live electrical components could result in death or serious injury.

⚠ CAUTION

SAFETY HAZARD! Sharp Edge Hazard. Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing. Personal injury may result.

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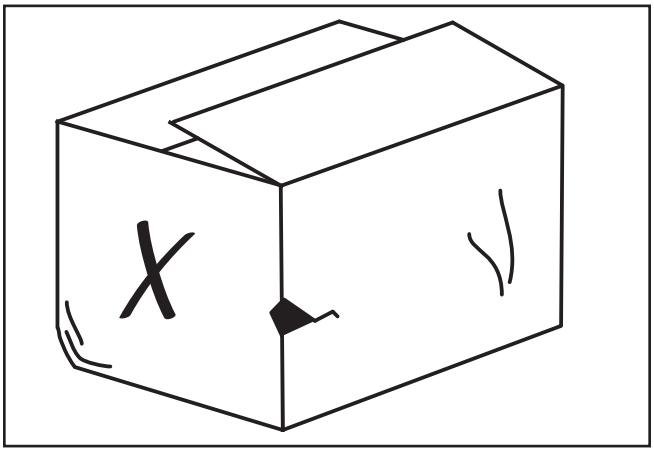
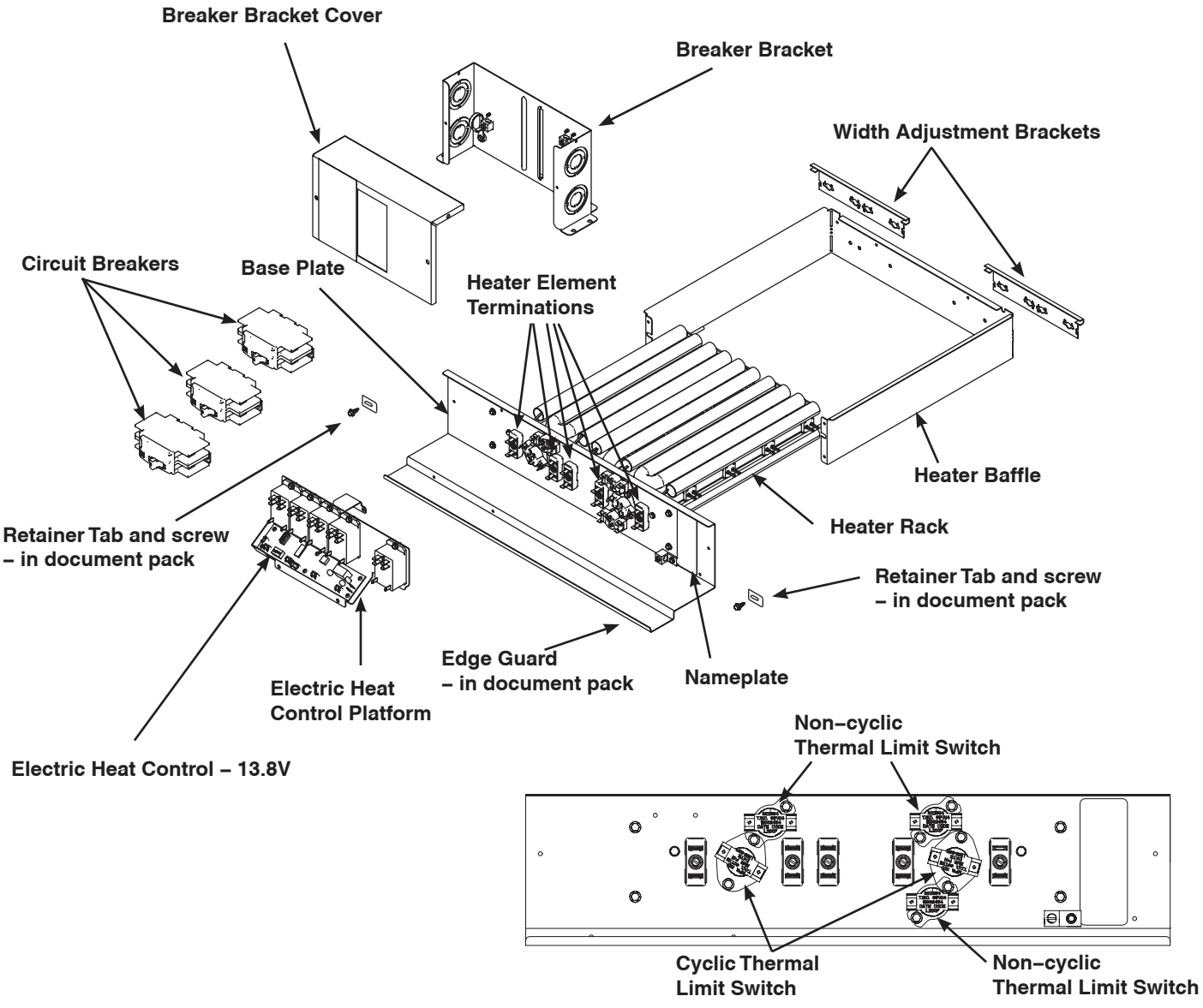
Section 2. General Information

This electric heater accessory is designed to provide power directly to the air handler from the accessory heater's power supply, eliminating the need for additional circuits. The power and control wiring each use a single wire harness to connect the heater and the air handler.

1. Check the heater nameplate to confirm that the selected heater is approved for use with the air handler.
2. Check the components received for damage. Report any defects or shortages to the transportation company immediately.
3. Be sure the power supply matches the listing shown on the heater nameplate.



Section 3. Heater Assembly Labeled

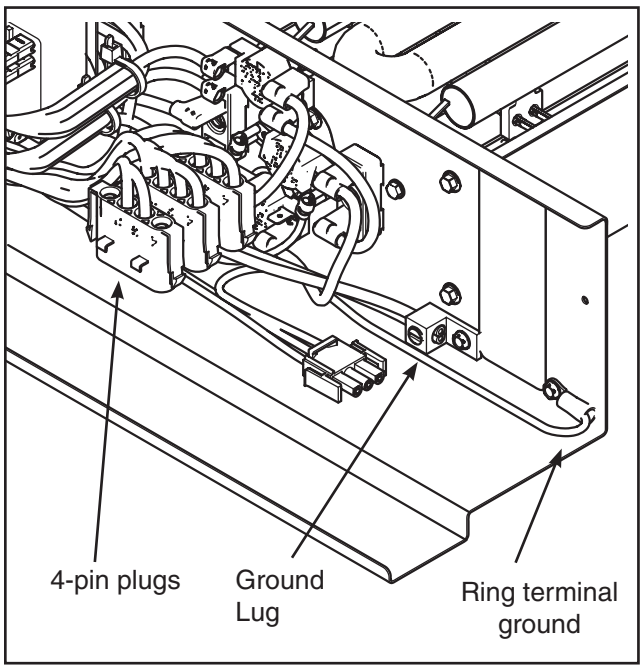


Section 4. Adjust Heater

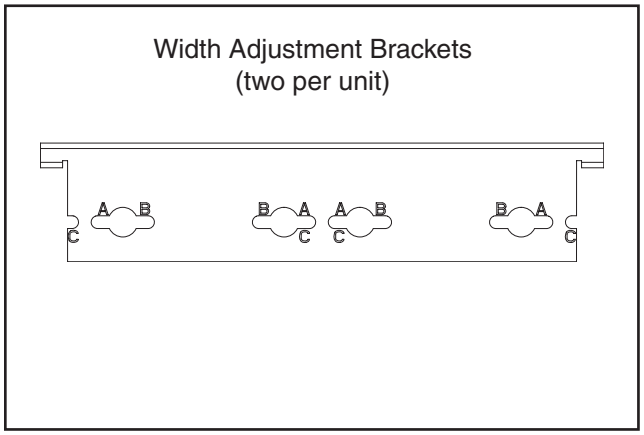
STEP 1 – Remove control box
The heater and control box are connected when they are shipped. Before installation is started, the control box must be disconnected from the heater.

1. Disconnect the three 4-pin plugs between the breakers and the heater.
2. Disconnect the ground on the 3-pin plug that is at the right front of the heater and connected with a ring terminal to the heater base plate.
3. Disconnect the two ground wires from the lug on the heater base plate.

Note: It is recommended that the ducting be attached and sealed before installing the heater.



STEP 2 – Adjustment brackets
Two Width Adjustment Brackets are located at the back of the heater assembly. The heater comes factory sized for the C cabinet. No modifications to the Width Adjustment Brackets are required.



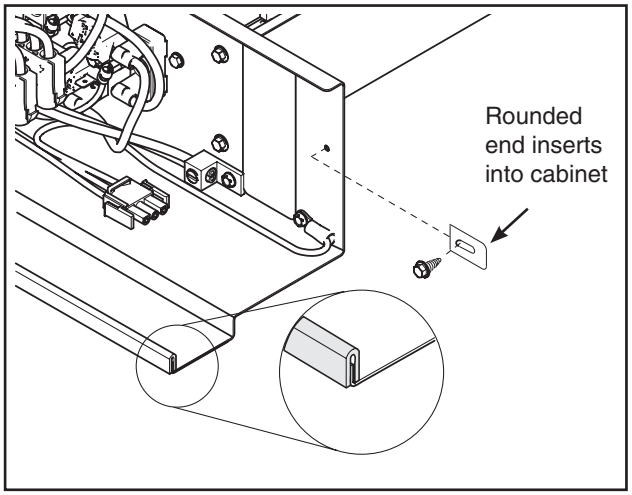
STEP 3 – Attach Retainer Tabs.

1. Add the Retainer tabs using the screws provided (both tabs and screws are located in the documentation packet).

   Leave the screws slightly loose so that the tab can slide to the left or right as needed. The tab will be used later to engage in a slot within the air handler cabinet.

Note: The retainer tabs must be attached to the heater base plate. Leave the screws slightly loose so they can be slid to the left or right as needed.

2. The edge guard is located in the document pack. Install the edge guard on the front of the heater flange as shown.



STEP 4 - (Optional) Rotate Circuit Breakers.

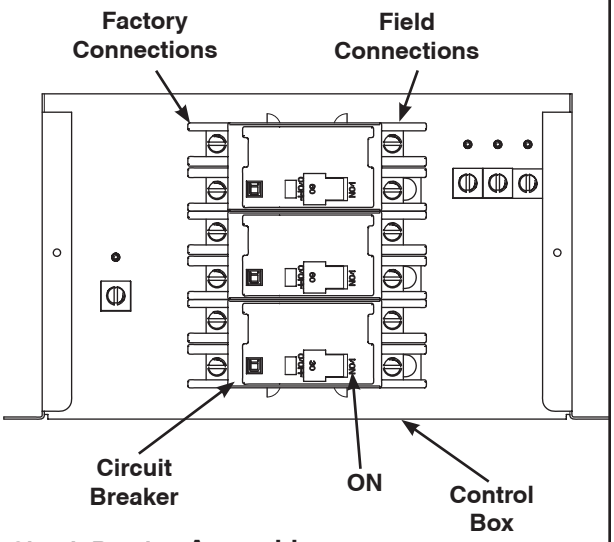
The need to reorient the Circuit Breaker Assembly depends upon the orientation of your application and which of the high voltage electrical conduit entry points you use for high voltage wiring.

Important: *For air handler units installed in the horizontal right position, the circuit breakers on the heater must be rotated in order to comply with National Electric Code (NEC Section 240.81). The NEC requires that circuit breakers operated vertically must be oriented so that the "on" position of the breaker is upward.*

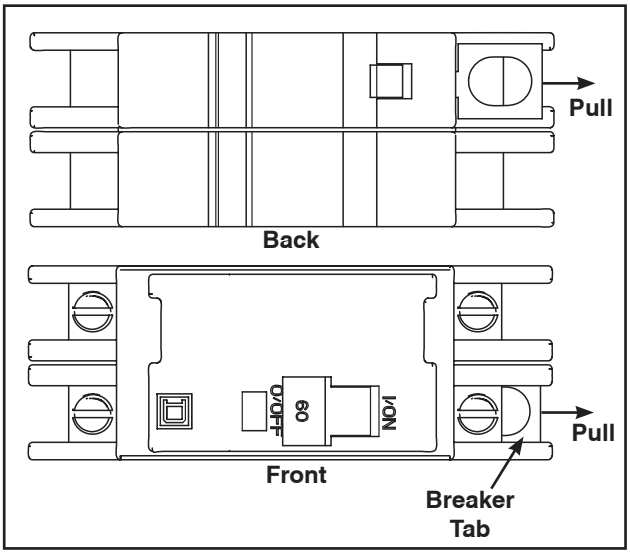
⚠ CAUTION

SAFETY HAZARD! Sharp Edge Hazard. Be careful of sharp edges on equipment or any cuts made on sheet metal while installing or servicing. Personal injury may result.

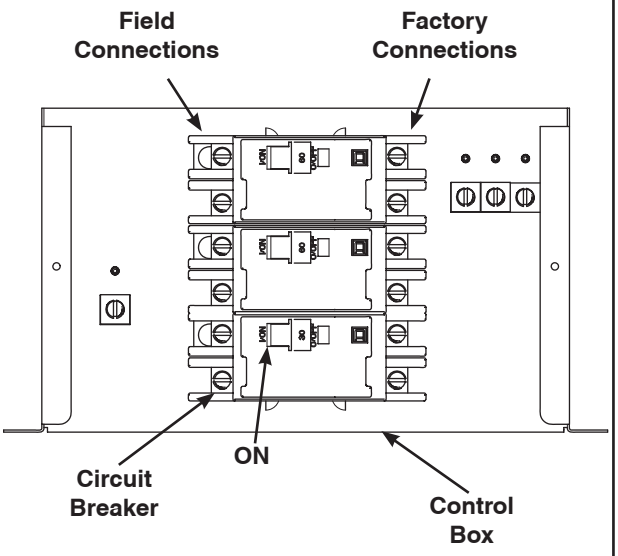
1. Pull out the tab on the back side of the breaker using a long screwdriver.
2. Remove the circuit breaker from the control box and rotate the circuit breakers 180 °.



Circuit Breaker Assembly



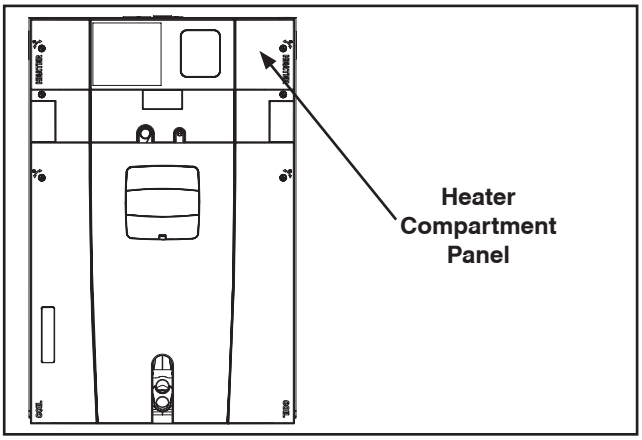
3. Place the circuit breakers back into the control box. The tabs on the breakers are spring loaded and will snap back to their locked position once the breakers are properly seated.



Circuit Breaker Assembly – Rotated

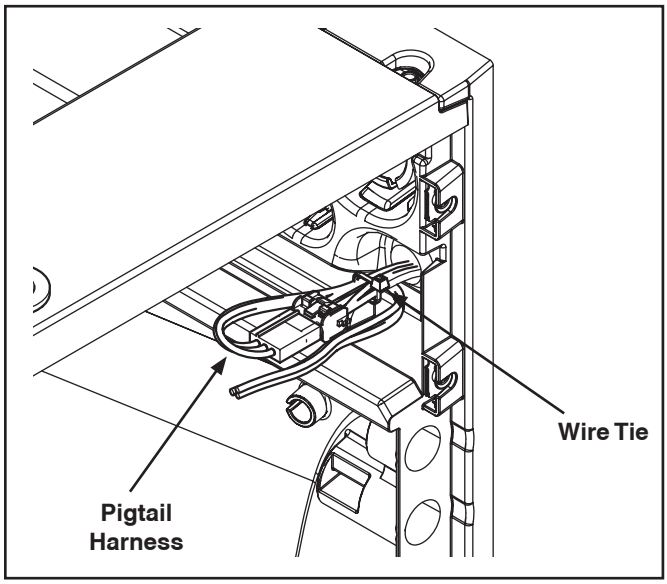
Section 5. Install Heater

STEP 1 - Remove Heater Compartment Panel.



STEP 2 - Disconnect & Dispose of Pigtail Harness.

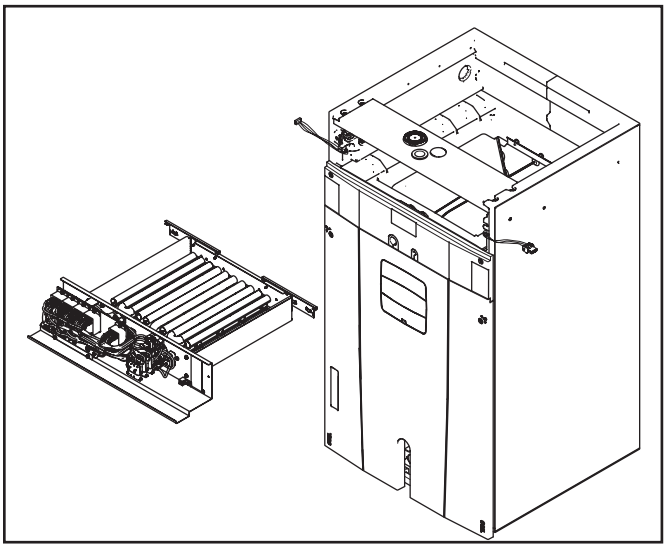
1. Remove the screw mounted wire tie that is holding the pigtail harness and case ground wire to the cabinet. Remove the wire tie from the two green ground wires.
2. Unplug and dispose of pigtail harness.



Important: If using a BAYSUPFLGA, B, or C Supply Duct Flange Kit, install the kit before inserting the heater.

STEP 3 - Insert heater assembly into heater compartment.

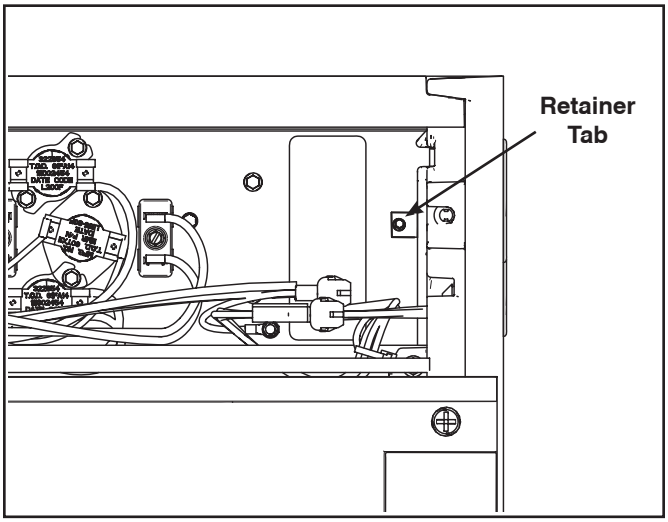
1. Move factory wiring out of the way and into the grooves provided in cabinet.
2. Slide heater into heater compartment of air handler.



STEP – 4 Lock Retainer tabs.

Note: *Retainer tabs are used to secure the heater inside of the heater compartment.*

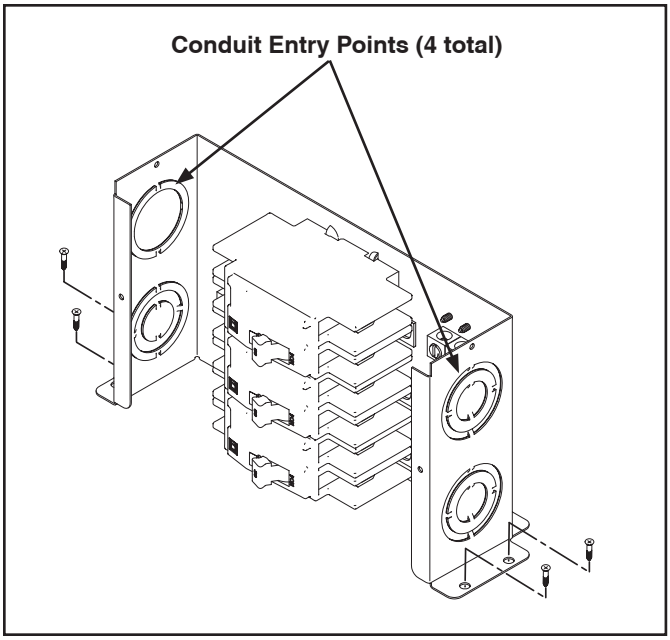
1. Slide retainer tab into recess in air handler cabinet.
2. Tighten screws to hold tab securely.
3. Repeat actions to secure the other tab.



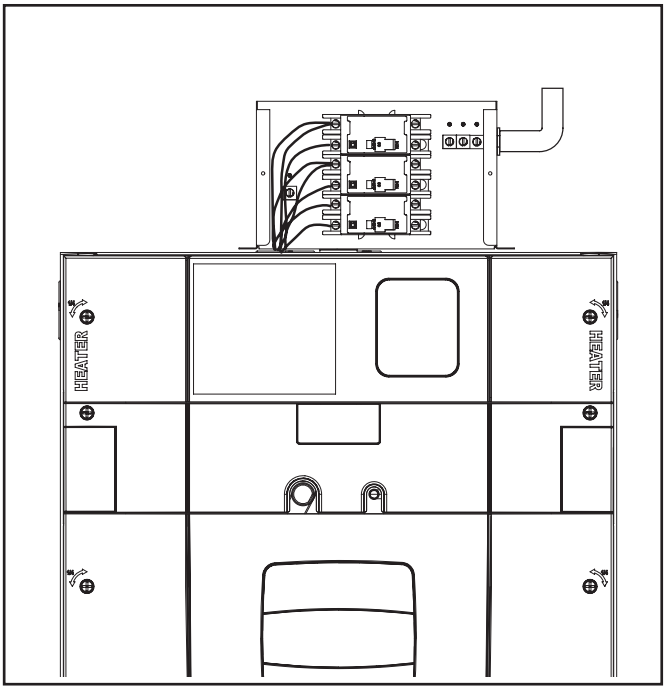
STEP 5 - Select a conduit entry point. See the orientations on the following pages for entry point selections.

1. Select the entry point on the control box cover you will use to bring in your high voltage wiring.
2. Remove knockout from the entry point.
3. Remove the plug from the 1-1/2" hole in the cabinet.
4. After the ductwork is installed, secure the control box to the top panel of the air handler.

Note: Use the low torque setting when attaching the screws to the unit.

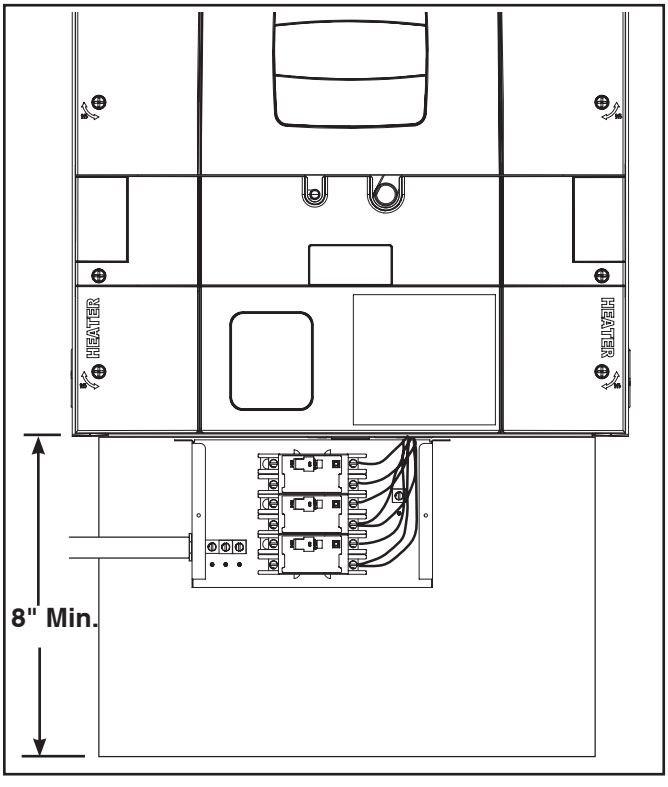


Upflow - Route conduit, as shown.

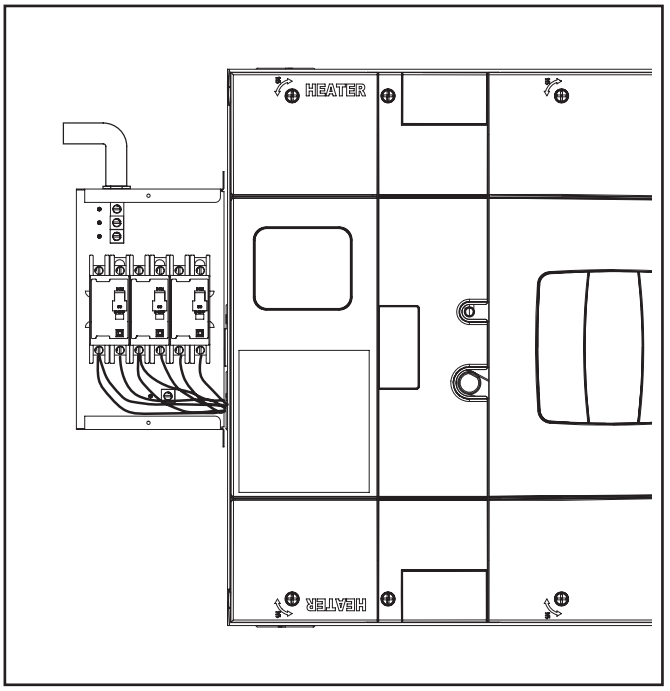


Downflow - Route conduit, as shown.

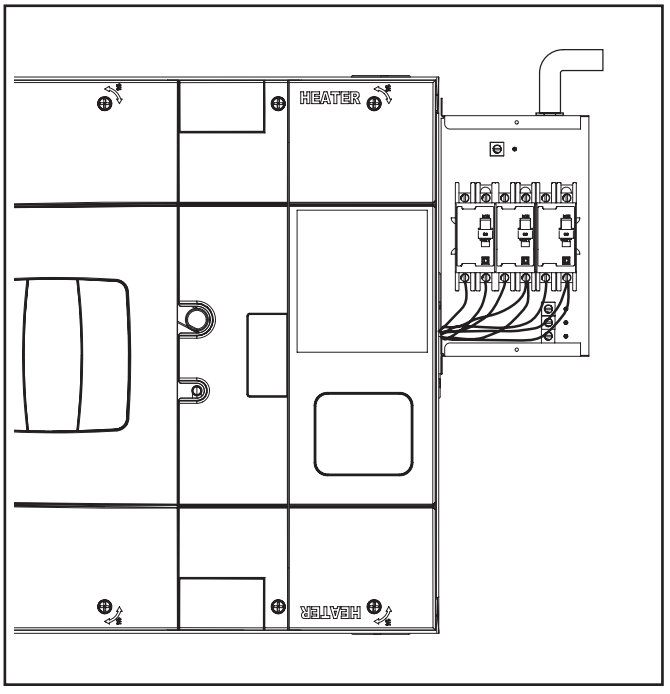
Note: *A minimum of 8" is required for installation and servicing of the control box.*



Horizontal Left - Route conduit, as shown.

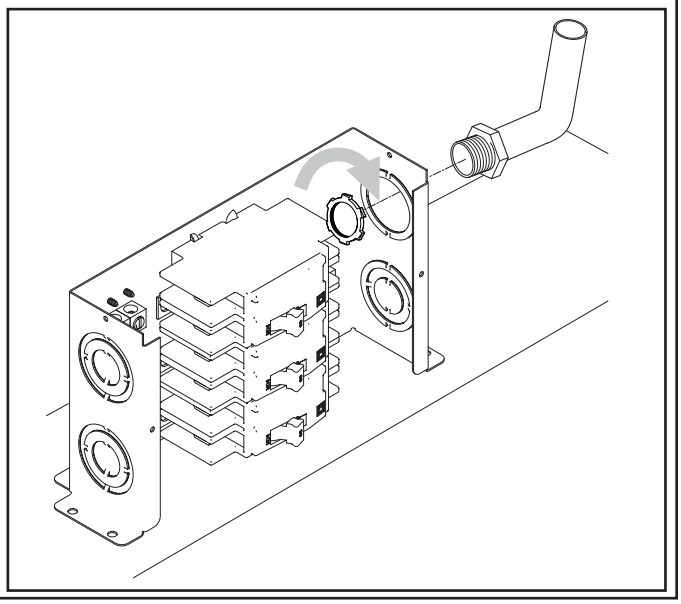


Horizontal Right - Route conduit, as shown.



STEP 6 - Route conduit, if used, and wiring to the entry point and connect.

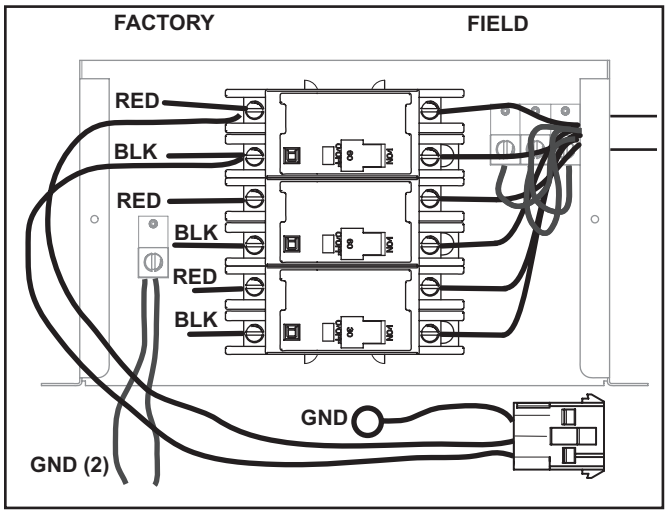
1. Connect field supplied conduit to breaker box.



STEP 7 – Connect high voltage wiring

1. Connect high voltage field wiring.
2. Route the three 4-pin connectors, one 3-pin connector, and two ground wires through the hole in the top panel.
3. Reconnect the ground wire coming from the 3-pin connector to the heater base plate front using the screw removed earlier. (See Section 4, Step 1 for illustration)
4. Reconnect the 3-pin plug on the heater to the 3-pin plug in the air handler case.
5. Reconnect the two ground wires to the lug on the base plate. See illustration in Step 8.

Note: *Minimum terminal screw torque is 45 in-lbs.*

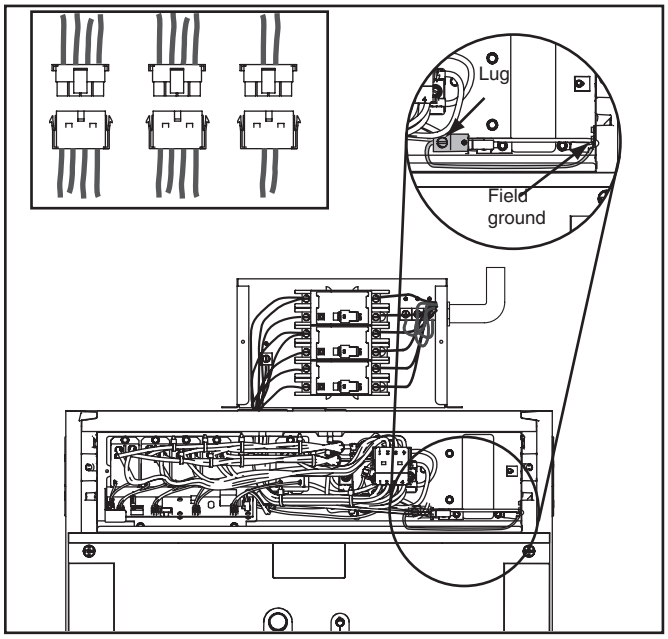


STEP 8 – Plug Connections

1. Connect the three 4-pin connectors from the circuit breakers to the three 4-pin connectors coming from the heater. The connectors are labeled "Circuit1", "Circuit 2", and "Circuit 3". Line up the mating male and female connectors and connect.

Note: *One set of plugs has only two wires each.*

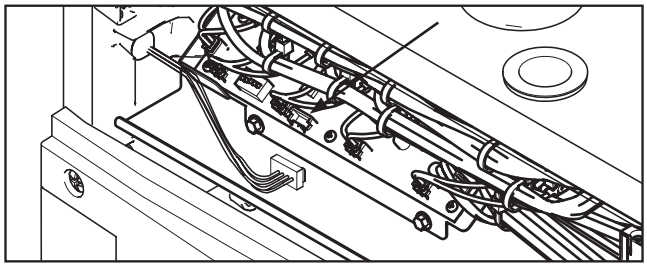
2. Connect the field ground wire to the lug on the heater base plate.

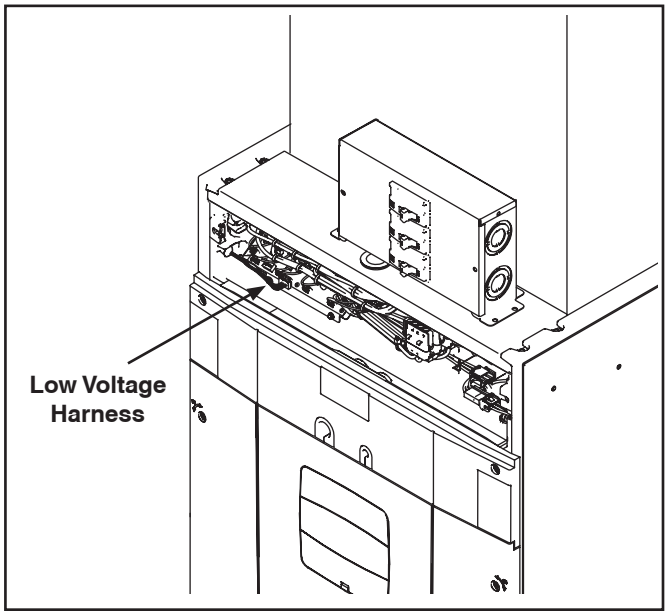


STEP 9 – Connect low voltage wiring.

1. Attach the low voltage harness to Electric Heat Control connector on the board as shown.

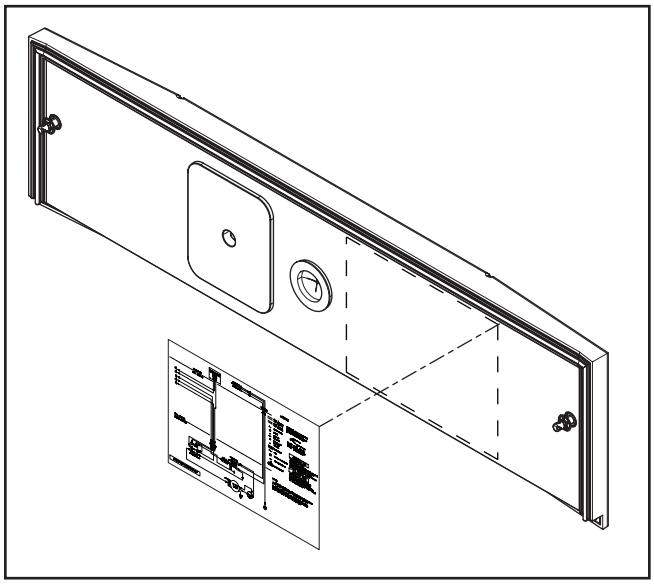
Close up with some wires not shown



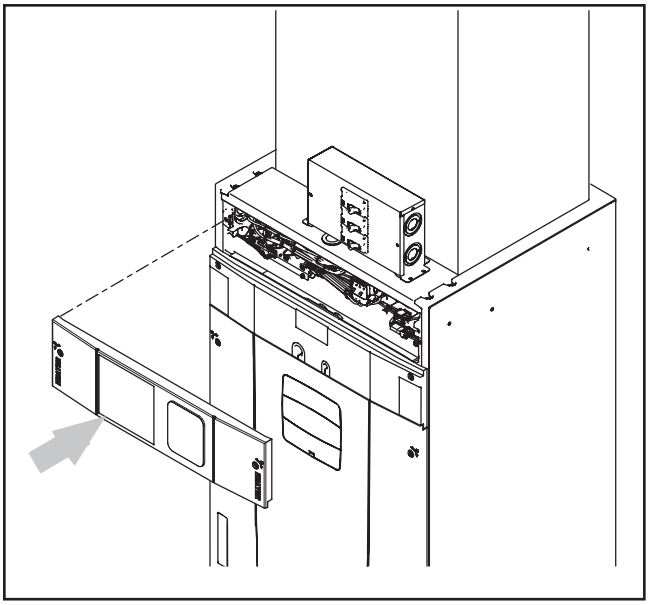


STEP 10 – Place Wiring Diagram.

1. Attach the wiring diagram, included in the documentation packet, to the back of the heater compartment panel.



STEP 11 **–** Replace Heater compartment panel on air handler.



Section 6. Tables

Important: *The BAYEV* electric heat accessory may include up to a combination of three 60 amp circuit breakers to provide an electrical disconnect for service personnel that is intended to help protect internal electrical components in the event of a short circuit or ground fault. As designed, the circuit breakers supplied in the BAYEV* accessory* ***DO NOT*** *provide overcurrent protection of the branch circuit. Therefore, the branch circuit(s) shall be sized and protected according to the unit nameplate.*

Table 6.1 BAYEV –– HEATER DATA

Heater Model No.	Number of Circuits	240 VOLT			208 VOLT		
		Capacity		Heater Amps per Circuit	Capacity		Heater Amps per Circuit
		kW	BTUH		kW	BTUH	
BAYEVCC25BK1	3	24.00	82000	40/40/20	18.00	61500	34.6/34.6/17.3

Table 6.2 MINIMUM HEATER AIRFLOW CFM – HEATER MATRIX

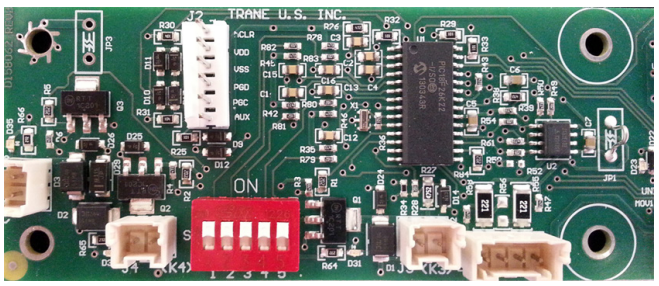
MODEL NO.	BAYECC25BK1
	W/O HP / WITH HP
TAM7A0C48H41S	1625 -- 1813
TAM7B0C60H51S	1625 ① -- 1813
	--
TAMGA0C48H41S	1625 -- 1813
TAMGA0C60H51S	1625 ① -- 1813
TAM8A0C48V41C	1625 -- 1813
TAM8B0C60V51C	1625 ① -- 1813

SEE AIR HANDLER NAMEPLATE OR PRODUCT DATA FOR EXCEPTIONS
① Not approved for 208V when installed in horizontal left position without Heat Pump.

Control Board Jumper Settings

When the heater comes from the factory, all dip switches will be in the ON (park) position. The control is already configured for the heater size that is required, so no adjustments are necessary.

NOTE: If the dip switches are changed to another kw rating, the original "Park" programming is not lost;, however the dip switches must be placed in the ON (park) position or the correct kw of the heater model for normal operation.



Heater Wattage Selection Table					
Heater Wattage	S1 SW1	S1 SW2	S1 SW3	S1 SW4	S1 SW5
PARK	ON	ON	ON	ON	ON
4 KW	ON	ON	ON	OFF	OFF
5 KW	OFF	ON	ON	ON	ON
8 KW	ON	OFF	ON	ON	ON
10 KW	ON	ON	OFF	ON	ON
15 KW	ON	ON	ON	OFF	ON
20 KW	ON	ON	ON	ON	OFF
25 KW	OFF	ON	ON	ON	OFF

Section 7. Heater Operation

7.1 TAM7/TAMG Heater Operation

Electric Heat

1. R-W contacts close on the comfort control sending 24VAC to W1 of the AFC.
2. R-G contacts close on the comfort control sending 24VAC to G of the AFC.
3. The AFC communicates to the EHC that 1st stage electric heat is being called upon.
4. The EHC determines the number of elements that are used for 1st stage and sends a message to the AFC for that correct cfm. (The EHC determines the amount of heat per stage by either factory programming or by the kw jumper position)
5. The AFC micro-processor sends a command to the serial communicating blower motor to run and close the blower interlock relay on the EHC. The blower motor will now run at the W1 electric heat cfm.
6. On subsequent calls for W2 and/or W3, the EHC will communicate to the AFC the required airflow request and energize the additional relays.

NOTE: *The EHC has "lead-lag" logic built in that energizes the electric heat relays based upon cycle counts.*

For example: BAYEV**15 – The first time W1 only is energized; the K1 relay would close and energize the "A" heater. The second time W1 only is energized; the K2 relay would close and energize the "B" heater. The third time W1 only is energized; the K3 relay would close and energize the "C" heater.

7.2 TAM8 Heater Operation

Electric Heat

1. When a request for electric heat is received, the AFC communicates to the EHC how much demand for auxiliary heat is being requested
2. The EHC determines the number of elements that will be used for this request and sends a message to the AFC for proper airflow. (The EHC determines the amount of heat available per stage by either factory programming or by the kW jumper position)
3. The AFC sends a command to the serial communicating blower motor to run proper airflow and close the blower interlock relay on the EHC.
4. As demand from the thermostat increases, the EHC will communicate to the AFC the required airflow when energizing additional relays.

NOTE: *The EHC has "lead-lag or rotating" logic built in that energizes the electric heat relays based upon cycle counts. To verify operation of all heating elements, switch thermostat to Emergency Heat and raise the setpoint of the thermostat at least 5 degrees above the actual room temperature.*

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Supersedes 18-GJ28D1-1B (December 2014)