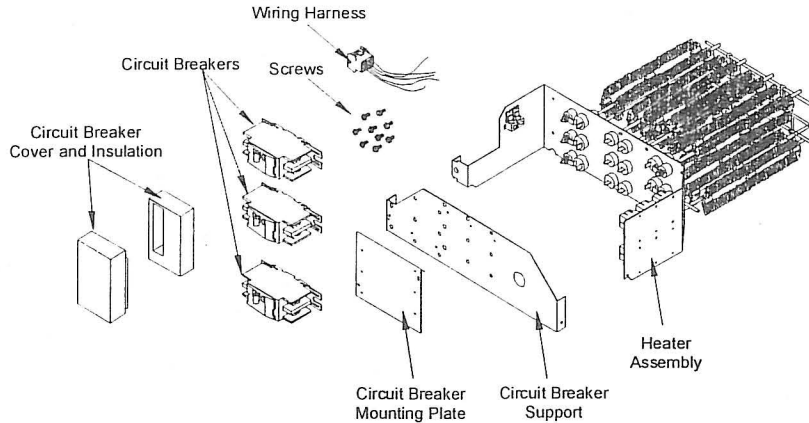


(EHK/ECB)**D BBA/BBC Electric Heat Kit Accessory Installation Instructions

DESCRIPTION

The EHK-D and ECB-D accessory electric heat kits are resistive heating elements that provide heat for Amana BBA and BBC product lines. All kits include the coiled nichrome heating elements and proper operating controls. ECB-D also include circuit breakers for electrical overcurrent protection.



APPLICATION VERIFICATION

It is the installer's responsibility to verify that the system being installed will satisfy the building load. The heating load should be calculated by ACCA's Manual J or equivalent. Refer to Table 1 for heater output at 240 volts (if installing with a heat pump, refer to outdoor unit specification sheet for heat pump heating capacity). If the supply voltage is other than 240 volts, apply the correction factor from Table 2 to the heater output from Table 1.

Heater Kit (EHK/ECB)**D	Heater Capacity @ 240 VAC	
	kW	BTUH
5	4.8	16,400
7	7.2	24,600
10	9.6	32,800
15	14.4	49,100
20	19.2	65,500
25	24.0	81,900
30	28.8	98,300

Table 1

Voltage @ Unit	Correction Factor
200	0.69
208	0.75
220	0.84
230	0.92
240	1.00
250	1.09

Table 2



RECOGNIZE THIS SYMBOL AS A SAFETY PRECAUTION.

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 this Instruction Manual. Pay special 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 in its safe use.

Safety is a matter of common sense...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 take precedence.

Installation Guidelines

1. Only qualified, experienced technicians should install or service these accessories.
2. The system and all accessories are to be installed in accordance with all local codes. If no local codes exist, follow National Codes (NEC in the United States and CEC in Canada).
3. Disconnect all power source(s) to equipment before installing or servicing the system and any accessories.
4. Before operating the unit, be certain it is properly grounded.

General

Check the model number of the heater kit and compare it to the list of approved accessories on the blower coil nameplate. This heater kit must be listed as an approved accessory. Single Point Power Supply Kits (SPKs) are accessories to the ECB-D models only.

The circuit breakers or the disconnect switch will extend through the upper door of the blower. In some areas, the breakers or disconnect switch must meet local code requirements for a physical disconnect.

SHIPPING AND HANDLING

Check the unit for any shipping damage. If damage is found, contact the company where you purchased the unit. If no damage is found, carefully remove and recycle or properly dispose of all shipping material.

Heater Installation



WARNING

To avoid the risk of death or personal injury due to electrical shock, disconnect all electrical power before changing any electrical wiring or installing heater kits. Wiring must conform to NEC or CEC and all local codes.

1. Remove access panel from blower section.
2. Remove the filler plate covering the electric heat opening (if installed). Refer to Figure 1 for location of filler plate and electric heat opening.

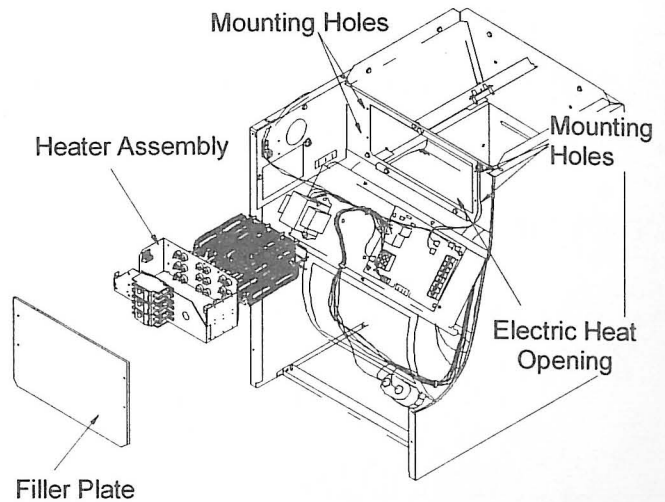


Figure 1
Filler Plate Location

3. Carefully insert the heater assembly in the front support opening. Ensure the heater does not damage other components when installing. Do not allow the heating elements to contact sharp edges when inserting into the unit. The support rods for the heaters should be guided into the holes in the back of the unit.

IMPORTANT NOTE: To avoid possible electrical failure due to short circuits, be careful not to damage the elements while installing. Always check for damaged elements after installation.

4. Secure the assembly to the front support with the four #8 x 3/8" sheet metal screws provided in the heater kit bag assembly (See Figure 1 for hole locations).

ECB-D HEATER KIT INSTALLATION

BBC36A2A (Manufacturing No. P1206412C) Models Only

Relocate transformer to lower left control plate mounting hole and secure transformer with self-tapping screw provided.

(BBA/BBC) 48 and 60 models

Reposition breaker mounting bracket (see front page heater assembly) to match indoor blower access panel knockout location.

NOTE: If blower is installed in horizontal left hand airflow position, circuit breakers must be turned 180° on mounting bracket. To rotate, disconnect factory-installed high voltage leads and loosen screws in circuit breaker clips. Rotate circuit breaker 180°, retighten screws and reconnect factory installed high voltage leads.

Remove knockouts on blower access panel to allow circuit breaker to extend through door. For models with one breaker, remove the bottom knockout. For models with two circuit breakers, remove the bottom two knockouts. For models with three circuit breakers, remove all three knockouts.

INSULATED CIRCUIT BREAKER COVER INSTALLATION FOR ECB-D HEATER KIT

1. Remove backing form insulation (Figure 2).

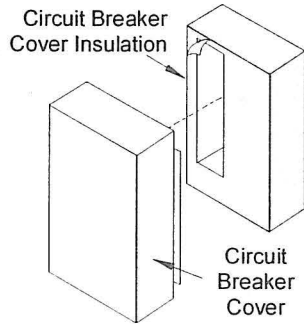


Figure 2
Circuit Breaker Cover

2. Place adhesive side of insulation in circuit breaker cover.
3. Place circuit breaker cover in knockout opening of indoor blower access panel.

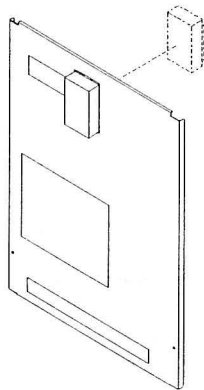


Figure 3
Circuit Breaker Cover Assembly Installation

4. Install and secure indoor access panel.

SINGLE POINT WIRING KIT INSTALLATION FOR ECB(15-30)D HEATER KIT

1. If installing a Single Point Wiring Kit (SPK02A) for ECB15D and ECB20D or SPK03D for ECB25D and ECB30D), loosen set screws on line side of circuit breakers.
2. Insert tabs from jumper bars on SPK kit into circuit breakers, ensuring the tabs are fully inserted and the body of the SPK kit is positioned fully against the circuit breakers. Refer to Figure 4 for application of SPK kits.
3. Tighten set screws on circuit breakers to 40-50 in-lbs.

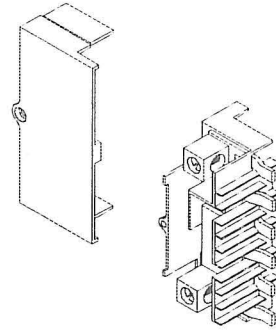


Figure 4
Single Point Power Supply Kit

Electrical Connections

WARNING
To avoid death or personal injury due to electrical shock, disconnect all electrical power before connecting electrical wiring. Wiring must conform to NEC or CEC and all local codes.

WARNING
To avoid death or personal injury due to electrical shock, wiring to the unit must be properly grounded.

CAUTION
To avoid the risk of fire or equipment damage, use only 75°C copper conductors.

POWER SUPPLY

1. Refer to Table 3 for Minimum Circuit Ampacity and Maximum Overcurrent Protection (also located on blower coil nameplate). Use this information to properly size supply wire per NEC, CEC or local codes.
2. Remove the proper size knockout from the blower coil. Be sure to use correctly sized electrical conduit to bring power to the unit. Refer to blower coil installation instructions for knockout sizes and conduit connection information.
3. *EHK-D models*
Connect power supply wires to red and black factory wires per the wiring diagram supplied with the heater kit. Use wire nuts supplied in the heater kit bag assembly to secure connections. Use electrical tape around wire nuts.
ECB-D models
Connect power supply wires to circuit breaker (or SPK kit) pressure lugs per wiring diagram supplied with the heater kit.
4. Connect ground wires to ground lug provided in blower coil. For models larger than 10 kW using multiple power supplies, second and third ground lugs are provided on the heater assembly.

UNIT INTERFACE

1. Remove and discard the 12-pin connector from the blower section control board.
2. Plug the male 12-pin connector from the heater kit into the female 12-pin connector on the blower section control board.

Double check all factory wiring connections to ensure none were loosened or detached during shipping and handling.

PLACING LABELS

1. Apply the proper Electric Heat Wiring diagram (provided) over existing wiring diagram on the blower housing. Different wiring diagrams are provided for the BBA models and for the BBC models. Be sure to use the correct diagram for the blower model being used.
2. On the fan unit nameplate place a check mark (✓) or "X" by the heater model installed.



CAUTION

To avoid the risk of fire, overcurrent protection must not exceed the value listed in Table 3.

Minimum Circuit Ampacity

Model	Heater	EHK05D	EHK07D	EHK10D	EHK15D	EHK20D	EHK25D	EHK30D	ECB15D +	ECB20D +	ECB25D +	ECB30D +
		ECB05D	ECB07D	ECB10D	ECB15D	ECB20D	ECB25D	ECB30D	SPK02A	SPK02A	SPK03A	SPK03A
BBA24A2A	L1/L2	27.8	41.3	53.8	53.8	53.8			79.8	105.7		
	L3/L4				26.0	52.0						
BBA36A2A	L1/L2	29.0	42.4	55.0	55.0	55.0	55.0	55.0	80.9	106.9	132.8	158.8
	L3/L4				26.0	52.0	52.0	52.0				
	L5/L6					26.0	52.0					
BBA48A2A	L1/L2	29.7	43.2	55.7	55.7	55.7	55.7	55.7	81.6	107.6	133.6	159.5
	L3/L4				26.0	52.0	52.0	52.0				
	L5/L6					26.0	52.0					
BBA60A2A	L1/L2	30.9	44.4	56.9	56.9	56.9	56.9	56.9	82.8	108.8	134.8	160.7
	L3/L4				26.0	52.0	52.0	52.0				
	L5/L6					26.0	52.0					
BBC36A2A	L1/L2	31.3	44.8	57.3	57.3	57.3	57.3	57.3	83.3	109.2	135.2	161.2
	L3/L4				26.0	52.0	52.0	52.0				
	L5/L6					26.0	52.0					
BBC48A2A	L1/L2	29.7	43.2	55.7	55.7	55.7	55.7	55.7	81.6	107.6	133.6	159.5
	L3/L4				26.0	52.0	52.0	52.0				
	L5/L6					26.0	52.0					
BBC60A2A	L1/L2	33.9	46.6	59.9	59.9	59.9	59.9	59.9	85.9	111.9	137.9	163.9
	L3/L4				26.0	52.0	52.0	52.0				
	L5/L6					26.0	52.0					

Maximum Overcurrent Protection

Model	Heater	EHK05D	EHK07D	EHK10D	EHK15D	EHK20D	EHK25D	EHK30D	ECB15D +	ECB20D +	ECB25D +	ECB30D +
		ECB05D	ECB07D	ECB10D	ECB15D	ECB20D	ECB25D	ECB30D	SPK02A	SPK02A	SPK03A	SPK03A
BBA24A2A	L1/L2	30	45	60	60	60			80	110		
	L3/L4				30	60						
BBA36A2A	L1/L2	30	45	60	60	60	60	60	90	110	150	175
	L3/L4				30	60	60	60				
	L5/L6					30	60					
BBA48A2A	L1/L2	30	45	60	60	60	60	60	90	110	150	175
	L3/L4				30	60	60	60				
	L5/L6					30	60					
BBA60A2A	L1/L2	35	45	60	60	60	60	60	90	110	150	175
	L3/L4				30	60	60	60				
	L5/L6					30	60					
BBC36A2A	L1/L2	35	45	60	60	60	60	60	90	110	150	175
	L3/L4				30	60	60	60				
	L5/L6					30	60					
BBC48A2A	L1/L2	30	45	60	60	60	60	60	90	110	150	175
	L3/L4				30	60	60	60				
	L5/L6					30	60					
BBC60A2A	L1/L2	35	50	60	60	60	60	60	90	125	150	175
	L3/L4				30	60	60	60				
	L5/L6					30	60					

Table 3