



AEH SERIES

Magic Aire Field-Installed Accessory Electric Heaters—
For Air Handling Units and Fan Coils

Installation, Operation and Maintenance Manual

GENERAL

Immediately inspect each unit for damage upon receipt. File any damage claims with the freight carrier. Protect stored units from damage.

Use these instructions in conjunction with other appropriate instructions, including but not limited to those instructions supplied with the AHU or Fan Coil unit or the outdoor unit (if applicable). Installation must comply with all applicable local codes.

HOW TO USE THIS MANUAL:

Find the air handler/fan coil model section below and use the following instructions to install the heater on the unit.

REQUIREMENTS:

These installation instructions are for installation of auxiliary electric heater accessory “AEH” in Magic Aire Belt Drive air handlers,

- INDOOR only,
- for the MODELS SPECIFIED only.

Instructions are primarily intended to assist qualified individuals experienced in the proper installation of heating and/or air handler units. All installations must be in accordance with these instructions and all local/national (NEC) electrical codes and standards and NFPA 90A & 90B.

Read Heater and Unit installation instructions before starting installation of heater kit on air handler discharge opening. Improper installation, service, adjustments or maintenance may cause fire, electrical shock or other conditions.

WARNING! To avoid the risk of electrical shock or personal injury, **lock out and tag out all electrical power** (may have more than one disconnect) to air handler before performing any installation or service maintenance work.

Installation and maintenance are to be performed **only** by qualified personnel who are familiar with local codes and regulations and are experienced with HVAC equipment of this type.

Pay particular attention to the following words:

NOTE—intended to clarify or make installation easier.

CAUTION—given to prevent equipment damage.

WARNING—to alert installer that personal injury and/or equipment damage may result if installation procedure is not properly followed.

WARNING: Sharp edges, coil surfaces and rotating fans are a potential injury hazard – avoid contact.

WARNING: Hazardous voltage – Disconnect and Lock Out all incoming power sources before servicing or installing unit. ELECTRIC SHOCK CAN CAUSE DEATH.

WARNING: This equipment may be installed well above finished floor—Use extreme caution when working at heights.

AEH Heaters for AHU Model BMB

Heater models: C-48BM TO C-120BM CLOSE COUPLED INSTALLATION INSTRUCTIONS

These units have been SPECIFICALLY Tested and Listed by Applied Research Laboratories to attach DIRECTLY to the discharge of **Magic Aire** current model numbers (previous model numbers in parens):

BMB16 (48BM), BMB20 (60BM), BMB30 (90BM) & BMB40 (120BM) series air handlers.

Heaters are suitable for Zero Clearance, for use with the above Heat Pumps and Air conditioners with Vertical or Horizontal air flow. Downflow is not available.

WARNING-Do NOT install these heaters in downflow applications! INDOOR USE ONLY!

NOTE—Not for use with Discharge Grille Plenum (BMGP) option.

NOTE—Not for use with Motor Start/Stop Station (MSS) option. However, MSS can be removed to allow use of the field installed heater accessory.

HEATER MODEL NUMBERS:

C-UNIT DESIGNATION -KW-PHASE
@ VOLTS
KW range Min. 0.5, Max. - see chart.
120 - 480 volts, 1 or 3 phase.

Heaters must be at least 2 feet before an elbow or may require turning vanes. Duct materials must be suitable for 250 degrees F. Ducts must be installed in accordance with NFPA pamphlets 90A and 90B. Locate system so that heater is accessible after installation. Do not enclose the control box with insulation.

APPLICATION CHART:

Heater	Unit	Max. KW	Duct Connection (in)
C-48BM	BMB16 (48BM)	15.0	12.00 X 13.63
C-60BM	BMB20 (60BM)	15.0	12.00 X 13.63
C-90BB	BMB30 (90BM)	30.0	16.50 X 19.25
C-120BM	BMB40 (120BM)	30.0	16.50 X 19.25

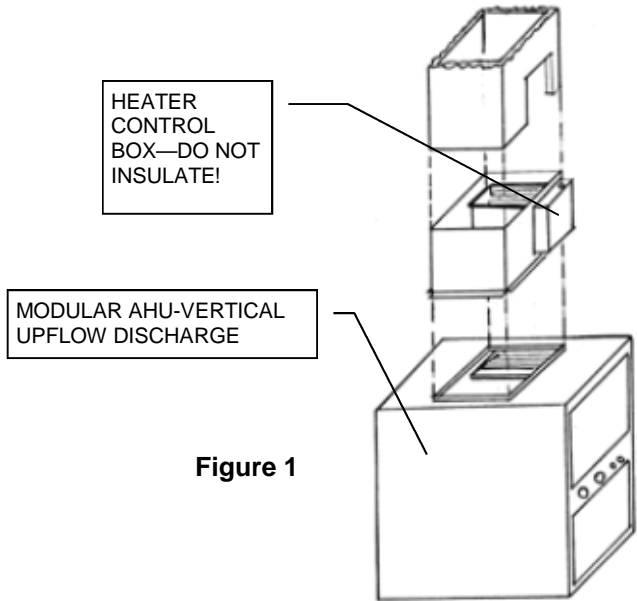


Figure 1

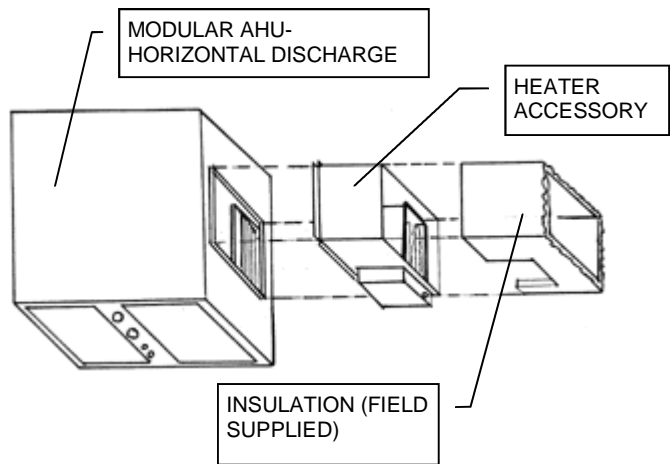


Figure 2

Note: C-48BM & C-60BM are interchangeable with each other. C-90BM & C-120BM are interchangeable with each other.

Important: Locate heater package so the elements are over the blower wheel discharge. If the baffle is over the wheel severe loss of air flow will result.

Secure heater to air handler with screws. Seal the connection with tape or other means.

Service Clearance: Allow 36" clearance in front of control box for service, or as required by local electrical code.

AEH Heaters for AHU Model HBB

Heater models: C-HB 04-40

CLOSE COUPLED INSTALLATION INSTRUCTIONS

These units have been SPECIFICALLY Tested and Listed by Applied Research Laboratories to attach DIRECTLY to the discharge of:

Magic Aire: current model numbers (previous model numbers in parens)

HBB04, HBB06, HBB08 (24-HB), HBB12 (36-HB), HBB16 (48-HB), HBB20 (60-HB), HBB30 (90-HB), HBB40 (120-HB) series air handlers.

Heaters are suitable for Zero Clearance, for use with the above Heat Pumps and Air conditioners with Horizontal air flow. Downflow is not available.

WARNING-Do NOT install these heaters in down-flow applications! INDOOR USE ONLY!

NOTE—Not for use with Discharge Grille Plenum (BHGP) option.

NOTE—Not for use with Motor Start/Stop Station (MSS) option. However, MSS can be removed to allow use of the field installed heater accessory.

HEATER MODEL NUMBERS:

C-UNIT DESIGNATION -KW-PHASE @
VOLTS
KW range Min. 0.5, Max. - see chart.
120 - 480 volts, 1 or 3 phase.

Heaters must be at least 2 feet before an elbow or may require turning vanes. Duct materials must be suitable for 250 degrees F. Ducts must be installed in accordance with NFPA pamphlets 90A and 90B. Locate system so that heater is accessible after installation. Do not enclose the control box with insulation.

INSTALLATION:

Standard heater control panel is location on right side of heater kit and unit. (air hitting the back of your head) Left hand heater kits are optional from the factory. Use same instruction for left handed heater kits. Heater elements must be over the blower wheel discharge after installation. If heater baffle is over fan

wheel, severe loss of air flow will result. Heater kit is designed for external discharge mounting only.

Secure heating kit to air handler with #10 sheet screw minimum, use mounting slots in heater plenum flange as a guide. Heater should fit over air handler duct starter flanges with a tight fit. Heater should be fastened tight against the unit. Seal the connection with tape or other means for proper seal. There should be no air gaps after installation of heater kit on air handler. See Fig. 3 for proper location of heater to air handler.

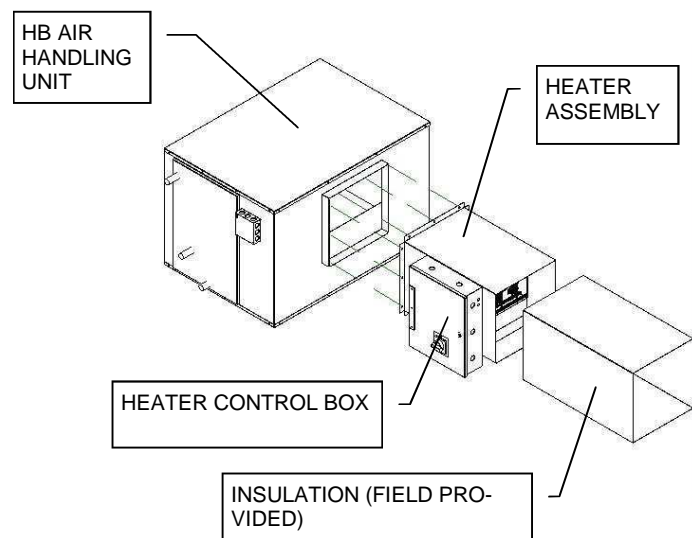


Figure 3

AEH Heaters for Fan Coil Model DVA

Heater models: C-DV400, '600, '800, '1000

CLOSE COUPLED INSTALLATION INSTRUCTIONS

These units have been SPECIFICALLY Tested and Listed by Applied Research Laboratories to attach DIRECTLY to the discharge of:

Magic Aire current model numbers (previous model numbers in parens)

DVA04 (DVW-400)(DVX-400), DVA06 (DVW-600)(DVX-600), DVA08 (DVW-800)(DVX-800), DVA10 (DVW-1000)(DVX-1000) series fan coil units.

Heaters are suitable for Zero Clearance, for use with the above Heat Pumps and Air conditioners with Vertical air flow. Downflow is not available.

WARNING-Do NOT install these heaters in down-flow applications! INDOOR USE ONLY!

NOTE—Not for use with Discharge Grille Plenum or Hot Water Coil accessories.

HEATER MODEL NUMBERS:

C-UNIT DESIGNATION -KW-PHASE @ VOLTS
 KW range Min. 0.5, Max. - see chart.
 120 - 480 volts, 1 or 3 phase.

Heaters must be at least 2 feet before an elbow or may require turning vanes. Duct materials must be suitable for 250 degrees F. Ducts must be installed in accordance with NFPA pamphlets 90A and 90B. Locate system so that heater is accessible after installation. Do not enclose the control box with insulation.

INSTALLATION:

Standard heater control panel is location on front side of heater kit and unit. Air is upflow. Heater elements must be over the blower wheel discharge after installation. If heater baffle is over fan wheel, severe loss of air flow will result. Heater kit is designed for external discharge mounting only.

Secure heating kit to air handler with #10 sheet metal screw minimum, use mounting

slots in heater plenum flange as a guide. Heater should fit over air handler duct starter flanges with a tight fit. Heater should be fastened tight against the unit. Seal the connection with tape or other means for proper seal. There should be no air gaps after installation of heater kit on air handler. See Fig. 4 for proper location of heater to air handler.

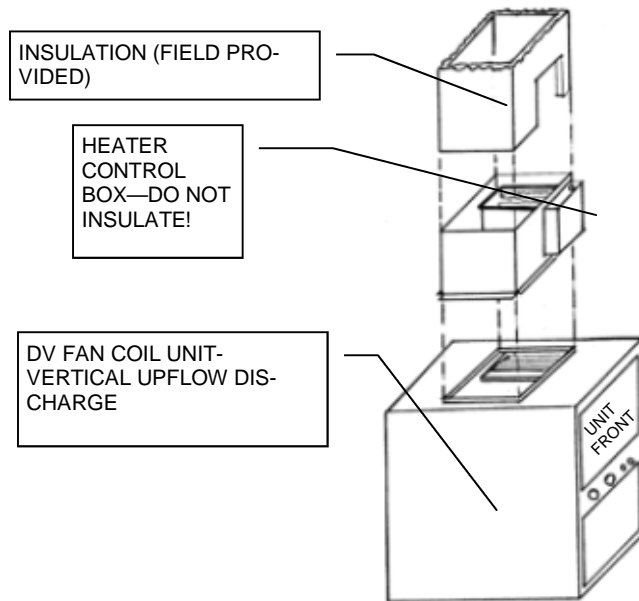


Figure 4

APPLICATION CHART

Heater	Unit	Max. KW	Duct Connection
C-DV400	DV()04	6.0	7.12 X 10.63 inches
C-DV600	DV()06	6.0	8.63 X 10.63 inches
C-DV800	DV()08	6.0	8.63 X 10.63 inches
C-DV1000	DV()10	10.0	8.63 X 11.88 inches

ELECTRICAL DATA

GENERAL:

AEH heaters are offered standard with “Single Point Line Connection” or “Single Point Power”, meaning that the heater control box has all necessary parts to control both the heating elements and the indoor fan motor on the AHU. Single Point Power units include 24VAC controls to allow a 24VAC thermostat to control the fan motor and heater. Special order heaters may be supplied as “Dual Point Power”, meaning they are equipped with only the means of controlling the heating elements. Both single and dual point offerings provide all required heater circuit safety devices.

AEH Heaters may be selected using the New Magic 4 software (www.magicaire.com). The software calculates the nameplate electrical data for the exact model number specified.