
INSTALLATION INSTRUCTIONS

ELECTRIC HEAT PACKAGES

Models:

EHS03A-A05	EHS03A-A08	EHS03A-A10	EHS03A-A15	
EHS03A-B06	EHS03A-B09	EHS03A-B15		
EHS03A-C06	EHS03A-C09	EHS03A-C15		
EHS04A-A05	EHS04A-A08	EHS04A-A15		
EHS04A-B09	EHS04A-B15			
EHS04A-C06	EHS04A-C09	EHS04A-C15		
EHS05A-A05	EHS05A-A10	EHS05A-A15		
EHS03H-A05	EHS03H-A08	EHS03H-A10	EHS03H-A15	
EHS03H-B09	EHS03H-B15			
EHS03H-C09	EHS03H-C15			
EHS04H-A04	EHS04H-A05	EHS04H-A08	EHS04H-A10	EHS04H-A15
EHS05H-A05	EHS05H-A10	EHS05H-A15	EHS05H-A20	
EHS05H-B06	EHS05H-B09	EHS05H-B15		
EHS05H-C06	EHS05H-C09	EHS05H-C15		

FOR USE WITH SH, W**A and W**H SERIES
WALL MOUNTED AIR CONDITIONERS
and HEAT PUMPS**

(See Tables 1A, 1B & 1C for Model Usage Matrix)



Bard Manufacturing Company, Inc.
Bryan, Ohio 43506
Since 1914...Moving ahead just as planned.

Manual: 2100-528
Supersedes: **NEW**
File: Volume III, Tab 18
Date: 10-23-09

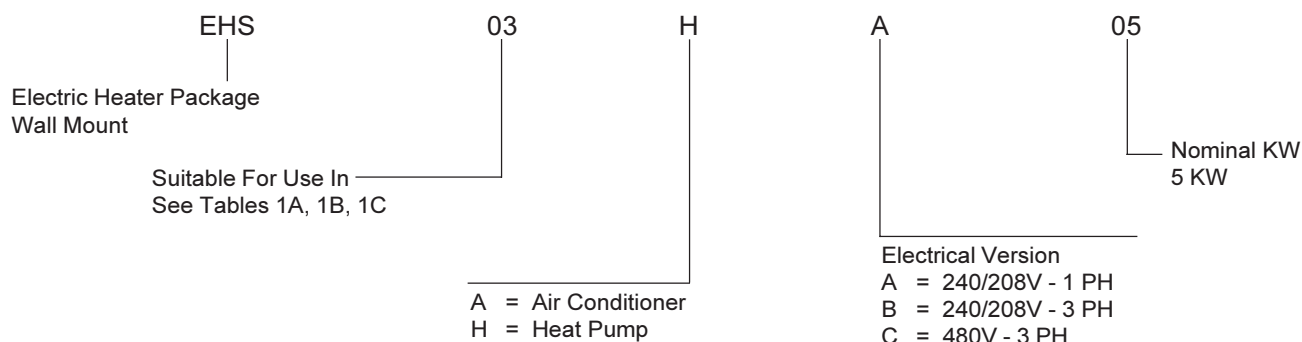
CLIMATE CONTROL SOLUTIONS

CONTENTS

Model Nomenclature Legend	3	Figures	
Description	3	Figure 1A Wiring - Main Power	8
Important	3	Figure 1B Wiring - Main Power	9
Shipping Damage	3	Figure 2 Electric Heat Access Panel & Control Panel Cover Locations	12
Unpacking the Electric Heat Package	3	Figure 3 Screw Mounting Holes	12
Wiring Main Power	10	Figure 4 A through C	15
Installation	10 & 11	Figure 4D Install Heat Package w/Two Heat Strips ..	16
		Figure 5 Installing Heater Base & Connecting	17
		Figure 6 Serial Plate Showing Approved Heater Packages	18
		Tables	
		Table 1A Heater Usage Matrix 240/220V 1-PH	4
		Table 1B Heater Usage Matrix 240/220V, 230/208V 3-PH	5
		Table 1C Heater Usage Matrix 415/460V 3-PH	5
		Table 2A Electrical Data & BTU Output (HP)	6
		Table 2B Electrical Data & BTU Output (AC)	7
		Table 3A References to Figures 4 & 5 By Model Number	13
		Table 3B References to Figures 4 & 5 By Model Number	14

COPYRIGHT OCTOBER 2009
BARD MANUFACTURING COMPANY, INC.
BRYAN, OHIO 43506

MODEL NOMENCLATURE LEGEND



DESCRIPTION

The electric heater packages listed in this Manual are field installable heater packages suitable for use with Bard Wall Mount air conditioners and heat pumps. The packages consist of the electric heat strip, the heater control base which includes the heat contactors, and circuit breaker or pull disconnects, installation instructions and wiring diagrams. See Table 1 for nominal electrical data and BTU output. ***Before installation, check unit serial plate to insure the heater package model that you intend to install is listed a heater package that is suitable for use with the Bard wall mount hi boy unit.*** See Figure 6.

IMPORTANT

The equipment covered in this manual is to be installed by trained, experienced service and installation technicians.

SHIPPING DAMAGE

Upon receipt of equipment, the carton should be checked for external signs of shipping damage. If damage is found, the receiving party must contact the last carrier immediately, preferably in writing, requesting inspection by the carrier's agent.

UNPACKING THE ELECTRIC HEAT PACKAGE

Remove the heat package from the shipping carton. The heat package must consist of the following:

1. Basic heater
2. Electric heat control base and wiring.
3. Installation instructions.
4. Wiring diagram (2), one to be applied to unit.
5. Adhesive label to remark serial plate to indicate new model number. This is attached to the front of these instructions.

TABLE 1A
APPROVED HEATER USAGE MATRIX 240/220V — 1 PHASE

	S26H1-A, W26H1-A	S31H1-A, W31H1-A	S38H1-A, W38H1-A	S43H1-A, W43H1-A	S49H1-A, W49H1-A	S61H1-A, W61H1-A	W38A1-A	W49A1-A	W61A1-A
EHS31-A04	X	X							
EHS31-A08	X	X							
EHS03H-A05			X						
EHS03H-A08			X						
EHS03H-A10			X						
EHS03H-A15			X						
EHS04H-A04				X	X				
EHS04H-A05				X	X				
EHS04H-A08				X	X				
EHS04H-A10				X	X				
EHS04H-A15				X	X				
EHS05H-A05						X			
EHS05H-A10						X			
EHS05H-A15						X			
EHS05H-A20						X			
EHS03A-A05							X		
EHS03A-A08							X		
EHS03A-A10							X	X	
EHS03A-A15							X		
EHS04A-A05								X	
EHS04A-A08								X	X
EHS04A-A15								X	
EHS05A-A05									X
EHS05A-A10									X
EHS05A-A15									X



WARNING

Only use factory provided heaters in approved combinations of heater models to unit models as shown in table 1A, 1B and 1C. Failure to use approved combinations as shown or modification to heaters could result in fire causing damage, bodily injury or death.

TABLE 1B
APPROVED HEATER USAGE MATRIX 240/220V, 230/208V — 3 PHASE

	S26H1-B, W26H1-B	S31H1-B, W31H1-B	S38H1-B, W38H1-B	S43H1-B, W43H1-B	S49H1-B, W49H1-B	S61H1-B, W61H1-B	W38A1-B	W49A1-B	W61A1-B
EHS03H-B06	X	X							
EHS03H-B09			X						
EHS03H-B15			X						
EHS05H-B06			X	X	X				
EHS05H-B09				X	X	X			
EHS05H-B15				X	X	X			
EHS03A-B06							X	X	
EHS03A-B09							X		
EHS03A-B15							X		
EHS04A-B09								X	X
EHS04A-B15								X	X

TABLE 1C
APPROVED HEATER USAGE MATRIX 415/460V — 3 PHASE

	S26H1-C, W26H1-C	S31H1-C, W31H1-C	S38H1-C, W38H1-C	S43H1-C, W43H1-C	S49H1-C, W49H1-C	S61H1-C, W61H1-C	W38A1-C	W49A1-C	W61A1-C
EHS03H-C06	X	X							
EHS03H-C09			X						
EHS03H-C15			X						
EHS05H-C06			X	X	X				
EHS05H-C09				X	X	X			
EHS05H-C15				X	X	X			
EHS03A-C06							X		
EHS03A-C09							X		
EHS03A-C15							X		
EHS04A-C06								X	X
EHS04A-C09								X	
EHS04A-C15								X	

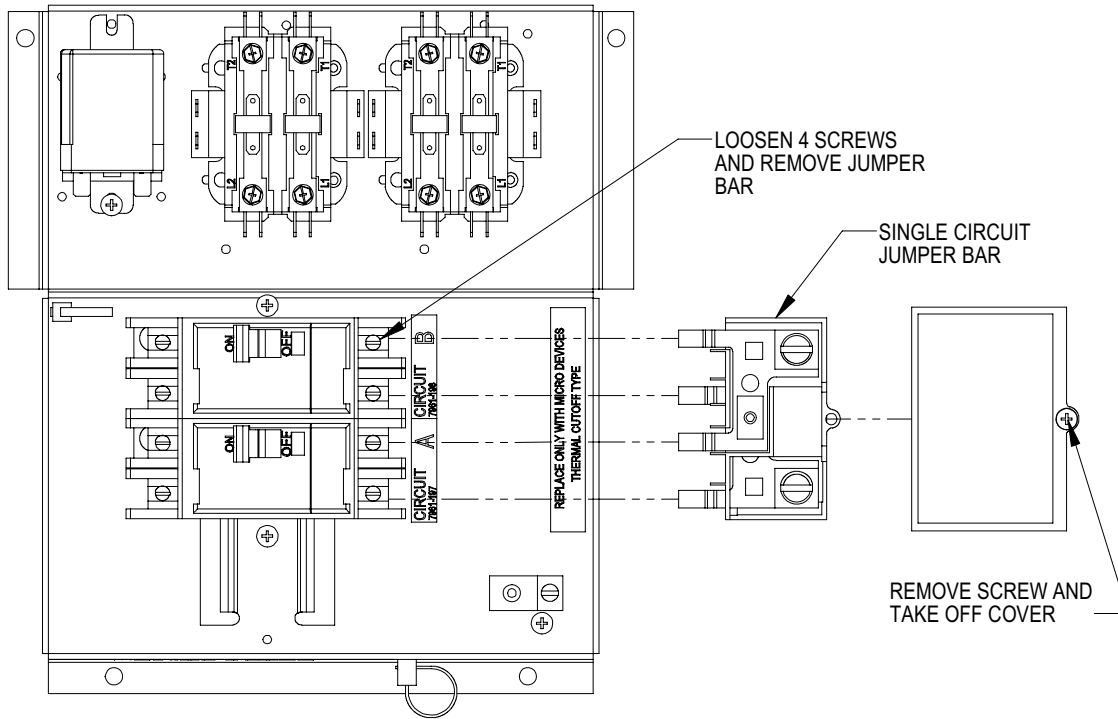
TABLE 2A
ELECTRICAL DATA AND BTU OUTPUT (HP)

Heater Package Model	Volts	Phase	Nominal KW	Nominal BTU
EHS31-A04	240/208	1	4 / 3	13,650 / 10,240
EHS31-A08	240/208	1	8 / 6	27,300 / 20,475
EHS31-B06	240/208	3	6 / 4.5	20,475 / 15,350
EHS31-C06	480	3	6	20,475
EHS03H-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHS03H-A08	240/208	1	8 / 6	27,300 / 20,475
EHS03H-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHS03H-A15	240/208	1	15 / 11.25	51,195 / 23,035
EHS03H-B09	240/208	3	9 / 6.75	30,715 / 23,035
EHS03H-B15	240/208	3	15 / 11.25	51,195 / 38,400
EHS03H-C09	480	3	9	30,715
EHS03H-C15	480	3	15	51,195
EHS04H-A04	240/208	1	4 / 3	13,650 / 10,240
EHS04H-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHS04H-A08	240/208	1	8 / 6	27,300 / 20,475
EHS04H-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHS04H-A15	240/208	1	15 / 11.25	51,195 / 23,035
EHS05H-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHS05H-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHS05H-A15	240/208	1	15 / 11.25	51,195 / 23,035
EHS05H-A20	240/208	1	20 / 22.5	68,260 / 51,200
EHS05H-B06	240/208	3	6 / 4.5	20,475 / 15,350
EHS05H-B09	240/208	3	9 / 6.75	30,715 / 23,035
EHS05H-B15	240/208	3	15 / 11.25	51,195 / 38,400
EHS05H-C06	480	3	6	20,475
EHS05H-C09	480	3	9	30,715
EHS05H-C15	480	3	15	51,195

TABLE 2B
ELECTRICAL DATA AND BTU OUTPUT (AC)

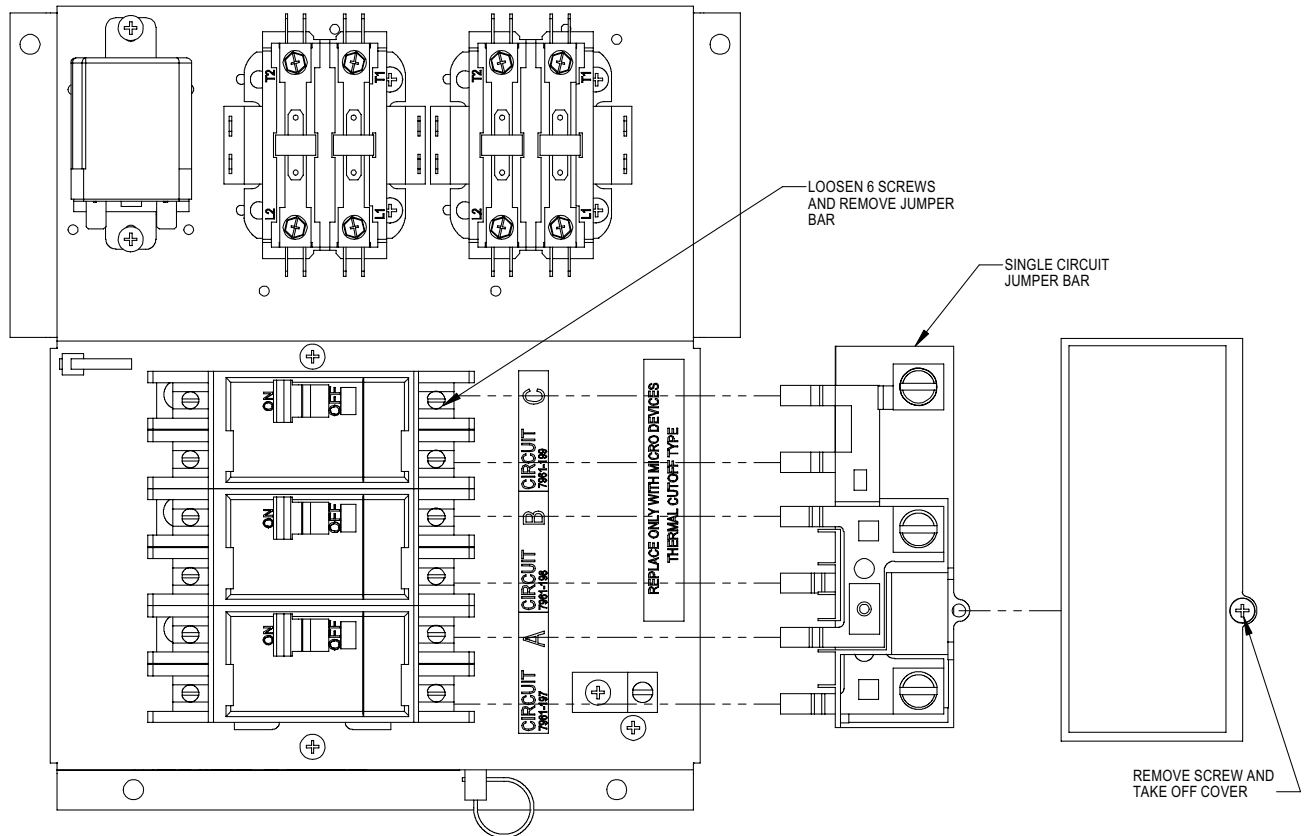
Heater Package Model	Volts	Phase	Nominal KW	Nominal BTU
EHS03A-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHS03A-A08	240/208	1	8 / 6	27,300 / 20,475
EHS03A-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHS03A-A15	240/208	1	15 / 11.25	51,195 / 23,035
EHS03A-B06	240/208	3	6 / 4.5	20,475 / 15,350
EHS03A-B09	240/208	3	9 / 6.75	30,715 / 23,035
EHS03A-B15	240/208	3	15 / 11.25	51,195 / 38,400
EHS03A-C06	480	3	6	20,475
EHS03A-C09	480	3	9	30,715
EHS03A-C15	480	3	15	51,195
EHS04A-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHS04A-A08	240/208	1	8 / 6	27,300 / 20,475
EHS04A-A15	240/208	1	15 / 11.25	51,195 / 23,035
EHS04A-B09	240/208	3	9 / 6.75	30,715 / 23,035
EHS04A-B15	240/208	3	15 / 11.25	51,195 / 38,400
EHS04A-C06	480	3	6	20,475
EHS04A-C09	480	3	9	30,715
EHS04A-C15	480	3	15	51,195
EHS05A-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHS05A-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHS05A-A15	240/208	1	15 / 11.25	51,195 / 23,035

FIGURE 1A
WIRING – MAIN POWER



MIS-2734

FIGURE 1B
WIRING – MAIN POWER



MIS-2730

WIRING MAIN POWER

1. On all installations, size unit power supply wiring for the minimum circuit ampacity requirement for the unit and heater package combination listed on the unit serial plate.



WARNING

Install properly sized power supply leads for the unit/heater combination minimum circuit ampacity as listed on the unit serial plate. Hazard of fire. Failure to install properly sized conductors could result in fire causing damage, bodily injury or death.

- 2A. All heater packages covered by this manual are factory wired for single supply circuit. The following heater packages are field convertible to a dual supply circuit if required or desired:

EHS03H-A10	EHS03H-A15
EHS04H-A04	EHS04H-A05
EHS04H-A08	EHS04H-A10
EHS04H-A15	EHS05H-A05
EHS05H-A10	EHS05H-A15

EHS03A-A10	EHS03A-A15
EHS04A-A05	EHS04A-A08
EHS04A-A15	EHS05A-A05
EHS05A-A10	EHS05A-A15

To convert the above heater packages to dual circuit configuration before installation, loosen four (4) screws holding jumper bar in place. Remove jumper bar. Circuits A & B are now identified on the heater package. See Figure 1A.

- 2B. All heater packages covered by this manual are factory wired for single supply circuit. The following heater package is field convertible to a triple supply circuit if required or desired:

EHS05H-A20

To convert the above heater package to triple circuit configuration before installation, loosen six (6) screws holding jumper bar in place. Remove jumper bar. Circuits A, B & C are now identified on the heater package. See Figure 1B.

3. Wire should be sized to the minimum circuit ampacity as specified on the serial plates of units that accept these heater package for (dual) circuits A & B or (triple) circuits A, B & C.

INSTALLATION

1. Disconnect all power to unit before installation.



WARNING

Disconnect all power to unit before installing heater package. Hazard of electrical shock. Failure to disconnect power could result in injury or death.

2. Before installation, check unit serial plate to insure that the heater package model that you intend to install is listed as a heater package suitable for use with the unit.

Under no circumstance shall a heater package be installed in a unit if the model number of the heater package does not appear on the unit serial plate.



WARNING

Install only heater packages listed on unit serial plate. Hazard of fire or electrical shock. Failure to install listed heater package could result in fire, injury or death.

3. Remove electric heater access panel and control panel cover, both inner and outer. See Figure 2.
4. All heaters are installed with the thermal cutoffs positioned to the top of the unit. See Figures 4A - 4C. Install heat strip(s) through heater access opening. Position heat strip support rod in heater support hole 1, 2 or 3 as indicated in Tables 3A, 3B and Figure 3.

On heater packages with two (2) heat strips, install 9KW heater first in position closest to the outlet air frame. See Figure 4D.
5. Install heater control base into top of control panel as shown in Figure 5. Secure with four (4) sheet metal screws provided.
6. Plug mail six (6) pin connector into mating connector mounted in control panel. See Figure 5.
7. Connect red compressor supply lead to L1 of terminal block. Connect black compressor supply lead to L2 of terminal block. If three phase, connect yellow supply lead to L3 of terminal block. See Figure 5 and wiring diagram supplied with this heater package.
8. Route wires from heater control base up through raceway in top right corner of control panel to the heaters. See Figure 5.
9. Wire heater package per wiring diagram supplied with this heater package. All wires are stamped with wire numbers that correspond with terminal numbers on the wiring diagram and stamped numbers on the heat strip. Limit switch wires are terminated with insulated quick connect terminals.
10. Attach adhesive wiring diagram directly above unit wiring diagram on inner control panel cover.
11. Recheck all wiring. Break out appropriate circuit breaker tabs on inner control panel cover to allow trip lever to protrude. Replace control panel and heater access panels.
12. Resupply power to the unit and check for proper operation.
13. Remark serial plate with self-adhesive label attached to the front of this manual. See Figure 6.

FIGURE 2
ELECTRIC HEATER ACCESS PANEL
AND CONTROL PANEL COVER LOCATIONS

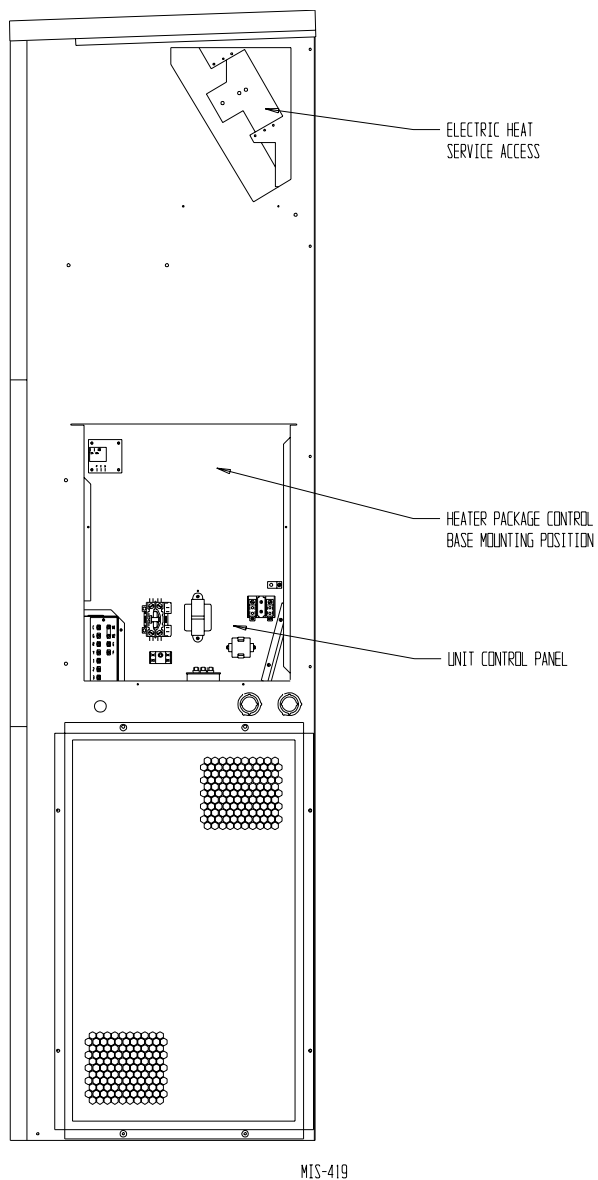


FIGURE 3
SCREW MOUNTING HOLES

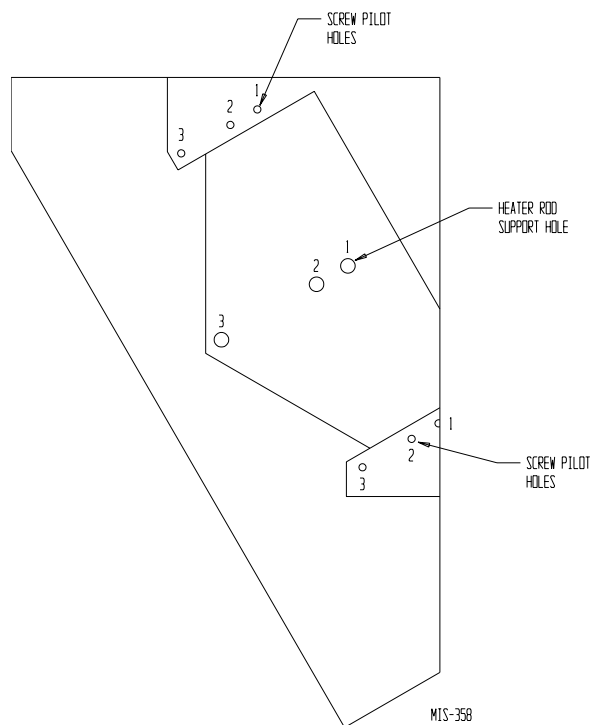


TABLE 3A
REFERENCES TO FIGURES 4 & 5
FOR MODEL NUMBER

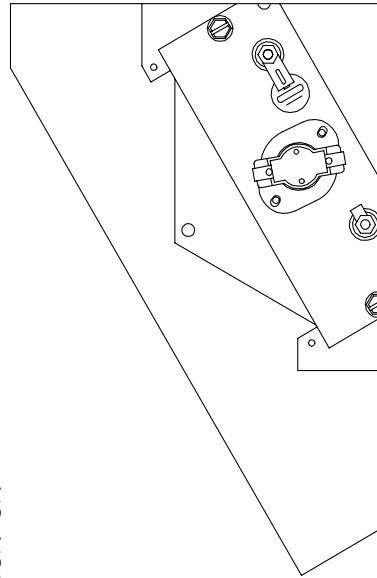
	Heater Package Model Number	Figure 4	Rod Support & Screw
1.	EHS31-A04	4A	1
2.	EHS31-A08	4B	1
3.	EHS31-B06	4C	1
4.	EHS31-C06	4C	1
5.	EHS03H-A05	4A	1
6.	EHS03H-A08	4B	1
7.	EHS03H-A10	4B	1
8.	EHS03H-A15	4D	1 + 3
9.	EHS03H-B09	4C	1
10.	EHS03H-B15	4D	1 + 3
11.	EHS03H-C09	4C	1
12.	EHS03H-C15	4D	1 + 3
13.	EHS04H-A04	4A	1
14.	EHS04H-A05	4A	1
15.	EHS04H-A08	4B	1
16.	EHS04H-A10	4B	1
17.	EHS04H-A15	4D	1 + 3
18.	EHS05H-A05	4A	1
19.	EHS05H-A10	4B	1
20.	EHS05H-A15	4D	1 + 3
21.	EHS05H-A20	4D	1 + 3
22.	EHS05H-B06	4C	1
23.	EHS05H-B09	4C	1
24.	EHS05H-B15	4D	1 + 3
25.	EHS05H-C06	4C	1
26.	EHS05H-C09	4C	1
27.	EHS05H-C15	4D	1 + 3

TABLE 3B
REFERENCES TO FIGURES 4 & 5
FOR MODEL NUMBER

	Heater Package Model Number	Figure 4	Rod Support & Screw
1.	EHS03A-A05	4A	1
2.	EHS03A-A08	4B	1
3.	EHS03A-A10	4B	1
4.	EHS03A-A15	4D	1 + 3
5.	EHS03A-B06	4C	1
6.	EHS03A-B09	4C	1
7.	EHS03A-B15	4D	1 + 3
8.	EHS03A-C06	4C	1
9.	EHS03A-C09	4C	1
10.	EHS03A-C15	4D	1 + 3
11.	EHS04A-A05	4A	1
12.	EHS04A-A08	4B	1
13.	EHS04A-A15	4D	1 + 3
14.	EHS04A-B09	4C	1
15.	EHS04A-B15	4D	1 + 3
16.	EHS04A-C06	4C	1
17.	EHS04A-C09	4C	1
18.	EHS04A-C15	4D	1 + 3
19.	EHS05A-A05	4B	1
20.	EHS05A-A10	4B	1
21.	EHS05A-A15	4D	1 + 3

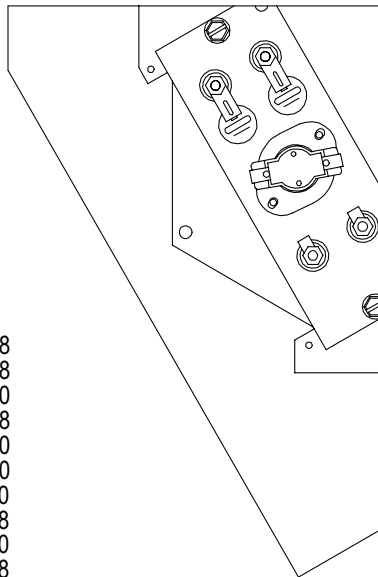
**FIGURE 4
A THROUGH C**

FIGURE 4A



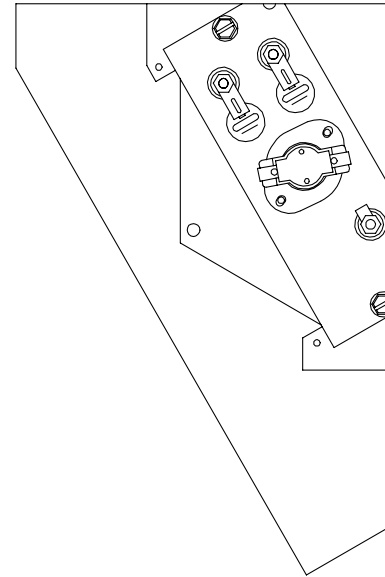
EHS031-A04
EHS03H-A05
EHS04H-A04
EHS04H-A05
EHS05H-A05
EHS03A-A05
EHS04A-A05

FIGURE 4B



EHS031-A08
EHS03H-A08
EHS03H-A10
EHS04H-A08
EHS04H-A10
EHS05H-A10
EHS03A-A10
EHS04A-A08
EHS05A-A10
EHS03A-A08
EHS05A-A05

FIGURE 4C

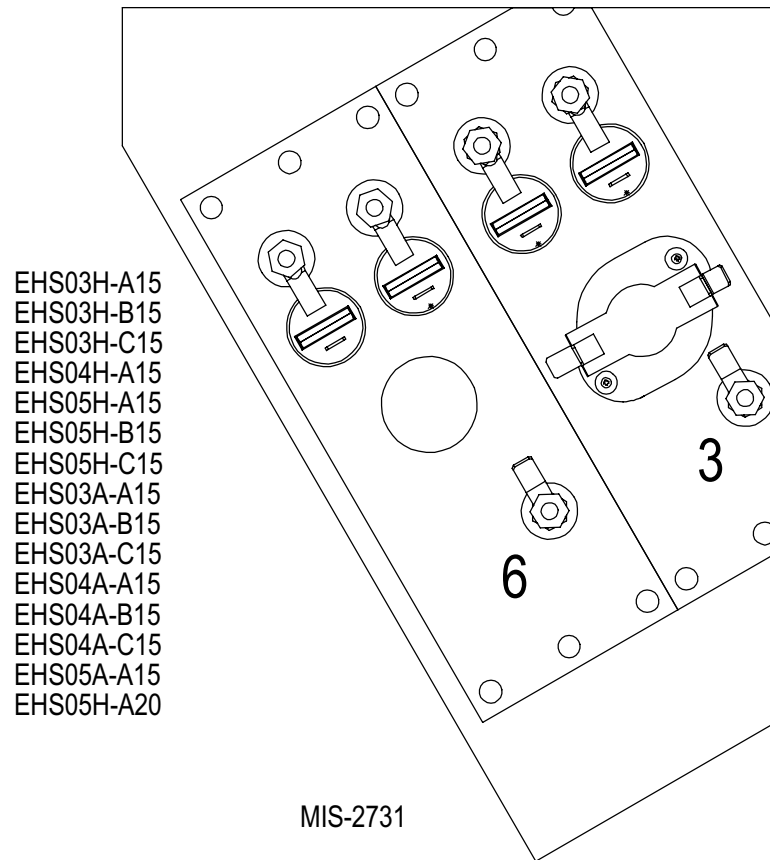


EHS031-B06
EHS031-C06
EHS03H-B09
EHS03H-C09
EHS05H-B06
EHS05H-B09
EHS05H-C06
EHS05H-C09
EHS03A-B06
EHS03A-B09
EHS03A-C06
EHS03A-C09
EHS04A-B09
EHS04A-C06
EHS04A-C09

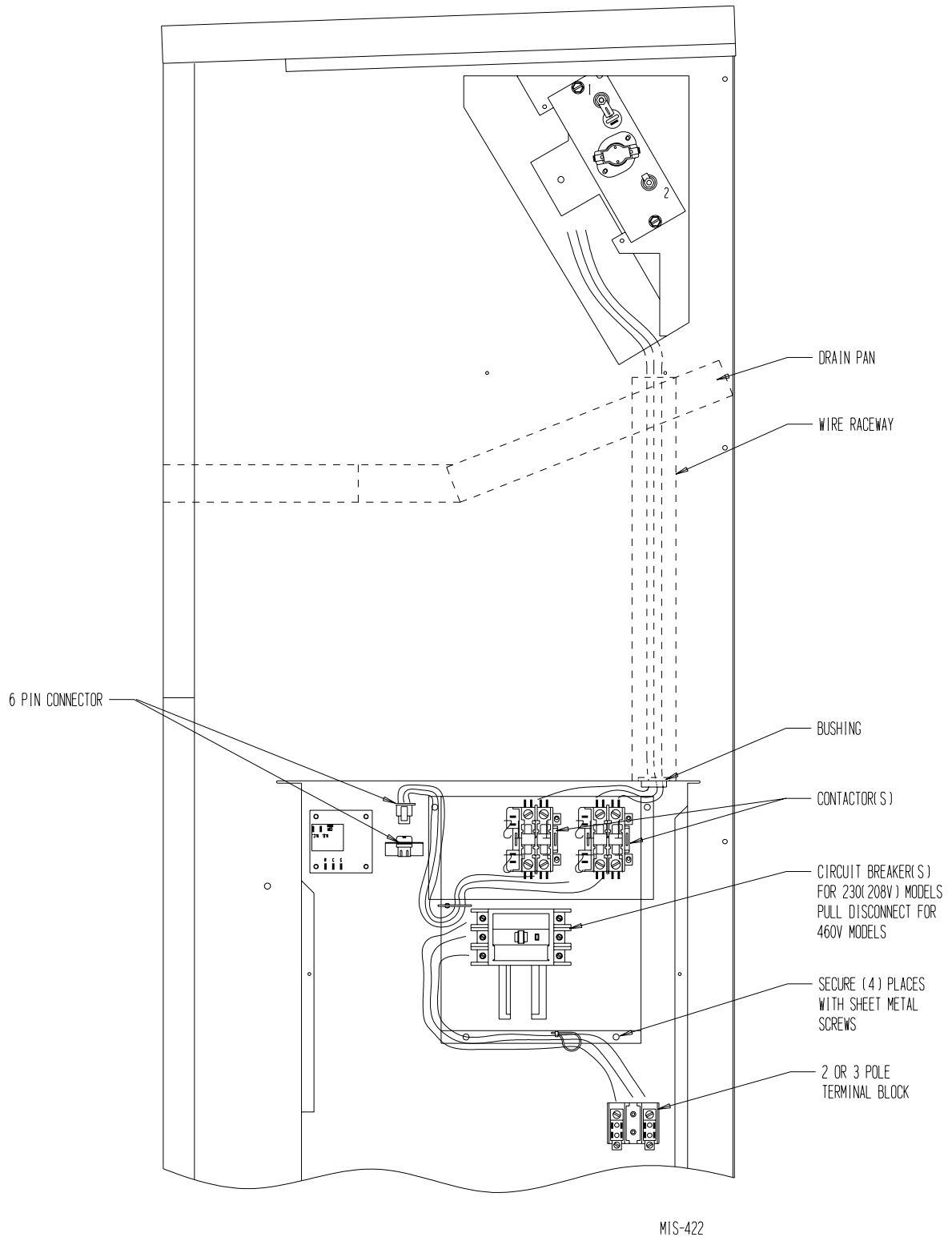
**NOTE: THERMAL CUTOFFS TO BE AT
TOP OF AIR FRAME WHEN INSTALLING**

MIS-2732

FIGURE 4D
INSTALL HEATER PACKAGE WITH
TWO HEAT STRIPS



**FIGURE 5
INSTALLING HEATER BASE
AND CONNECTING**



**FIGURE 6
SERIAL PLATE SHOWING
APPROVED HEATER PACKAGES**

INSTALL ONLY HEATER PACKAGES LISTED HERE.

(X)	()	()	()	()
()	(X)	()	()	()
()	()	(X)	()	()
()	()	()	(X)	()
()	()	()	()	(X)

ASSURE THAT SERIAL PLATE IS CLEAN AND DRY, REMOVE APPROPRIATE LABEL STRIP FOR KW REQUIRED AND REMARK SERIAL PLATE AS SHOWN FOR THE HEATER PACKAGE THAT IS INSTALLED

BARD MANUFACTURING COMPANY, 1914 RANDOLPH DRIVE

MODEL

[] TS38H1-A00

[] TS38H1-A0Z

[X] TS38H1-A05

[] TS38H1-A08

[] TS38H1-A10

[] TS38H1-A15

(1)
APPROVED
HEATER
PACKAGE

NONE

WMCB-07A

EHS03H-A05

EHS03H-A08

EHS03H-A10

EHS03H-A15

VAC

230/208

230/208

230/208

230/208

230/208

230/208

HZ

60

60

60

60

60

60

BRANCH CIRCUIT SELECT CURRENT 18 OPERATION

SERIAL NUMBER XXXXXXXXXXXX-XX UL FILE NO.

SUITABLE FOR OUTDOOR USE

	VAC	HZ	-- ELECTRICAL	
			PH	HP
COMPRESSOR	230/208	60	1	
OUTDOOR MOTOR	230/208	60	1	1/3
INDOOR MOTOR	230/208	60	1	1/4
WERV-ASB	230/208	60	1	
HEATER PACKAGE				KW
EHS03H-A05	240/208	60	1	5/3.75
EHS03H-A08	240/208	60	1	8/6
EHS03H-A10	240/208	60	1	10/7.5
EHS03H-A15	240/208	60	1	15/11.25

-- FACTORY

FACTORY CHARGED R410: 155 OZ. DESI

-- CLEAR

N15-2733