
INSTALLATION INSTRUCTIONS

ELECTRIC HEAT PACKAGES

Models:	EHCH3S-A05	EHCH4S-B18
	EHCH3S-A10	EHCH4S-C06
	EHCH3S-A15	EHCH4S-C09
	EHCH3S-B06	EHCH4S-C15
	EHCH3S-B09	EHCH4S-C18
	EHCH3S-B15	EHCH5S-A04
	EHCH4S-A04	EHCH5S-A05
	EHCH4S-A05	EHCH5S-A10
	EHCH4S-A10	EHCH5S-A15
	EHCH4S-A15	EHCH5S-A20
	EHCH4S-A20	EHCH5S-B06
	EHCH4S-B06	EHCH5S-B09
	EHCH4S-B09	EHCH5S-B15
	EHCH4S-B15	EHCH5S-B18
	EHCH4STA10	EHCH5STA10
	EHCH4STA15	EHCH5STA15
	EHCH4STA20	EHCH5STA20

***FOR USE WITH CH SERIES
WALL MOUNTED HEAT PUMPS***



Climate Control Solutions

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

Manual: 2100-475A
Supersedes: 2100-475
File: Volume III, Tab 18
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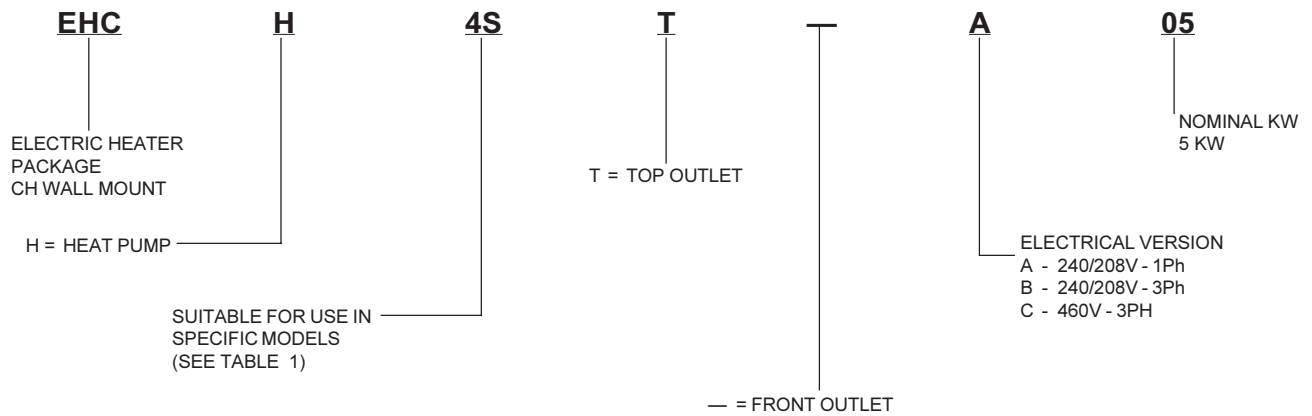
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GENERAL INFORMATION

DESCRIPTION OF EQUIPMENT

The EHCH series electric heater packages are field installable heater packages suitable for use with Bard Wall Mount heat pumps. The packages consist of the electric heat strip, the heater control base, which includes the heat contactors, and circuit breaker of pull disconnects, installation instructions and wiring diagrams. See Table 2 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 as a heater package that is suitable for use with the Bard Wall Mount unit. See Figure 6.

NOMENCLATURE



WARNING

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

**TABLE 1
HEATER USAGE BY MODEL MATRIX**

	CH3S1-A	CH3S1-B	CH3S1-C	CH4S1-A	CH4S1-B	CH4S1-C	CH5S1-A	CH5S1-B	CH5S1-C
EHCH3S-A05	X								
EHCH3S-A10	X								
EHCH3S-A15	X								
EHCH3S-B06		X							
EHCH3S-B09		X							
EHCH3S-B15		X							
EHCH4S-A04				X					
EHCH4S-A05				X					
EHCH4S-A10				X					
EHCH4STA10				X					
EHCH4S-A15				X					
EHCH4STA15				X					
EHCH4S-A20				X					
EHCH4STA20				X					
EHCH4S-B06					X				
EHCH4S-B09					X				
EHCH4S-B15					X				
EHCH4S-B18					X				
EHCH4S-C06			X			X			X
EHCH4S-C09			X			X			X
EHCH4S-C15			X			X			X
EHCH4S-C18						X			X
EHCH5S-A04							X		
EHCH5S-A05							X		
EHCH5S-A10							X		
EHCH5STA10							X		
EHCH5S-A15							X		
EHCH5STA15							X		
EHCH5S-A20							X		
EHCH5STA20							X		
EHCH5S-B06								X	
EHCH5S-B09								X	
EHCH5S-B15								X	
EHCH5S-B18								X	

**TABLE 2
ELECTRICAL DATA AND BTU OUTPUT**

Heater Package Model	Volts	Phase	Nominal KW	Nominal BTU
EHCH3S-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHCH3S-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHCH3S-A15	240/208	1	15 / 11.25	51,200 / 38,400
EHCH3S-B06	240/208	3	9 / 6.75	30,600 / 23,030
EHCH3S-B09	240/208	3	15 / 11.25	51,200 / 38,400
EHCH3S-B15	240/208	3	18 / 13.5	61,430 / 46,100
EHCH4S-A04	240/208	1	4 / 3	13,650 / 10,240
EHCH4S-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHCH4S-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHCH4STA10	240/208	1	10 / 7.5	34,130 / 25,600
EHCH4S-A15	240/208	1	15 / 11.25	51,200 / 38,400
EHCH4STA15	240/208	1	15 / 11.25	51,200 / 38,400
EHCH4S-A20	240/208	1	20 / 15	68,260 / 51,200
EHCH4STA20	240/208	1	20 / 15	68,260 / 51,200
EHCH4S-B06	240/208	3	6 / 4.5	20,475 / 15,350
EHCH4S-B09	240/208	3	9 / 6.75	30,600 / 23,030
EHCH4S-B15	240/208	3	15 / 11.25	51,200 / 38,400
EHCH4S-B18	240/208	3	18 / 13.5	61,430 / 46,100
EHCH4S-C06	480	3	6.00	20,475
EHCH4S-C09	480	3	9.00	30,700
EHCH4S-C15	480	3	15.00	51,175
EHCH4S-C18	480	3	18.00	61,400
EHCH5S-A04	240/208	1	4 / 3	13,650 / 10,240
EHCH5S-A05	240/208	1	5 / 3.75	17,065 / 12,800
EHCH5S-A10	240/208	1	10 / 7.5	34,130 / 25,600
EHCH5STA10	240/208	1	10 / 7.5	34,130 / 25,600
EHCH5S-A15	240/208	1	15 / 11.25	51,200 / 38,400
EHCH5S-A15	240/208	1	15 / 11.25	51,200 / 38,400
EHCH5S-A20	240/208	1	20 / 15	68,260 / 51,200
EHCH5STA20	240/208	1	20 / 15	68,260 / 51,200
EHCH5S-B06	240/208	3	6 / 4.5	20,475 / 15,350
EHCH5S-B09	240/208	3	9 / 6.75	30,600 / 23,030
EHCH5S-B15	240/208	3	15 / 11.25	51,200 / 38,400
EHCH5S-B18	240/208	3	18 / 13.5	61,430 / 46,100

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 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.

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.

For existing installations, addition or upgrading of a heater package may require that larger supply wires be run to the unit. Resize all power supply wires for the minimum circuit ampacity rating listed on the unit serial plate that is applicable for your combination of unit and heater package.



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.

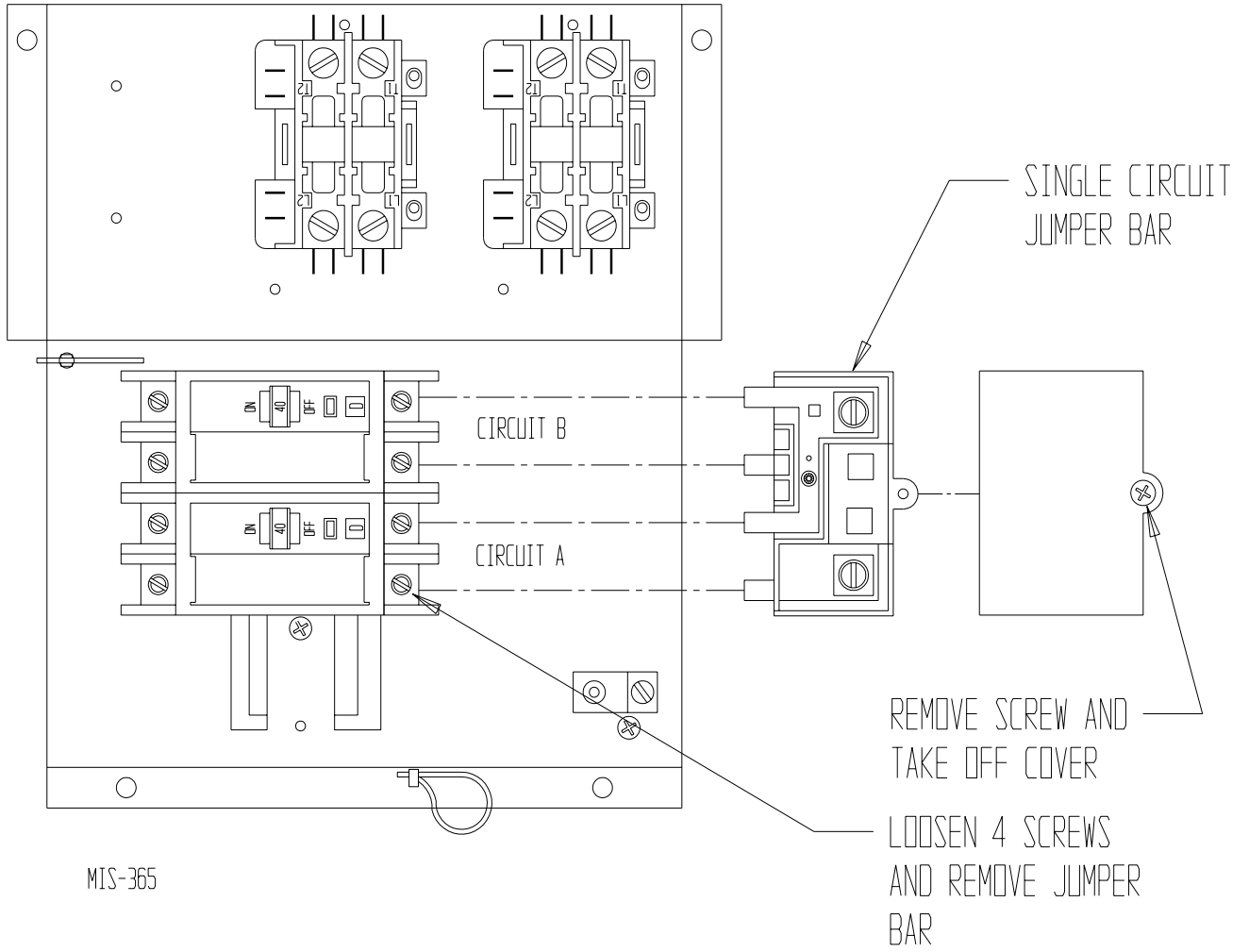
2. All heater packages covered by this manual are factory wired for a single supply circuit. The following heater packages are field convertible to a dual supply circuit if required or desired.

EHCH3S-A10	EHCH3S-A15
EHCH4S-A10	EHCH4STA10
EHCH4S-A15	EHCH4STA15
EHCH4S-A20	EHCH4STA20
EHCH5S-A10	EHCH5STA10
EHCH5S-A15	EHCH5STA15
EHCH5S-A20	EHCH5STA20

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

Wire should be sized to the minimum circuit ampacity as specified on the serial plates of units that accept these heater packages for circuits A + B.

FIGURE 1
ELECTRICAL CONNECTIONS



INSTALLATION

INSTALLATION OF HEATER PACKAGE

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 circumstances 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

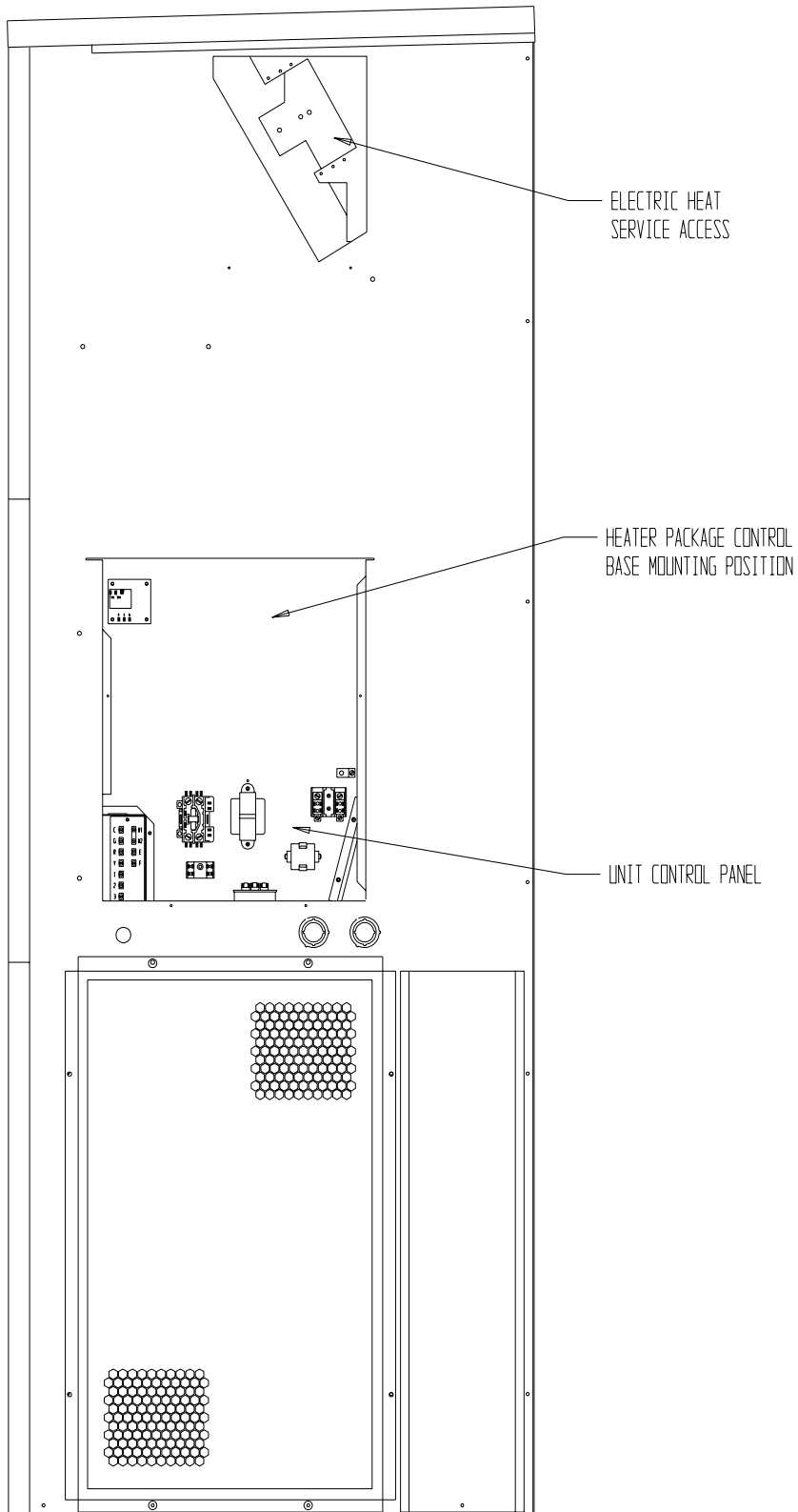
Install only heater packages listed on unit serial plate. Hazard of fire or electrical shock. Failure to install listed heater package could result in fire, injury or death.

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. Install heat strip(s) through heater access opening. Position heat strip support rod in heater support hole 1, 2, or 3 as indicated in Table 3 and Figure 3. Secure in place with 2 sheet metal screws in mounting holes as indicated in Table 3 and Figure 3.

On heater packages with 2 heat strips, install 9KW or 10KW heater first in position closest to the outlet air frame. See Figures 4E and 4F.

5. Install heater control base into top of control panel as shown in Figure 5. Secure with 4 sheet metal screws provided.
6. Plug male 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 3 phase, connect yellow supply lead to L3 of terminal block. See Figure 5 and wiring diagram.
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. See Figure 4.
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
INSTALLATION OF HEATER PACKAGE

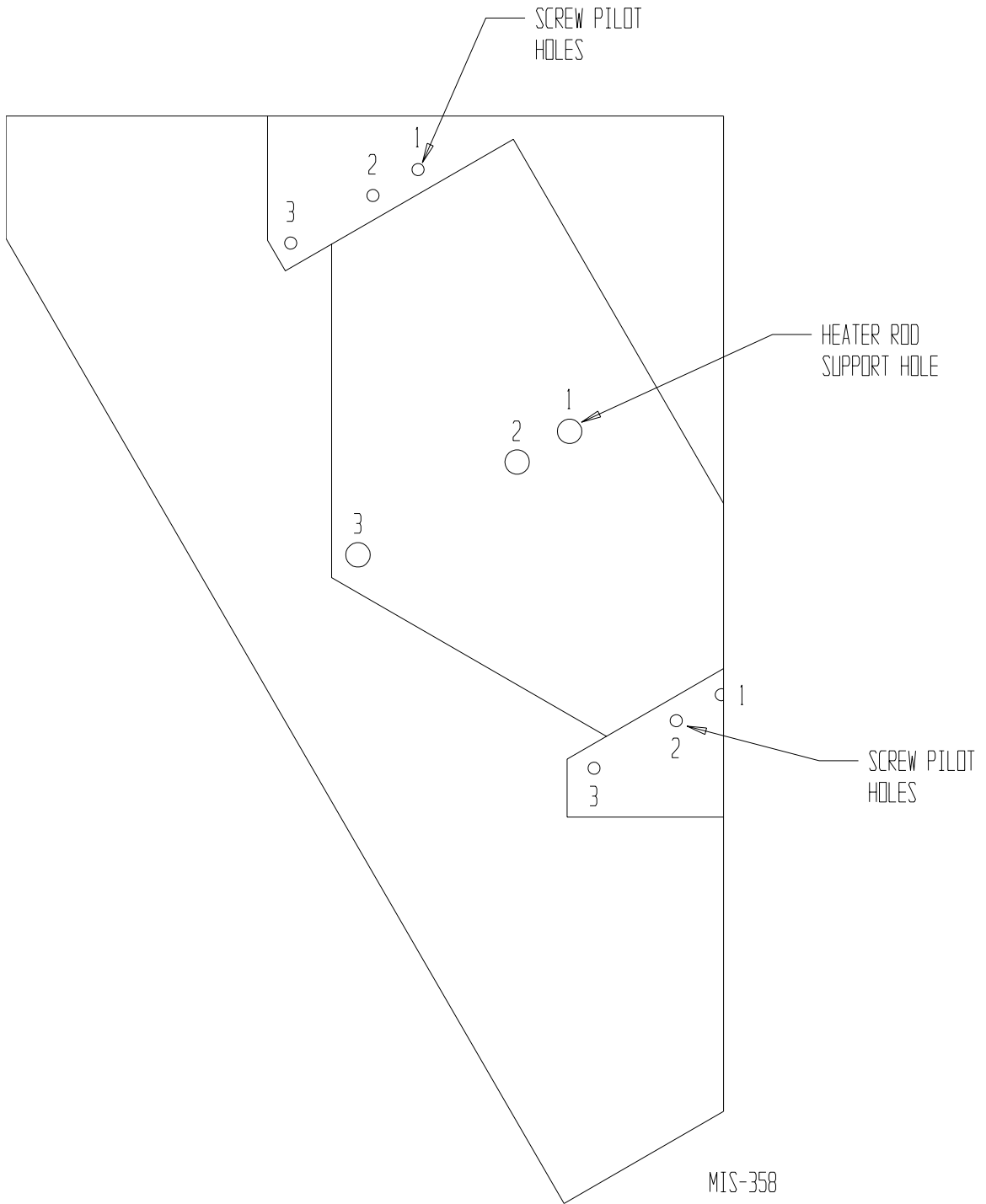


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TABLE 3
REFER TO FIGURES 3 AND 4

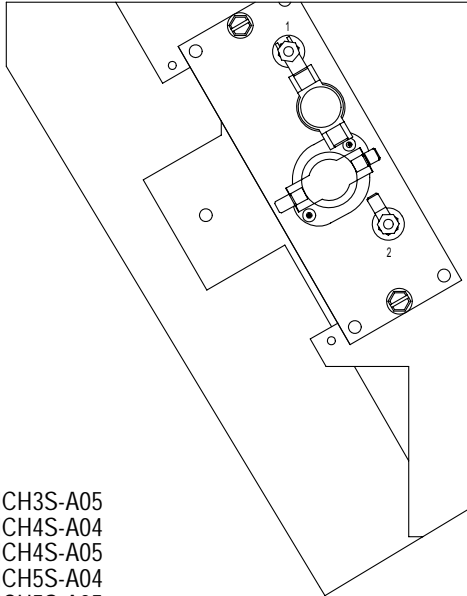
Heater Package Model Number	Figure 4 Heater Terminal Identification Drawing	Figure 3 Rod Support and Screw Mounting Position
EHCH3S-A05	4A	1
EHCH3S-A10	4B	1
EHCH3S-A15	4D	1 + 3
EHCH3S-B06	4C	1
EHCH3S-B09	4C	1
EHCH3S-B15	4E	1 + 3
EHCH4S-A04	4A	1
EHCH4S-A05	4A	1
EHCH4S-A10	4B	1
EHCH4STA10	4B	1
EHCH4S-A15	4D	1 + 3
EHCH4STA15	4D	1 + 3
EHCH4S-A20	4F	1 + 3
EHCH4STA20	4F	1 + 3
EHCH4S-B06	4C	1
EHCH4S-B09	4C	1
EHCH4S-B15	4E	1 + 3
EHCH4S-B18	4E	1 + 3
EHCH4S-C06	4C	1
EHCH4S-C09	4C	1
EHCH4S-C15	4E	1 + 3
EHCH4S-C18	4E	1 + 3
EHCH5S-A04	4A	1
EHCH5S-A05	4A	1
EHCH5S-A10	4B	1
EHCH5STA10	4B	1
EHCH5S-A15	4D	1 + 3
EHCH5STA15	4D	1 + 3
EHCH5S-A20	4F	1 + 3
EHCH5STA20	4F	1 + 3
EHCH5S-B06	4C	1
EHCH5S-B09	4C	1
EHCH5S-B15	4E	1 + 3
EHCH5S-B18	4E	1 + 3

FIGURE 3
ROD SUPPORT AND SCREW MOUNTING POSITIONS



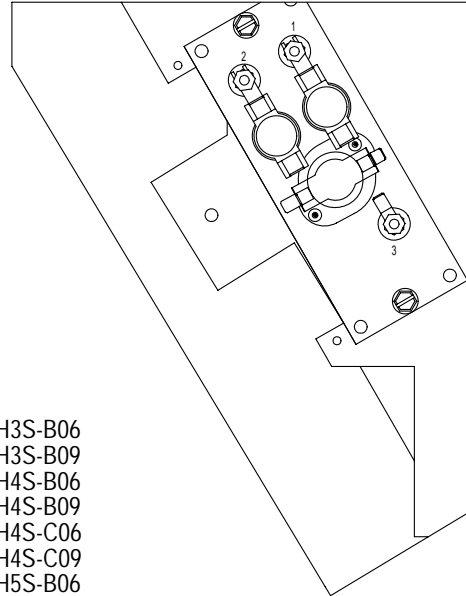
**FIGURES 4A - 4D
HEATER TERMINAL IDENTIFICATION DRAWINGS**

FIGURE 4A



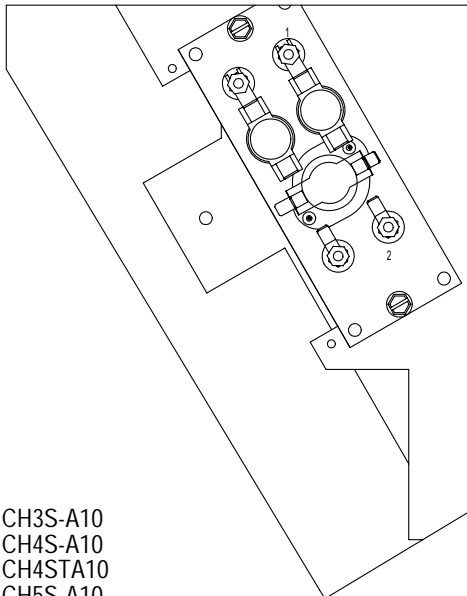
EHCH3S-A05
EHCH4S-A04
EHCH4S-A05
EHCH5S-A04
EHCH5S-A05

FIGURE 4C



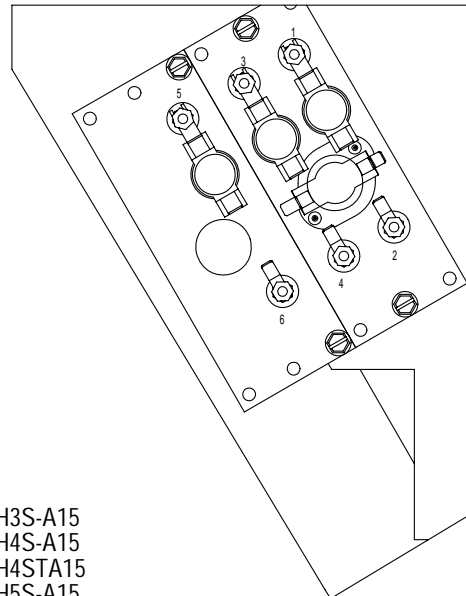
EHCH3S-B06
EHCH3S-B09
EHCH4S-B06
EHCH4S-B09
EHCH4S-C06
EHCH4S-C09
EHCH5S-B06
EHCH5S-B09

FIGURE 4B



EHCH3S-A10
EHCH4S-A10
EHCH4STA10
EHCH5S-A10
EHCH5STA10

FIGURE 4D

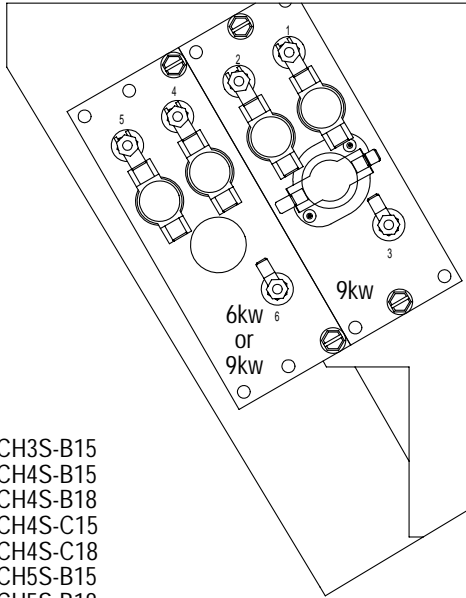


EHCH3S-A15
EHCH4S-A15
EHCH4STA15
EHCH5S-A15
EHCH5STA15

MIS-2202

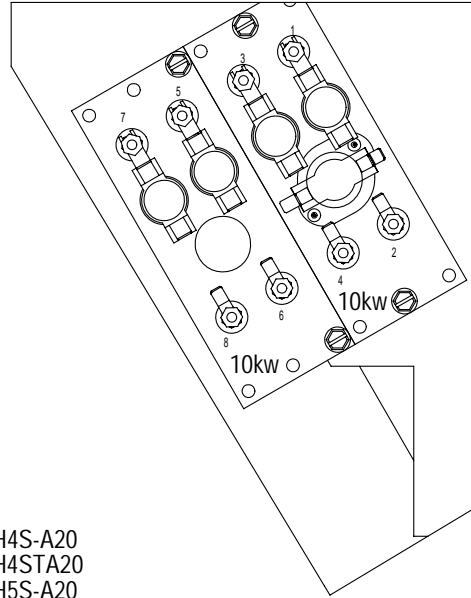
**FIGURES 4E AND 4F
HEATER TERMINAL IDENTIFICATION DRAWINGS**

FIGURE 4E



EHCH3S-B15
EHCH4S-B15
EHCH4S-B18
EHCH4S-C15
EHCH4S-C18
EHCH5S-B15
EHCH5S-B18

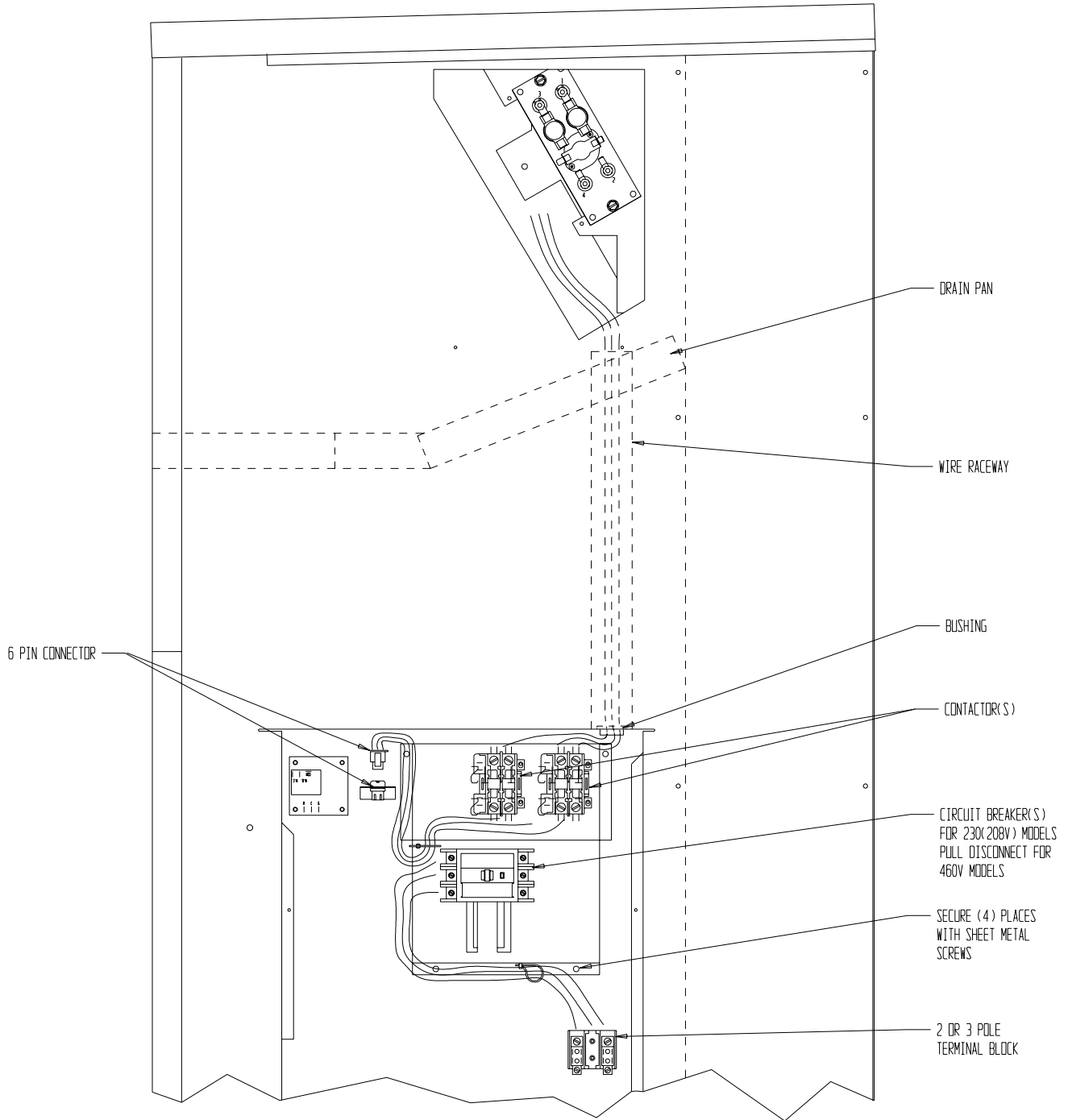
FIGURE 4F



EHCH4S-A20
EHCH4STA20
EHCH5S-A20
EHCH5STA20

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**FIGURE 5
WIRING DIRECTIONS**



MIS-2204

**FIGURE 6
MARKING SERIAL PLATE LABEL**

Install only heater packages listed here.

BARD MANUFACTURING CO., INC., 1914 RANDOLPH DRIVE, BRYAN, OHIO 43506 U.S.A.

MODEL	APPROVED HEATER PACKAGE	(1)		(2)		SINGLE CIRCUIT MINIMUM MAX. FUSE CIRCUIT OR CKT. AMPACITY BREAKER CKT.A/CKT.B	DUAL CIRCUIT MINIMUM MAX. FUSE CIRCUIT OR CKT. AMPACITY BREAKER CKT.A/CKT.B
		VAC	HZ	PH	AMPACITY BREAKER CKT.A/CKT.B		
Model Numbers	CHCB-08A	230/208	60	1	37	50	N/A
CH4S1-A0Z	EHCH4S-A04	230/208	60	1	57	60	N/A
CH4S1-A04	EHCH4S-A05	230/208	60	1	63	70	37/26
CH4S1-A05	EHCH4S-A10	230/208	60	1	89	90	37/52
CH4S1-A10	EHCH4S-A15	230/208	60	1	89	90	37/52
CH4S1-A15	EHCH4S-A20	230/208	60	1	113	120	37/52/26
CH4S1-A20							50/60/30

BCSC: 21-2 OPERATING VOLTAGE RANGE: 197 VAC MIN. 253 VAC MAX.

SERIAL NUMBER xxxxxxxxxxxxxxxx UL FILE NO. SA9951

SUITABLE FOR OUTDOOR USE ALL MOTORS ARE THERMALLY PROTECTED

-- ELECTRICAL RATINGS --

	VAC	HZ	PH	HP	FLA	LRA	RLA
COMPRESSOR	230/208	60	1		96/96		18/21
OUTDOOR MOTOR	230/208	60	1	1/3	2.5		
INDOOR MOTOR	230/208	60	1	3/4	5.0		
CHERV-A5A	230/208	60	1		2.2 (OPTIONAL)		

HEATER PACKAGE	KW	FLA
EHCH4S-A04	240/208	60 1 4/3 16.7/14.4
EHCH4S-A05	240/208	60 1 5/3.75 20.8/18.1
EHCH4S-A10	240/208	60 1 10/7.5 41.6/36.2
EHCH4S-A15	240/208	60 1 15/11.25 62.4/54.1
EHCH4S-A20	240/208	60 1 20/15 83.2/76.4

HEAT PUMP
5N73

Installation Instructions:

Make sure serial plate is clean and dry.
Remove appropriate label strip for Kw required and re-mark serial plate for the installed heater package.