

# INSTALLATION MANUAL

## SINGLE PIECE, 3 POSITION AIR HANDLERS

MODELS: AHR / AHE SERIES



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## SECTION I: GENERAL

The AHR/AHE single piece air handler provides the flexibility for installation in any upflow or horizontal application.

These versatile models may be used for cooling or heat pump operation with or without electric heat.

A BRAND LABEL (available from Distribution) may be applied to the center of the blower access panel.

The unit can be positioned for bottom return air in the upflow position, and right or left return in the horizontal position.

Top and side power wiring and control wiring, accessible screw terminals for control wiring, easy to install drain connections and electric heaters all combine to make the installation easy, and minimize installation cost.

## SECTION II: SAFETY



This is a safety alert symbol. When you see this symbol on labels or in manuals, be alert to the potential for personal injury.

Understand and pay particular attention to the signal words **DANGER**, **WARNING**, or **CAUTION**.

**DANGER** indicates an **imminently** hazardous situation, which, if not avoided, **will result in death or serious injury**.

**WARNING** indicates a **potentially** hazardous situation, which, if not avoided, **could result in death or serious injury**.

**CAUTION** indicates a potentially hazardous situation, which, if not avoided **may result in minor or moderate injury**. It is also used to alert against unsafe practices and hazards involving only property damage.

### WARNING

*Improper installation may create a condition where the operation of the product could cause personal injury or property damage.*

*Improper installation, adjustment, alteration, service or maintenance can cause injury or property damage. Refer to this manual for assistance or for additional information, consult a qualified contractor, installer or service agency.*

### CAUTION

*This product must be installed in strict compliance with the installation instructions and any applicable local, state, and national codes including, but not limited to building, electrical, and mechanical codes.*

### WARNING

#### FIRE OR ELECTRICAL HAZARD

*Failure to follow the safety warnings exactly could result in serious injury, death or property damage. A fire or electrical hazard may result causing property damage, personal injury or loss of life.*

1. Install this air handler only in a location and position as specified in SECTION III of these instructions.
2. Always install the air handler to operate within the air handler's intended maximum outlet air temperature. Only connect the air handler to a duct system which has an external static pressure within the allowable range, as specified on the air handler rating plate.
3. When an air handler is installed so that supply ducts carry air circulated by the air handler to areas outside the space containing the air handler, the return air shall also be handled by duct(s) sealed to the air handler casing and terminating in the space to be cooled/heated.
4. The air handler is not to be used for temporary heating of buildings or structures under construction.
5. The size of the unit should be based on an acceptable heat loss or gain calculation for the structure. ACCA, Manual J or other approved methods may be used.

**SAFETY REQUIREMENTS**

1. This air handler should be installed in accordance with all national and local building/safety codes and requirements, local plumbing or wastewater codes, and other applicable codes.
2. Refer to the unit rating plate for the air handler model number, and then see the dimensions page of this instruction for supply air plenum dimensions in Figure 5. The plenum must be installed according to the instructions.
3. Provide clearances from combustible materials as listed under Clearances.
4. Provide clearances for servicing ensuring that service access is allowed for electric heaters and blower.
5. Failure to carefully read and follow all instructions in this manual can result in air handler malfunction, death, personal injury and/or property damage.
6. Check the rating plate and power supply to be sure that the electrical characteristics match.
7. Air handler shall be installed so the electrical components are protected from water.

8. Installing and servicing heating/cooling equipment can be hazardous due to the electrical components. Only trained and qualified personnel should install, repair, or service heating/cooling equipment. Untrained service personnel can perform basic maintenance functions such as cleaning and replacing the air filters. When working on heating/cooling equipment, observe precautions in the manuals and on the labels attached to the unit and other safety precautions that may apply.
9. These instructions cover minimum requirements and conform to existing national standards and safety codes. In some instances these instructions exceed certain local codes and ordinances, especially those who have not kept up with changing residential and non-HUD modular home construction practices. These instructions are required as a minimum for a safe installation.

**INSPECTION**

As soon as a unit is received, it should be inspected for possible damage during transit. If damage is evident, the extent of the damage should be noted on the carrier's freight bill. A separate request for inspection by the carrier's agent should be made in writing. Also, before installation the unit should be checked for screws or bolts, which may have loosened in transit. There are no shipping or spacer brackets which need to be removed.

Also check to be sure all accessories such as heater kits, suspension kits, and coils are available. Installation of these accessories or field conversion of the unit should be accomplished before setting the unit in place or connecting any wiring, electric heat, ducts or piping.

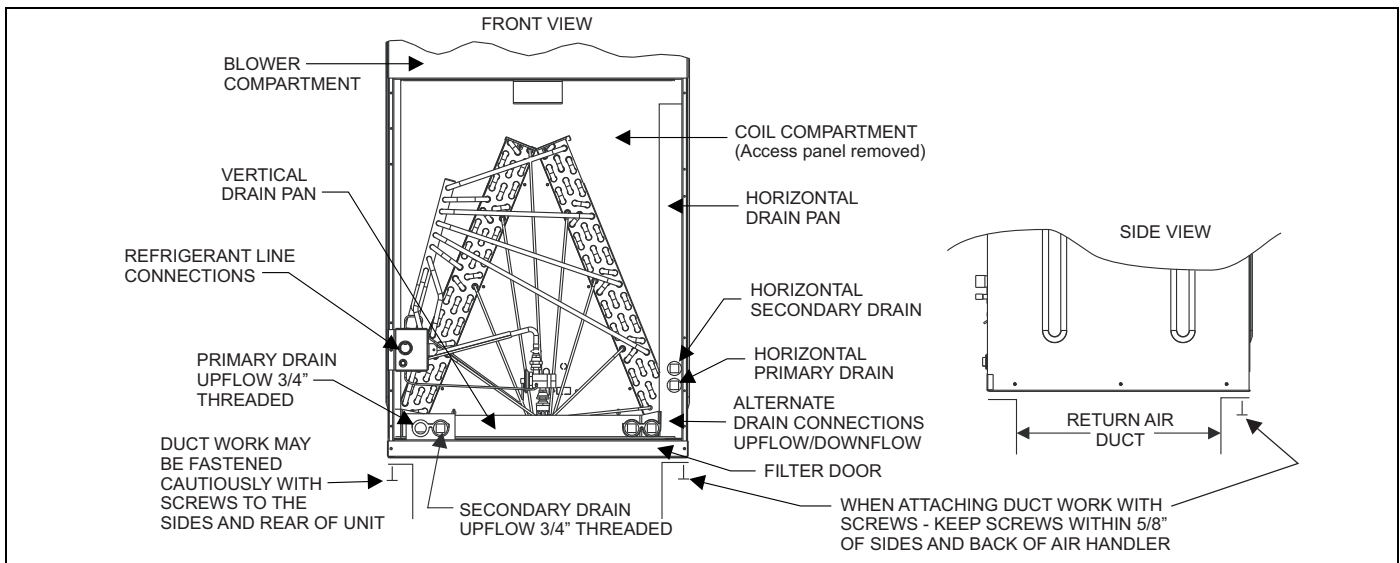
**LIMITATIONS**

These units must be wired and installed in accordance with all national and local safety codes. Voltage limits are as follows:

Air Handler Voltage	Voltage code	Normal Operating <sup>1</sup> Voltage Range
208/230-1-60	06	187-253

1. Rated in accordance with ARI Standard 110, utilization range "A". Airflow must be within the minimum and maximum limits approved for electric heat, evaporator coils and outdoor units.

Entering Air Temperature Limits			
Wet Bulb Temp. °F		Dry Bulb Temp. °F	
Min.	Max.	Min.	Max.
57	72	65	95



**FIGURE 1:** Return Duct Attachment & Component Location

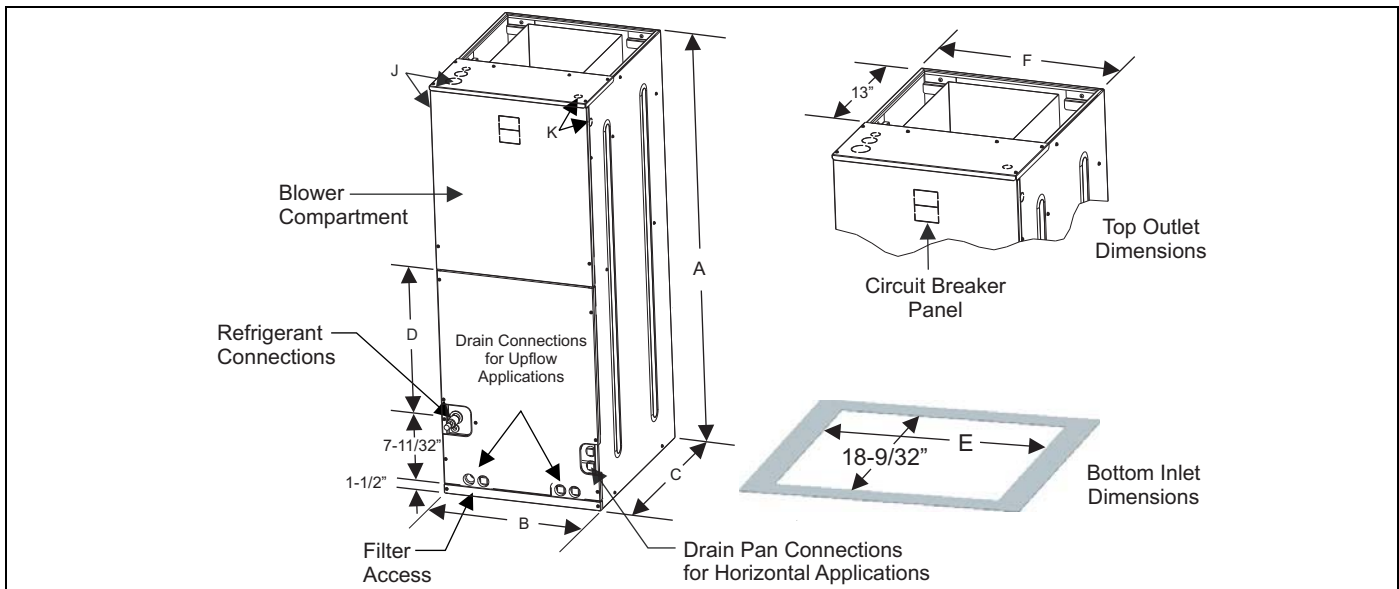


FIGURE 2: Dimensions & Duct Connection Dimensions

TABLE 1: Dimensions

Models	Dimensions						Wiring Knockouts		Refrigerant Connections Line Size	
	A	B	C	D	E	F	J	K	Liquid	Vapor
	Height	Width	Depth				Power	Control		
AHR18B/AHE18B	46"	17 1/2"	21 1/2"	16 1/2"	13-29/32"	16 1/2"	7/8" (1/2") <sup>1</sup> 1-3/8" (1") 1-23/32" (1-1/4")	7/8" (1/2")	3/8"	3/4"
AHR24B/AHE24B	46"	17 1/2"		16 1/2"	13-29/32"	16 1/2"				
AHR30B/AHE30B	46"	17 1/2"		16 1/2"	13-29/32"	16 1/2"				
AHR36B	46"	17 1/2"		16 1/2"	13-29/32"	16 1/2"				
AHR42C/AHE36C	52"	21"		21 1/2"	17-13/32"	20"				
AHR48D/AHE48D/AHE42D	57"	24 1/2"		26"	20-29/32"	23-1/2"				
AHR60D/AHE60D	57"	24 1/2"	26"	20-29/32"	23-1/2"	7/8"				

1. Actual size (Conduit size).

## SECTION III: UNIT INSTALLATION

### CLEARANCES

Clearances must be taken into consideration, and provided for as follows:

1. Refrigerant piping and connections - minimum 12" recommended.
2. Maintenance and servicing access - minimum 36" from front of unit recommended for blower motor / coil replacement.
3. Condensate drain lines routed to clear filter and panel access.
4. Filter removal - minimum 36" recommended.
5. The ductwork and plenum connected to this unit are designed for zero clearance to combustible materials.
6. A combustible floor base accessory is available for downflow applications of this unit, if required by local code.

### LOCATION

Location is usually predetermined. Check with owner's or dealer's installation plans. If location has not been decided, consider the following in choosing a suitable location:

1. Select a location with adequate structural support, space for service access, clearance for air return and supply duct connections.
2. Use hanging brackets to wall mount this single piece air handler unit, is not recommended.

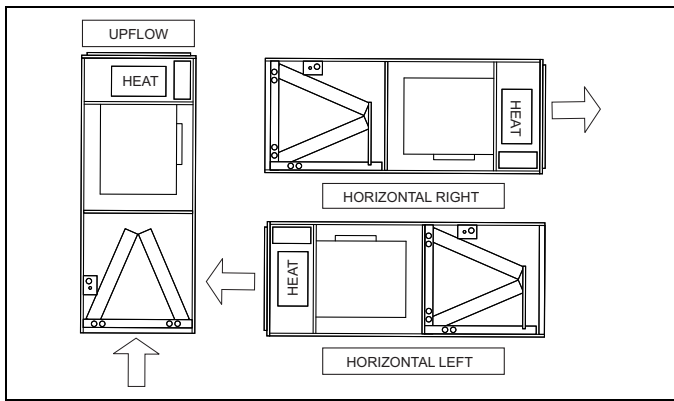
3. Normal operating sound levels may be objectionable if the air handler is placed directly over some rooms such as bedrooms, study, etc.
4. Select a location that will permit installation of condensate line to an open drain or outdoors allowing condensate to drain away from structure.

### NOTICE

*The primary and secondary drain line must be trapped to allow proper drainage of condensate water. If the secondary drain line is not used, it must be capped.*

The coil is provided with a secondary drain. It should be piped to a location that will give the occupant a visual warning that the primary drain is clogged. If the secondary drain is not used it must be capped.

5. When an evaporator coil is installed in an attic or above a finished ceiling, an auxiliary drain pan should be provided under the air handler as is specified by most local building codes.
6. Proper electrical supply must be available.
7. If unit is located in an area of high humidity (i.e. an unconditioned garage or attic), nuisance sweating of casing may occur. On these installations, unit duct connections and other openings should be properly sealed, and a wrap of 2" fiberglass insulation with vinyl vapor barrier should be used.



**FIGURE 3:** Typical Installation

**HORIZONTAL CONVERSION**

These air handler units are supplied ready to be installed in a upflow and right hand horizontal position. If unit requires left hand positioning, the unit must have the coil assembly repositioned.

**NOTICE**

*For both horizontal applications, the condensate deflector should be positioned as shown in Figure 5.*

1. Remove blower, coil, and filter access panels.

**NOTICE**

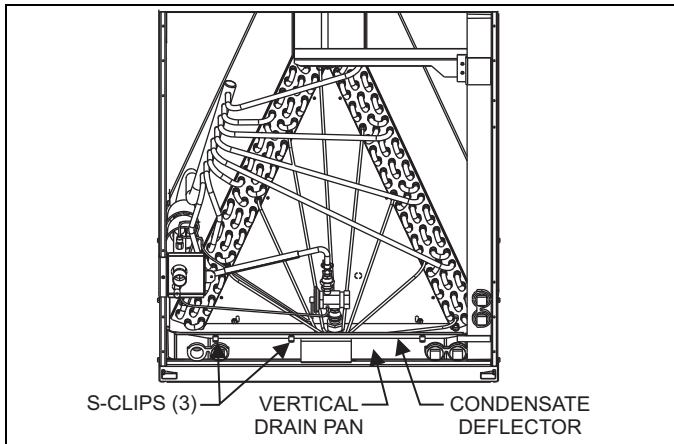
*Conversion must be made before brazing the refrigerant connections to the coil.*

- For horizontal left installations, follow steps 2 - 8.
2. Remove tubing connection panel.
  3. Slide coil assembly out of air handler.
  4. Rotate cabinet 180° so blower outlet is facing down.
  5. Re-install coil assembly on coil support bracket.
  6. Re-attach tubing connection panel.
  7. For horizontal applications, rotate air handler 90° into desired orientation.
  8. Re-position drain plugs as necessary based on air handler orientation.
  9. Re-position and replace access panels.

**SUCTION FEEDER TUBECONDENSATE DEFLECTOR**

**UPFLOW**

No action required. See Figure 6.



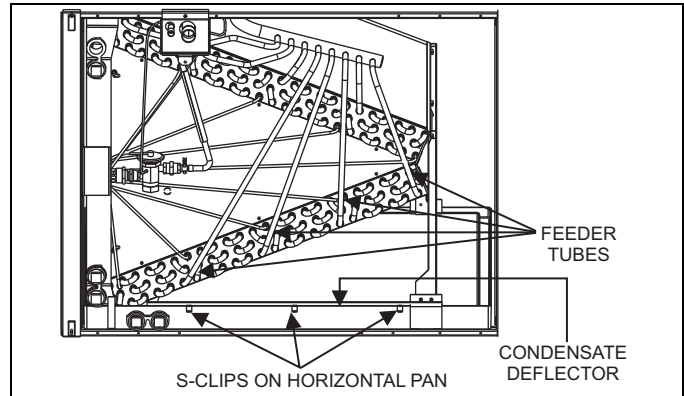
**FIGURE 4:** Condensate Deflector on Vertical Drain Pan

**HORIZONTAL LEFT OR RIGHT**

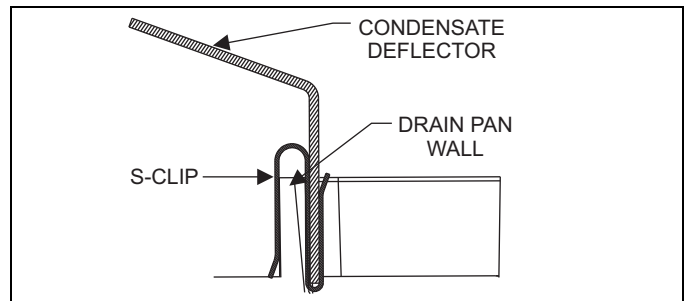
Use an appropriate tool to pry out water deflector with two or three s-clips from the vertical drain pan, see Figure 4. Relocate the deflector with s-clips on the Horizontal Drain Pan lined up to the coil support bracket. See Figure 2. This positions the deflector below the feeder tubes to channel the condensate to the drain pan.

**NOTICE**

*The condensate deflector should be installed in the s-clip section which is inside the drain pan edge. See Figure 8.*



**FIGURE 5:** Condensate Deflector on Horizontal Drain Pan Edge

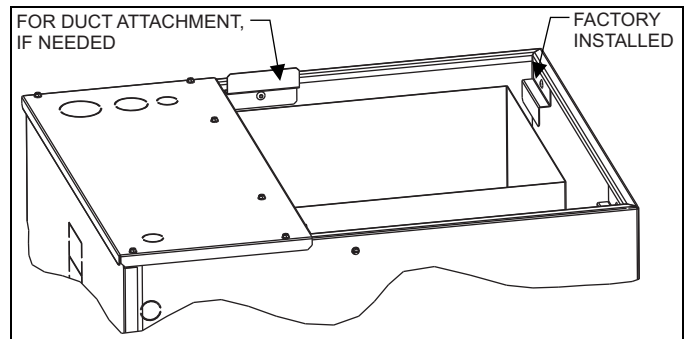


**FIGURE 6:** S-Clip Installation

**DUCT FLANGES**

Four flanges are provided to attach ductwork to the furnace. These flanges are rotated down for shipment. In order to use the flanges, remove the screw holding an individual flange, rotate the flange so it is in the upward position and reinstall the screw then repeat this for all 4 flanges.

If the flanges are not used, they must remain in the rotated down position as shipped.



**FIGURE 7:** Duct Attachment

## DUCT CONNECTIONS

### WARNING

Use 1/2" screws to connect ductwork to bottom of unit. Longer screws will pierce the drain pan and cause leakage. If pilot holes are drilled, drill only through field duct and unit bottom flange.

Air supply and return may be handled in one of several ways best suited to the installation. See Figure 5 for dimensions for duct inlet and outlet connections.

The vast majority of problems encountered with combination heating and cooling systems can be linked to improperly designed or installed duct systems. It is therefore highly important to the success of an installation that the duct system be properly designed and installed.

Use flexible duct collars to minimize the transmission of vibration/noise into the conditioned space. If electric heat is used, non-flammable material must be used.

Where return air duct is short, or where sound may be a problem, sound absorbing glass fiber should be used inside the duct. Insulation of ductwork is a must where it runs through an unheated space during the heating season or through an uncooled space during the cooling season. The use of a vapor barrier is recommended to prevent absorption of moisture from the surrounding air into the insulation.

The supply air duct should be properly sized by use of a transition to match unit opening. All ducts should be suspended using flexible hangers and never fastened directly to the structure. This unit is not designed for non-ducted (freeblow) applications. Size outlet plenum or transition to discharge opening sizes shown in Figure 5.

Ductwork should be fabricated and installed in accordance with local and/or national codes. This includes the standards of the National Fire Protection Association for Installation of Air-Conditioning and Ventilating Systems, NFPA No. 90B.

## DUCTWORK TRANSITION

Ductwork that is not designed to match the supply air opening can cause turbulence inside the plenum box. This turbulence can change the air flow patterns across the heat kit limit switch. If the factory suggested transition can not be fabricated, it is recommended a block off plate (approximately 8" in height and running the full width of the plenum) be attached to the supply opening. Please refer to Figure 9 as a visual aid. The use of this block off plate will keep better air circulation across the limit switch.

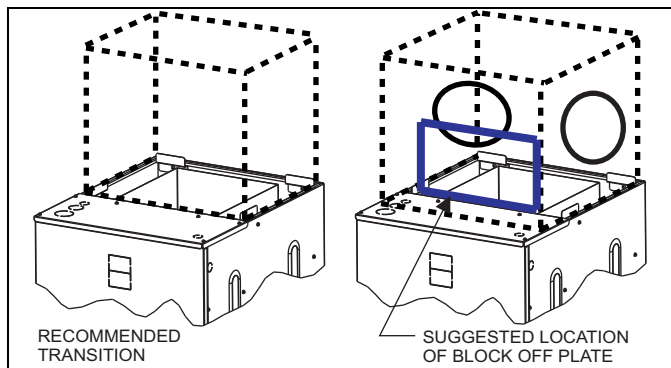


FIGURE 8: Ductwork Transition

## AIR FILTERS

Air filters must be field supplied. A 1" filter access rack has been built into the unit. See Figure 5. Remove filter access cover shown. Install proper size filter. Standard 1" size permanent or throw away filter may be used, or, permanent washable filters are available using model numbers: 1PF0601, 602 or 603BK. See Table 2 for filter size.

### CAUTION

Equipment should never be operated without filters.

## HORIZONTAL SUSPENSION

For suspension of these units in horizontal applications, it is recommended to use angle steel support brackets with threaded rods, supporting the units from the bottom, at the locations shown in Figure 10.

When an evaporator coil is installed in an attic or above a finished ceiling, an auxiliary drain pan should be provided under the air handler as is specified by most local building codes.

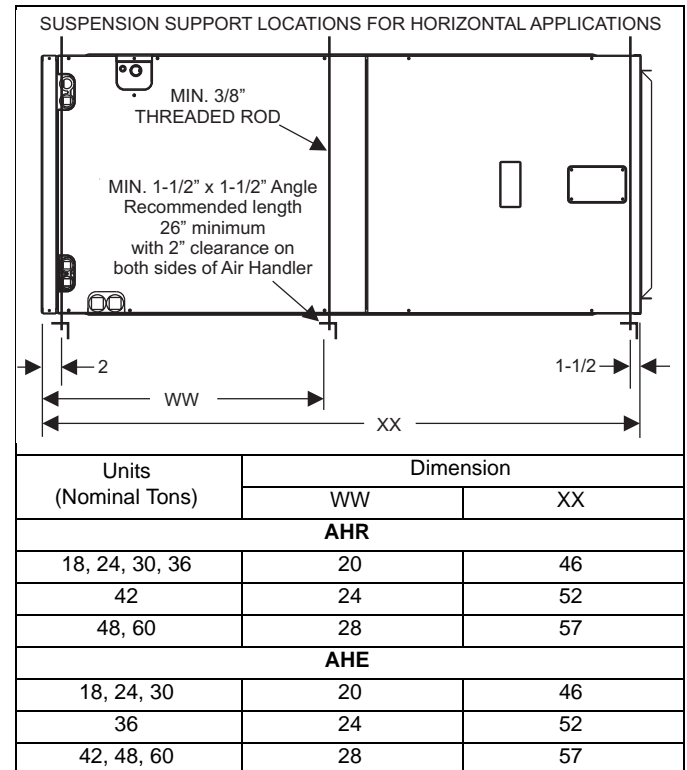


FIGURE 9: Typical Horizontal Installation

## TXV METERING DEVICES

If the model number is of the following model series:

3X, the coil will require a R22 or R410A Orifice or TXV to be installed in the field. Refer to installation manual with TXV kit. It is recommended to install the TXV kit prior to brazing line sets.

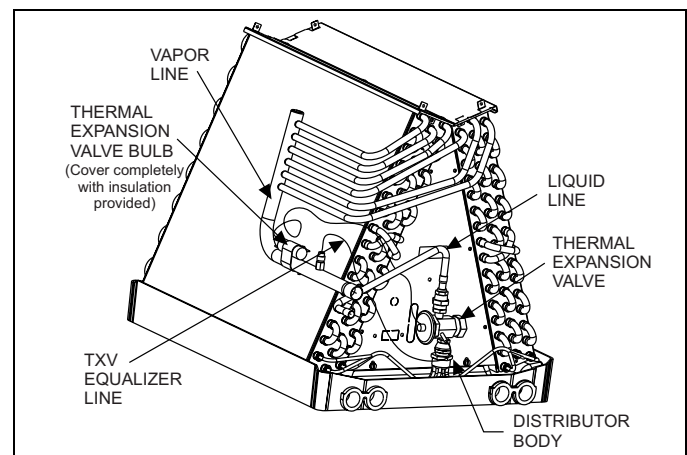


FIGURE 10: TXV



Please refer to Outdoor Unit Tech Guide to verify which TXV is installed in this coil and that this is a valid system match for the AC or HP unit installed.

The temperature sensing bulb is attached to the coil suction header line.

## NOTICE

*For models that have factory installed TXV's, take caution not to apply high temperatures to the TXV assembly or equalizer line while brazing.*

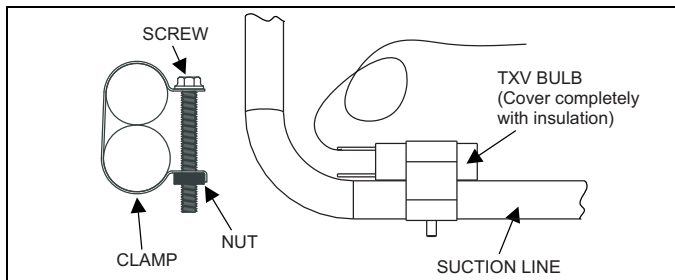


FIGURE 11: Proper Bulb Location

## CAUTION

### COIL UNDER PRESSURE.

*Relieve pressure by depressing schrader core. Coil may have factory installed TXV or may require orifice or TXV to be added. See outdoor unit documentation for correct orifice or TXV to be used. Refer to coil nameplate for orifice or TXV identification for this unit.*

## NOTICE

*The coil should be open to the air for no more than 2 minutes to keep moisture and contaminants from entering the system. If the coil cannot be brazed into the refrigeration system in that time, the ends should be temporarily closed or plugged. For a short term delay, use masking tape over the ends of the copper tubing to close the tube to the air. For a longer term delay, use plugs or caps. There is no need to purge the coil if this procedure is followed.*

### REFRIGERANT LINE CONNECTION

## CAUTION

*Dry nitrogen should always be supplied through the tubing while it is being brazed, because the temperature required is high enough to cause oxidation of the copper unless an inert atmosphere is provided. The flow of dry nitrogen should continue until the joint has cooled. Always use a pressure regulator and safety valve to insure that only low pressure dry nitrogen is introduced into the tubing. Only a small flow is necessary to displace air and prevent oxidation.*

Connect lines as follows:

## NOTICE

*Route the refrigerant lines to the coil in a manner that will not obstruct service access to the coil, air handling system, or filter.*

1. Suction and liquid line connections are made outside the cabinet. Leave the tubing connection panel attached to the cabinet with the tubes protruding through it. Coil access panel should be removed for brazing. The lines are swaged to receive the field line set tubes.

2. Remove the heat shield from the Customer Packet, soak in water, and install over coil tubing to prevent overheating of cabinet.
3. Wrap a water soaked rag around the coil connection tubes inside the cabinet to avoid damaging the TXV bulb.
4. Remove grommets where tubes exit the cabinet to prevent burning them during brazing.
5. Purge refrigerant lines with dry nitrogen.
6. Braze the suction and liquid lines. Suction line must be insulated.
7. Remove the heat shield.
8. Re-attach the grommets to the lines carefully to prevent air leakage.
9. Attach the coil access panel to the cabinet.

## NOTICE

**ALWAYS** evacuate the coil and line. Set tubing to 500 microns before opening outdoor unit service valves.

Refer to Outdoor unit Installation Manual for evacuation, leak check and charging instructions.

Lines should be sound isolated by using appropriate hangers or strapping.

All evaporator coil connections are copper-to-copper and should be brazed with a phosphorous-copper alloy material such as Silfos-5 or equivalent. DO NOT use soft solder.

### DRAIN CONNECTIONS

All drain lines should be trapped a minimum of three inches, should be pitched away from unit drain pan and should be no smaller than the coil drain connection.

## CAUTION

*Threaded drain connection should be hand-tightened, plus no more than 1/16 turn.*

Route the drain line so that it does not interfere with accessibility to the coil, air handling system or filter and will not be exposed to freezing temperatures. See Figures 2 and 4 for drain connection locations.

## CAUTION

*When the coil is installed in an attic or above a finished ceiling, an auxiliary drain pan should be provided under the coil if specified by local building codes. When this exterior secondary drain pan is used that drain should be piped to a location that will give the occupant a visual warning that the primary drain is clogged.*

Coils should be installed level or pitched slightly toward the drain end. Suggested pitch should not exceed 1/4 inch per foot of coil.

The coil is provided with a secondary drain that should be trapped and piped to a location that will give the occupant a visual warning that the primary drain is clogged. If the secondary drain is not used it must be capped.

The drain pan connections are designed to ASTM Standard D 2466 Schedule 40. Use 3/4" PVC or steel threaded pipe. Since the drains are not subject to any pressure it is not necessary to use Schedule 40 pipe for drain lines.

## SECTION IV: ELECTRIC HEATER INSTALLATION

If the air handler requires electric heat, install the electric heat kit according to the installation instructions included with the kit. After installing the kit, mark the air handler nameplate to designate the heater kit that was installed. If no heater is installed, mark the name plate appropriately to indicate that no heat kit is installed.

Use only 6HK heater kits, as listed on Air Handler name plate and in these instructions. Use data from Tables 5 through 9 for information on required minimum motor speed tap to be used for heating operation, maximum over-current protection device required and minimum electrical supply wiring size required – for listed combination of Air Handler and Heater Kit.

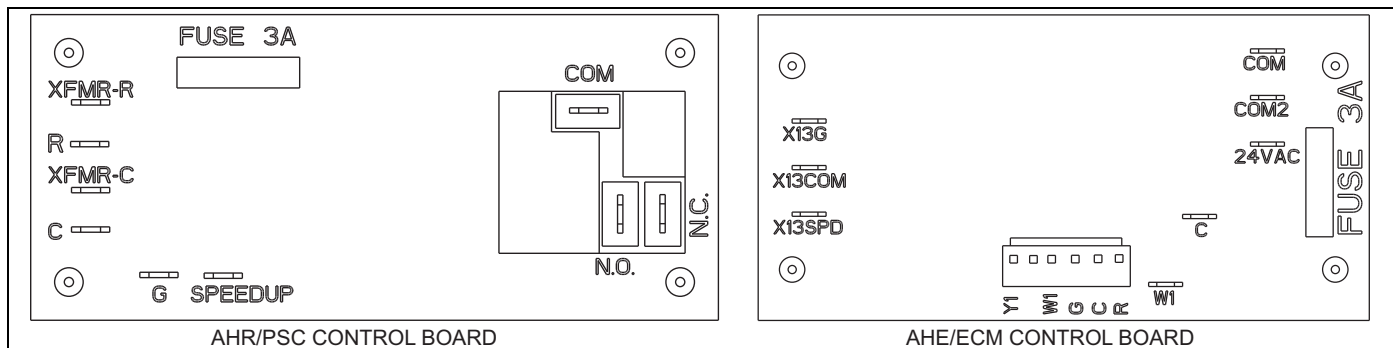


FIGURE 12: Blower Delay Control Board

## SECTION V: LINE POWER CONNECTIONS

Power may be brought into the unit through the supply air end of the unit (top when unit is vertical) or the left side panel. Use the hole appropriate to the unit's orientation in each installation to bring conduit from the disconnect. The power lead conduit should be terminated at the electrical control box. Refer to Tables 11, 12, 14 and 15 to determine proper wire sizing. Also see Figure 3. To minimize air leakage, seal the wiring entry point at the outside of the unit.

All electrical connections to air handlers must be made with copper conductors. **Direct connection of aluminum wiring to air handlers is not approved.**

If aluminum conductors are present, all applicable local and national codes must be followed when converting from aluminum to copper conductors prior to connection to the air handler.

If wire other than uncoated (non-plated), 75° C ambient, copper wire is used, consult applicable tables of the National Electric Code (ANSI/NFPA 70). The chosen conductor and connections all must meet or exceed the amperage rating of the overcurrent protector (circuit breaker or fuse) in the circuit.

Additionally, existing aluminum wire within the structure must be sized correctly for the application according to National Electric Code and local codes. Caution must be used when sizing aluminum rather than copper conductors, as aluminum conductors are rated for less current than copper conductors of the same size.

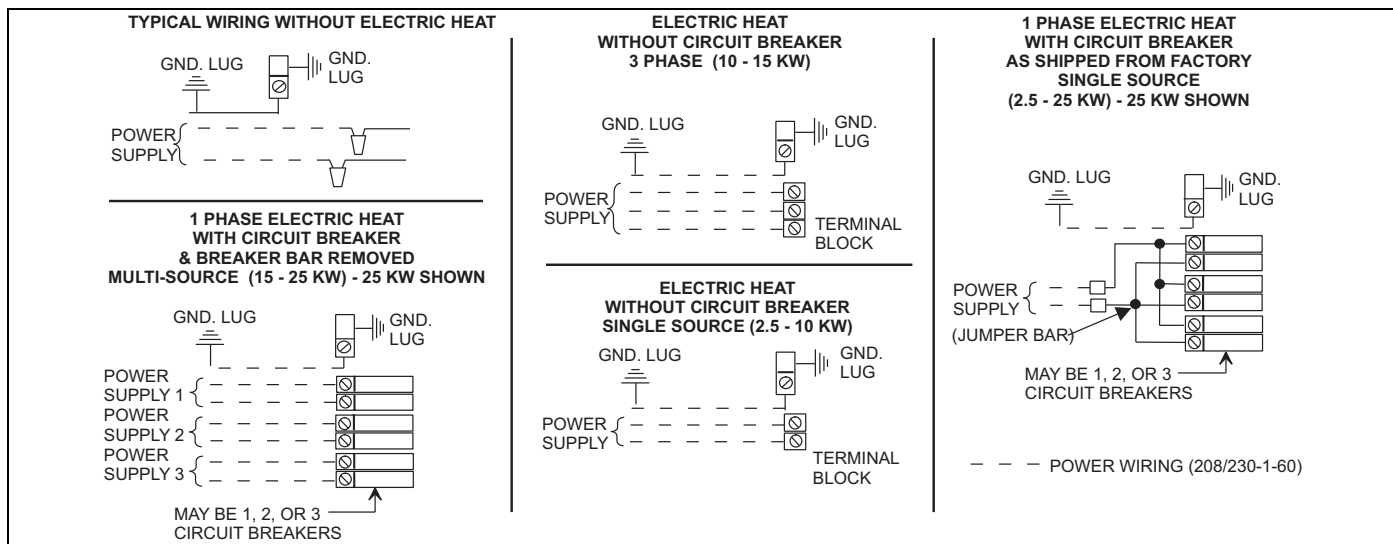


FIGURE 13: Line Power Connections

## SECTION VI: LOW VOLTAGE CONTROL CONNECTIONS

The 24 volt power supply is provided by an internally wired low voltage transformer which is standard on all models. However, if the unit is connected to a 208 volt power supply, the low voltage transformer must be rewired to the 208 volt tap. See the unit wiring label.

Field supplied low voltage wiring can exit the unit on the top right hand corner or the right hand side panel. Refer to Figure 5.

Remove desired knockout and pierce foil faced insulation to allow wiring to pass through. Use as small of a hole as possible to minimize air leakage. Install a 7/8" plastic bushing in the selected hole and keep low voltage wiring as short as possible inside the control box.

To further minimize air leakage, seal the wiring entry point at the outside of the unit.

The field wiring is to be connected at the pigtails supplied with the control board harness. Refer to SECTIONS X and XI for system wiring.

**NOTICE**

All wiring must comply with local and national electrical code requirements. Read and heed all unit caution labels.

**NOTICE**

It is possible to vary the amount of electric heat turned on during the defrost cycle of a heat pump. Standard wiring will only bring on the first stage of electric heat during defrost. See Heat Output and Limit Connections and Table 6 for additional information on heat during defrost cycle.

## SECTION VII: BLOWER SPEED CONNECTIONS

Adjust blower motor speed to provide airflow within the minimum and maximum limits approved for evaporator coil, electric heat and outdoor unit. Speed tap adjustments are made at the motor terminal block. Air-flow data is shown in Table 15.

Connect motor wires to motor speed tap receptacle for speed desired. See unit wiring label for motor wiring details.

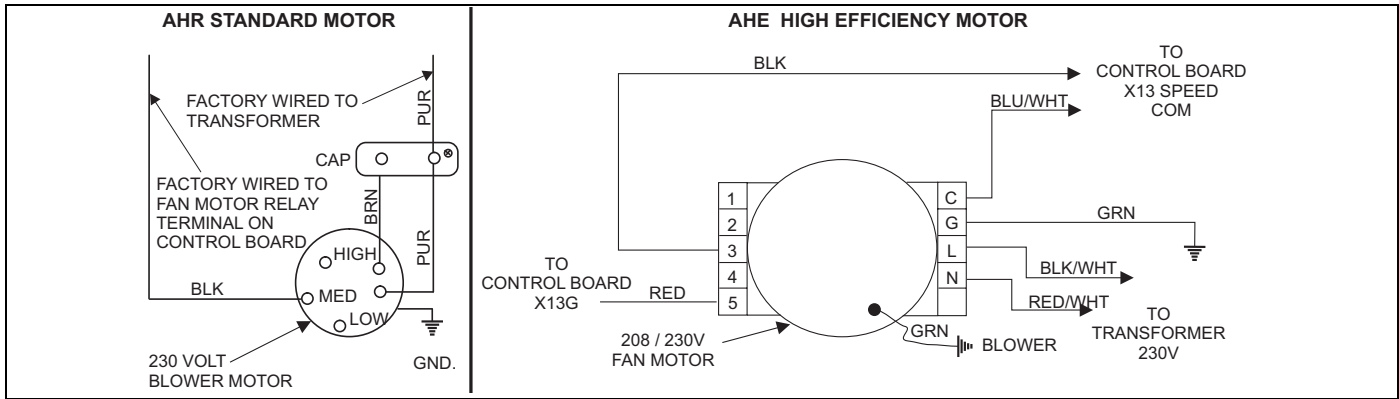


FIGURE 14: Blower Speed Connections

## SECTION VIII: UNIT DATA

TABLE 2: Physical and Electrical Data

AHR MODELS								
Models		18B	24B	30B	36B	42C	48D	60D
Blower - Diameter x Width		10 x 8	10 x 8	10 x 8	10 x 8	10 x 10	10X10	10X10
Motor	HP	1/4 HP	1/4 HP	3/4 HP	3/4 HP	3/4 HP	3/4 HP	3/4 HP
	Nominal RPM	1075	1075	1075	1075	1075	1075	1075
Voltage		208/230	208/230	208/230	208/230	208/230	208/230	208/230
Amps	Full Load (230)	1.4	1.4	3.8	3.8	3.8	3.8	3.8
Filter <sup>1</sup>	Type	DISPOSABLE OR PERMANENT						
	Size	16 x 20 x 1	16 x 20 x 1	16 x 20 x 1	16 x 20 x 1	20 x 20 x 1	22 x 20 x 1	22 x 20 x 1
	Permanent Type Kit	1PF0601BK	1PF0601BK	1PF0601BK	1PF0601BK	1PF0602BK	1PF0603BK	1PF0603BK
Shipping / Operating Weight (lbs.)		112/100	117/102	117/105	122/110	148/133	165/147	168/150
AHE MODELS								
Models		18B	24B	30B	36C	42D	48D	60D
Blower - Diameter x Width		10 x 8	10 x 8	10 x 8	11 x 10	11 x 10	11 x 10	11 x 10
Motor	HP	1/3 HP	1/3 HP	1/3 HP	1/2 HP	1/2 HP	3/4 HP	3/4 HP
	Nominal RPM	1050	1050	1050	1050	1050	1050	1050
Voltage		208/230	208/230	208/230	208/230	208/230	208/230	208/230
Amps - AHE	Full Load (230)	2.8	2.8	2.8	4.1	4.1	6.0	6.0
Filter <sup>1</sup>	Type	DISPOSABLE OR PERMANENT						
	Size	16 x 20 x 1	16 x 20 x 1	16 x 20 x 1	20 x 20 x 1	22 x 20 x 1	22 x 20 x 1	22 x 20 x 1
	Permanent Type Kit	1PF0601BK	1PF0601BK	1PF0601BK	1PF0602BK	1PF0603BK	1PF0603BK	1PF0603BK
Shipping / Operating Weight (lbs.)		115/103	120/105	120/105	152/137	168/150	171/153	174/156

1. Field Supplied.



TABLE 3: Conversion Table

kW & MBH Conversions - for Total Power Input Requirement					
FOR	208V	OPERATION MULTIPLY	240V	TABULATED kW & MBH BY	.751
	230V		240V		.918

TABLE 4: Electrical Data - Cooling Only (60 Hz)

Models	Total Motor Amps		Minimum Circuit Ampacity		Max. O.C.P. <sup>1</sup> Amps/Type	Minimum Wire Size A.W.G.
	60 Hertz		60 Hertz			
	208V	230V	208V	230V		
<b>AHR MODELS</b>						
18B	1.3	1.4	1.6	1.8	15	14
24B	1.3	1.4	1.6	1.8	15	14
30B	3.4	3.8	4.3	4.8	15	14
36B	3.4	3.8	4.3	4.8	15	14
42C	3.4	3.8	4.3	4.8	15	14
48D	3.4	3.8	4.3	4.8	15	14
60D	3.4	3.8	4.3	4.8	15	14
<b>AHE MODELS</b>						
18B	2.8	2.8	3.5	3.5	15	14
24B	2.8	2.8	3.5	3.5	15	14
30B	2.8	2.8	3.5	3.5	15	14
36C	4.1	4.1	5.1	5.1	15	14
42D	4.1	4.1	5.1	5.1	15	14
48D	6.0	6.0	7.5	7.5	15	14
60D	6.0	6.0	7.5	7.5	15	14

1. OCP = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

\* May be 0 (no Circuit Breaker) or 1 (with Circuit Breaker).

TABLE 5: Electrical Data - 208/230-1-60

Models	Heater Models*	Max. Static	PSC Min. Speed Tap	ECM Min. Speed Tap	Total Heat <sup>1</sup>				kW Staging			
					kW		MBH		W1 Only		W1 + W2	
					208V	230V	208V	230V	208V	230V	208V	230V
18	6HK*6500206	0.3	Low	Med Low #2	1.8	2.2	6.1	7.5	1.8	2.2	1.8	2.2
	6HK*6500506	0.3	Med	Med Low #2	3.6	4.4	12.3	15.0	3.6	4.4	3.6	4.4
	6HK*6500806	0.3	Med	Med High #4	5.8	7.0	19.7	24.0	5.8	7.0	5.8	7.0
	6HK16501006	0.3	Med	Med High #4	7.2	8.8	24.6	29.9	7.2	8.8	7.2	8.8
24	6HK*6500206	0.3	Low	Low #1	1.8	2.2	6.1	7.5	1.8	2.2	1.8	2.2
	6HK*6500506	0.3	Low	Med Low #2	3.6	4.4	12.3	15.0	3.6	4.4	3.6	4.4
	6HK*6500806	0.3	Med	Med #3	5.8	7.0	19.7	24.0	5.8	7.0	5.8	7.0
	6HK*6501006	0.3	Med	Med High #4	7.2	8.8	24.6	29.9	7.2	8.8	7.2	8.8
	6HK*6501306	0.3	High	Med High #4	9.4	11.4	31.9	38.9	3.1	3.8	9.4	11.4
	6HK16501506	0.3	High	High #5	10.8	13.2	36.9	44.9	3.6	4.4	10.8	13.2
30	6HK*6500206	0.3	Low	Low #1	1.8	2.2	6.1	7.5	1.8	2.2	1.8	2.2
	6HK*6500506	0.3	Low	Med Low #2	3.6	4.4	12.3	15.0	3.6	4.4	3.6	4.4
	6HK*6500806	0.3	Med	Med #3	5.8	7.0	19.7	24.0	5.8	7.0	5.8	7.0
	6HK*6501006	0.3	Med	Med High #4	7.2	8.8	24.6	29.9	7.2	8.8	7.2	8.8
	6HK*6501306	0.3	High	Med High #4	9.4	11.4	31.9	38.9	3.1	3.8	9.4	11.4
	6HK16501506	0.3	High	High #5	10.8	13.2	36.9	44.9	3.6	4.4	10.8	13.2
36	6HK*6500206	0.3	Low	Low #1	1.8	2.2	6.1	7.5	1.8	2.2	1.8	2.2
	6HK*6500506	0.3	Low	Med Low #2	3.6	4.4	12.3	15.0	3.6	4.4	3.6	4.4
	6HK*6500806	0.3	Med	Med #3	5.8	7.0	19.7	24.0	5.8	7.0	5.8	7.0
	6HK*6501006	0.3	Med	Med High #4	7.2	8.8	24.6	29.9	7.2	8.8	7.2	8.8
	6HK*6501306	0.3	High	Med High #4	9.4	11.4	31.9	38.9	3.1	3.8	9.4	11.4
	6HK16501506	0.3	High	Med High #4	10.8	13.2	36.9	44.9	3.6	4.4	10.8	13.2
	6HK16501806	0.3	High	High #5	13.0	15.8	44.2	53.9	6.5	7.9	13.0	15.8
	6HK16502006	0.3	High	High #5	14.4	17.5	49.1	59.9	7.2	8.8	14.4	17.6
42	6HK*6500206	0.3	Low	Low #1	1.8	2.2	6.1	7.5	1.8	2.2	1.8	2.2
	6HK*6500506	0.3	Low	Med #3	3.6	4.4	12.3	15.0	3.6	4.4	3.6	4.4
	6HK*6500806	0.3	Med	Med #3	5.8	7.0	19.7	24.0	5.8	7.0	5.8	7.0
	6HK*6501006	0.3	Med	Med High #4	7.2	8.8	24.6	29.9	7.2	8.8	7.2	8.8
	6HK*6501306	0.3	High	High #5	9.4	11.4	31.9	38.9	3.1	3.8	9.4	11.4
	6HK16501506	0.3	High	High #5	10.8	13.2	36.9	44.9	3.6	4.4	10.8	13.2
48	6HK*6500206	0.3	Low	Low #1	1.8	2.2	6.1	7.5	1.8	2.2	1.8	2.2
	6HK*6500506	0.3	Low	Low #1	3.6	4.4	12.3	15.0	3.6	4.4	3.6	4.4
	6HK*6500806	0.3	Low	Med Low #2	5.8	7.0	19.7	24.0	5.8	7.0	5.8	7.0
	6HK*6501006	0.3	Med	Med Low #2	7.2	8.8	24.6	29.9	7.2	8.8	7.2	8.8
	6HK*6501306	0.3	Med	Med #3	9.4	11.4	31.9	38.9	3.1	3.8	9.4	11.4
	6HK16501506	0.3	Med	Med #3	10.8	13.2	36.9	44.9	3.6	4.4	10.8	13.2
	6HK16501806	0.3	Med	Med High #4	13.0	15.8	44.2	53.9	6.5	7.9	13.0	15.8
	6HK16502006	0.3	High	High #5	14.4	17.5	49.1	59.9	7.2	8.8	14.4	17.6
60	6HK*6500206	0.3	Low	Low #1	1.8	2.2	6.1	7.5	1.8	2.2	1.8	2.2
	6HK*6500506	0.3	Low	Low #1	3.6	4.4	12.3	15.0	3.6	4.4	3.6	4.4
	6HK*6500806	0.3	Low	Low #1	5.8	7.0	19.7	24.0	5.8	7.0	5.8	7.1
	6HK*6501006	0.3	Med	Med Low #2	7.2	8.8	24.6	29.9	7.2	8.8	7.2	8.8
	6HK*6501306	0.3	Med	Med #3	9.4	11.4	31.9	38.9	3.1	3.8	9.4	11.4
	6HK16501506	0.3	Med	Med #3	10.8	13.2	36.9	44.9	3.6	4.4	10.8	13.2
	6HK16501806	0.3	Med	Med High #4	13.0	15.8	44.2	53.9	6.5	7.9	13.0	15.8
	6HK16502006	0.3	High	Med High #4	14.4	17.5	49.1	59.9	7.2	8.8	14.4	17.6
	6HK16502506	0.3	High	High #5	18.0	21.9	61.4	74.9	7.2	8.8	18.0	22.0

1. See conversion Table 3.

**TABLE 6:** Electrical Data - (For **Single Source** Power Supply) - Copper Wire - 208/230-1-60 (AHR)

Models	Heater Models*	Heater Amps 240V	Field Wiring					
			Min. Circuit Ampacity		Max. O.C.P. <sup>1</sup> Amps/Type		75°C Wire Size - AWG	
			208V	230V	208V	230V	208V	230V
AHR18B3XH21	6HK*6500206	10.0	12.42	13.73	15	15	12	12
	6HK*6500506	20.0	23.25	25.71	25	30	10	10
	6HK*6500806	32.0	36.25	40.08	40	45	8	8
	6HK*6501006	40.0	44.92	49.67	45	50	8	6
AHR24B3XH21	6HK*6500206	10.0	12.42	13.73	15	15	12	12
	6HK*6500506	20.0	23.25	25.71	30	30	10	10
	6HK*6500806	32.0	36.25	40.08	40	50	8	8
	6HK*6501006	40.0	44.92	49.67	45	50	8	6
	6HK16501306	52.0	57.92	64.04	60	70	4	4
	6HK16501506	60.0	66.58	73.63	70	80	4	4
AHR30B3XH21	6HK*6500206	10.0	15.13	16.73	20	20	12	12
	6HK*6500506	20.0	25.96	28.71	30	30	10	10
	6HK*6500806	32.0	38.96	43.08	40	45	8	8
	6HK*6501006	40.0	47.63	52.67	50	60	6	6
	6HK16501306	52.0	60.63	67.04	70	70	6	4
	6HK16501506	60.0	69.30	76.63	70	80	4	4
AHR36B3XH21	6HK*6500206	10.0	15.13	16.73	20	20	12	12
	6HK*6500506	20.0	25.96	28.71	30	30	10	10
	6HK*6500806	32.0	38.96	43.08	40	45	8	8
	6HK*6501006	40.0	47.63	52.67	50	60	8	6
	6HK16501306	52.0	60.63	67.04	70	70	6	4
	6HK16501506	60.0	69.30	76.63	70	80	4	4
	6HK16501806	72.0	82.30	91.00	90	100	3	3
	6HK16502006	80.0	91.0	100.6	100	110	3	2
AHR42C3XH21	6HK*6500206	10.0	15.1	16.7	20	20	12	12
	6HK*6500506	20.0	26.0	28.7	30	30	10	10
	6HK*6500806	32.0	39.0	43.1	40	45	8	8
	6HK*6501006	40.0	47.6	52.7	50	60	6	6
	6HK16501306	52.0	60.6	67.0	70	70	6	4
	6HK16501506	60.0	69.30	76.63	70	80	4	4
AHR48D3XH21	6HK*6500206	10.0	15.1	16.7	20	20	12	12
	6HK*6500506	20.0	26.0	28.7	30	30	10	10
	6HK*6500806	32.0	39.0	43.1	40	45	8	8
	6HK*6501006	40.0	47.6	52.7	50	60	6	6
	6HK16501306	52.0	60.6	67.0	70	70	6	4
	6HK16501506	60.0	69.3	76.6	70	80	4	4
	6HK16501806	72.0	82.3	91.0	90	100	3	3
	6HK16502006	80.0	91.0	100.6	100	110	3	2
AHR60D3XH21	6HK*6500206	10.0	15.1	16.7	20	20	12	12
	6HK*6500506	20.0	26.0	28.7	30	30	10	10
	6HK*6500806	32.0	39.0	43.1	40	45	8	8
	6HK*6501006	40.0	47.6	52.7	50	60	6	6
	6HK16501306	52.0	60.6	67.0	70	70	6	4
	6HK16501506	60.0	69.3	76.6	70	80	4	4
	6HK16501806	72.0	82.3	91.0	90	100	3	3
	6HK16502006	80.0	91.0	100.6	100	110	3	2
	6HK16502506	100.0	112.6	124.5	115	130	1	1

1. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

\* May be 0 (no Circuit Breaker) or 1 (with Circuit Breaker).

**TABLE 7:** Electrical Data - (For **Single Source** Power Supply) - Copper Wire - 208/230-1-60 (AHE)

Models	Heater Models*	Heater Amps 240V	Field Wiring					
			Min. Circuit Ampacity		Max. O.C.P. <sup>1</sup> Amps/Type		75°C Wire Size - AWG	
			208V	230V	208V	230V	208V	230V
AHE18B3XH21	6HK*6500206	10.0	14.33	15.48	15	20	12	12
	6HK*6500506	20.0	25.17	27.46	30	30	10	10
	6HK*6500806	32.0	38.17	41.83	40	45	8	8
	6HK*6501006	40.0	46.83	51.42	50	60	8	6
AHE24B3XH21	6HK*6500206	10.0	14.33	15.48	15	20	12	12
	6HK*6500506	20.0	25.17	27.46	30	30	10	10
	6HK*6500806	32.0	38.17	41.83	40	45	8	8
	6HK*6501006	40.0	46.83	51.42	50	60	8	6
	6HK16501306	52.0	59.83	65.79	60	70	6	4
	6HK16501506	60.0	68.50	75.38	70	80	4	4
AHE30B3XH21	6HK*6500206	10.0	14.33	15.48	15	20	12	12
	6HK*6500506	20.0	25.17	27.46	30	30	10	10
	6HK*6500806	32.0	38.17	41.83	40	50	8	8
	6HK*6501006	40.0	46.83	51.42	50	60	6	6
	6HK16501306	52.0	59.83	65.79	60	70	6	4
	6HK16501506	60.0	68.50	75.38	70	80	4	4
AHE36C3XH21	6HK*6500206	10.0	15.96	17.10	20	20	12	12
	6HK*6500506	20.0	26.79	29.08	30	30	10	10
	6HK*6500806	32.0	39.79	43.46	40	45	8	8
	6HK*6501006	40.0	48.46	53.04	50	60	8	6
	6HK16501306	52.0	61.46	67.42	70	70	6	4
	6HK16501506	60.0	70.13	77.00	80	80	4	4
	6HK16501806	72.0	83.13	91.38	90	100	3	3
	6HK16502006	80.0	91.79	100.96	100	110	3	2
AHE42D3XH21	6HK*6500206	10.0	15.96	17.10	20	20	12	12
	6HK*6500506	20.0	26.79	29.08	30	30	10	10
	6HK*6500806	32.0	39.79	43.46	40	45	8	8
	6HK*6501006	40.0	48.46	53.04	50	60	6	6
	6HK16501306	52.0	61.46	67.42	70	70	6	4
	6HK16501506	60.0	70.13	77.00	80	80	4	4
AHE48D3XH21	6HK*6500206	10.0	18.3	19.5	20	20	12	12
	6HK*6500506	20.0	29.2	31.5	30	35	10	10
	6HK*6500806	32.0	42.2	45.8	45	50	8	8
	6HK*6501006	40.0	50.8	55.4	60	60	6	6
	6HK16501306	52.0	63.8	69.8	70	70	4	4
	6HK16501506	60.0	72.5	79.4	80	80	4	4
	6HK16501806	72.0	85.5	93.8	90	100	3	3
	6HK16502006	80.0	94.2	103.3	100	110	3	2
AHE60D3XH21	6HK*6500206	10.0	18.3	19.5	20	20	12	12
	6HK*6500506	20.0	29.2	31.5	30	35	10	10
	6HK*6500806	32.0	42.2	45.8	45	50	8	8
	6HK*6501006	40.0	50.8	55.4	60	60	6	6
	6HK16501306	52.0	63.8	69.8	70	70	4	4
	6HK16501506	60.0	72.5	79.4	80	80	4	4
	6HK16501806	72.0	85.5	93.8	90	100	3	3
	6HK16502006	80.0	94.2	103.3	100	110	3	2
	6HK16502506	100.0	115.8	127.3	120	130	1	1

1. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

\* May be 0 (no Circuit Breaker) or 1 (with Circuit Breaker).

**TABLE 8:** Electrical Data - (For **Multi-Source** Power Supply) - Copper Wire - 208/230-1-60<sup>1</sup> (AHR)

Models	Heater Models	Min. Circuit Ampacity		Max. O.C.P. <sup>2</sup> Amps/Type		75°C Wire Size - AWG	
		Circuit		Circuit		Circuit	
		1st	2nd	1st	2nd	1st	2nd
		208/230	208/230	208/230	208/230	208/230	208/230
AHR24B3XH21	6HK16501306	37.5/41.3	20.3/22.4	40/45	25/25	8/8	12/12
	6HK16501506	43.3/47.8	23.2/25.5	45/50	25/30	8/8	12/10
AHR30B3XH21	6HK16501306	37.5/41.3	23.0/25.4	40/45	25/30	8/8	10/10
	6HK16501506	43.3/47.8	25.9/28.7	45/50	30/30	8/8	10/10
AHR36B3XH21	6HK16501306	37.5/41.3	23.0/25.4	40/45	25/30	8/8	12/12
	6HK16501506	43.3/47.8	25.9/28.7	45/50	30/35	8/8	10/10
	6HK16501806	38.9/42.9	43.2/47.7	40/45	50/50	8/8	8/8
	6HK16502006	43.3/47.8	47.6/52.6	45/50	50/60	8/8	8/6
AHR42C3XH21	6HK16501306	37.5/41.3	23.0/25.4	40/45	25/30	8/8	12/12
	6HK16501506	43.3/47.8	25.9/28.7	45/50	30/30	8/8	10/10
AHR48D3XH21	6HK16501306	37.5/41.3	23.0/25.4	40/45	25/30	8/8	12/12
	6HK16501506	43.3/47.8	25.9/28.7	45/50	30/30	8/8	10/10
	6HK16501806	38.9/42.9	43.2/47.7	40/45	45/50	8/8	8/8
	6HK16502006	43.3/47.8	47.6/52.6	45/50	50/60	8/8	8/6
AHR60D3XH21	6HK16501306	37.5/41.3	23.0/25.4	40/45	25/30	8/8	12/12
	6HK16501506	43.3/47.8	25.9/28.7	45/50	30/30	8/8	10/10
	6HK16501806	38.9/42.9	43.2/47.7	40/45	45/50	8/8	8/8
	6HK16502006	43.3/47.8	47.6/52.6	45/50	50/60	8/8	8/6
	6HK16502506	64.9/71.7	47.6/52.6	70/80	50/60	4/4	8/6

1. If wire other than non-plated, 75° ambient, copper wire is used. consult applicable tables of the NEC and local codes.
2. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

**TABLE 9:** Electrical Data - (For **Multi-Source** Power Supply) - Copper Wire - 208/230-1-60<sup>1</sup> (AHE)

Models	Heater Models	Min. Circuit Ampacity		Max. O.C.P. <sup>2</sup> Amps/Type		75°C Wire Size - AWG	
		Circuit		Circuit		Circuit	
		1st	2nd	1st	2nd	1st	2nd
		208/230	208/230	208/230	208/230	208/230	208/230
AHE24B3XH21	6HK16501306	37.5/41.3	22.3/24.2	40/45	25/25	8/8	12/12
	6HK16501506	43.3/47.8	25.1/27.4	45/50	30/30	8/8	10/10
AHE30B3XH21	6HK16501306	37.5/41.3	22.3/24.2	40/45	25/25	8/8	12/12
	6HK16501506	43.3/47.8	26.8/27.4	45/50	30/30	8/8	10/10
AHE36C3XH21	6HK16501306	37.5/41.3	23.9/25.8	40/45	25/30	8/8	12/10
	6HK16501506	43.3/47.8	27.7/29.0	45/50	30/30	8/8	10/10
	6HK16501806	38.9/42.9	44.1/48.0	40/45	45/50	8/8	8/8
	6HK16502006	43.3/47.8	48.4/53.0	45/50	50/60	8/8	6/6
AHE42D3XH21	6HK16501306	37.5/41.3	23.9/25.8	45/45	25/30	8/8	12/10
	6HK16501506	43.3/47.8	27.7/29.0	45/50	30/30	8/8	10/10
AHE48D3XH21	6HK16501306	37.5/41.3	26.3/28.2	40/45	30/30	8/8	10/10
	6HK16501506	43.3/47.8	29.1/31.4	45/50	30/35	8/8	10/10
	6HK16501806	38.9/42.9	46.4/50.4	40/45	50/60	8/8	8/8
	6HK16502006	43.3/47.8	50.8/55.3	45/50	60/60	8/8	6/6
AHE60D3XH21	6HK16501306	37.5/41.3	26.3/28.2	40/45	30/30	8/8	10/10
	6HK16501506	43.3/47.8	29.1/31.4	45/50	30/35	8/8	10/10
	6HK16501806	38.9/42.9	46.4/50.4	40/45	50/60	8/8	8/8
	6HK16502006	43.3/47.8	50.8/55.3	45/50	60/60	8/8	6/6
	6HK16502506	64.9/71.7	50.8/55.3	70/80	60/60	4/4	6/6

1. If wire other than non-plated, 75° ambient, copper wire is used. consult applicable tables of the NEC and local codes.
2. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.



**TABLE 10:** Electrical Data - 208/230-3-60

Models	Heater Models*	Max. Static	PSC Min. Speed Tap	ECM Min. Speed Tap	Total Heat <sup>1</sup>				kW Staging			
					kW		MBH		W1 Only		W1 + W2	
					208V	230V	208V	230V	208V	230V	208V	230V
AHR/AHE24	6HK06501525	0.3	High	High #5	10.8	14.4	36.9	49.1	10.8	14.4	10.8	14.4
AHR/AHE30	6HK06501525	0.3	High	High #5	10.8	14.4	36.9	49.1	10.8	14.4	10.8	14.4
AHR/AHE36	6HK06501525	0.3	Med	Med High #4	10.8	14.4	36.9	49.1	10.8	14.4	10.8	14.4
	6HK16502025	0.3	High	High #5	14.4	19.2	49.1	65.5	7.2	9.6	14.4	19.2
AHR42C	6HK06501525	0.3	Med	Med High #4	10.8	14.4	36.9	49.1	10.8	14.4	10.8	14.4
AHE42D	6HK06501525	0.3	High	High #5	10.8	14.4	36.9	49.1	10.8	14.4	10.8	14.4
	6HK16502025	0.3	High	High #5	14.4	19.2	49.1	65.5	7.2	9.6	14.4	19.2
AHR/AHE48	6HK06501525	0.3	High	High #5	10.8	14.4	36.9	49.1	10.8	14.4	10.8	14.4
	6HK16502025	0.3	High	High #5	14.4	19.2	49.1	65.5	7.2	9.6	14.4	19.2
AHR/AHE60	6HK06501525	0.3	High	High #5	10.8	14.4	36.9	49.1	10.8	14.4	10.8	14.4
	6HK16502025	0.3	High	High #5	14.4	19.2	49.1	65.5	7.2	9.6	14.4	19.2
	6HK16502525	0.3	High	High #5	18	24	61.4	81.9	9.0	12.0	18.0	24.0

1. See conversion Table 3.

**TABLE 11:** Electrical Data - (For Single Source Power Supply) - Copper Wire - 208/230-3-60 (AHR)

Models	Heater Models*	Heater Amps 240V	Field Wiring					
			Min. Circuit Ampacity		Max. O.C.P. <sup>1</sup> Amps/Type		75°C Wire Size - AWG	
			208V	230V	208V	230V	208V	230V
AHR24B	6HK06501525	34.6	39.1	43.20	40	45	8	8
AHR30B	6HK06501525	34.6	41.7	46.20	45	50	8	8
AHR36B	6HK06501525	34.6	41.7	46.20	45	50	8	8
	6HK16502025	46.2	54.3	60.09	60	70	6	4
AHR42C	6HK06501525	34.6	41.7	46.20	45	50	8	8
AHR48D	6HK06501525	34.6	41.7	46.20	45	50	8	8
	6HK16502025	46.2	54.3	60.09	60	70	6	4
AHR60D	6HK06501525	34.6	41.7	46.20	45	50	8	8
	6HK16502025	46.2	54.3	60.09	60	70	6	4
	6HK16502525	57.7	66.8	73.87	70	80	4	4

1. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

\* May be 0 (no Circuit Breaker) or 1 (with Circuit Breaker).

**TABLE 12:** Electrical Data - (For Single Source Power Supply) - Copper Wire - 208/230-3-60 (AHE)

Models	Heater Models*	Heater Amps 240V	Field Wiring					
			Min. Circuit Ampacity		Max. O.C.P. <sup>1</sup> Amps/Type		75°C Wire Size - AWG	
			208V	230V	208V	230V	208V	230V
AHE24B	6HK06501525	34.6	41.0	44.95	45	50	8	8
AHE30B	6HK06501525	34.6	41.0	44.95	45	50	8	8
AHE36C	6HK06501525	34.6	42.6	46.57	45	50	8	8
	6HK16502025	46.2	55.2	60.47	60	70	6	4
AHE42D	6HK06501525	34.6	42.6	46.57	45	50	8	8
	6HK16502025	46.2	55.2	60.47	60	70	6	4
AHE48D	6HK06501525	34.6	45.0	48.95	50	50	8	8
	6HK16502025	46.2	57.6	62.84	60	70	6	4
AHE60D	6HK06501525	34.6	45.0	48.95	50	50	8	8
	6HK16502025	46.2	57.6	62.84	60	70	6	4
	6HK16502525	57.7	70.0	76.62	80	80	4	4

1. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

\* May be 0 (no Circuit Breaker) or 1 (with Circuit Breaker).

**TABLE 13:** Electrical Data - (For **Multi-Source** Power Supply) - Copper Wire - 208/230-3-60<sup>1</sup> (AHR)

Models	Heater Models	Min. Circuit Ampacity		Max. O.C.P. <sup>2</sup> Amps/Type		75°C Wire Size - AWG	
		Circuit		Circuit		Circuit	
		1st	2nd	1st	2nd	1st	2nd
		208/230	208/230	208/230	208/230	208/230	208/230
AHR36B	6HK16502025	29.3/33.6	25/28.9	30/35	30/30	10/10	10/10
AHR48D	6HK16502025	29.3/33.6	25/28.9	30/35	30/30	10/10	10/10
AHR60D	6HK16502025	29.3/33.6	25/28.9	30/35	30/30	10/10	10/10
	6HK16502525	35.5/40.3	31.3/36.1	40/45	35/40	8/8	10/8

1. If wire other than non-plated, 75° ambient, copper wire is used. consult applicable tables of the NEC and local codes.
2. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

**TABLE 14:** Electrical Data - (For **Multi-Source** Power Supply) - Copper Wire - 208/230-3-60<sup>1</sup> (AHE)

Models	Heater Models	Min. Circuit Ampacity		Max. O.C.P. <sup>2</sup> Amps/Type		75°C Wire Size - AWG	
		Circuit		Circuit		Circuit	
		1st	2nd	1st	2nd	1st	2nd
		208/230	208/230	208/230	208/230	208/230	208/230
AHE36C	6HK16502025	30.1/34.0	25/28.9	35/35	30/30	10/10	10/10
AHE42D	6HK16502025	30.1/34.0	25/28.9	35/35	30/30	10/10	10/10
AHE48D	6HK16502025	32.5/36.4	25/28.9	35/40	30/30	10/8	10/10
AHE60D	6HK16502025	32.5/36.4	25/28.9	35/40	30/30	10/8	10/10
	6HK16502525	38.8/43.6	31.3/36.1	40/45	35/40	8/8	10/8

1. If wire other than non-plated, 75° ambient, copper wire is used. consult applicable tables of the NEC and local codes.
2. O.C.P. = Over Current Protection device, must be HACR type Circuit Breaker or Time Delay fuse.

TABLE 15: Air Flow Data - 60 Hz Models - 208/230 Volt (AHR)

Models	Blower Motor Speed	CFM <sup>1</sup> @ External Static Pressure - IWC							m3/min @ External static pressure - Pascal						
		0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.003	0.005	0.008	0.010	0.013	0.015	0.018
<b>208 Volt</b>															
AHR18B	High	1024	1000	970	930	860	810	NA	28.7	28.0	27.2	26.0	24.1	22.7	NA
	Medium	756	731	700	670	620	550	NA	21.2	20.5	19.6	18.8	17.3	15.4	NA
	Low	557	531	495	445	375	315	195	15.6	14.9	13.9	12.5	10.5	8.8	5.5
AHR24B	High	995	970	935	900	925	795	645	27.9	27.2	26.2	25.2	25.9	22.3	18.1
	Medium	820	810	780	745	695	545	485	23.0	22.7	21.8	20.9	19.5	15.3	13.6
	Low	715	695	640	405	370	375	220	20.0	19.5	17.9	11.3	10.4	10.5	6.2
AHR30B	High	1380	1315	1245	1160	1075	990	885	38.6	36.8	34.9	32.5	30.1	27.7	24.8
	Medium	1060	1040	1005	955	890	860	820	29.7	29.1	28.1	26.7	24.9	24.1	23.0
	Low	1035	980	910	825	770	685	485	29.0	27.4	25.5	23.1	21.6	19.2	13.6
AHR36B	High	1410	1335	1270	1190	1110	990	820	39.5	37.4	35.6	33.3	31.1	27.7	23.0
	Medium	1215	1170	1115	1050	935	850	740	34.0	32.8	31.2	29.4	26.2	23.8	20.7
	Low	950	935	895	855	NA	NA	NA	26.6	26.2	25.1	23.9	NA	NA	NA
AHR42C	High	1800	1725	1645	1545	1360	1200	1050	50.4	48.3	46.1	43.3	38.1	33.6	29.4
	Medium	1535	1480	1415	1280	1155	1010	870	43.0	41.4	39.6	35.8	32.3	28.3	24.4
	Low	1225	1195	1095	1025	925	825	680	34.3	33.5	30.7	28.7	25.9	23.1	19.0
AHR48D	High	1890	1830	1755	1650	1565	1450	1285	52.9	51.2	49.1	46.2	43.8	40.6	36.0
	Medium	1515	1480	1450	1380	1295	1115	985	42.4	41.4	40.6	38.6	36.3	31.2	27.6
	Low	1170	1165	1140	1100	965	860	745	32.8	32.6	31.9	30.8	27.0	24.1	20.9
AHR48D	High	1911	1841	1757	1668	1564	1439	1233	53.5	51.5	49.2	46.7	43.8	40.3	34.5
	Medium	1556	1507	1450	1388	1266	1246	989	43.6	42.2	40.6	38.9	35.4	34.9	27.7
	Low	1211	1181	1151	1062	992	911	827	33.9	33.1	32.2	29.7	27.8	25.5	23.2
<b>230 Volt</b>															
AHR18B	High	1145	1100	1055	1005	930	845	725	32.0	30.8	29.5	28.1	26.0	23.7	20.3
	Medium	755	750	725	665	605	485	435	21.2	21.0	20.3	18.6	16.9	13.6	12.2
	Low	680	655	625	585	540	395	300	19.0	18.3	17.5	16.4	15.1	11.1	8.4
AHR24B	High	1305	1285	1225	1175	920	915	835	36.5	36.0	34.3	32.9	25.8	25.6	23.4
	Medium	930	920	890	845	705	760	505	26.0	25.8	24.9	23.7	19.8	21.3	14.1
	Low	735	730	700	670	545	470	NA	20.6	20.4	19.6	18.8	15.3	13.2	NA
AHR30B	High	1450	1380	1300	1215	1130	1030	910	40.6	38.6	36.4	34.0	31.6	28.8	25.5
	Medium	1330	1280	1205	1135	1050	975	780	37.2	35.8	33.7	31.8	29.4	27.3	21.8
	Low	1160	1120	1065	1005	930	825	635	32.5	31.4	29.8	28.2	26.0	23.1	17.8
AHR36B	High	1470	1390	1325	1245	1155	1045	880	41.2	38.9	37.1	34.9	32.3	29.3	24.6
	Medium	1325	1265	1205	1125	1025	965	840	37.1	35.4	33.7	31.5	28.7	27.0	23.5
	Low	1115	1075	1025	950	NA	NA	NA	31.2	30.1	28.7	26.6	NA	NA	NA
AHR42C	High	1750	1670	1570	1477	1260	1125	935	49.0	46.8	44.0	41.4	35.3	31.5	26.2
	Medium	1590	1520	1435	1277	1150	1010	870	44.5	42.6	40.2	35.7	32.2	28.3	24.4
	Low	1330	1280	1200	1083	980	850	NA	37.2	35.8	33.6	30.3	27.4	23.8	NA
AHR48D	High	2005	1940	1850	1755	1650	1530	1405	56.1	54.3	51.8	49.1	46.2	42.8	39.3
	Medium	1705	1665	1605	1510	1425	1340	1185	47.7	46.6	44.9	42.3	39.9	37.5	33.2
	Low	1355	1330	1300	1245	1170	990	980	37.9	37.2	36.4	34.9	32.8	27.7	27.4
AHR60D	High	2034	1955	1858	1753	1640	1522	1296	56.9	54.8	52.0	49.1	45.9	42.6	36.3
	Medium	1733	1672	1609	1527	1431	1272	1220	48.5	46.8	45.1	42.8	40.1	35.6	34.1
	Low	1388	1359	1313	1255	1133	1004	912	38.9	38.1	36.8	35.1	31.7	28.1	25.5

1. Dry coil conditions only, tested without filters.

Air handler units are CSA listed to UL 1995/CSA C22.2 236-05 up to 0.30" w.c. external static pressure, including air filter, wet coil, and largest kW size heater, unless otherwise noted.

TABLE 16: Air Flow Data - 60 Hz Models - 208 Volt (AHE)

Models	Blower Motor Speed	CFM <sup>1</sup> @ External Static Pressure - IWC							m3/min @ External static pressure - Pascal						
		0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.003	0.005	0.008	0.010	0.013	0.015	0.018
<b>208 Volt</b>															
AHE18B	High #5	1074	1029	999	954	911	865	812	30.1	28.8	28.0	26.7	25.5	24.2	22.7
	Med High #4	895	846	802	759	701	630	526	25.1	23.7	22.5	21.3	19.6	17.6	14.7
	Med #3	663	610	556	482	334	219	173	18.6	17.1	15.6	13.5	9.4	6.1	4.8
	Med Low #2	630	466	346	196	170	67	23	17.7	13.0	9.7	5.5	4.8	1.9	0.6
	Low #1	630	466	346	196	170	67	23	17.7	13.0	9.7	5.5	4.8	1.9	0.6
AHE24B	High #5	1147	1107	1076	1040	992	942	861	32.1	31.0	30.1	29.1	27.8	26.4	24.1
	Med High #4	1009	974	941	903	859	811	762	28.3	27.3	26.3	25.3	24.0	22.7	21.3
	Med #3	826	785	744	690	639	566	501	23.1	22.0	20.8	19.3	17.9	15.9	14.0
	Med Low #2	654	590	556	479	419	307	251	18.3	16.5	15.6	13.4	11.7	8.6	7.0
	Low #1	580	491	425	317	224	189	73	16.2	13.8	11.9	8.9	6.3	5.3	2.1
AHE30B	High #5	1147	1107	1076	1040	992	942	861	32.1	31.0	30.1	29.1	27.8	26.4	24.1
	Med High #4	1009	974	941	903	859	811	762	28.3	27.3	26.3	25.3	24.0	22.7	21.3
	Med #3	826	785	744	690	639	566	501	23.1	22.0	20.8	19.3	17.9	15.9	14.0
	Med Low #2	654	590	556	479	419	307	251	18.3	16.5	15.6	13.4	11.7	8.6	7.0
	Low #1	580	491	425	317	224	189	73	16.2	13.8	11.9	8.9	6.3	5.3	2.1
AHE36C	High #5	1473	1417	1361	1304	1241	1171	1109	41.2	39.7	38.1	36.5	34.7	32.8	31.0
	Med High #4	1257	1204	1138	1076	1000	928	856	35.2	33.7	31.9	30.1	28.0	26.0	24.0
	Med #3	1069	997	912	831	772	697	617	29.9	27.9	25.5	23.3	21.6	19.5	17.3
	Med Low #2	994	800	705	621	554	488	432	27.8	22.4	19.7	17.4	15.5	13.7	12.1
	Low #1	904	692	411	329	256	152	NA	25.3	19.4	11.5	9.2	7.2	4.2	NA
AHE42D	High #5	1619	1577	1531	1484	1428	1372	1307	45.3	44.2	42.9	41.6	40.0	38.4	36.6
	Med High #4	1434	1391	1346	1292	1235	1164	1054	40.2	39.0	37.7	36.2	34.6	32.6	29.5
	Med #3	1243	1192	1135	1073	978	882	778	34.8	33.4	31.8	30.0	27.4	24.7	21.8
	Med Low #2	1141	1027	952	842	724	572	559	32.0	28.8	26.7	23.6	20.3	16.0	15.7
	Low #1	1025	851	465	418	253	208	123	28.7	23.8	13.0	11.7	7.1	5.8	3.4
AHE48D	High #5	1847	1812	1775	1725	1684	1645	1600	51.7	50.7	49.7	48.3	47.2	46.1	44.8
	Med High #4	1675	1640	1597	1561	1522	1479	1421	46.9	45.9	44.7	43.7	42.6	41.4	39.8
	Med #3	1436	1394	1349	1301	1246	1182	1095	40.2	39.0	37.8	36.4	34.9	33.1	30.7
	Med Low #2	1250	1211	1157	1100	1013	924	854	35.0	33.9	32.4	30.8	28.4	25.9	23.9
	Low #1	1151	1029	965	857	779	720	639	32.2	28.8	27.0	24.0	21.8	20.2	17.9
AHE60D	High #5	2083	2042	2002	1959	1921	1875	1829	58.3	57.2	56.1	54.8	53.8	52.5	51.2
	Med High #4	1893	1856	1815	1776	1728	1688	1639	53.0	52.0	50.8	49.7	48.4	47.3	45.9
	Med #3	1642	1609	1564	1512	1467	1416	1340	46.0	45.1	43.8	42.3	41.1	39.6	37.5
	Med Low #2	1443	1401	1360	1307	1242	1160	1062	40.4	39.2	38.1	36.6	34.8	32.5	29.7
	Low #1	1259	1198	1140	1067	972	900	797	35.3	33.5	31.9	29.9	27.2	25.2	22.3

1. Dry coil conditions only, tested without filters.

Air handler units are CSA listed to UL 1995/CSA C22.2 236-05 up to 0.30" w.c. external static pressure, including air filter, wet coil, and largest kW size heater, unless otherwise noted.

TABLE 17: Air Flow Data - 60 Hz Models - 230 Volt - AHE

Models AHE	Blower Motor Speed	CFM <sup>1</sup> @ External Static Pressure - IWC							m3/min @ External static pressure - Pascal						
		0.10	0.20	0.30	0.40	0.50	0.60	0.70	0.003	0.005	0.008	0.010	0.013	0.015	0.018
<b>230 Volt</b>															
AHE18B	High #5	1075	1041	1003	970	930	885	842	30.1	29.1	28.1	27.2	26.0	24.8	23.6
	Med High #4	895	845	808	767	709	647	561	25.1	23.7	22.6	21.5	19.9	18.1	15.7
	Med #3	663	618	557	490	348	267	192	18.6	17.3	15.6	13.7	9.8	7.5	5.4
	Med Low #2	629	468	356	197	175	68	23	17.6	13.1	10.0	5.5	4.9	1.9	0.6
	Low #1	629	468	356	197	175	68	23	17.6	13.1	10.0	5.5	4.9	1.9	0.6
AHE24B	High #5	1156	1120	1093	1056	1014	951	862	32.4	31.4	30.6	29.6	28.4	26.6	24.1
	Med High #4	1021	987	952	918	873	836	787	28.6	27.6	26.7	25.7	24.4	23.4	22.0
	Med #3	829	789	754	698	654	585	532	23.2	22.1	21.1	19.5	18.3	16.4	14.9
	Med Low #2	681	621	575	496	435	336	262	19.1	17.4	16.1	13.9	12.2	9.4	7.3
	Low #1	598	503	437	340	259	203	74	16.7	14.1	12.2	9.5	7.3	5.7	2.1
AHE30B	High #5	1156	1120	1093	1056	1014	951	862	32.4	31.4	30.6	29.6	28.4	26.6	24.1
	Med High #4	1021	987	952	918	873	836	787	28.6	27.6	26.7	25.7	24.4	23.4	22.0
	Med #3	829	789	754	698	654	585	532	23.2	22.1	21.1	19.5	18.3	16.4	14.9
	Med Low #2	681	621	575	496	435	336	262	19.1	17.4	16.1	13.9	12.2	9.4	7.3
	Low #1	598	503	437	340	259	203	74	16.7	14.1	12.2	9.5	7.3	5.7	2.1
AHE36C	High #5	1465	1415	1360	1307	1246	1183	1118	41.0	39.6	38.1	36.6	34.9	33.1	31.3
	Med High #4	1260	1204	1142	1075	1008	946	876	35.3	33.7	32.0	30.1	28.2	26.5	24.5
	Med #3	1088	1022	939	862	782	721	626	30.5	28.6	26.3	24.1	21.9	20.2	17.5
	Med Low #2	998	810	717	630	562	493	444	27.9	22.7	20.1	17.6	15.7	13.8	12.4
	Low #1	903	707	411	323	265	152	NA	25.3	19.8	11.5	9.0	7.4	4.3	NA
AHE42D	High #5	1632	1589	1542	1494	1446	1391	1335	45.7	44.5	43.2	41.8	40.5	38.9	37.4
	Med High #4	1430	1390	1346	1294	1238	1168	960	40.0	38.9	37.7	36.2	34.7	32.7	26.9
	Med #3	1238	1198	1145	1082	993	908	805	34.7	33.6	32.1	30.3	27.8	25.4	22.5
	Med Low #2	1118	1020	947	851	734	666	563	31.3	28.6	26.5	23.8	20.6	18.7	15.8
	Low #1	998	772	477	418	349	NA	NA	27.9	21.6	13.4	11.7	9.8	NA	NA
AHE48D	High #5	1861	1823	1787	1750	1708	1666	1620	52.1	51.1	50.0	49.0	47.8	46.7	45.3
	Med High #4	1674	1640	1599	1562	1516	1472	1432	46.9	45.9	44.8	43.7	42.5	41.2	40.1
	Med #3	1442	1405	1358	1311	1262	1197	1108	40.4	39.3	38.0	36.7	35.3	33.5	31.0
	Med Low #2	1257	1220	1163	1103	1031	942	864	35.2	34.2	32.6	30.9	28.9	26.4	24.2
	Low #1	1153	1031	967	867	764	718	633	32.3	28.9	27.1	24.3	21.4	20.1	17.7
AHE60D	High #5	2091	2053	2016	1975	1937	1906	1869	58.5	57.5	56.4	55.3	54.2	53.4	52.3
	Med High #4	1903	1868	1832	1791	1748	1703	1660	53.3	52.3	51.3	50.1	49.0	47.7	46.5
	Med #3	1634	1598	1562	1516	1468	1422	1350	45.8	44.7	43.7	42.4	41.1	39.8	37.8
	Med Low #2	1447	1404	1361	1318	1257	1164	1092	40.5	39.3	38.1	36.9	35.2	32.6	30.6
	Low #1	1268	1203	1148	1073	978	907	839	35.5	33.7	32.1	30.0	27.4	25.4	23.5

1. Dry coil conditions only, tested without filters.

Air handler units are CSA listed to UL 1995/CSA C22.2 236-05 up to 0.30" w.c. external static pressure, including air filter, wet coil, and largest kW size heater, unless otherwise noted.

## SECTION IX: MAINTENANCE

Filters must be cleaned or replaced when they become dirty. Inspect at least once per month. The frequency of cleaning depends upon the hours of operation and the local atmospheric conditions. Clean filters keep unit efficiency high.

### COIL CLEANING

If the coil needs to be cleaned, it should be wash with a evaporator coil cleaner. Follow directions from coil cleaner.

## LUBRICATION

The bearings of the blower motor are permanently lubricated.

## CONDENSATE DRAINS

During the cooling season check the condensate drain lines to be sure that condensate is flowing from the primary drain but not from the secondary drain. If condensate ever flows from the secondary drain the unit should be promptly shut off and the condensate pan and drains cleaned to insure a free flowing primary drain.



SECTION X: WIRING DIAGRAM

WHEN INSTALLING HEATER KIT, BE SURE THE BLOWER SPEED IS SET TO THE SPEED SPECIFIED FOR THE AIR HANDLER/HEATER KIT COMBINATION ON THIS UNIT'S INSTALLATION INSTRUCTIONS.

SEE INSTALLATION INSTRUCTIONS FOR PROPER LOW VOLTAGE FIELD WIRING CONNECTIONS.

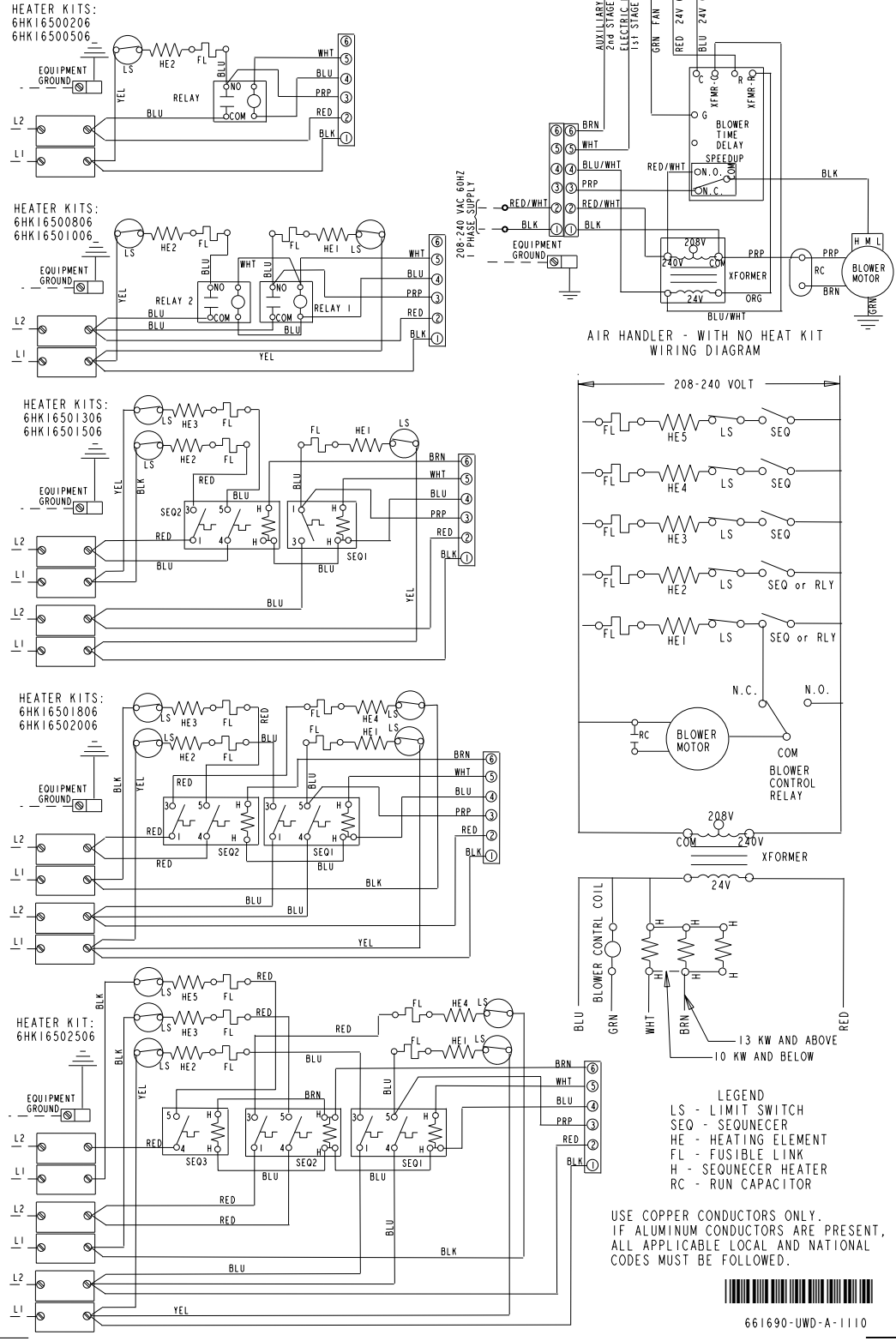


FIGURE 15: Wiring Diagram - PSC - Single Phase Heat Kits

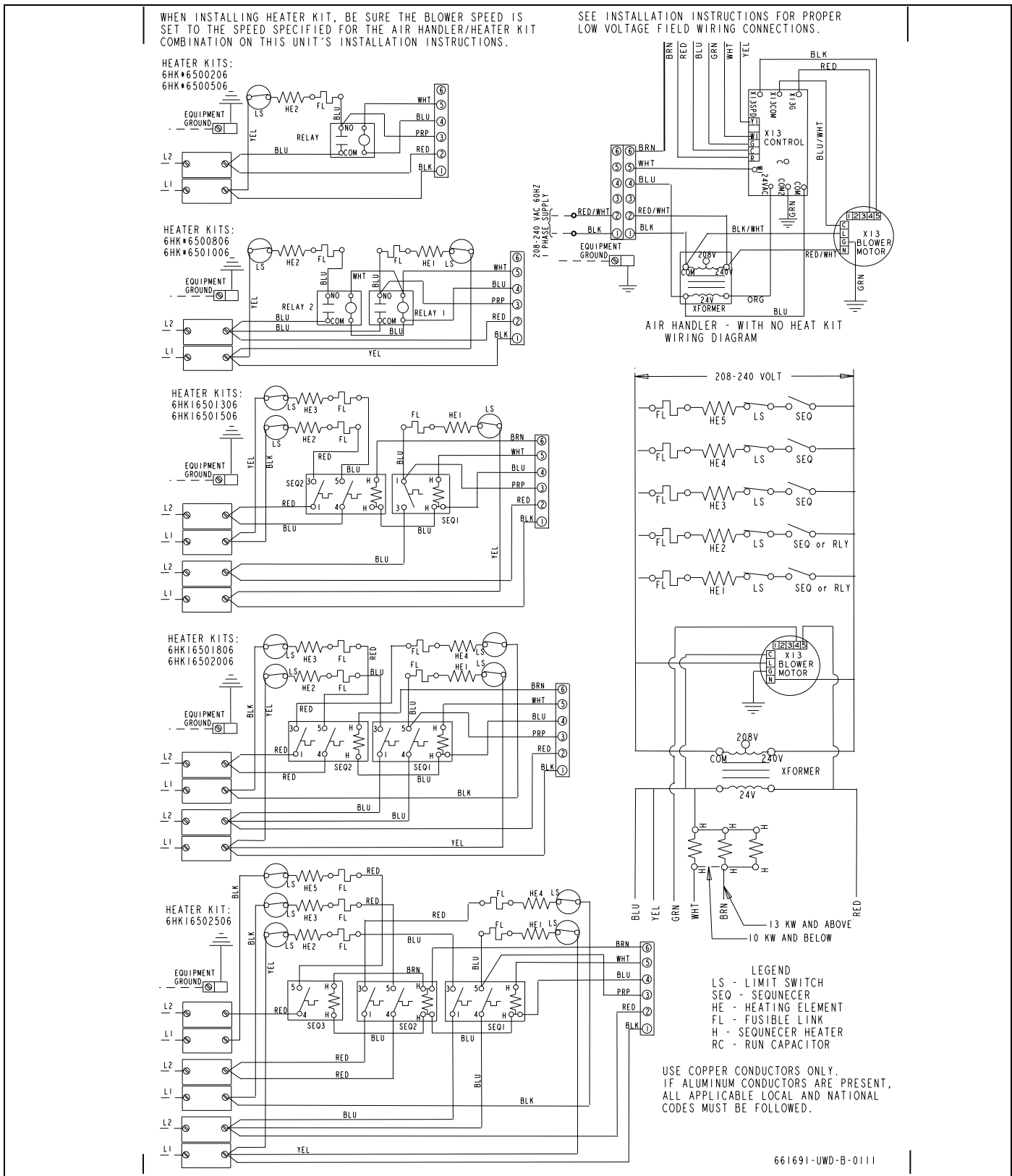
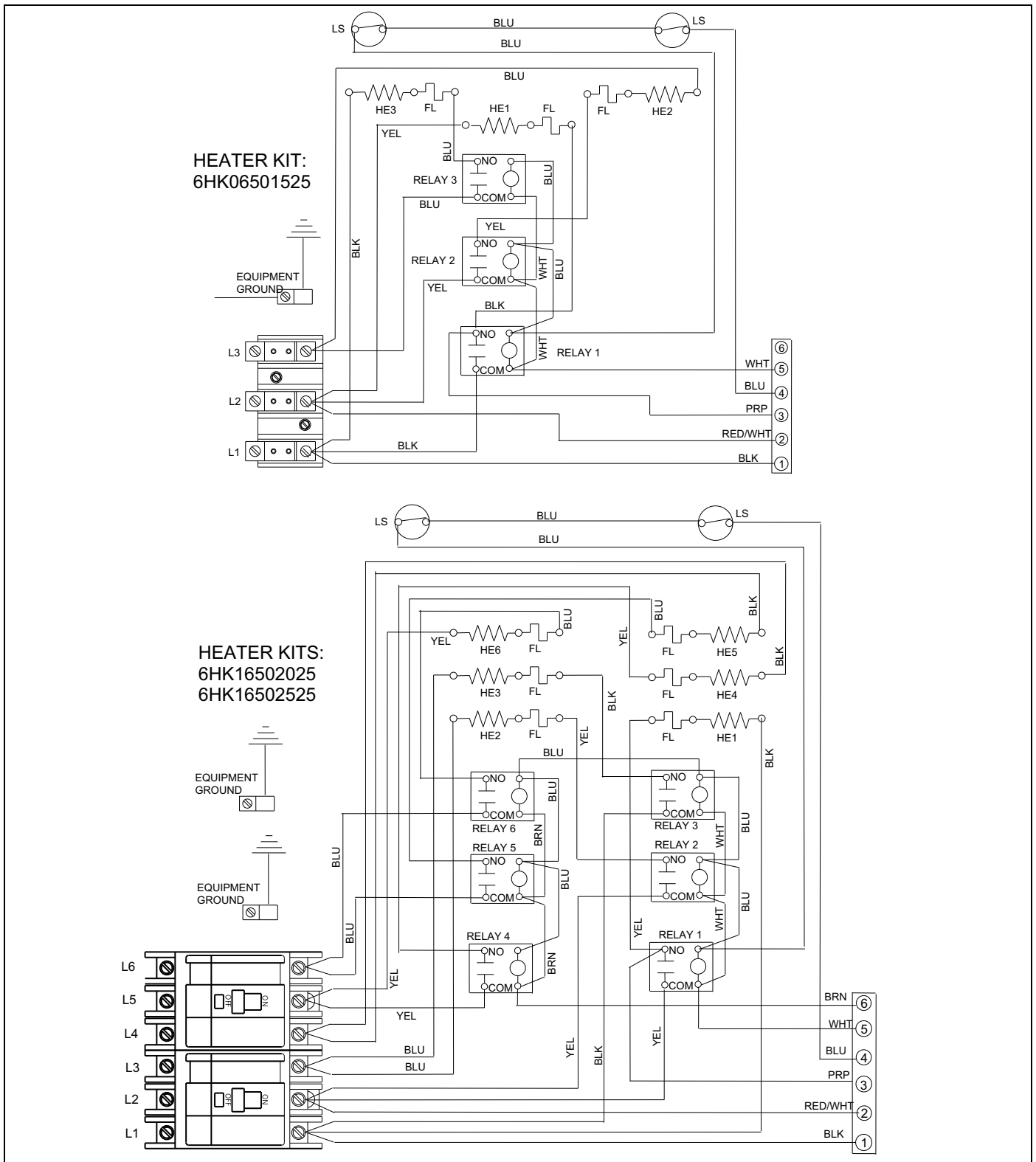


FIGURE 16: Wiring Diagram - ECM - Single Phase Heat Kits



SECTION XI: TYPICAL THERMOSTAT CONNECTIONS

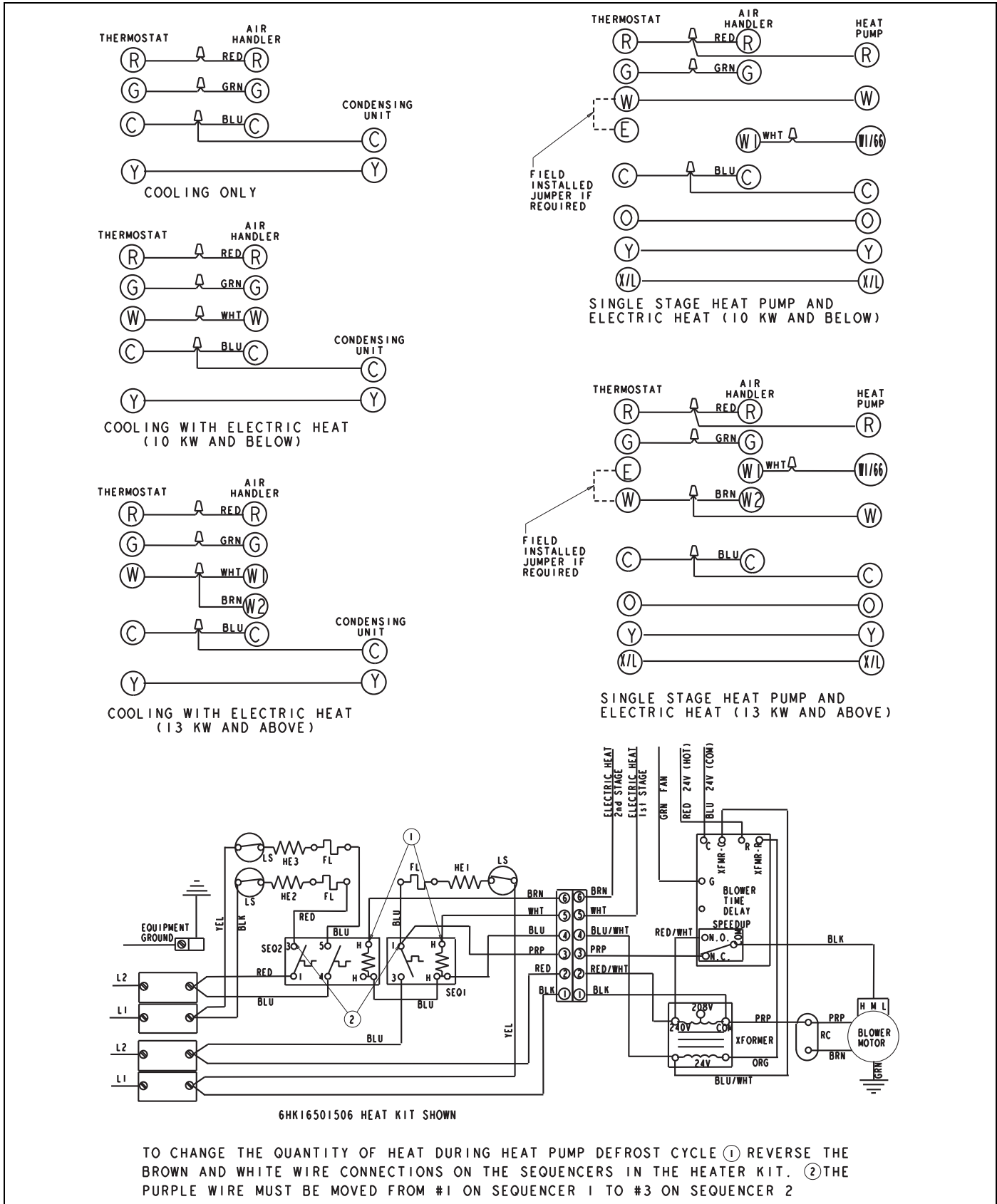
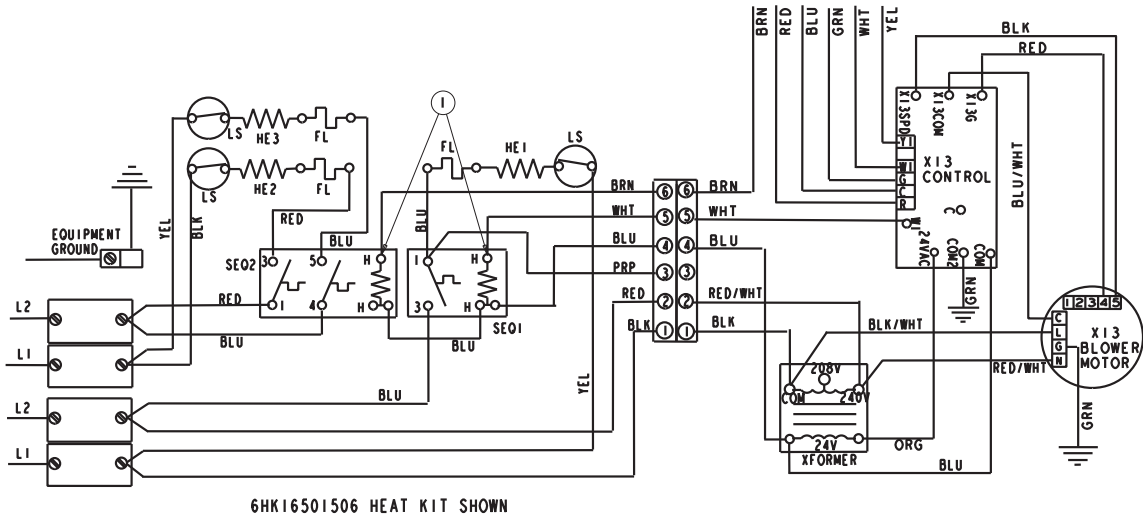
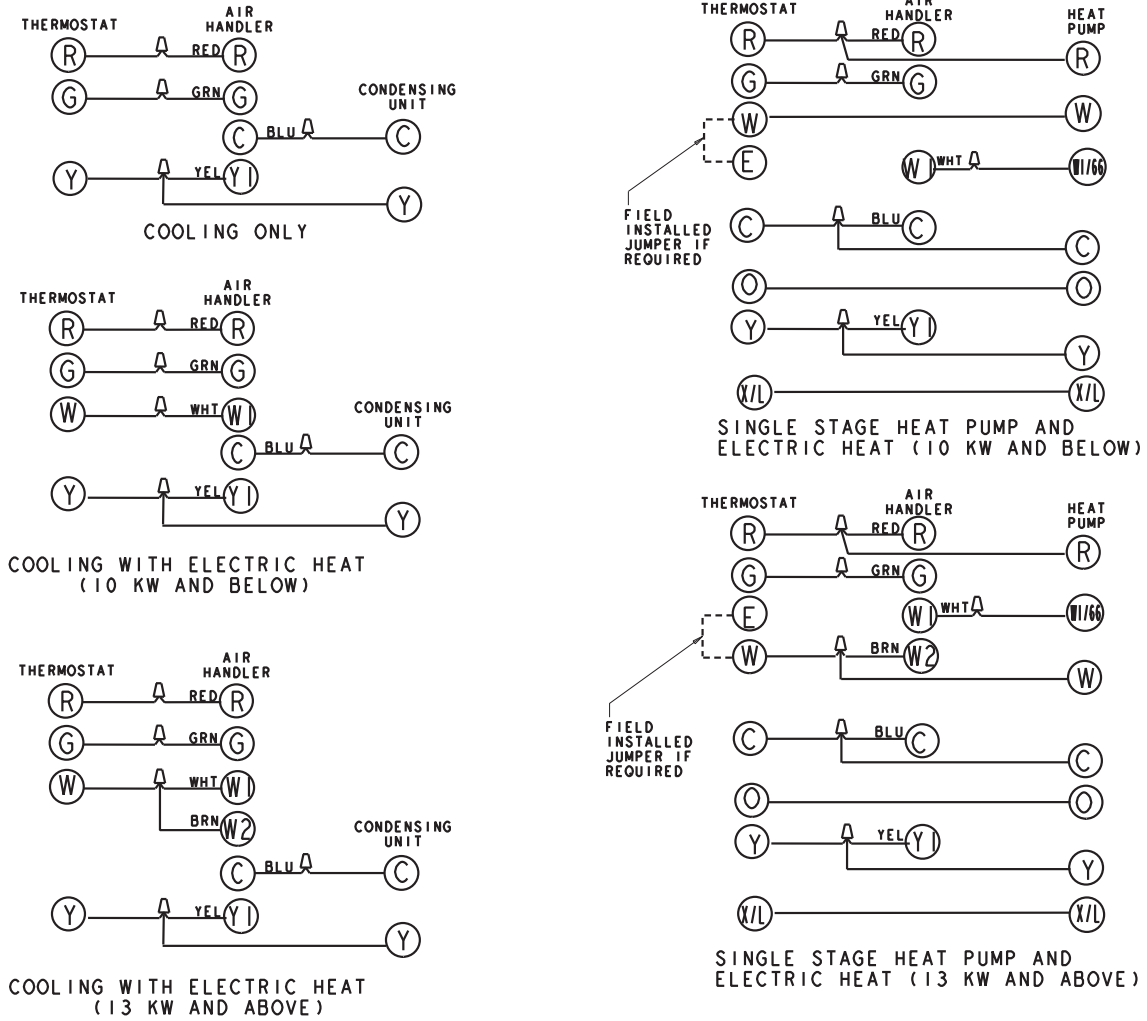


FIGURE 18: Typical Wiring Diagram - PSC



TO CHANGE THE QUANTITY OF HEAT DURING HEAT PUMP DEFROST CYCLE ① REVERSE THE BROWN AND WHITE WIRE CONNECTIONS ON THE SEQUENCERS IN THE HEATER KIT.

FIGURE 19: Typical Wiring Diagram - ECM



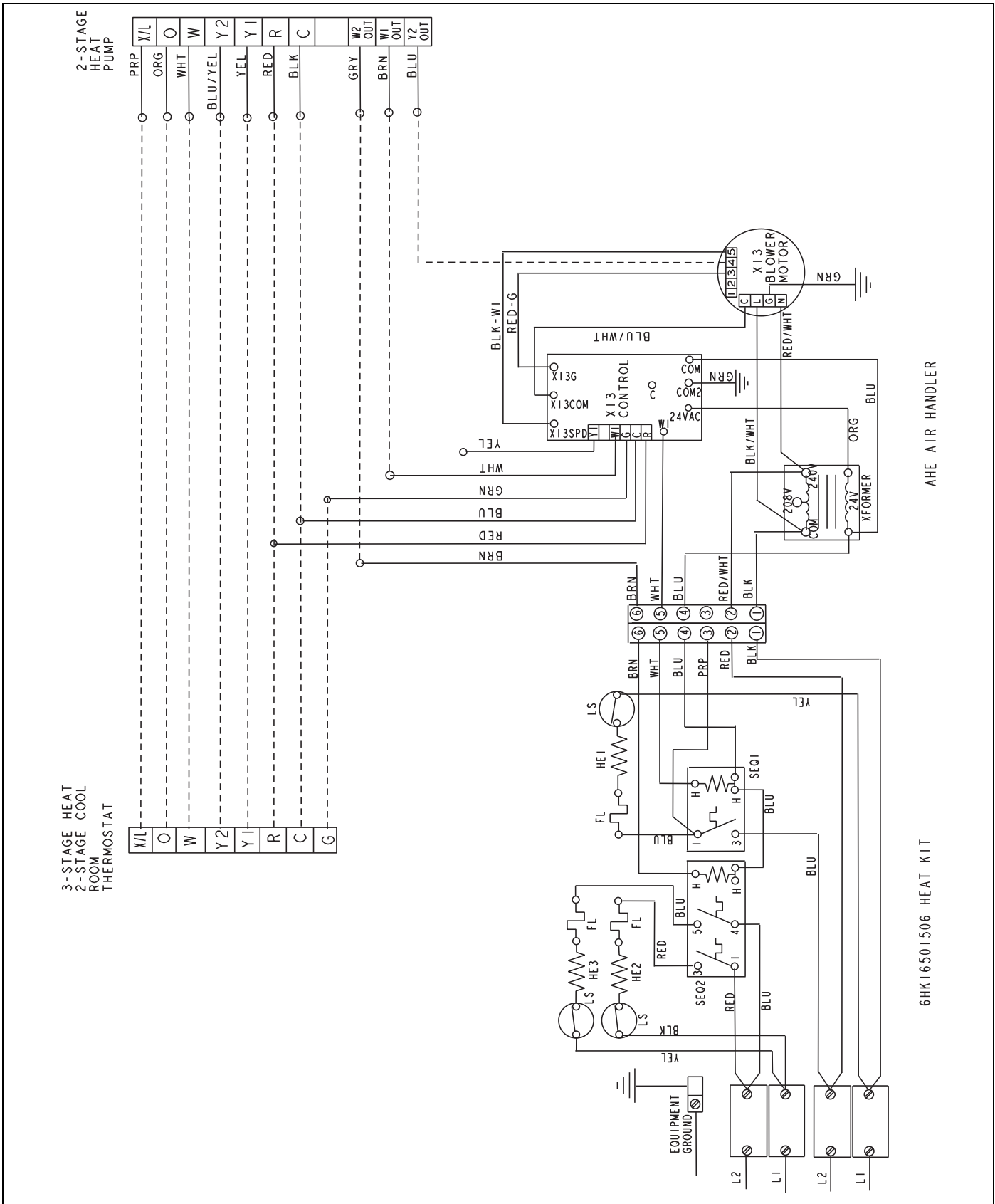


FIGURE 20: Typical Thermostat Wiring for 2-Stage Heat Pump with ECM Blower Motor - AHE