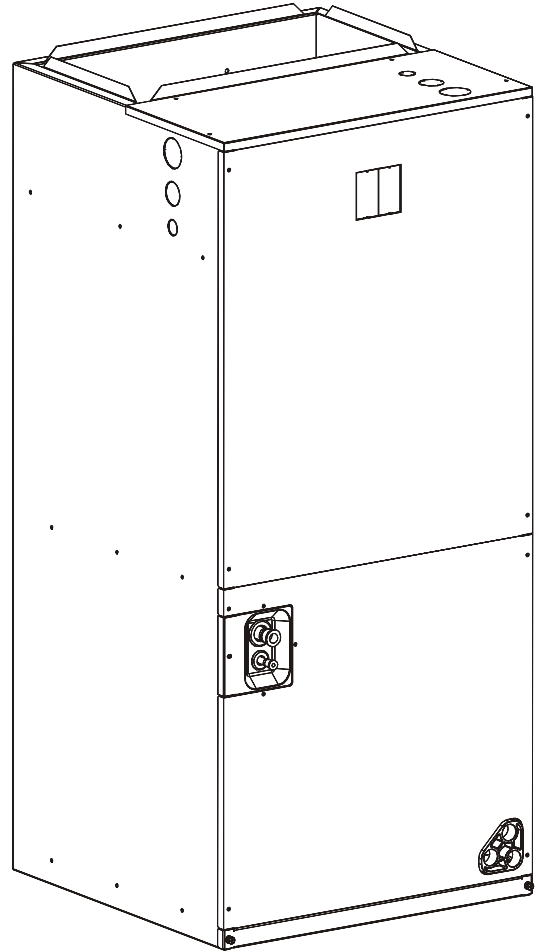


Installation Manual

High Efficiency Air Handlers
2-5 Ton Capacity
R-410A TXV Inside

E4AH5E24A1J30A
E4AH5E36A1J30A
E4AH5E48A1K30A
E4AH5E60A1K30A



NOTE: Appearance of unit may vary.
Installation must be performed in accordance
with the requirements of NEC and CEC by
authorized personnel only.

All phases of this installation must comply with National, State and Local Codes.

This document is customer's property and is to remain with this unit. Please return it to customer with service information upon completion of work.

These instructions are intended as an assist to qualified and licensed personnel for proper installation, adjustment and operation of ECM air handler units. Read it thoroughly before attempting installation or service work.

Failure to follow these instructions may result in fire, electrical shock, property damage, personal injury or death.

The instructions do not cover all variations in systems or provide for every possible contingency to be met in connection with the installation.



88-E4AH5001-1D-EN

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1. Safety

Read the following safety instructions before installing the unit or doing service work.

WARNING may cause personal death or serious injury.

CAUTION may lead to injury or structural damage under some conditions.



WARNING

FIRE HAZARD!

WITH HEAT PUMP INSTALLATIONS, SOME ELECTRIC HEATERS ARE POSITION SENSITIVE. USE ONLY APPROVED HEATER TO UNIT COMBINATIONS PER NAMEPLATE AND SET BLOWER AIRFLOW SPEED PER NAMEPLATE INSTRUCTIONS.

WHEN HEATERS COME SUPPLIED WITH CIRCUIT BREAKERS, USE 240/208 VOLT SUPPLY POWER WITH 120 VOLTS (NOMINAL) TO GROUND.

FAILURE TO FOLLOW THE ABOVE COULD RESULT IN DEATH, SERIOUS INJURY OR EQUIPMENT DAMAGE.



WARNING

PRESSURIZED REFRIGERANT! — IMPROPER REFRIGERANT!

SYSTEM CONTAINS OIL AND REFRIGERANT UNDER HIGH PRESSURE. RECOVER REFRIGERANT TO RELIEVE PRESSURE BEFORE OPENING THE SYSTEM.

DO NOT USE NON-APPROVED REFRIGERANTS OR REFRIGERANT SUBSTITUTES OR REFRIGERANT ADDITIVES. SEE OUTDOOR UNIT NAMEPLATE FOR REFRIGERANT TYPE.

FAILURE TO FOLLOW THE ABOVE COULD RESULT IN DEATH, SERIOUS INJURY OR EQUIPMENT DAMAGE.



WARNING

THIS PRODUCT CAN EXPOSE YOU TO CHEMICALS INCLUDING LEAD, WHICH ARE KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

FOR MORE INFORMATION GO TO www.p65Warnings.ca.gov



WARNING

FLAMMABLE VAPORS!

THE USE AND STORAGE OF GASOLINE OR OTHER FLAMMABLE VAPORS AND LIQUIDS IN OPEN CONTAINERS IN THE VICINITY OF THIS FURNACE CAN RESULT IN EXPLOSION OR FIRE.

FAILURE TO FOLLOW THE ABOVE COULD RESULT IN DEATH OR SERIOUS INJURY, OR PROPERTY DAMAGE.



WARNING

HAZARDOUS VOLTAGE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING. INSURE THAT ALL MOTOR CAPACITORS HAVE DISCHARGED STORED VOLTAGE.

FAILURE TO DO THE ABOVE COULD RESULT IN DEATH OR SERIOUS INJURY.



WARNING

FIBERGLASS WOOL EXPOSURE!

REFER TO OWNER'S INFORMATION MANUAL PROVIDED WITH THIS UNIT FOR PROPER INSTALLATION, OPERATING AND MAINTENANCE INSTRUCTIONS.

DISTURBING THE INSULATION IN THIS PRODUCT DURING INSTALLATION, MAINTENANCE OR REPAIR WILL EXPOSE YOU TO AIRBORNE PARTICLES OF GLASS WOOL FIBERS AND CERAMIC FIBERS KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER THROUGH INHALATION. GLASS WOOL FIBERS COULD ALSO CAUSE RESPIRATORY, SKIN OR EYE IRRITATION.



WARNING

SHARP EDGES!

AVOID CONTACT WITH COIL FINS AND SHEET METAL EDGES.

FAILURE TO FOLLOW THE ABOVE COULD RESULT IN DEATH OR SERIOUS INJURY.



WARNING

USE COPPER CONDUCTORS ONLY!

UNIT TERMINALS ARE NOT DESIGNED TO ACCEPT OTHER TYPES OF CONDUCTORS.

FAILURE TO DO THE ABOVE COULD RESULT IN EQUIPMENT DAMAGE.



WARNING

ROTATING FAN BLADE!

DISCONNECT ALL ELECTRIC POWER INCLUDING REMOTE DISCONNECTS BEFORE SERVICING.

FAILURE TO DISCONNECT POWER BEFORE SERVICING CAN CAUSE SEVERE PERSONAL INJURY OR DEATH.

Note:

Air Handlers E4AH5E24A1J30 and E4AH5E36A1J30 have been evaluated in accordance with the Code of Federal Regulations, Chapter XX, Part 3280 or the equivalent. "SUITABLE FOR MOBILE HOME USE"

2. Dimensions

NOTE: 25" CLEARANCE IS REQUIRED IN THE FRONT OF THE UNIT FOR FILTER AND COIL MAINTENANCE

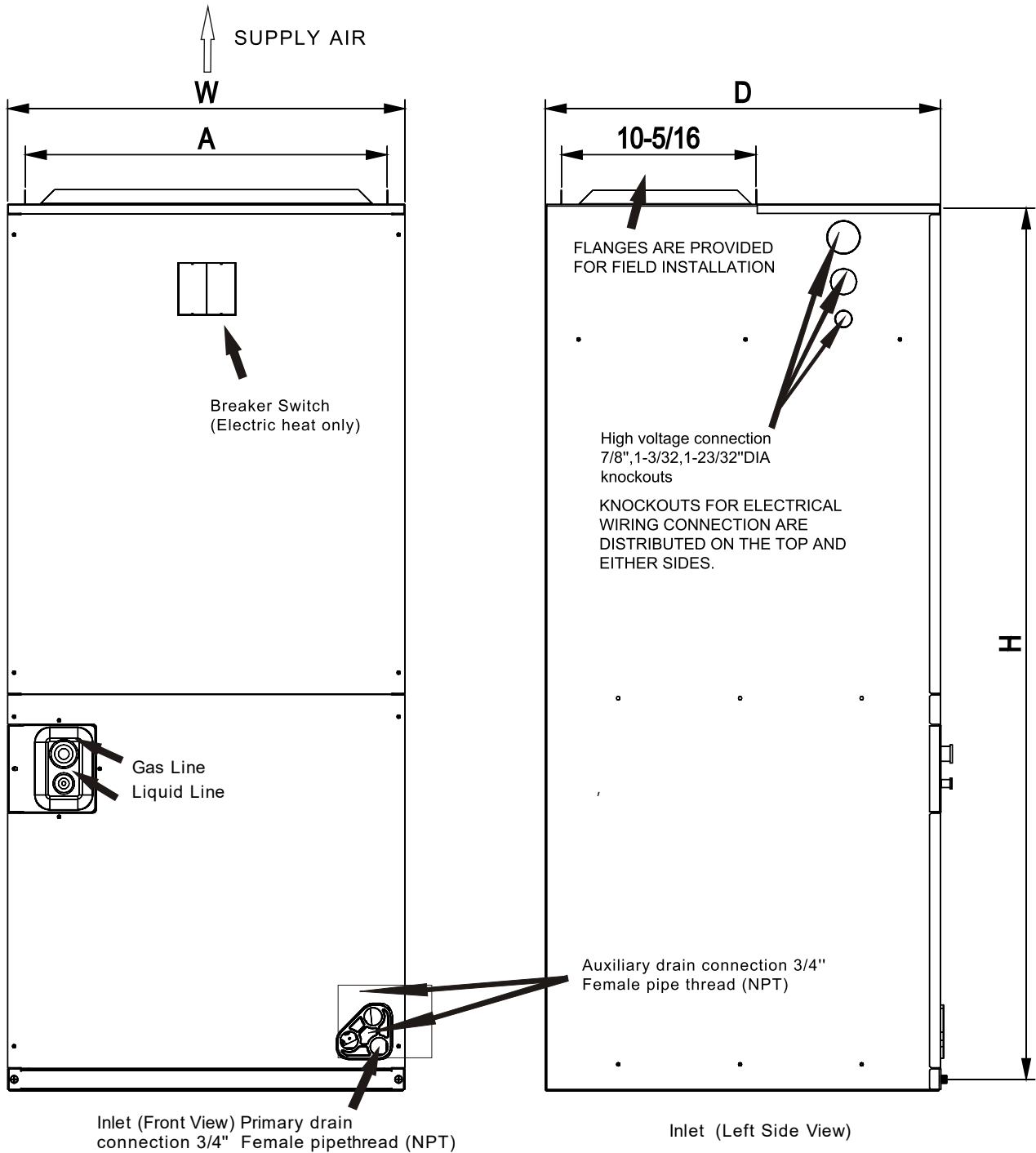


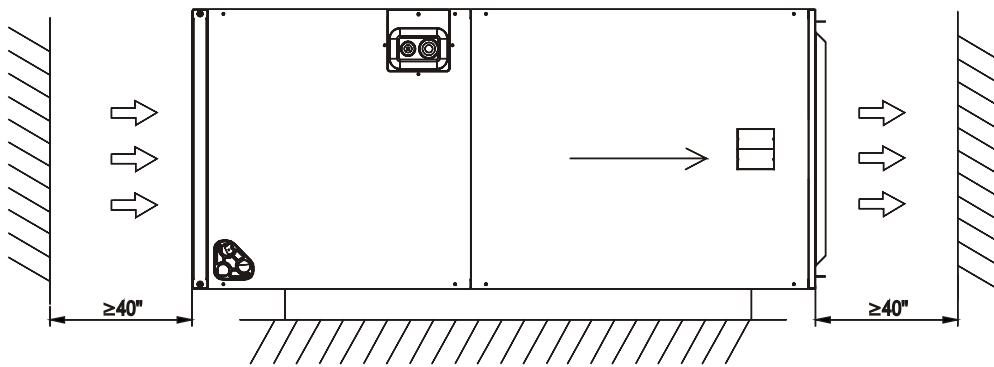
Figure 2-1 Unit dimensions

Table 1. Unit Dimensions

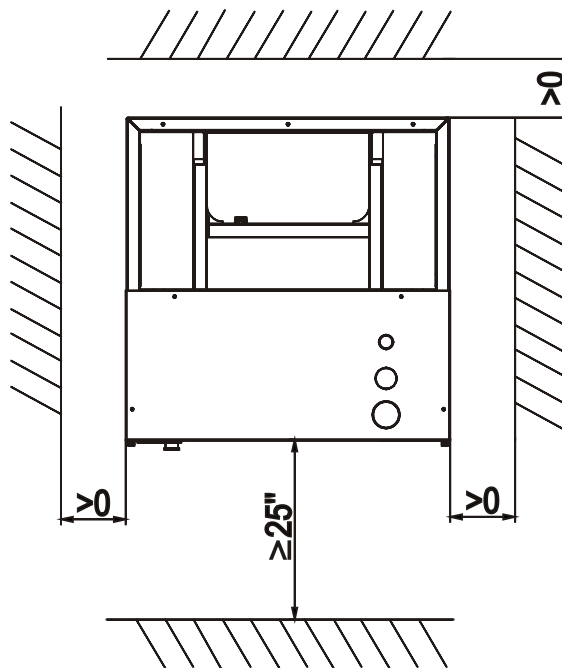
Model	Dimensions (in.)					
	H	W	D	A	Liquid Line Connection	Gas Line Connection
E4AH5E24A1J30A E4AH5E36A1J30A	46-1/2	21	21	19-1/4	3/8	3/4
E4AH5E48A1K30A E4AH5E60A1K30A	56	24-1/2	21	22-3/4	3/8	7/8

Select a solid and level site, keep enough space for proper installation and maintenance.

Adjust motor speed tap on indoor main control board (MCB) to select correct air flow according to blower performance table.



a) Horizontal position



b) Vertical position

Figure 2-2 Clearance requirement

3. Applications

3.1 Vertical up-flow and Horizontal right-flow

Vertical up-flow and horizontal right-flow configurations are the factory settings on all models. If return air is to be ducted, install duct flush with floor. Set unit on floor over opening.

IMPORTANT

Lightly tighten the drain connections so they do not leak. Using excessive force may cause damage to the drain connections. Torque applied to drain connections should not exceed 10.ft.lbs. E4AH Air Handlers are not approved for downflow configurations.

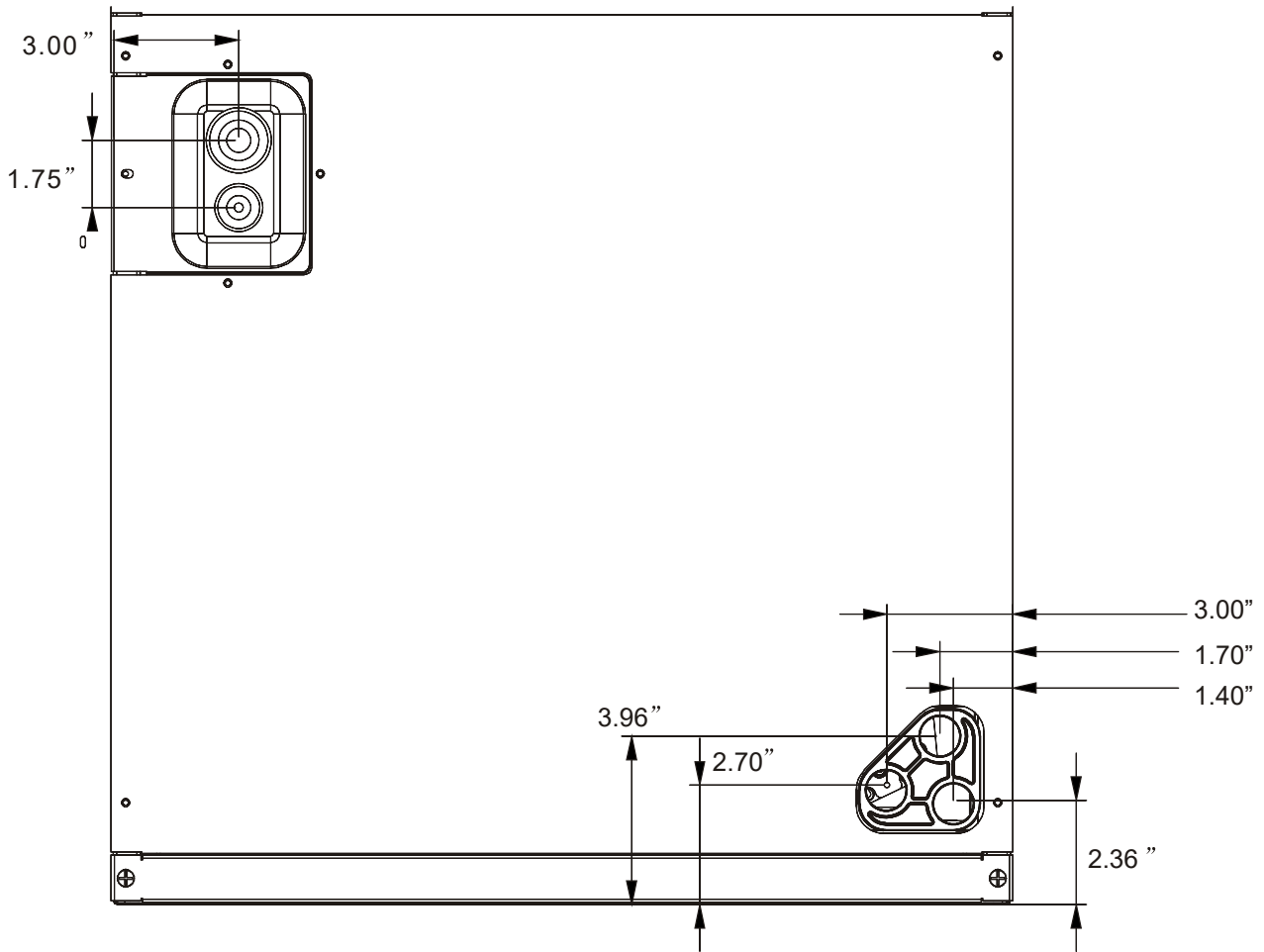


Figure 3-1 Dimensions for front connection coil

3.1.1 Installation of drainpipe

1. When the air handler is installed vertically, please block the upper drainage hole with a cover. The lower right of the drainage hole is connected with the drainage pipe, and the lower left of the drainage hole is connected with the overflow pipe that should be exposed to the air; If the pipe ① is draining, which means the pipe ② is blocked. Contact maintenance personnel as soon as possible.

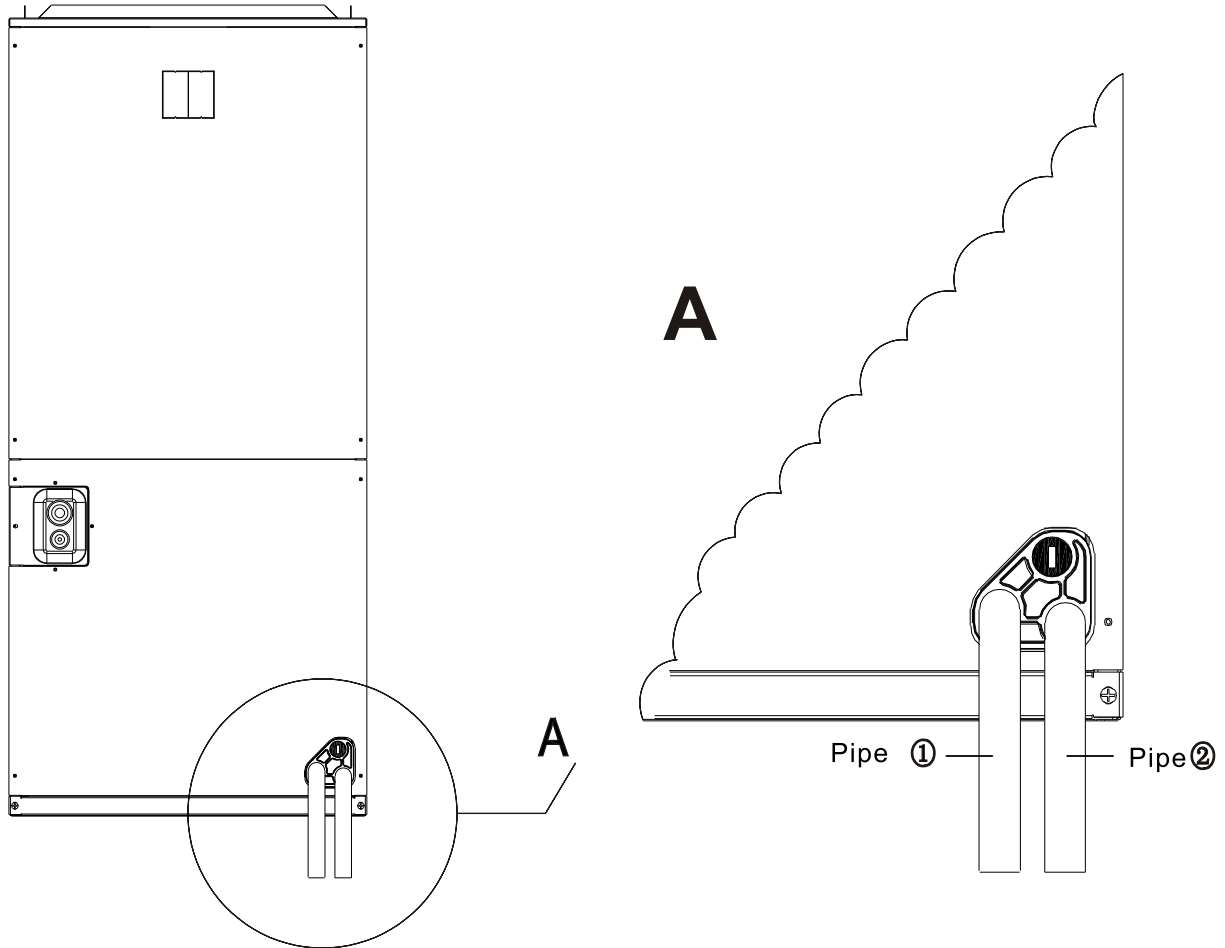


Figure 3-2 Vertical

2. When installing the air handler lying down, the upper drainage hole is covered the lower left of the drainage hole is connected with the drainage pipe, the lower right of the drainage hole is connected with the overflow pipe that should be exposed to the air. If the pipe ① is draining, which means the pipe ② is blocked. Contact maintenance personnel as soon as possible.

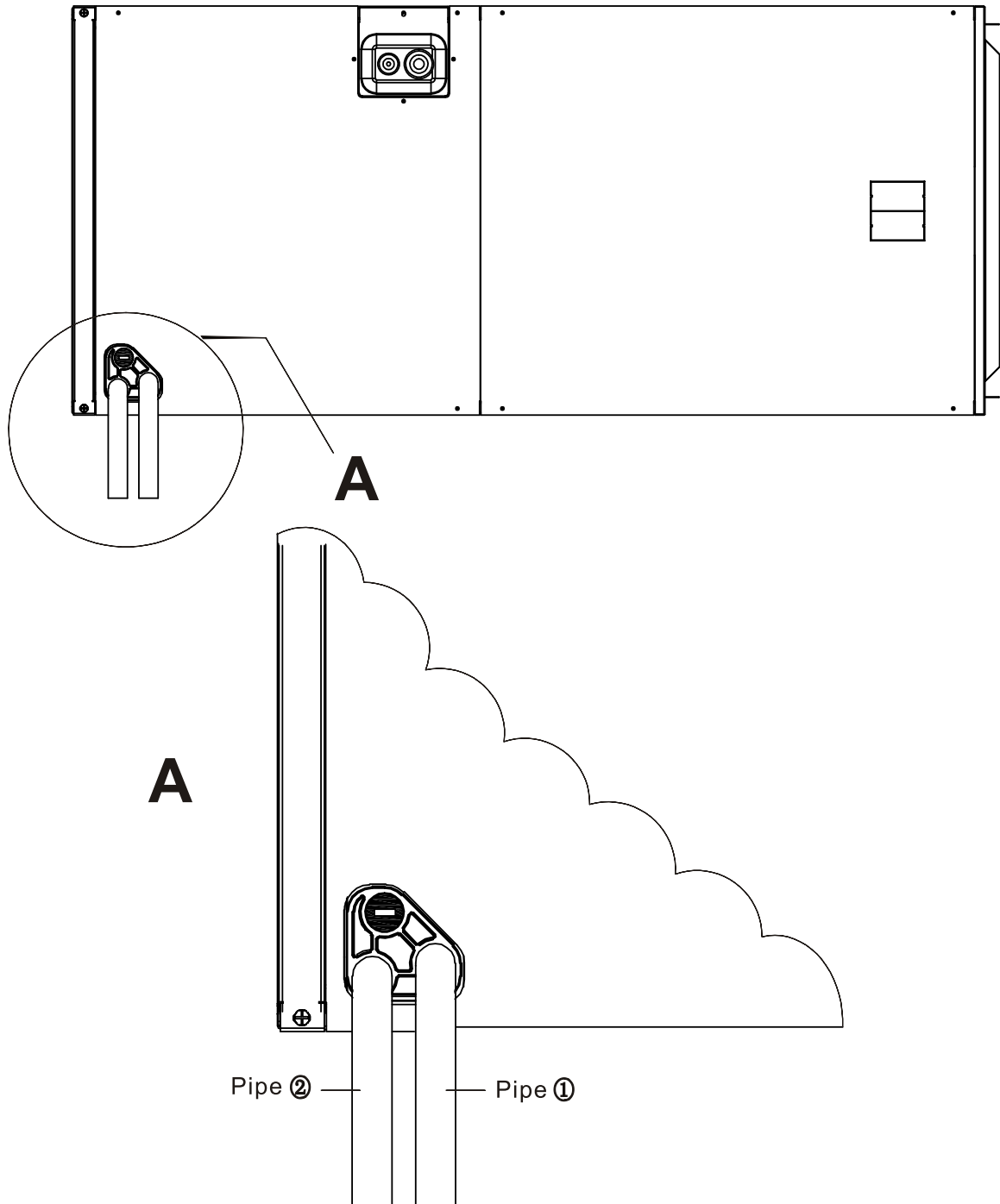


Figure 3-3 Horizontal right

Condensate Drain Connection

Keep the coil connections sealed until refrigerant connections are made. Refer to condensing unit installation instructions for details on pipe size and insulation.

- Coil is shipped with nitrogen. Evacuate the system before charging with refrigerant.
- Make sure the refrigerant pipes layout do not block service access.
- Purge the refrigerant pipes and indoor coil with dry nitrogen while brazing.
- Use a wet rag or an approved heat paste to protect the TXV sensing bulb during the brazing process.

Condensate Drain Connection

- Use a thin layer of Teflon paste, silicone or Teflon tape when making drain fitting connections.
- Do not over tighten fittings resulting in splitting pipe connections on the drain pan.

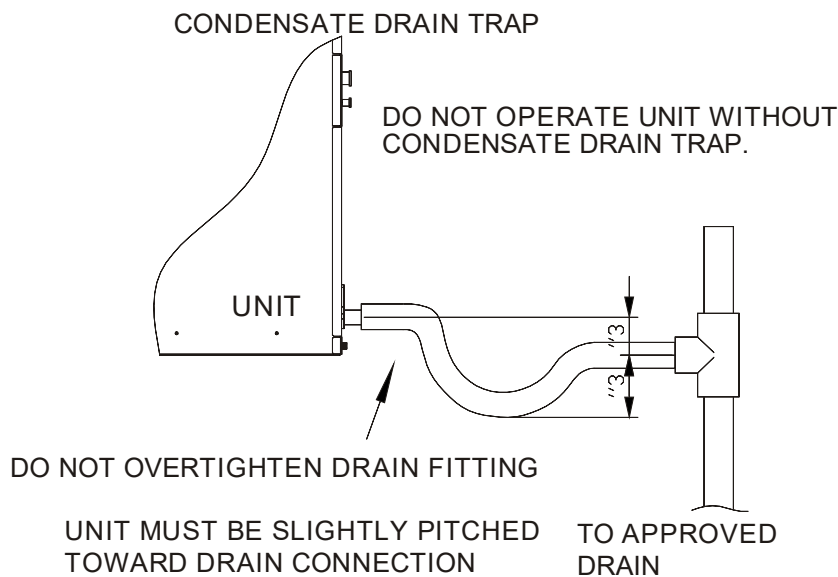


Figure 7-1 Condensate drain trap

- Make sure the drain pipes layout do not block service access. Minimum clearance of 25" is required for filter, coil or blower removal and service access.
- Ensure the unit is level or pitched slightly toward primary drain connection so that water will drain smoothly from the pan. All horizontal drain pipes must be pitched downward away from the unit a minimum of 1/8" per foot of line to ensure proper drainage.
- Do not reduce drain pipe size less than connection size provided on condensate drain pan.
- Do not connect condensate drain pipe to a closed or open sewer pipe.
- The drain pipe should be insulated where necessary to prevent sweating and damage due to condensate forming on the outside surface of the line.
- Make provisions for disconnecting and cleaning of the primary drain pipe if it become necessary. Install a 3 inch trap in the primary drain pipe as close as possible to the unit. Make sure that the top of the trap is below connection to the drain pan to allow complete drainage of pan.
- Auxiliary drain pipe should be connected to a place where it will be noticeable. Homeowner should be warned that a problem exists if water begins running from the auxiliary drain pipe.
- Test condensate drain pan and drain pipe after installation is complete. Pour enough water into drain pan, make sure that the drain pan is draining completely, no leaks are found in drain pipe fittings, and no water is draining from the termination of the primary drain pipe.

3.' Horizontal left-flow

- Horizontal left-flow is another default factory configuration for the units. These units may be converted to horizontal left-flow by removing indoor coil assembly with drain pan and reinstalling it as shown below.
- Rotate the unit 90° into the horizontal left position, with the coil compartment on the right and the blower compartment on the left.
- Reinstall the indoor coil 180° from original position. Ensure the retaining channel is fully engaged with the coil rail(Figure 3-4 and 3-5).
- Aftermarket drain pan kits are required when the unit is configured for the horizontal position over a finished ceiling and living space.

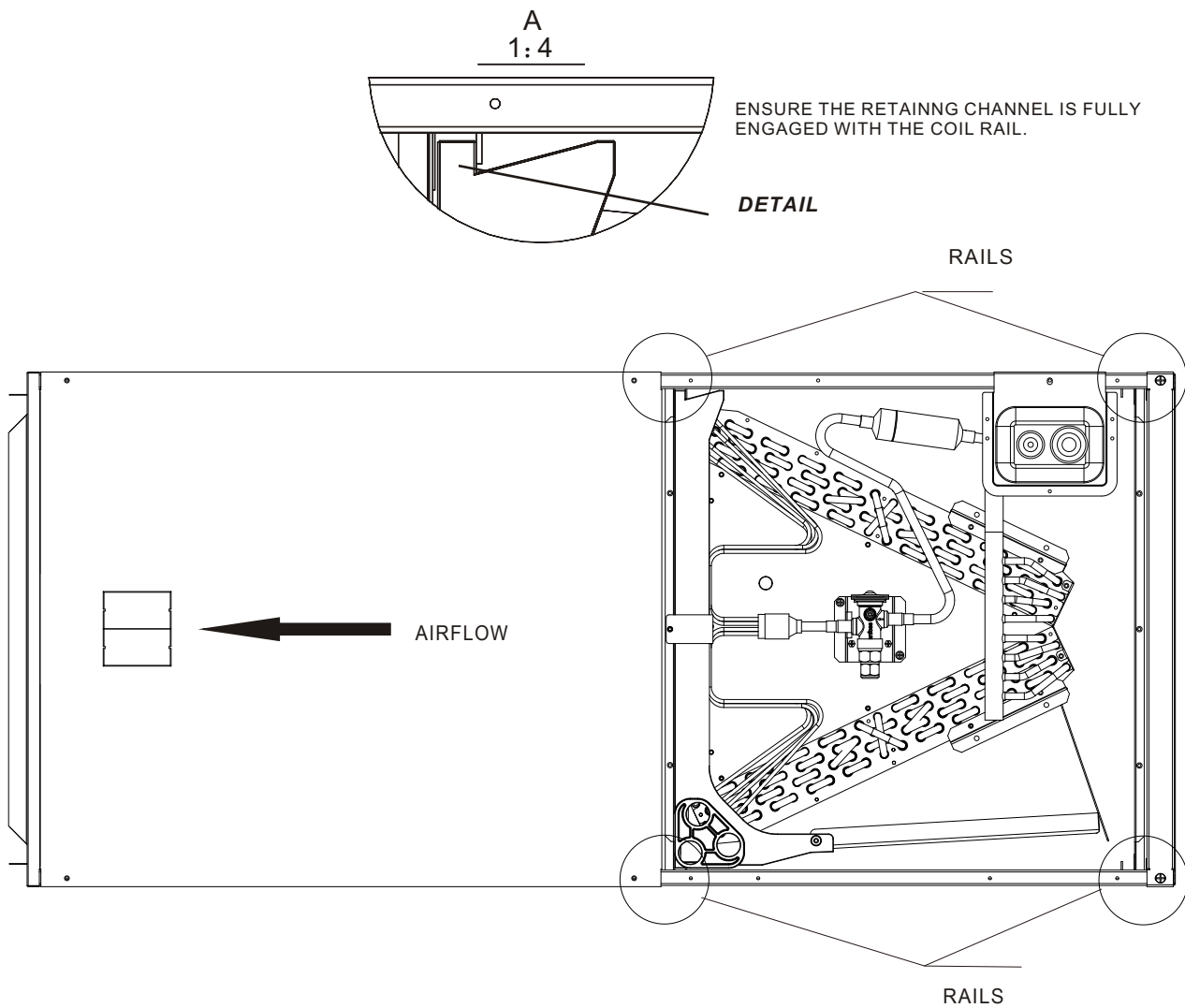


Figure 3-4 Horizontal left-flow application

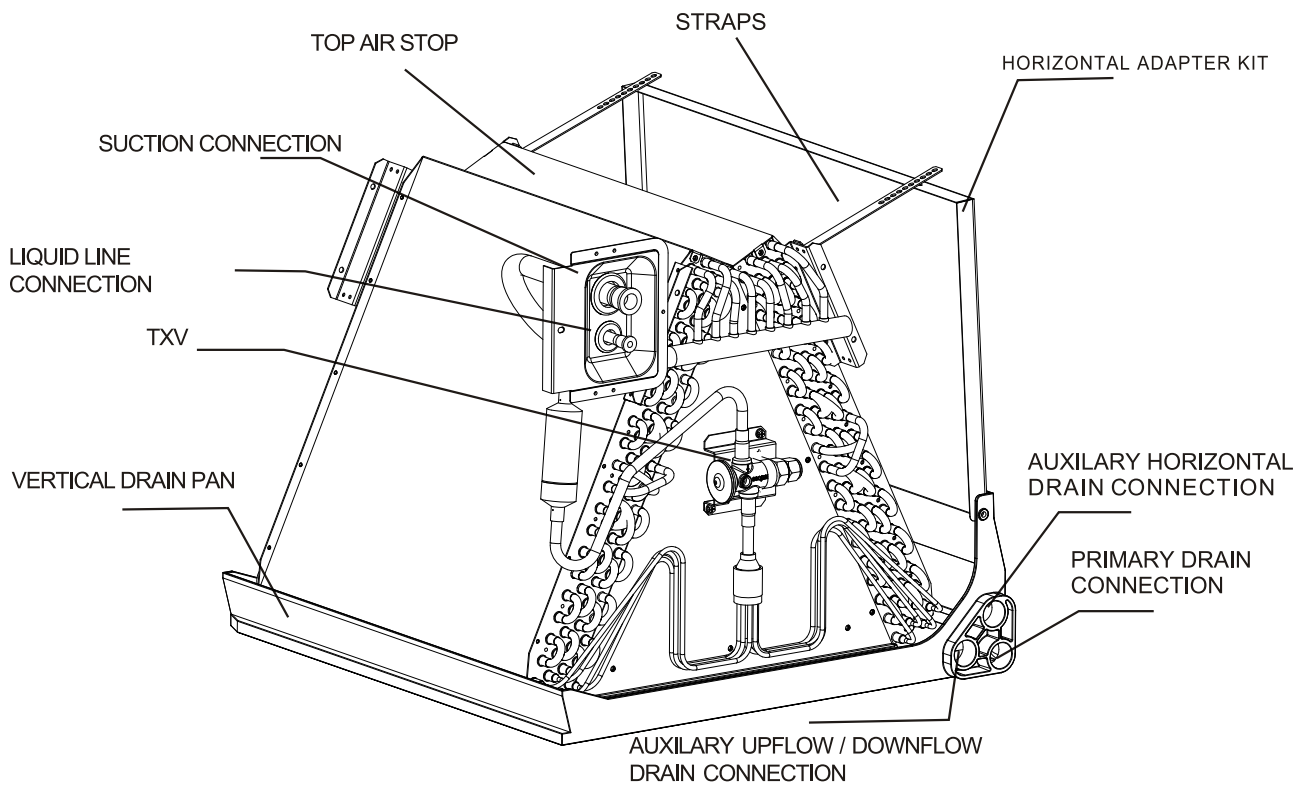


Figure 3-5 Evaporator diagram

CAUTION

Horizontal units must be configured for right hand air supply or left hand air supply. Horizontal drain pan must be located under indoor coil. Failure to use the drain pan can result in property damage.

3.(Installation in an unconditioned space

There are two pairs of coil rails in the air handler for default and counter flow application. If the air handler is installed in an unconditioned space, the two unused coil rails should be removed to minimize air handler surface sweating. The coil rails can be easily removed by taking off the 6 mounting screws from both sides of the cabinet.

4. Electrical Wiring

Field wiring must comply with the National Electric Code (C.E.C. in Canada) and any applicable local ordinance.

WARNING

Disconnect all power to unit before installing or servicing. More than one disconnect switch may be required to de-energize the equipment. Hazardous voltage can cause severe personal injury or death.

4.1 Power Wiring

It is important that proper electrical power is available for connection to the unit model being installed. Refer to the unit nameplate, wiring diagram and electrical data in the installation instructions.

- If required, install a branch circuit disconnect of adequate size, located within sight of, and readily accessible to the unit.
- When the electric heat is installed, units may be equipped with one or two 30~60 amp circuit breakers. These breakers protect the internal wiring in the event of a short circuit and serve as a disconnect. Circuit breakers installed within the unit do not provide over-current protection of the supply wiring and therefore may be sized larger than the branch circuit protection.
- Supply circuit power wiring must be 167 °F minimum copper conductors only. Refer to electrical data in this section for ampacity, wire size and circuit protector requirements. Supply circuit protective devices may be either fuses or “HACR” type circuit breakers.

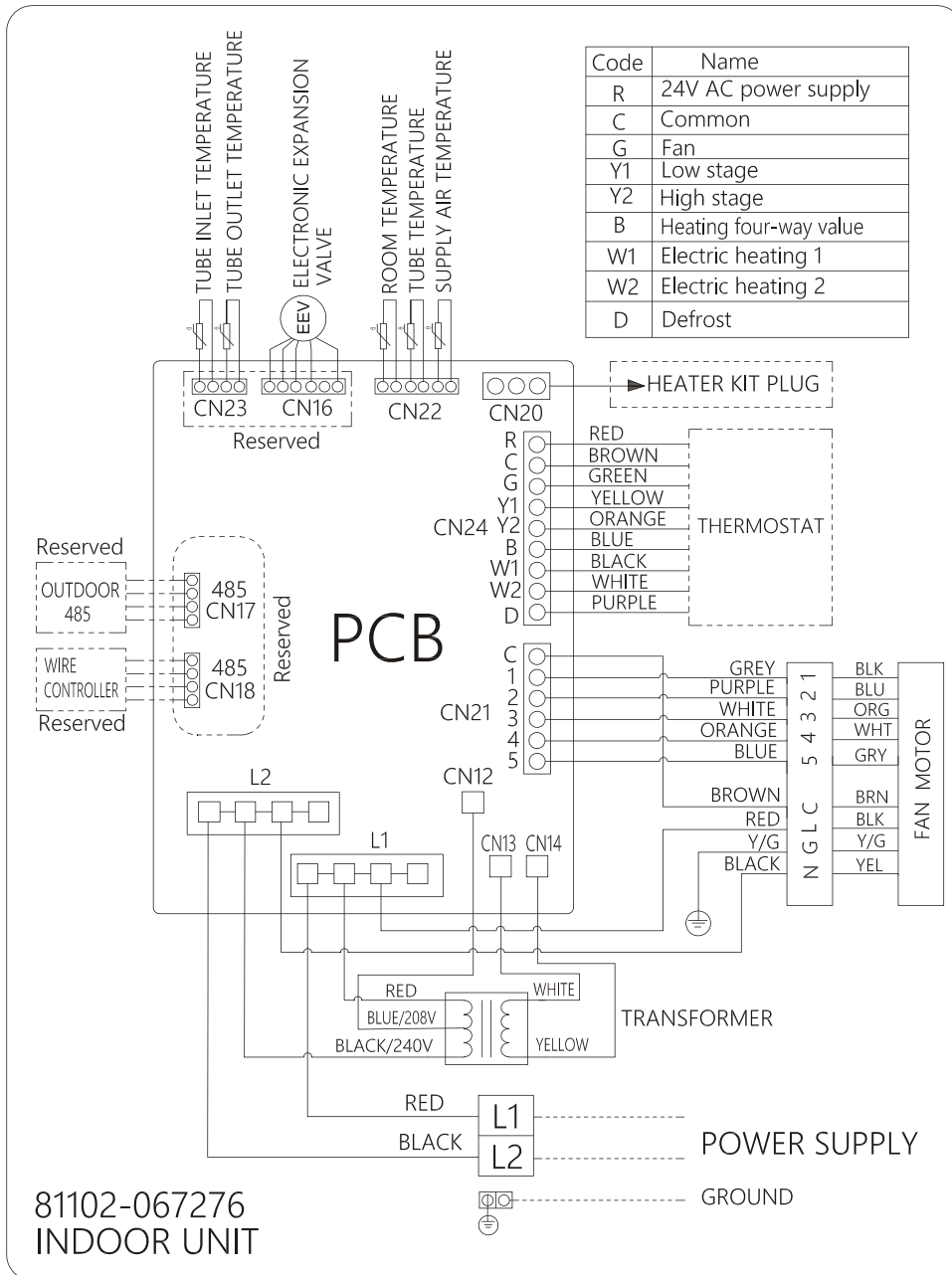
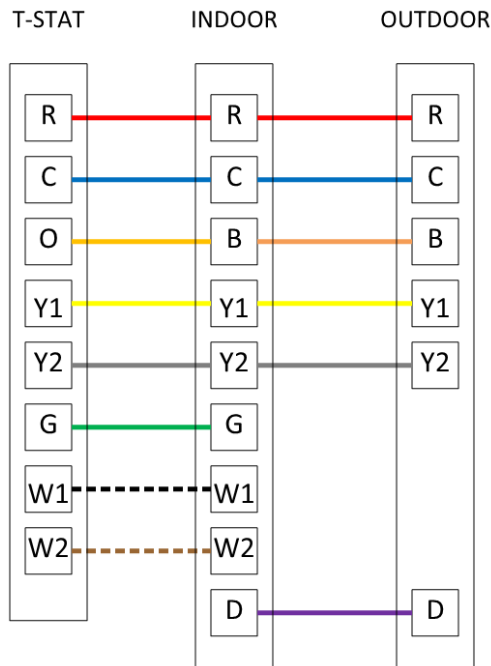


Figure 4-1 Wiring diagram

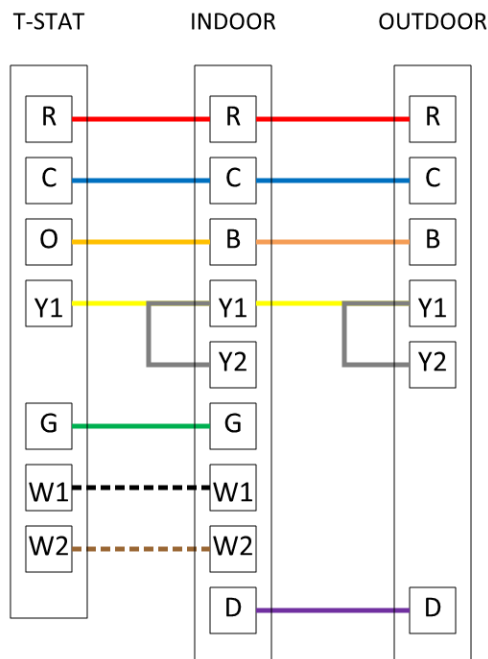
4.2 Control Wiring

Class 2 low voltage control wiring should not be run in conduit with main power wiring and must be separated from power wiring, unless class 1 wire of proper voltage rating is used.

- Low voltage control wiring should be color-coded **18 AWG**. For lengths longer than 100 ft, 16 AWG wire shall be used.
- Refer to wiring diagrams attached to indoor and outdoor sections to be connected.
- Make sure separation of control wiring and power wiring has been maintained.



a) Two-Stage thermostat



b) Single-Stage thermostat

Figure 4-2 Schematic diagram for control wiring connection

Table 2. Thermostat terminal definition chart.

Unit Terminal	Terminal definition
R	24VAC power supply for thermostat from secondary transformer.
C	Common wire.
G	Fan motor relay.
Y1	Compressor stage 1, low load-output control.
Y2	Compressor stage 2, high load-output control.
B	Reversing valve for heating pump systems.
W1	Heating stage 1, electrical heater low load-output control.
W2	Heating stage 2, electrical heater high load-output control.
D	Defrosting single wire.

NOTES:

1. Be sure power supply agrees with equipment nameplate.
2. Power wiring and grounding of equipment must comply with local codes.
3. Low voltage wiring to be No. 18 AWG minimum conductor.
4. Some thermostats may use W2/AUX for heat pump.
5. The electrical heater may be not available for some model (need to be checked later).
6. For single stage thermostat with Y/Y1 terminal only, place both Y1 and Y2 wire together to Y/Y1 terminal.

4.3 Grounding

WARNING

The unit must be grounded.

Failure to do so can result in electrical shock causing personal injury or death.

- Grounding may be accomplished by grounding metal conduit when installed in accordance with electrical codes to the unit cabinet. Grounding may also be accomplished by attaching ground wire(s) to ground lug(s) provided in the unit wiring compartment.
- Use of multiple supply circuits require grounding of each circuit to lug(s) provided in the unit.

4.4 Electrical Data

Table 3. Electrical data

Model	Voltage-Phase-Hz	Power Supply Wiring Gauge	Motor HP	Motor Steps	Minimum Circuit AMPS	MAX overcurrent protective(A)
E4AH5E24A1J30A	208/230-1Ph-60Hz	14	1/3	5	3.5	15
E4AH5E36A1J30A			1/2		5.0	
E4AH5E48A1K30A			3/4		7.0	
E4AH5E60A1K30A			3/4		7.0	

4.5 Electric Heat Data

Table 4. Electric heat data

Kit Model	Model	Electric Heat (kW)	MIN. Circuit Ampacity		MAX. Fuse or Breaker (HACR) Ampacity		Fan speed				
			208	230	208	230	1	2	3	4	5
BAYHTR16 05BRKA	E4AH5E 24A1J30A	5	23	25	25	30	x	x	●	●	●
BAYHTR16 10BRKA		10	45	50	50	60	x	x	●	●	●
BAYHTR16 05BRKA	E4AH5E 36A1J30A	5	23	25	25	30	x	x	●	●	●
BAYHTR16 10BRKA		10	45	50	50	60	x	x	●	●	●
BAYHTR16 15BRKA		5+10	23+45	25+50	50+25	60+30	x	x	●	●	●
BAYHTR16 05BRKA	E4AH5E 48A1K30A	5	23	25	25	30	x	x	●	●	●
BAYHTR16 10BRKA		10	45	50	50	60	x	x	●	●	●
BAYHTR16 15BRKA		5+10	23+45	50+25	50+25	60+30	x	x	●	●	●
BAYHTR16 20BRKA		10+10	45+45	50+50	50+50	60+60	x	x	x	●	●
BAYHTR16 05BRKA	E4AH5E 60A1K30A	5	23	25	25	30	x	x	●	●	●
BAYHTR16 10BRKA		10	45	50	50	60	x	x	●	●	●
BAYHTR16 15BRKA		5+10	23+45	50+25	50+25	60+30	x	x	●	●	●
BAYHTR16 20BRKA		10+10	45+45	50+50	50+50	60+60	x	x	x	●	●

*MCA and Max Fuse Ampacity contains the motor amps.

- Electric heat kits are suitable for air handler multiple position installation. “●” means available, “x” means unavailable.

Safety Cautions All electric work must be performed by qualified personnel.

BAYHTR16** series is designed and approved to be installed in the AMERISTAR or RUNTRU series air handlers.

- Check the BAYHTR16** series label to confirm BAYHTR16** series size based on room load under lowest ambient temperature.
- Inspect all heating elements and whether heater element wires. Contact local distributor immediately if there is any occurred damage.

Warning

- Disconnect all external power supplies before performing installation and servicing. Turn off accessory heater power switch if applicable. Failure to do so may cause serious injury.
- BAYHTR16** series must be properly grounded and use copper supply wires.
- Make sure to follow national electric code and local regulations.
- When installing it in an enclosed area such as a garage, heater elements should have a minimum clearance of 18" from the floor to insure the proper ventilation.

4.6 INSTALLATION INSTRUCTIONS

“BAYHTR16**” Electric Heater Kits For use in Air Handlers

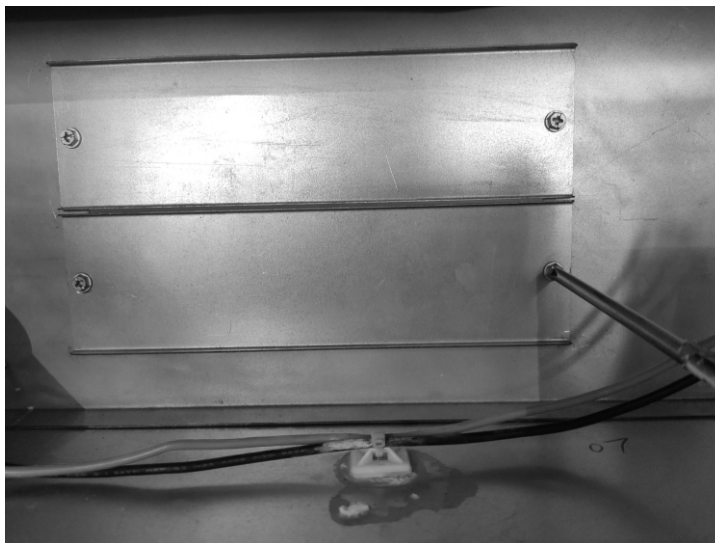
ATTENTION INSTALLING PERSONNEL

Prior to installation, thoroughly familiarize yourself with this installation manual. Observe all safety warnings. During installation or repair, caution is to be observed. It is your responsibility to install the product safely and to educate the customer on its safe use.

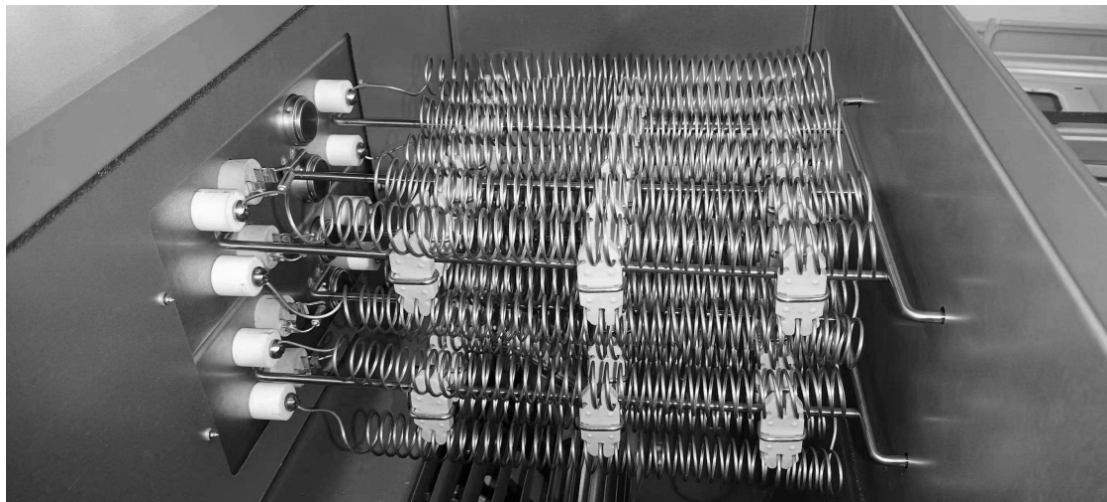
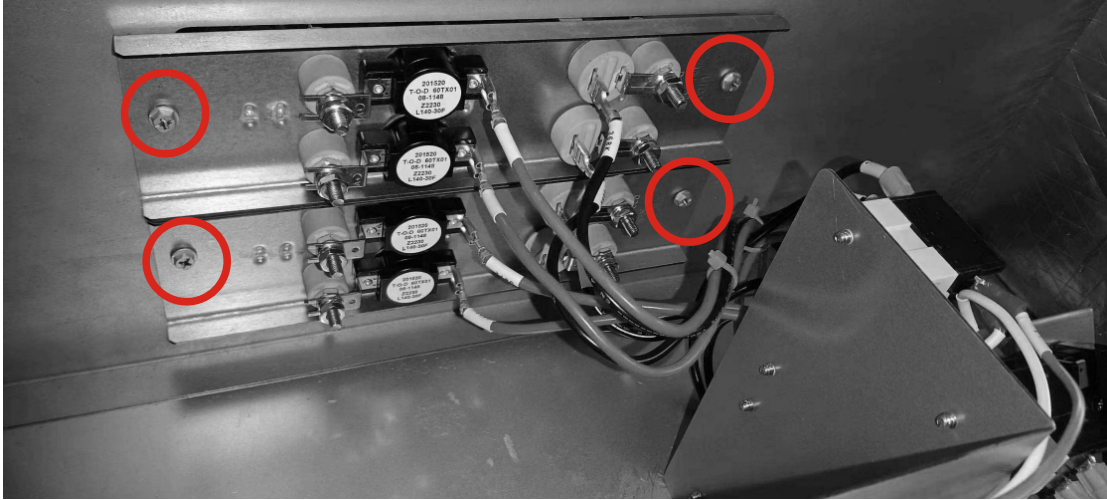
STEP 1. Unfasten 4 screws to take away the blower access panel of the air handler.



STEP 2. Remove the cover plate from the air handler.

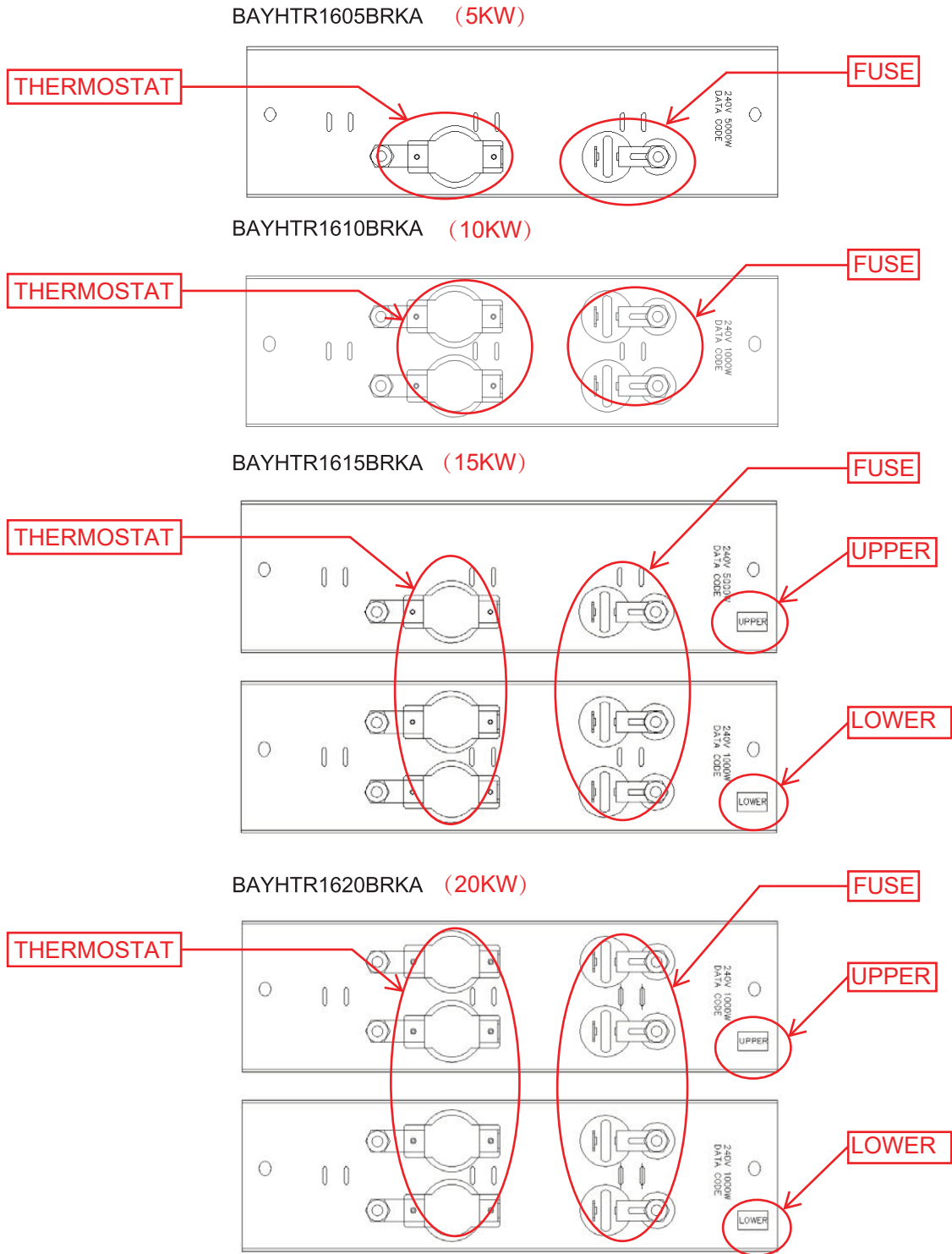


STEP 3. Slide the heater kit into the slot and secure element plate with previously removed screws.

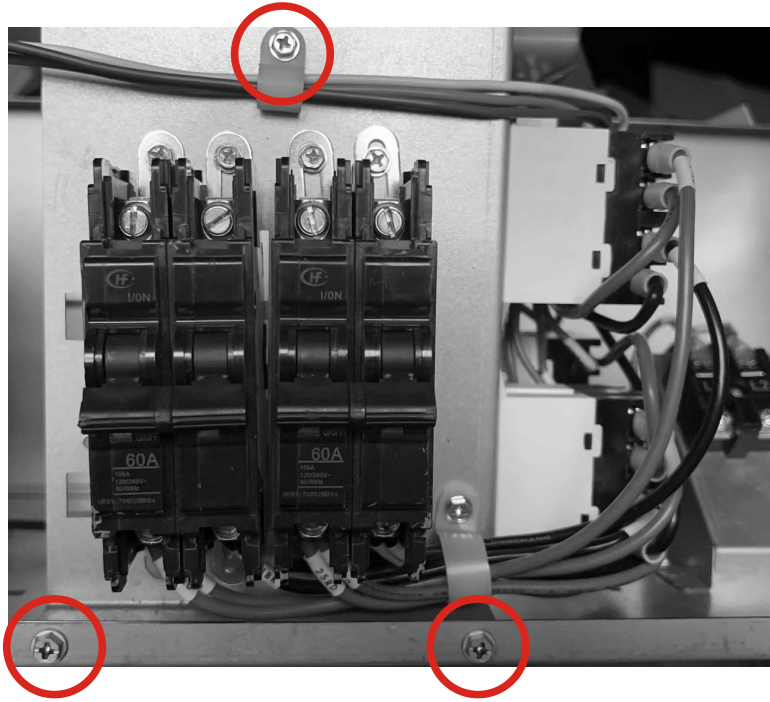


When sliding the heater kit into the slot ensure that it is installed in the correct orientation described below. Thermostat will be on the left hand side and the fuse will be on the right hand side.

When two elements are being used ensure that "UPPER" and "LOWER" elements are installed in the correct slots and orientations.

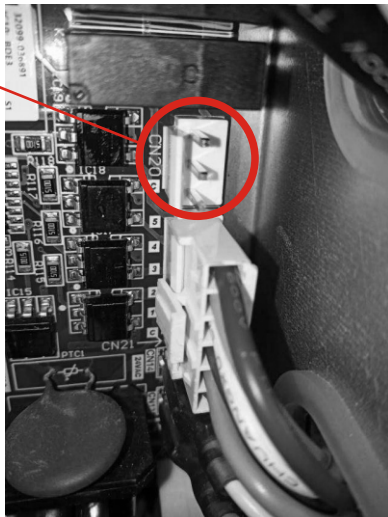


STEP 4. Align the attachment clip and the hole and fasten the loose wires by using wire tie.

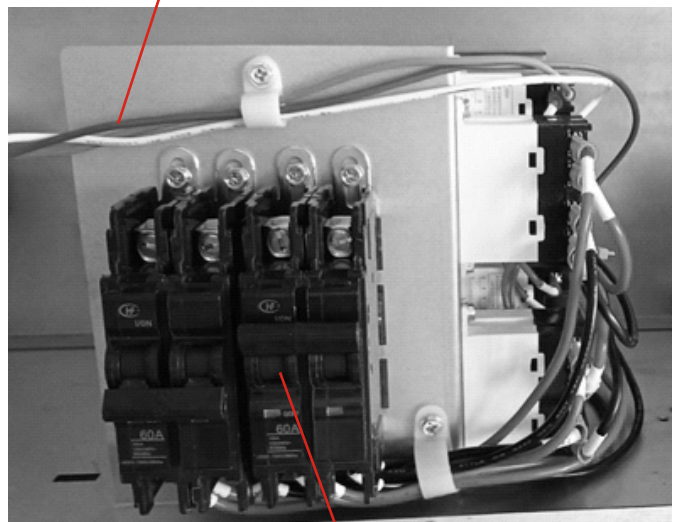


STEP 5. Install the circuit breaker into the mounting rail, break out appropriate area of the plastic circuit breaker cover on the access panel of the air handler.

CONNECT TO 3PINS



CHECK SCREWS



Warning

FIRE, ELECTRICAL SHOCK, HAZARD

After connect all wires, check all screws of breaker and make sure all screws are properly tight. Failure to do so will result in breaker malfunction, fire, death, personal injury and property damage.

NOTE:

- When indoor control board receives W1/W2 signal, electric heater will be energized and indoor blower will be turned on.
- When W1/W2 signal is off, indoor blower will be turned off.
- Blower motor runs when “G” is energized, and off when “G” is de-energized.

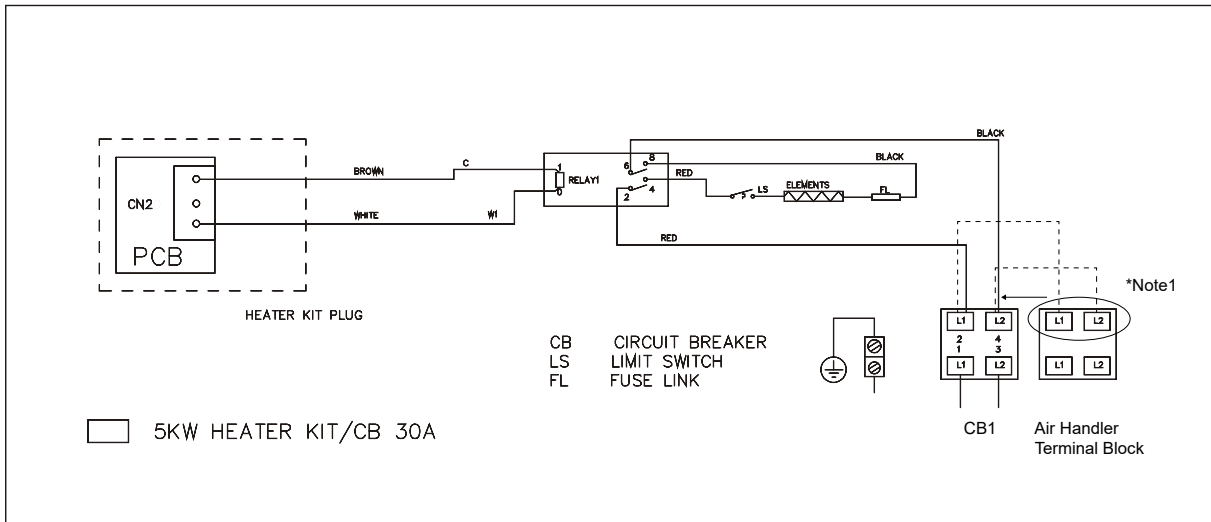


Figure 4-3 Wiring diagram for 5KW electric heat

Note 1: To power the air handler from circuit breaker 1, remove the L1 and L2 located on the air handler terminal block. Relocate L1 and L2 from the terminal block to the load side of circuit breaker 1. The MCA and MOP for the blower motor are calculated into the circuit size for all heaters. For more information see electric heat data table 4.

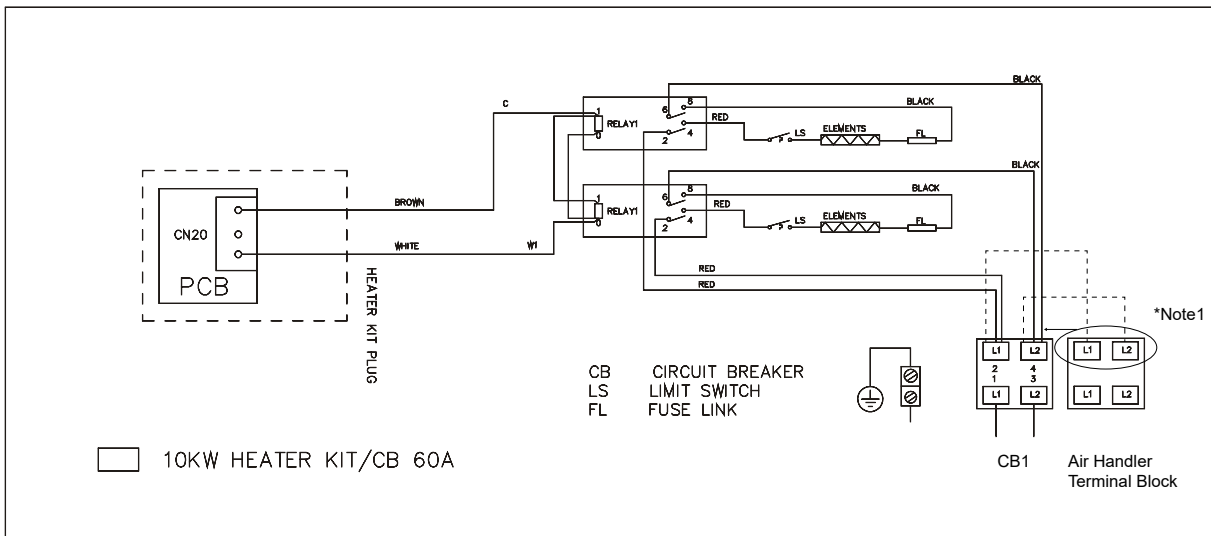


Figure 4-4 Wiring diagram for 10KW electric heat

Note 1: To power the air handler from circuit breaker 1, remove the L1 and L2 located on the air handler terminal block. Relocate L1 and L2 from the terminal block to the load side of circuit breaker 1. The MCA and MOP for the blower motor are calculated into the circuit size for all heaters. For more information see electric heat data table 4.

5. Airflow Performance

Airflow performance data is based on cooling performance with a coil and no filter in place. Check the performance table for appropriate unit size selection. External static pressure should stay within the minimum and maximum limits shown in the table below in order to ensure proper airflow.

Table 5. Airflow performance data

Model	Motor Speed		SCFM / Watts									
			External Static Pressure-Inches W.C.]									
			0	0.1	0.16	0.2	0.3	0.4	0.5	0.6	0.7	0.8
E4AH5E 24A1J30A	Tap (5)	SCFM	1013	968	947	948	948	936	899	857	808	755
		Watts	181	192	196	198	200	207	217	226	236	245
	Tap (4)factory	SCFM	862	810	810	804	790	746	702	655	607	562
		Watts	114	118	122	124	131	139	148	159	169	177
	Tap (3)	SCFM	767	735	728	729	680	630	576	535	490	454
		Watts	80	85	88	91	99	108	118	127	135	141
	Tap (2)factory	SCFM	668	642	636	614	590	510	471	418	380	334
		Watts	59	63	66	68	72	85	95	101	107	116
	Tap (1)	SCFM	598	569	553	528	475	428	373	325	277	260
		Watts	45	46	53	55	64	72	79	85	92	97
E4AH5E 36A1J30A	Tap (5)	SCFM	1458	1412	1390	1366	1320	1274	1194	1167	1072	1027
		Watts	280	295	298	300	308	317	327	337	350	357
	Tap (4)factory	SCFM	1287	1240	1210	1192	1149	1077	1006	939	888	832
		Watts	203	212	216	221	228	232	246	258	266	272
	Tap (3)	SCFM	1133	1084	1057	1035	979	896	835	777	724	670
		Watts	147	154	157	162	169	180	190	197	204	211
	Tap (2)factory	SCFM	929	872	839	796	716	653	598	527	460	380
		Watts	81	92	95	100	114	120	127	136	143	153
	Tap (1)	SCFM	802	756	692	651	594	525	453	355	270	210
		Watts	60	69	72	78	87	91	98	108	114	119
E4AH5E 48A1K30A	Tap (5)	SCFM	1950	1903	1877	1863	1819	1784	1744	1708	1666	1616
		Watts	562	570	575	578	585	591	597	604	611	619
	Tap (4)	SCFM	1718	1682	1659	1648	1612	1575	1533	1498	1453	1401
		Watts	412	422	361	433	444	453	460	466	473	482
	Tap (3)factory	SCFM	1505	1465	1443	1428	1391	1353	1325	1293	1254	1174
		Watts	277	290	298	302	313	325	338	348	358	374
	Tap (2)	SCFM	1211	1175	1174	1174	1100	1066	1031	957	917	879
		Watts	155	167	176	179	191	206	217	232	247	260
	Tap (1)factory	SCFM	931	927	894	905	857	796	785	744	717	676
		Watts	83	100	110	116	129	144	158	176	188	206
E4AH5E 60A1K30A	Tap (5)	SCFM	1950	1903	1877	1863	1819	1784	1744	1708	1666	1616
		Watts	562	570	575	578	585	591	597	604	611	619
	Tap (4)	SCFM	1718	1682	1659	1648	1612	1575	1533	1498	1453	1401
		Watts	412	422	361	433	444	453	460	466	473	482
	Tap (3)factory	SCFM	1505	1465	1443	1428	1391	1353	1325	1293	1254	1174
		Watts	277	290	298	302	313	325	338	348	358	374
	Tap (2)	SCFM	1211	1175	1174	1174	1100	1066	1031	957	917	879
		Watts	155	167	176	179	191	206	217	232	247	260
	Tap (1)factory	SCFM	931	927	894	905	857	796	785	744	717	676
		Watts	83	100	110	116	129	144	158	176	188	206

 Shaded boxes represent airflow outside the required 300-450cfm/ton at full load.

NOTES: Airflow based upon cooling performance at 230V with no electric heat and no filter. Airflow at 208V is approximately the same as 230V because the multi-tap ECM motor is a constant torque motor. The torque doesn't drop off at the speeds in which the motor operates.

The air distribution system has the greatest effect on airflow. For this reason, the contractor should use only industry-recognized procedures to finish ductwork.

Heat pump systems require a specified airflow. Each ton of cooling requires between 300 and 450 cubic feet per minute (CFM). Duct design and construction should be carefully done. System performance can be lowered dramatically through bad planning or workmanship. Air supply diffusers must be selected and located carefully. They must be sized and positioned to deliver treated air along the perimeter of the space. Return air grilles must be properly sized to carry air back to the blower as well. Failure to follow these may cause abnormal noise and drafts.

The installers should balance the air distribution system to ensure proper quiet airflow to all rooms in the home. This ensures a comfortable living space. An air velocity meter or airflow hood can give a reading of system CFM.

6. Ductwork

Field ductwork must comply with the National Fire Protection Association NFPA 90A, NFPA 90B and any applicable local ordinance.

WARNING

Do not, under any circumstances, connect return ductwork to any other heat producing device such as fireplace insert, stove, etc. Unauthorized use of such devices may result in fire, carbon monoxide poisoning, explosion, personal injury or property damage.

Sheet metal ductwork run in unconditioned spaces must be insulated and covered with a vapor barrier. Fibrous ductwork may be used if constructed and installed in accordance with SMACNA Construction Standard on Fibrous Glass Ducts. Ductwork must comply with National Fire Protection Association as tested by U/L Standard 181 for Class I Air Ducts. Check local codes for requirements on ductwork and insulation.

- Duct system must be designed within the range of external static pressure the unit is designed to operate against. It is important that the system airflow be adequate. Make sure supply and return ductwork, grilles, special filters, accessories, etc. are accounted for in total flow resistance. Refer to the airflow performance table in this manual.
- Design the duct system in accordance with "ACCA" Manual "D" Design for Residential Winter and Summer Air Conditioning and Equipment Selection. Latest editions are available from: "ACCA" Air Conditioning Contractors of America, 1513 16th Street, N.W., Washington, D.C. 20036. If duct system incorporates flexible air duct, be sure that the pressure drop Information (straight length plus all turns) shown in "ACCA" Manual "D" is accounted for in system.
- Supply plenum is attached to the 3/4" duct flanges supplied with the unit. Attach flanges around the blower outlet.
- Secure the supply and return ductwork to the unit flanges, using proper fasteners for the type of duct used and tape the duct-to-unit joint as required to prevent air leaks.

IMPORTANT

If an elbow is included in the plenum close to the unit, it must not be smaller than the dimensions of the supply duct flange on the unit.

The front flange on the return duct connected to the blower casing must not be screwed into the area where the power wiring is located. Drills or sharp screw points can damage insulation on wires located inside unit.

+ Air Filter

Filter application and replacement are critical to airflow, which may affect the heating and cooling system performance. Reduced airflow can shorten the life of the system's major components, such as motor, heat relays, evaporator coil or compressor. Units should be sized for a maximum of 300 feet/min. air velocity or what is recommended for the filter type installed.

Ensure the air flow is in the range of 300~450CFM if adding high efficiency filters or electronic air filtration systems. Note that the overall performance and efficiency of the unit will be reduced because of pressure drop by filters.

IMPORTANT

Do not double filter the return air duct.

Do not filter the supply air duct which will change the performance of the unit and reduce airflow.

WARNING

Do not operate the system without filters. A portion of the dust suspended in the air may temporarily lodge in the duct. Any circulated dust particles could be heated and charred by contact with the air handler elements. This residue could soil ceilings, walls, drapes, carpets and other articles in the house. Soot damage may occur without filters in place when certain types of candles, oil lamps or standing pilots are burned.

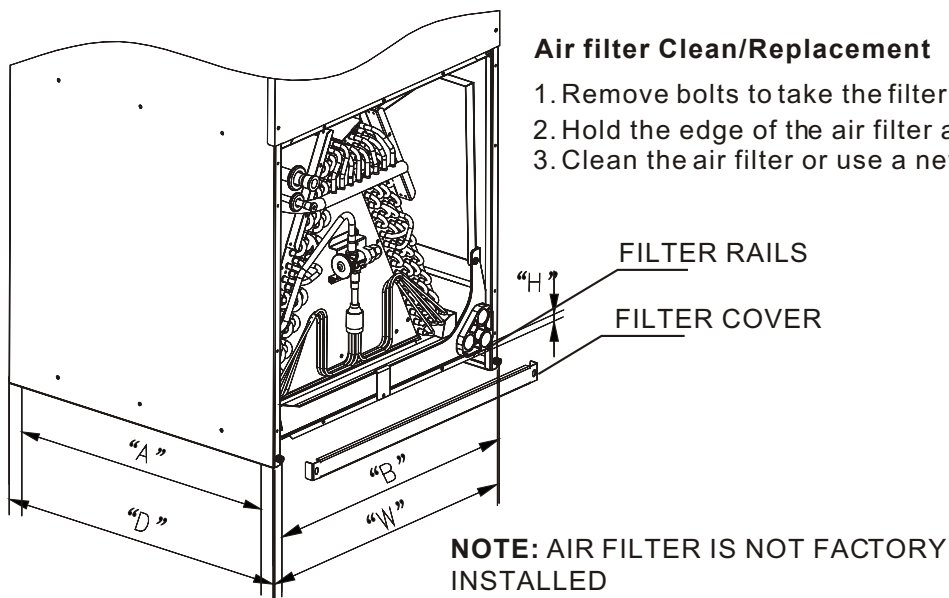


Figure 8-1 Filter installation and clean

Table 6. Filter Dimensions

Model	Dimensions (in.)					
	Filter size	W	D	H	A	B
E4AH5E24A1J30A E4AH5E36A1J30A	18 x 20	19-3/4	21	1	16	13-7/8
E4AH5E48A1K30A E4AH5E60A1K30A	22 x 20	23-1/4	21	1	16	15-1/4

NOTE:

- Refer to the label on filter cover to install the correct filter size.
- Units built on and prior to Dec 31, 2019.

, . Indoor Unit Function

, .1 Indoor Fan Speed Adjustment

This function is for the user in the installation, according to the length of the air duct to determine the best fan speed, so that indoor air supply to achieve the best performance. If the user wants to adjust the fan speed level, the operation is as follows:

The dip-switch for adjusting the fan speed level is located at SW1 of the indoor unit Main PCB, as shown in Figure 9-1. Dip-switch have digital end and "ON" end, The setting of dip-switch is explained as follows:

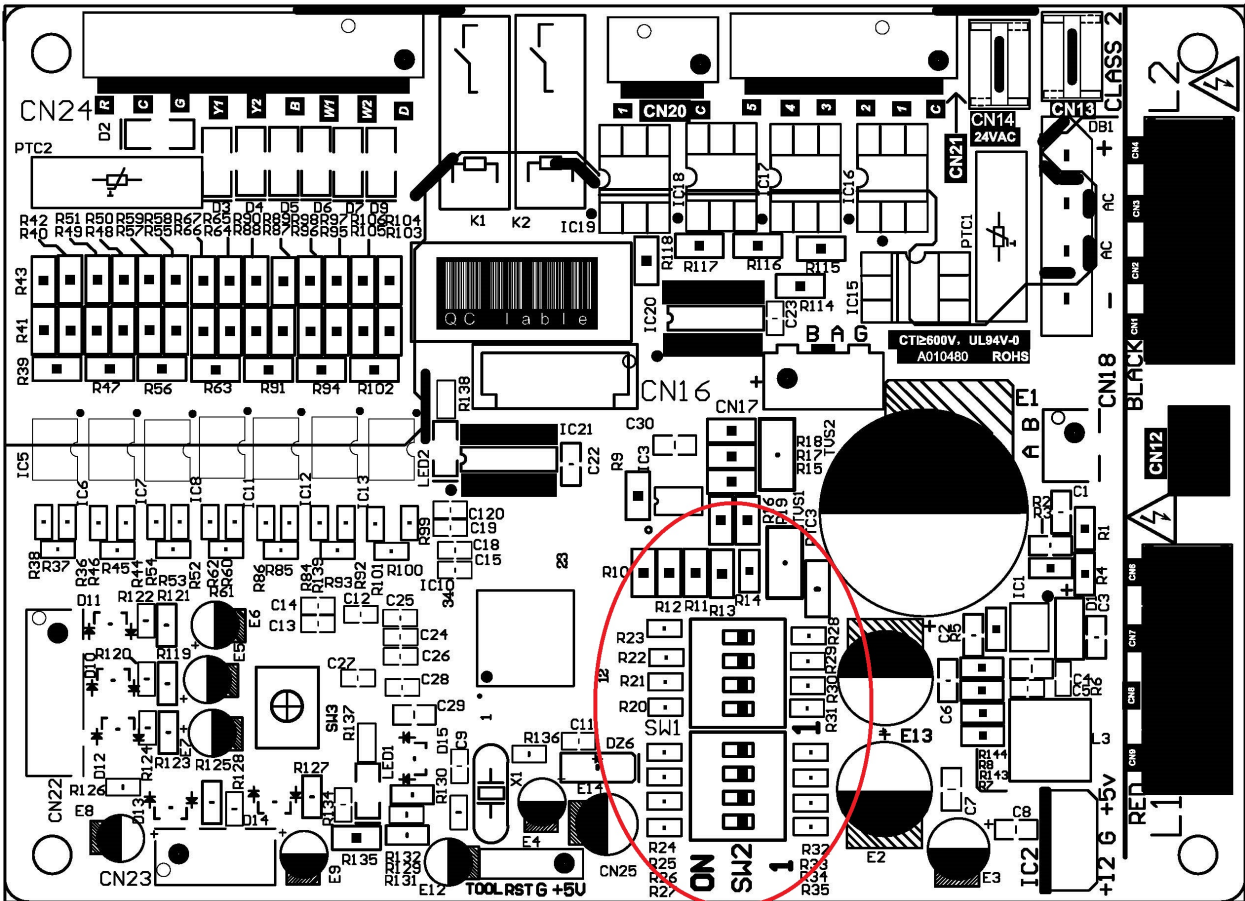


Figure 9-1 Indoor unit main PCB

STEP 1.

When the SW1-1 is located at the digital end (factory default), the fan runs in 5th level for high speed and 2nd level for low speed. If you want to adjust the fan speed by yourself, you need to change it to the “ON” end:

STEP 2.

Set SW1-1 to “ON” end. Then combining the SW1-2 and SW1-3 to get different fan speeds. The fan speed operation obtained by the combination is shown in the following table:

Table 7. Dip-switch setting for fan speed

Combination	SW1 setting	Low speed	High speed
1(Default)		2 nd speed	5 th speed
2		1 st speed	2 nd speed
3		1 st speed	3 rd speed
4		2 nd speed	4 th speed
5		3 rd speed	5 th speed

, .2 Cold Air Prevention

This function should be confirmed to the user during the installation, the factory default is turning on anti-cold air function, the effect is: 1. the initial stage of heating with low fan speed, 2. the indoor unit is shut down when the unit enter defrosting mode;

You can turn on or turn off this function by adjusting the fourth position of SW1 on the indoor unit main control board. The digit end corresponds to OFF, and the letter end corresponds to ON. The default setting is ON, adjust the dip-switch to OFF, the anti-cold air function will be turned off.

9. Service Manual

For more information, please scan the QR code for the service manual.



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