Installation Manual
Wall Mounted Air Handler

EVOX XTREME HEAT

For 18,000 - 36,000 BTU Systems



NOTE

Read the entire instruction manual before starting the installation. Images are for illustration purposes only. Actual models may differ slightly.

Units Covered In This Manual

SYSTEM TONS	BTUH	VOLTAGE/ PHASE	AIR HANDLER MODEL
1.5	18,000	115/208/230-1	MAWHE-H18B-2A
2.0	24,000	115/208/230-1	MAWHE-H24B-2A
2.5	30,000	115/208/230-1	MAWHE-H30B-2A
3.0	36,000	115/208/230-1	MAWHE-H36B-2A

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Manufacturer reserves the right to change, at any time, specifications and designs without notice and without obligations.

Table of Contents

Safety Considerations **3**
Table S-1: Allowed Static Pressure Ranges 5
Table S-2: Approved Matchups 5
Table S-3: Minimum Room Area Requirements 5
Table S-4: Minimum Leak Airflow 5
Table S-5: Explanation of symbols displayed on the indoor unit or outdoor unit 9
Installation Accessories **10**
Table A-1: Included Accessories 10
Table A-2: Optional Accessories 10
Unpacking 10
Fig. A-1: Remove the Cushion 10
Product Overview **11**
Fig. P-1: Component Location 11
Dimensions **12**
Table D-1: Dimensions 12
Table D-2: Recommended Filter Sizes 12
Fig. D-1: Filter Dimensions 12
Air Filter Recomendations 12
Clearances **13**
Fig. C-1: Clearance Dimensions 13
Location 13
Fig. C-2: Airflow Direction Options 13
Select Return Air 13
Fig. C-3: Bottom Return Conversion Kit 13
Installation Requirements **14**
Installation **15**
Step 1 - Mounting the Unit 15
Fig. 1-1: Wall Mounting 15
Fig. 1-2: Frame Mount 15
Fig. 1-3: Cut the Template Off the Box 16
Fig. 1-4: Mounting Screw Holes 16
Fig. 1-5: Drill Holes Using the Template 16
Fig. 1-6: Remove Brackets From The Unit 16
Fig. 1-7: Attach the Upper and Lower Brackets 16
Fig. 1-8: Hang the Unit on the Stand 17
Fig. 1-9: Attach the Ears to the Bracket 17
Fig. 1-10: Install the Adapter Tube 17
Step 2 - Drain Piping 17
Fig. 2-1: Drainpipe Connections 17
Fig. 2-2: Air Vent Arrangement 18
Step 3 - Ductwork 18
Fig. 3-1: Connection of Duct 18
Table 3-1: Airflow Performance 19
Step 4 - Refrigerant Piping Connections 20
Table 4-1: Piping Sizes 20
Fig. 4-1: Correct Pipe Cutting 21
Fig. 4-2: Reamer Tool 21
Fig. 4-3: Copper pipe and flare nut 21
Fig. 4-4: Flare Form 21
Fig. 4-5: Flare Shape 21
Table 4-2: Tightening Torque 21
Fig. 4-6: Align the center of the two pipes 22
Fig. 4-7: Spanner and Backup Wrench 22
Fig. 4-8: Bend the Tubing 22
Leak Detection System 23
Fig. LD-1: Leak Detector Location 23
Confirmation of Indoor Unit 24
Table CIU-1: Units Without Electric Heat 24
Step 5 - Power Wiring Connections 24
Fig. 5-1: Wiring Overview 24
Fig. 5-2: Remove Electrical Cover 25
Fig. 5-3: Field Wiring Conduit Location 25
Fig. 5-5: Open the Upper Front Panel 25
Fig. 5-6: Power Wiring Location 26
Step 6 - Specific Wiring Methods 26
Table 6-1: Communication Wiring Sizes 26
Table 6-2: Wiring Color Guide 27
Scenario 1: EVOX Heat Pump and Air Handler 3rd Party 24 V Thermostat 28
Fig. 6-1: Scenario 1 Wiring Diagram and Dip Switch Settings 28
Scenario 2: EVOX Heat Pump, Air Handler, and RS485 Communication 28
Fig. 6-2: Scenario 2 Wiring Diagram 28
Scenario 3: Self-Adapt Mode with 3rd Party Equipment 29
Fig. 6-3: Scenario 3 Wiring Diagram and Dip Switch Settings 29
24 V Connection Diagrams 29
Table 6-4: Control Logic 29
Fig. 6-4: Never Connect 24 V to S1-S2 30
Fig. 6-5: Wiring for 4H and 2C Thermostat 30
Fig. 6-6: Wiring for 3H and 2C Thermostat 30
Fig. 6-7: Wiring for 3H and 1C Thermostat 30
Fig. 6-8: Wiring for 2H and 2C Thermostat No Auxilary Heat 30
Fig. 6-9: Wiring for 3H and 2C Thermostat 30
Fig. 6-10: Wiring for 2H and 1C Thermostat 30
Fig. 6-11: Wiring for 1H and 1C Thermostat 31
Fig. 6-12: Wiring for 1H and 1C Thermostat 31
Optional function wiring 31
Fig. 6-13: Condensate Overflow Wiring 31
Fig. 6-14: Alarm Wiring 31
Fig. 6-15: Humidifier Wiring 31
Fig. 6-16: Clean Air Wiring 32
Fig. 6-17: Interface Wiring Locations 32
DIP switch definitions 33
Fig 6-18: Dip Switch Layout 33
Fig. 6-19: 24 V Thermostat Settings 34
Table 6-5: Function combination table of SW1-1 and SW1-4 34
Table 6-6: Indoor Unit Dip Switch Settings 34
Table 6-7: Determined by dial code SW8 1-10K 2-5.1K 35
Table 6-8: Table A 36
Step 7 - Air Evacuation 36
Step 8 - Insulate the Piping 36
Table 8-1: Recommended Insulation Thickness 36
Fig. 8-1: Insulate Both Pipes Separately 36
Fig. 8-2: Insulate All Connections 36
Test Run **37**
Appendix **38**
Table AP-1: Air Volume Table 38
Table AP-2: 24 V Signal Chart 40
Indoor Unit Diagnostic Guide 41
Table AP-3: Indoor Unit Diagnostic Codes 41
Installation Guide For AHU Using 115 V Power Supply 42
Fig. AP-1: Remove Upper Cover 42
Fig. AP-2: Switch the Red Wire to 115 V 42
Fig. AP-3: Unplug Sensors From Contol Board 42
Fig. AP-4: Remove the Conrol Box 42
Fig. AP-5: Unplug CN12 Connector 42
Fig. AP-6: Remove the Red Connector 42
Fig. AP-7: Connect the Accessory Connection 43
Fig. AP-8: Replace the Control Box and Reattach the Sensors 43

Safety Considerations

⚠ WARNING

Hazards or unsafe practices that may result in severe personal injury or death.

⚠ CAUTION

Hazards or unsafe practices may result in minor personal injury or property damage. Carefully follow the precautions because they are essential to guarantee the safety of the equipment.

⚠ DANGER

Identifies the most serious hazards which will result in severe personal injury or death.

NOTE

A property-damage-only hazard, meaning no personal injury is possible.

IMPORTANT

Is used to highlight suggestions which will result in enhanced installation, reliability, or operation.

⚠ WARNING

State of California Proposition 65 Warning (US Only)
This product contains chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm.

⚠ WARNING

Improper installation, adjustment, alteration, service, maintenance, or use can cause an explosion, fire, electrical shock, or other conditions that may cause death, personal injury, or property damage. Consult a qualified installer, service agency, distributor, or branch for information or assistance. The qualified installer or agency must use factory-authorized kits or accessories when modifying this product. Refer to the individual instructions packaged with kits or accessories when installing.

IMPORTANT

Follow all safety codes. Wear safety glasses, protective clothing, and work gloves. Have a fire extinguisher available. Read these instructions thoroughly and follow all warnings or cautions in the literature and labels attached to the unit. Consult local building codes and the current editions of the National Electrical Code (NEC) NFPA 70.

IMPORTANT

In Canada, refer to the current editions of the Canadian Electrical Code CSA C22.1. Follow the safety information.

⚠ WARNING

This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety. Children should be supervised to ensure that they do not play with the appliance.

⚠ WARNING

ELECTRICAL WARNINGS



- Only use the specified wire. If the wire is damaged, it must be replaced by the manufacturer, service agent, or similarly qualified persons to avoid a hazard.
- The product must be properly grounded at the time of installation, or electric shock may occur.
- For all electrical work, follow all local and national wiring standards, regulations, and the Installation Manual. Connect cables tightly and clamp them securely to prevent external forces from damaging the terminal. Improper electrical connections can overheat, cause fire, and may also cause shock. All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.
- All wiring must be properly arranged to ensure that the control board cover can close properly. If the control board cover is not closed properly, it can lead to corrosion and cause the connection points on the terminal to heat up, catch fire, or cause electrical shock.
- Disconnection must be incorporated in the fixed wiring in accordance with the NEC, CEC, or local codes.
- **DO NOT** share the electrical outlet with other appliances. The unit must be installed on a dedicated electrical circuit.
- If connecting power to fixed wiring, an all-pole disconnection device must be incorporated into the fixed wiring following the wiring rules.
- If the SUPPLY CORD is damaged, it must be replaced by the manufacturer, service agent, or similarly qualified Technician to avoid a hazard.

⚠ WARNING

WARNINGS FOR PRODUCT INSTALLATION

- Turn off the air conditioner and disconnect the power before performing any installation or repairs. Failure to do so can cause electric shock.
- Installation must be performed by an authorized dealer or specialist according to the installation instructions. Improper installation can cause water damage, electrical hazards, or fire. Contact an authorized service technician for repair or maintenance.
- This appliance shall be installed in accordance with national wiring regulations. Only use the included accessories, parts, and specified parts for installation.
- Using non-standard parts can cause water leakage, electrical shock, and fire, and can cause the unit to fail.
- Check the electric wire, water, and gas pipeline layout inside the wall, floor, and ceiling before installation. Do not implement drilling unless you confirm safety

with the user, especially for the hidden power wire. An electron probe can be used to test whether a wire is passing by at the drilling location, to prevent physical injury or death caused by insulation broken cords.

- Check the power supply before installation. Ensure that the power supply is reliably grounded following local, state, and National Electrical Codes. If not, for example, if the ground wire is detected charged, installation is prohibited before it is rectified. Otherwise, there is a risk of fire and electric shock, causing physical injury or death.
- Contact an authorized service provider for repair or maintenance of this unit. This appliance shall be installed following national wiring regulations.
- Only use the included accessories, parts, and specified parts for installation. Using non-standard parts can cause water leakage, electrical shock, and fire, and can cause the unit to fail.
- Install the unit in a firm location that can support the unit's weight. If the chosen location cannot support the unit's weight, or the installation is not done properly, the unit may drop and cause serious injury and damage.
- The first 36 in. of supply air plenum and ductwork must be constructed of sheet metal as required by NFPA 90B. The supply air plenum or duct must have a solid sheet metal bottom directly under the unit with no openings, registers, or flexible air ducts located in it. If flexible supply air ducts are used, they may be located only in the vertical walls of the rectangular plenum, a minimum of 6 in. from the solid bottom. A metal plenum of duct may be connected to the combustible floor base, if not, it must be connected to the unit supply duct exposed to the supply air opening from the downflow unit. Exposing combustible (non-metal) material to the supply opening of a downflow unit can cause a fire resulting in property damage, personal injury, or death.
  Exception warning to downflow:
  Installations on concrete floor slab with supply air plenum and ductwork completely encased must be not less than 2 in. of concrete (See NFPA 90A). When using the unit with an electrical heater, the switch is used only for the electrical heater on the front of the panel.
- Install drainage piping according to the instructions in this manual. Improper drainage may cause water damage to your home and property.
- For units that have an auxiliary electric heater installed, ensure 1" of clearance from any combustible materials for the first 3 feet (1 meter) of plenum and ductwork exiting the unit.
- For the units that have a wireless network function, USB device access, replacement, and maintenance operations must be carried out by professional staff.
- **Do not** install the unit in a location that may be exposed to combustible gas leaks. **If combustible gas accumulates around the unit, it may cause fire.**
- **Do not** turn on the power until all work has been completed.
- **When moving or relocating the air conditioner**, consult experienced service technicians for disconnection and reinstallation of the unit.
- How to install the appliance to its support, please read the information for details in the "indoor unit installation" and "outdoor unit installation" sections.

⚠ WARNING

TAKE NOTE OF FUSE SPECIFICATIONS

The air conditioner's circuit board (PCB) may be designed with a fuse to provide overcurrent protection. This fuse must be replaced with an identical component.
The specifications of the fuse are printed on the circuit board, for example: T3.15 AL/250 VAC, T5 AL/250 VAC, T3.15 A/250 VAC, T5 A/250 VAC, T20 A/250 VAC, T30 A/250 VAC, etc.
The specifications of the fuse, if equipped, are printed on the circuit board, examples of such are T5 A/250 VAC and T10 A/250 VAC.

NOTE

Only the blast-proof ceramic fuse can be used.

⚠ WARNING

WARNINGS FOR CLEANING AND MAINTENANCE

- Turn off the device and disconnect the power before cleaning. Failure to do so can cause electrical shock.
- **Do not** clean the air conditioner with excessive amounts of water.
- **Do not** clean the air conditioner with combustible cleaning agents. Combustible cleaning agents can cause fire or deformation.

⚠ WARNING

USING FLAMMABLE REFRIGERANT

1. Installation (Space)
   - That the installation of pipe work shall be kept to a minimum.
   - That pipe work shall be protected from physical damage.
   - Where refrigerant pipes shall comply with national gas regulations.
   - That mechanical connections shall be accessible for maintenance purposes.
   - In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
   - When disposing of the used product, it must be based on national regulations, and properly processed.
2. Service
   - Any person who is involved with working on or breaking into a refrigerant circuit should hold a currently valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely following an industry-recognized assessment specification.
3. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of a person competent in the use of flammable refrigerants.
4. Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
5. The appliance shall be stored in a room without

continuously operating ignition sources (for example: open flames, an operating gas appliance, or an operating electric heater).

6. Be careful that foreign matter(oil, water,etc) does not enter the piping. Also, when storing the piping, securely seal the opening by pinching, taping, etc.
7. Do not pierce or burn.
8. Be aware that refrigerants may not contain an odor.
9. All working procedures that affect safety means shall only be carried out by competent technicians.
10. Appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
11. The appliance shall be stored to prevent mechanical damage from occurring.
12. Joints shall be tested with detection equipment with a capability of 0.2 oz./year of refrigerant or better, with the equipment in standstill and under operation or pressure of at least these standstill or operation conditions after installation. Detachable joints shall NOT be used in the indoor side of the unit (brazed, welded joints could be used).

NOTE

About Refrigerant

- A certified technician must perform product uninstallation and recycling.
- Proper record-keeping of all checks is strongly recommended when the unit is checked for leaks.

The allowed static pressure range of the air conditioner on the side refers to Table S-1.

Table S-1: Allowed Static Pressure Ranges

Model	18-24K	30-36K
The static pressure allowed by the product	≤ 0.8 in.- w.c. (200 Pa)	

Note: The maximum functional total external static pressure can not exceed 0.80 in. WC or 200 Pa. The airflow reduces significantly beyond 0.80 in. WC or 200 Pa. System design should allow for the increased resistance of filters as they become dirty.

For R454B refrigerant charge amount and minimum room area:

The machine you purchased may be one of the types in the table below. The indoor and outdoor units are designed to be used together, and the indoor unit is connected via an air duct system to one or more rooms. Please check the machine you purchased. The height of the room cannot be less than 7.3 ft./2.2 m, and the minimum room area for operating or storage should be as specified in the following table:



A2L

Caution: Risk of fire/flammable materials

Table S-2: Approved Matchups

Product Type	Capacity (208/230 V)	Air Handler Unit	Outdoor Unit
Wall Mounted AHU Advanced Heat	18K	MAWHE-H18B-2A	MO1BE-H18B-2A
	24K	MAWHE-H24B-2A	MO1BE-H24B-2A
	30K	MAWHE-H30B-2A	MO1BE-H30B-2A
	36K	MAWHE-H36B-2A	MO1BE-H36B-2A
Wall Mounted AHU Extreme Heat AHU	18K	MAWHE-H18B-2A	MO1HE-H18B-2A
	24K	MAWHE-H24B-2A	MO1HE-H24B-2A
	30K	MAWHE-H30B-2A	MO1HE-H30B-2A
	60K	MAWHE-H36B-2A	MO1HE-H60B-2A

Table S-3: Minimum Room Area Requirements

Mc or MREL [oz./kg]	TAmin [ft.²/m²]	Mc or MREL [oz./kg]	TAmin [ft.²/m²]	Mc or MREL [oz./kg]	TAmin [ft.²/m²]	Mc or MREL [oz./kg]	TAmin [ft.²/m²]
<=62.7/1.776	12/1.1	134/3.8	126/11.67	211.6/6.0	198/18.43	289.2/8.2	271/25.18
63.5/1.8	60/5.53	141.1/4	132/12.29	218.7/6.2	205/19.04	296.3/8.4	278/25.8
70.5/2	66/6.14	148.1/4.2	139/12.9	225.8/6.4	212/19.66	303.4/8.6	284/26.41
77.6/2.2	73/6.76	155.2/4.4	145/13.51	232.8/6.6	218/20.27	310.4/8.8	291/27.63
84.6/2.4	79/7.37	162.2/4.6	152/14.13	239.9/6.8	225/20.88	317.5/9.0	298/27.64
91.7/2.6	86/7.99	169.3/4.8	159/14.74	246.9/7.0	231/21.5	324.5/9.2	304/28.26
98.8/2.8	93/8.6	176.4/5	165/15.36	254/7.2	238/22.11	331.6/9.4	311/28.87
105.8/3	99/9.21	183.4/5.2	172/15.97	261/7.4	245/22.73	338.6/9.6	317/29.48
112.9/3.2	106/9.83	190.5/5.4	179/16.58	268.1/7.6	251/23.34	345.7/9.8	324/30.10
119.9/3.4	112/10.44	197.5/5.6	185/17.2	275.1/7.8	258/23.96	352.7/10.0	331/30.71
127/3.6	119/11.06	204.6/5.8	192/17.81	282.2/8.0	264/24.57		
Area formula	**TAmin** is the required minimum area of the total conditioned space connected by air ducts in ft.²/m² **Mc** is the actual refrigerant charge in the system in oz/kg **MREL** is the refrigerant releasable charge in oz./kg **hinst** is the height of the bottom of the appliance relative to the floor of the room after installation. **WARNING:** The minimum room area or minimum room area of conditioned space is based on releasable charge and total system refrigerant charge.						

NOTE

If the actual room size does not fit the abovementioned conditions, please refer to the upper-level condition. Ex. we provide suggestions for a room size of 400 sq. ft., if the room size is 450 sq. ft., please refer to the 500 sq. ft. requirement.

When the unit detects a refrigerant leak, the minimum airflow of the indoor unit is as indicated in Table S-4:

Table S-4: Minimum Leak Airflow

Model	18K	24K	30K	36K
Nominal air volume	400 CFM (680 m³/h)	400 CFM (680 m³/h)	447 CFM (760 m³/h)	541 CFM (920 m³/h)

1. Installation

- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry-recognized assessment specification.
- Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants.

- That the installation of pipe work shall be kept to a minimum.
- That pipe work shall be protected from physical damage.
- Where refrigerant pipes shall comply with national gas regulations.
- That mechanical connections shall be accessible for maintenance purposes.
- Be more careful that foreign matter (oil, water, etc.) does not enter the piping. Also, when storing the piping, securely seal the opening by pinching, taping, etc.
- All working procedures that affect safety means shall only be carried out by competent technicians.
- Appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation.
- Joints shall be tested with detection equipment with a capability of 0.2 oz./year of refrigerant or better, with the equipment in a standstill and under operation or under pressure of at least these standstill or operation conditions after installation. Detachable joints should NOT be used on the indoor side of the unit (brazed, welded joints could be used).
- In cases that require mechanical ventilation, ventilation openings shall be kept clear of obstruction.
- LEAK DETECTION SYSTEM installed. The unit must be powered except for service.
- For the unit with a refrigerant sensor, when the refrigerant sensor detects refrigerant leakage, the indoor unit will display an error code and emit a buzzing sound, the compressor of the outdoor unit will immediately stop, and the indoor fan will start running. The service life of the refrigerant sensor is 15 years. When the refrigerant sensor malfunctions, the indoor unit will display the error code "FHCC".
- The refrigerant sensor cannot be repaired and can only be replaced by the manufacturer. It shall only be replaced with the sensor specified by the manufacturer.

2. When a FLAMMABLE REFRIGERANT is used, the requirements for installation space of appliance and/or ventilation requirements are determined according to

- the mass charge amount (M) used in the appliance,
- the installation location,
- the type of ventilation of the location or the appliance.
- piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and comply with national and local codes and standards, such as ASHRAE 15, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection before being covered or enclosed.
- that protection devices, piping, and fittings shall be protected as far as possible against adverse environmental effects, for example, the danger of water collecting and freezing in relief pipes or the accumulation of dirt and debris;
- that piping in refrigeration systems shall be so designed and installed to minimize the likelihood of hydraulic shock damaging the system;
- that steel pipes and components shall be protected against corrosion with a rustproof coating before applying any insulation;
- that precautions shall be taken to avoid excessive vibration or pulsation;
- the minimum floor area of the room shall be mentioned in the form of a table or a single figure without reference to a formula;
- after completion of field piping for split systems, the field pipework shall be pressure tested with an inert gas and then vacuum tested before refrigerant charging, according to the following requirements:
  a. The minimum pressure test for the low side of the system shall be the low side design pressure and the minimum pressure test for the high side of the system shall be the high side design pressure, unless the high side of the system can not be isolated from the low side of the system in which case the entire system shall be pressure tested to the low side design pressure.
  b. During the pressure test, the system shall maintain the pressure for at least 1 h with no decrease of pressure indicated by the test gauge, with test gauge resolution not exceeding 5% of the test pressure.
  c. During the evacuation test, after achieving a vacuum level specified in the manual or less, the refrigeration system shall be isolated from the vacuum pump and the pressure shall not rise above 1500 microns within 10 min. The vacuum pressure level shall be specified in the manual and shall be the lessor of 500 microns or the value required for compliance with national and local codes and standards, which may vary between residential, commercial, and industrial buildings.
- field-made refrigerant joints indoors shall be tightness tested according to the following requirements: The test method shall have a sensitivity of 5 grams per year of refrigerant or better under a pressure of at least 0,25 times the maximum allowable pressure. No leak shall be detected.

3 . Qualification of workers

Any maintenance, service, and repair operations must require the qualification of the working personnel. Every working procedure that affects safety means shall only be carried out by competent technicians who joined the training and achieved competence should be documented by a certificate. The training of these procedures is carried out by national training organizations or manufacturers that are accredited to teach the relevant national competency standards that may be set in legislation. All training shall follow the ANNEX HH requirements of UL 60335-2-40 4th Edition.

Examples of such working procedures are:

- breaking into the refrigerating circuit;
- opening of sealed components;
- opening of ventilated enclosures.

4. Checks to the area

Before beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repair to the refrigerating system, the following precautions shall be complied with before conducting work on the system.

5. Work procedure

Works shall be undertaken under a controlled procedure to minimize the risk of flammable gas or vapor being present while the work is being performed.

6. General work area

All maintenance staff and others working in the local area should be instructed on the nature of the work being carried out. Work in confined spaces shall be avoided.

7. Checking for the presence of refrigerant

The area should be checked with an appropriate refrigerant detector before and during work, to ensure the technician is aware of potentially flammable atmospheres. Ensure that the leak detection equipment being used is suitable for use with flammable refrigerants, i.e. no sparking, adequately sealed or intrinsically safe.

8. Presence of fire extinguisher

If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment shall be available to hand. Have a dry powder or CO_2 fire extinguisher adjacent to the charging area.

9. No ignition sources

No person carrying out work on a REFRIGERATING SYSTEM which involves exposing any pipe work shall use any sources of ignition in such a manner that it may lead to the risk of a fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repair, removal, and disposal, during which refrigerant can be released into the surrounding space. Before work takes place, the area around the equipment is to be surveyed to make sure that there are no flammable hazards or ignition risks. "No Smoking" signs shall be displayed.

10. Ventilated area

Ensure that the area is in the open or that it is adequately ventilated before breaking into the system or conducting any hot work. A degree of ventilation shall continue during the period that the work is carried out. The ventilation should safely disperse any released refrigerant and preferably expel it externally into the atmosphere.

11. Check the refrigeration equipment

Where electrical components are being changed, they shall be fit for the purpose and to the correct specification. At all times the manufacturer's maintenance and service guidelines shall be followed. If in doubt consult the manufacturer's technical department for assistance. The following checks shall be applied to installations using FLAMMABLE REFRIGERANTS:

- the actual refrigerant charge is in accordance with the room size within which the refrigerant-containing parts are installed;
- the ventilation machinery and outlets are operating adequately and are not obstructed;
- if an indirect refrigerating circuit is being used, the secondary circuits shall be checked for the presence of refrigerant;
- marking to the equipment continues to be visible and legible, marking and illegible signs shall be corrected;
- refrigeration pipe or components are installed in a position where they are unlikely to be exposed to any substance that may corrode refrigerant-containing components unless the components are constructed of materials that are inherently resistant to being corroded or are suitably protected against being so corroded.

12. Checks to electrical devices

Repair and maintenance of electrical components shall include initial safety checks and component inspection procedures. If a fault exists that could compromise safety, then no electrical supply shall be connected to the circuit until it is satisfactorily dealt with. If the fault cannot be corrected immediately it is necessary to continue operation, and adequate temporary solution shall be used.

This shall be reported to the owner of the equipment so all parties are advised.

Initial safety checks shall include:

that capacitors are discharged: this shall be done safely to avoid the possibility of sparking;

that no live electrical components and wiring are exposed while charging, recovering, or purging the system;

that there is continuity of earth bonding;

Sealed electrical components shall be replaced if it's damaged; Intrinsically safe components must be replaced if it's damaged.

13. Cabling

Check that cabling will not be subject to wear, corrosion, excessive pressure, vibration, sharp edges, or any other adverse environmental effects. The check shall also take into account the effects of aging or continual vibration from sources such as compressors or fans.

14. Detection of flammable refrigerants

Under no circumstances shall potential sources of ignition be used in the search for or detection of refrigerant leaks. A halide torch(or any other detector using a naked flame) shall not be used.

The following leak detection methods are deemed acceptable for refrigerant systems. Electronic leak detectors may be used to detect refrigerant leaks but, in the case of FLAMMABLE REFRIGERANTS, the sensitivity may not be adequate, or may need re-calibration. (Detection equipment shall be calibrated in a refrigerant-free area.) Ensure that the detector is not a potential source of ignition and is suitable for the refrigerant used. Leak detection equipment shall be set at a percentage of the LFL of the refrigerant and shall be calibrated to the refrigerant employed, and the appropriate percentage of gas (25 % maximum) is confirmed. Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine shall be avoided as the chlorine may react with the refrigerant and corrode the copper pipe-work.

NOTE

Examples of leak-detection fluids are

- bubble method,
- fluorescent method agents.

If a leak is suspected, all naked flames shall be removed/ extinguished.

If leakage of refrigerant is found which requires brazing, all of the refrigerant shall be recovered from the system, or isolated (using shut-off valves) in a part of the system

remote from the leak. See the following instructions for the removal of refrigerant.

15. Removal and evacuation

When breaking into the refrigerant circuit to make repairs - or for any other purpose conventional procedures shall be used. However, for flammable refrigerants best practice must be followed since flammability is a consideration.

The following procedure shall be adhered to:

- safely remove refrigerant following local and national regulations;
- evacuate;
- purge the circuit with inert gas;
- evacuate;
- continuously flush or purge with inert gas when using a flame to open the circuit; and
- open the circuit.

The refrigerant charge shall be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For appliances containing flammable refrigerants, the system shall be purged with oxygen-free nitrogen to render the appliance safe for flammable refrigerants. This process might need to be repeated several times. Compressed air or oxygen shall not be used for purging refrigerant systems.

For appliances containing flammable refrigerants, refrigerant purging shall be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill until the working pressure is achieved, then venting to the atmosphere, and finally pulling down to a vacuum. This process shall be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system shall be vented down to atmospheric pressure to enable work to take place.

The outlet for the vacuum pump shall not be close to any potential ignition sources, and ventilation shall be available.

16. Charging procedures

In addition to conventional charging procedures, the following requirements shall be followed:

- Works shall be undertaken with appropriate tools only (In case of uncertainty, please consult the manufacturer of the tools for use with flammable refrigerants) Ensure that contamination of different refrigerants does not occur when using charging equipment. Hoses or lines shall be as short as possible to minimize the amount of refrigerant contained in them.
- Ensure that the refrigeration system is earthed before charging the system with refrigerant.
- Label the system when charging is complete(if not already). Extreme care shall be taken not to overfill the refrigeration system.
- Before recharging the system, it shall be pressure tested with oxygen-free nitrogen (OFN). The system shall be leak tested on completion of charging but before commissioning. A follow-up leak test shall be carried out before leaving the site.

17. Decommissioning

Before carrying out this procedure, the technician must be completely familiar with the equipment and all its details. It is recommended good practice that all refrigerants are recovered safely. Before the task is carried out, an oil and refrigerant sample shall be taken in case analysis is required before the re-use of recovered refrigerant. Electrical power must be available before the task commences.

a. Become familiar with the equipment and its operation.
b. Isolate system electrically
c. Before attempting the procedure ensure that:
   - mechanical handling equipment is available, if required, for handling refrigerant cylinders;
   - all personal protective equipment is available and being used correctly;
   - the recovery process is supervised at all times by a competent person;
   - recovery equipment and cylinders conform to the appropriate standards.
d. Pump down the refrigerant system, if possible.
e. If a vacuum is not possible, make a manifold so that refrigerant can be removed from various parts of the system.
f. Make sure that the cylinder is situated on the scales before recovery takes place.
g. Start the recovery machine and operate following instructions.
h. Do not overfill cylinders (no more than 80 % volume liquid charge)
i. Do not exceed the maximum working pressure of the cylinder, even temporarily.
j. When the cylinders have been filled correctly and the process completed, make sure that the cylinders and the equipment are removed from the site promptly and all isolation valves on the equipment are closed off.
k. Recovered refrigerant shall not be charged into another refrigeration system unless it has been cleaned and checked.

18. Labelling

Equipment shall be labeled stating that it has been de-commissioned and emptied of refrigerant. The label shall be dated and signed. For appliances containing FLAMMABLE REFRIGERANTS, ensure that there are labels on the equipment stating the equipment contains FLAMMABLE REFRIGERANT.

19. Recovery

When removing refrigerant from a system, either for servicing or decommissioning, it is recommended good practice that all refrigerants are removed safely.

When transferring refrigerant into cylinders, ensure that only appropriate refrigerant recovery cylinders are employed. Ensure that the correct number of cylinders for holding the total system charge is available. All cylinders to be used are designated for the recovered refrigerant and labeled for that refrigerant (i. e. special cylinders for the recovery of refrigerant). Cylinders shall be complete with pressure-relief valves and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs.

The recovery equipment shall be in good working order

with a set of instructions concerning the equipment that is at hand and shall be suitable for the recovery of the flammable refrigerant. If in doubt, the manufacturer should be consulted. In addition, a set of calibrated weighing scales shall be available and in good working order. Hoses shall be complete with leak-free disconnect couplings and in good condition.

The recovered refrigerant shall be processed according to local legislation in the correct recovery cylinder, and the relevant waste transfer note arranged. Do not mix refrigerants in recovery units especially not in cylinders.

If compressors or compressor oils are to be removed, ensure that they have been evacuated to an acceptable level to make certain that flammable refrigerant does not remain within the lubricant. The compressor body shall not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it shall be carried out safely.

20. Transportation, marking, and storage for units that employ flammable refrigerants

a. **General** - The following information is provided for units that employ FLAMMABLE REFRIGERANTS.

b. **Transport of equipment containing flammable refrigerants** - Attention is drawn to the fact that additional transportation regulations may exist concerning equipment containing flammable gas. The maximum number of pieces of equipment or the configuration of the equipment permitted to be transported together will be determined by the applicable transport regulations.
   • Cylinders shall be kept upright.

c. **Marking of equipment using signs** - Signs for similar appliances used in a work area are generally addressed by local regulations and give the minimum requirements for the provision of safety and/or health signs for a work location.
   All required signs are to be maintained, and employers should ensure that employees receive suitable and sufficient instruction and training on the meaning of appropriate safety signs and the actions that need to be taken in connection with these signs.
   The effectiveness of signs should not be diminished by too many signs being placed together.
   Any pictograms used should be as simple as possible and contain only essential details.

d. **Disposal of equipment using flammable refrigerants See national regulations.**

e. **Storage of equipment/appliances -** The storage of the appliance should be following the applicable regulations or instructions, whichever is more stringent.

f. **Storage of packed (unsold) equipment** - Storage package protection should be constructed in such a way that mechanical damage to the equipment inside the package will not cause a leak of the REFRIGERANT CHARGE.
   The maximum number of pieces of equipment permitted to be stored together will be determined by local regulations.

21. Unventilated areas

- An unventilated area where the appliance using FLAMMABLE REFRIGERANTS is installed shall be so constructed that should any refrigerant leak, it will not stagnate to create a fire or explosion hazard.
- If appliances are connected via an air duct system to one or more rooms with A2L REFRIGERANTS are installed in a room with an area less than Amin, that room shall be without continuously operating open flames (e.g. an operating gas appliance) or other POTENTIAL IGNITION SOURCES (e.g. an operating electric heater, hot surfaces). A flame-producing device may be installed in the same space if the device is provided with an effective flame arrest.
- Auxiliary devices that may be a POTENTIAL IGNITION SOURCE shall not be installed in the ductwork. Examples of such POTENTIAL IGNITION SOURCES are hot surfaces with a temperature exceeding 700 °C and electric switching devices.
- Only auxiliary devices (such as certificated heater kit) approved by the appliance manufacturer or declared suitable with the refrigerant shall be installed in connecting ductwork.
- For duct-connected appliances, false ceilings or drop ceilings may be used as a return air plenum if a REFRIGERANT DETECTION SYSTEM is provided in the appliance and any external connections are also provided with a sensor immediately below the return air plenum duct joint.
- REFRIGERANT SENSORS for REFRIGERANT DETECTION SYSTEMS Shall Only be replaced with sensors specified by the appliance manufacturer.
- LEAK DETECTION SYSTEM installed. The unit must be powered except for service.

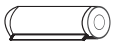
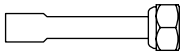
Table S-5: Explanation of symbols displayed on the indoor unit or outdoor unit

	**WARNING**	This symbol shows that this appliance used a flammable refrigerant. If the refrigerant is leaked and exposed to an external ignition source, there is a risk of fire.
	**CAUTION**	This symbol shows that the operation manual should be read carefully.
	**CAUTION**	This symbol shows that service personnel should be handling this equipment referencing the installation manual.
	**CAUTION**	This symbol shows that information is available such as the operating manual or installation manual.

Installation Accessories

The system is shipped with the following accessories. Use all the installation parts and accessories to install the system. Improper installation may result in water leakage, electrical shock, and fire, or cause the equipment to fail. Keep the installation manual in a safe place and do not discard any other accessories until the installation work has been completed.

Table A-1: Included Accessories

QTY.	Part Name	Part Image
2	Manual	
8	Cable ties (type A)	
2	Insulation sleeve	
2	Flare nut	
2	Braze to flare adapter	
Varies by model	Magnetic ring (install it on the connective cable between indoor unit and outdoor unit after installation.) (some models)	
1	RG10 Remote controller	
1	Remote controller holder	
2	Battery	

NOTE

Some models have magnetic rings in the accessories, install them on the connective cable between the indoor unit and outdoor unit, and approach the outdoor unit.

Table A-2: Optional Accessories

QTY.	Part Name	Part Image
1	Wired remote control	

NOTE

The wired system control functions as an IR receiver for the handheld remote, if the remote is not used it must be retained with the indoor unit to adjust parameters, and for troubleshooting.

Unpacking

Carefully unpack the unit and inspect the contents for damage. If any damage is found at the time of delivery, proper notification and claims should be made with the carrier. Check the rating plate to ensure the model number and voltage, plus any kits match with what you ordered. The manufacturer should be notified within 5 days of any discrepancy or parts shortage. The box has a mounting template for hanging the unit.

⚠ CAUTION

Remove the EPE cushion installed in the wind turbine.

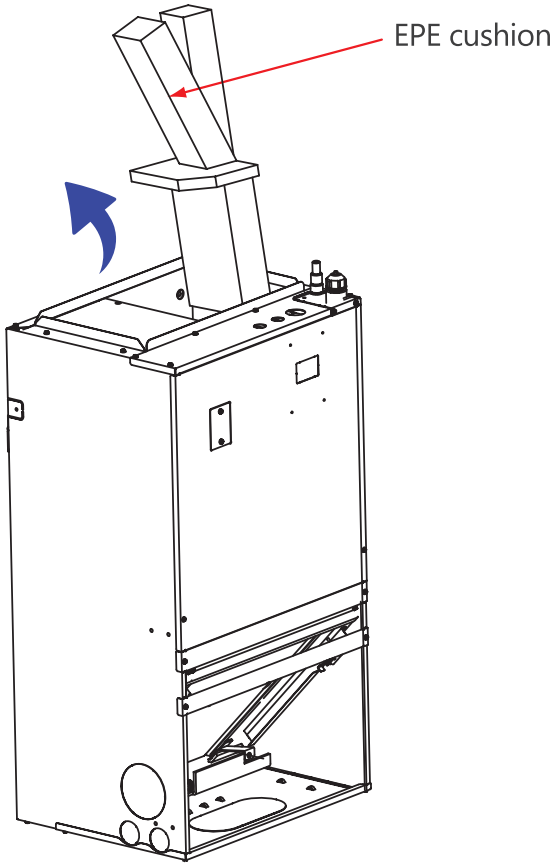


Fig. A-1: Remove the Cushion

Product Overview

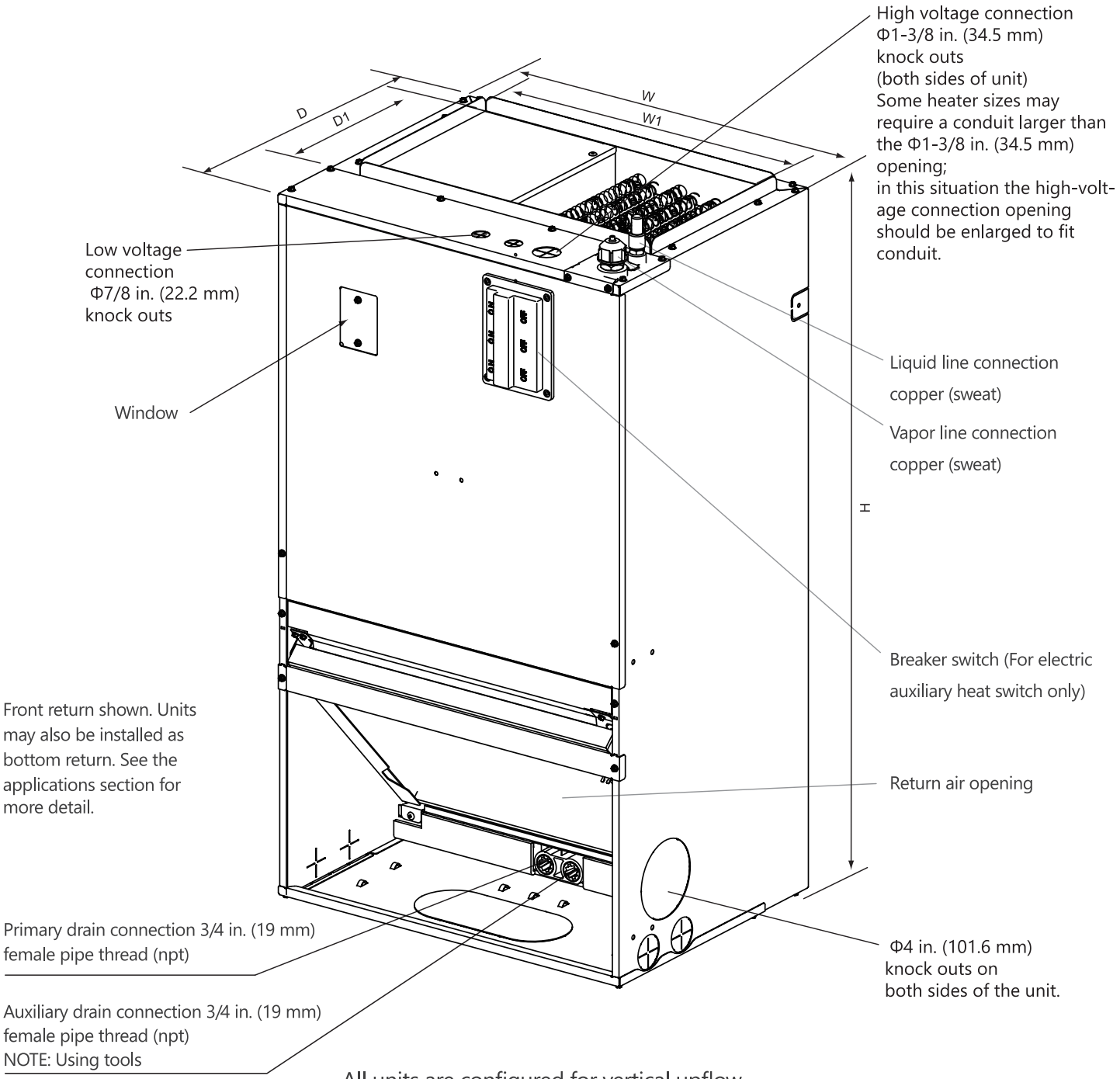


Fig. P-1: Component Location

Dimensions

Table D-1: Dimensions

System Size	Unit Sizes			Duct Opening Area		
	Width (W) in. (mm)	Depth (D) in. (mm)	Height (H) in. (mm)	Supply Width (W1) in. (mm)	Supply Depth (D1) in. (mm)	Weight lbs. (kg)
18K	20-1/4 (580)	15-3/4 (495)	36-1/2 (1,090)	17 1/2 (444.5)	10-1/2 (266.7)	88 1/2 (40)
24K						
30K	22 (625)	19 (590)	40 (1,193)	18 13/16 (477.5)	9-5/16 (236.2)	109 (60.3)
36K						

See Fig. P-1 for dimension markings.

Table D-2: Recommended Filter Sizes

Model (Btu/h)	Width ("W")	Depth ("D")	Thickness ("H")
	in. (mm)	in. (mm)	in. (mm)
18-24K	18 (457)	14 (356)	1 (25.4)
30-36K	20 (508)	20 (508)	

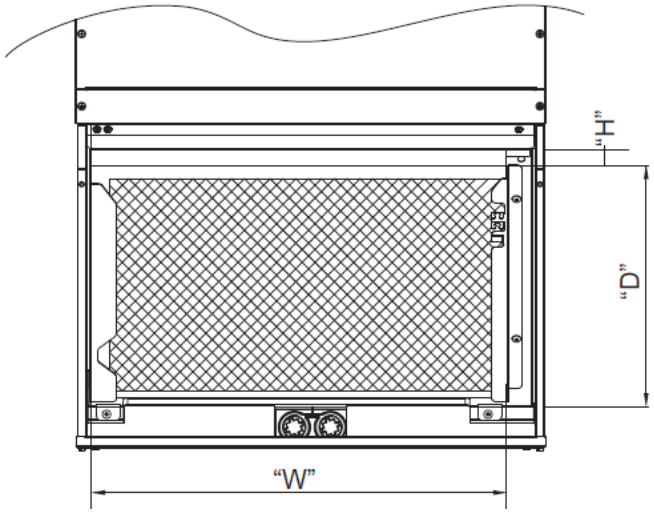


Fig. D-1: Filter Dimensions

IMPORTANT

DO NOT DOUBLE-FILTER THE RETURN AIR DUCT SYSTEM. DO NOT FILTER THE SUPPLY AIR DUCT SYSTEM. THIS WILL CHANGE THE PERFORMANCE OF THE UNIT AND REDUCE AIRFLOW.

NOTE The user needs to use a standard filter that meets the requirements of UL900.

⚠ WARNING

- **Do not** operate the system without filters. A portion of the dust entrained in the air may temporarily lodge in the duct runs and at the supply registers. 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 with filters in place, when certain types of candles, oil lamps or standing pilots are burned.

Air Filter Recomendations

An external filter (not factory installed) or other means of filtration are required. Units should be sized for a maximum of 300 ft./min. air velocity or what is recommended for the type of filter installed.

Filter application and placement 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 the motor, limits, elements, heat relays, evaporator coil, or compressor. Consequently, we recommend that the return air duct system has only one filter location. Systems with a return air filter grill or multiple filter grills can have a filter installed at each return air opening.

If adding high-efficiency filters or electronic air filtration systems, the airflow mustn't be reduced. If the airflow is reduced the overall performance and efficiency of the unit will be reduced. It is strongly recommended that a professional installation technician is contacted to ensure the installation of these filtration systems is installed correctly.

Clearances

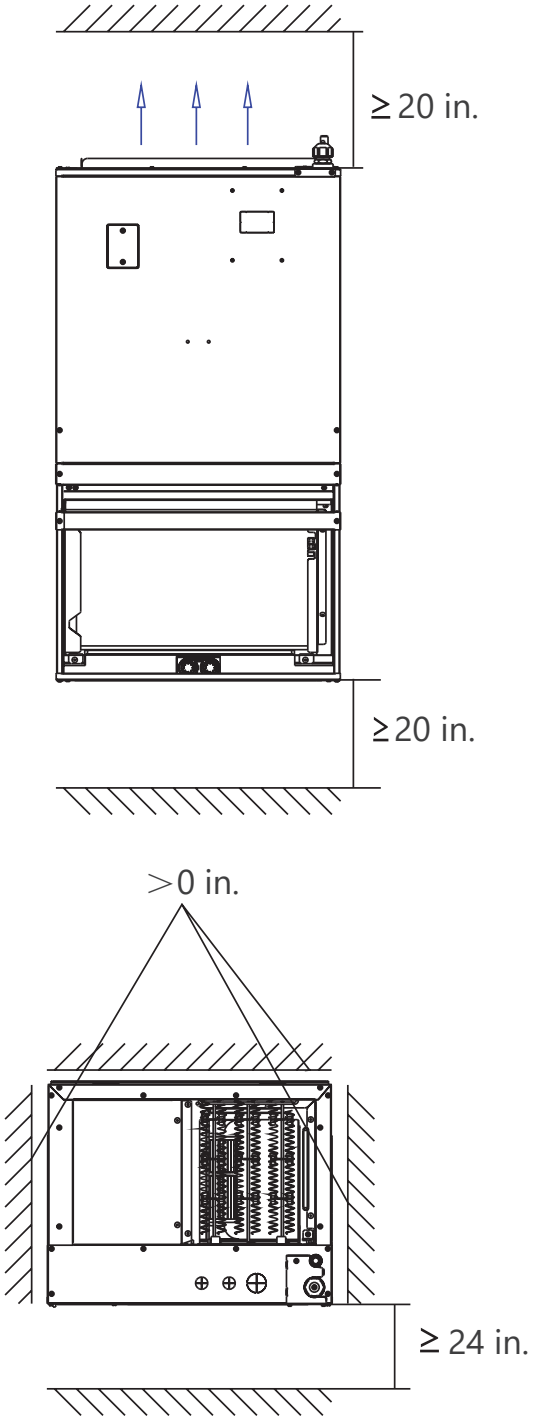


Fig. C-1: Clearance Dimensions

The air handler comes standard with two different options for mounting, wall mount or frame mount. Both mounting options require the unit to be level from side to side and from front to back to allow condensate to properly drain from the unit. Failure to do this will result in condensate leaking out from the unit potentially causing structural damage to the surrounding support structures, drywall, carpet, etc. around the unit. Also, both mounting structures require the ability to accommodate a minimum of 165 lb. load. Failure to do this will cause damage to the support structure and potentially damage the unit.

Location

The small air handler should be centrally located and may be installed in a closet, alcove, utility room, or basement. Minimum clearances must be met. The air handler comes standard with two different options for mounting, wall mount or frame mount. Both mounting options require the unit to be level from side to side and from front to back to allow condensate to properly drain from the unit. Failure to do this will result in condensate leaking out from the unit potentially causing structural damage to the surrounding support structures, drywall, carpet, etc. around the unit. Also, both mounting structures require the ability to accommodate a minimum of 360 lb. load. Failure to do this will cause damage to the support structure and potentially damage the unit.

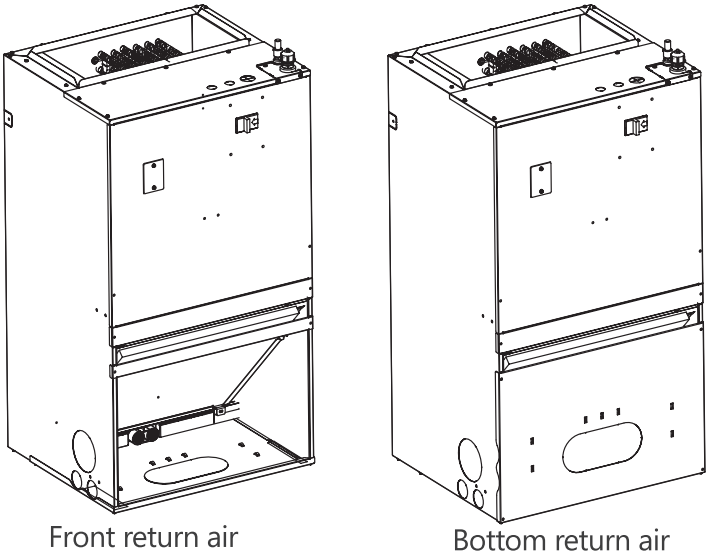


Fig. C-2: Airflow Direction Options

Select Return Air

The unit comes from the factory with front return air as standard.

A Bottom Return Conversion Kit is used to divert the return air from the factory standard front return to a bottom return.

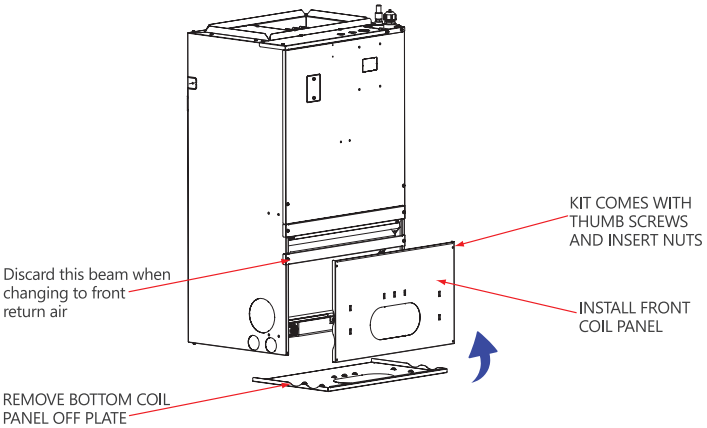


Fig. C-3: Bottom Return Conversion Kit

Installation Requirements

⚠ CAUTION

Install the indoor and outdoor units, cables and wires at least 3-1/5 ft. (1 m) from televisions or radios to prevent static or image distortion. Depending on the appliances, a 3-1/5 ft. (1 m) distance may not be sufficient.

The Indoor unit must be electrically grounded per national and local electrical code.

⚠ WARNING

DO NOT INSTALL IN THE FOLLOWING LOCATIONS:



- DO NOT install the indoor unit in a moist environment. Excessive moisture can corrode the equipment, and electrical components, and cause electrical shorts.



- Areas with strong electromagnetic waves.



- Coastal areas with high salt content in the air.



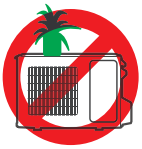
- Areas with oil drilling or fracking.



- Areas that store flammable materials or gas.



- Areas where there may be detergent or other corrosive gases in the air, such as bathrooms, or laundry rooms.



- Areas where the air inlet and outlet may be obstructed.

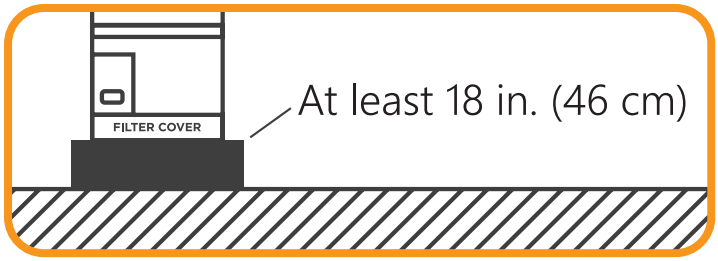


- The danger of explosion. Keep flammable materials and vapors, such as gasoline, away from the air handler.

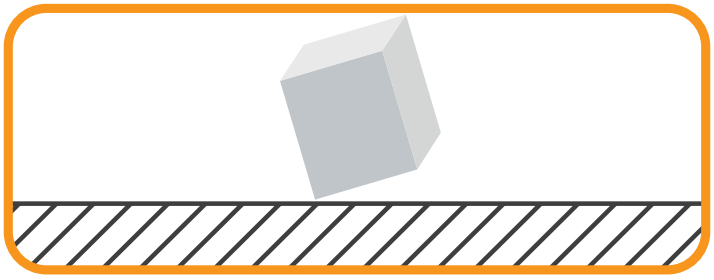
⚠ WARNING

THE UNIT MUST BE INSTALLED IN A LOCATION THAT MEETS THE FOLLOWING REQUIREMENTS:

- **If heating elements are added, the distance from the ground must be greater than 18 in. (46 cm)**. Failure to follow these instructions can result in death, explosion or fire.

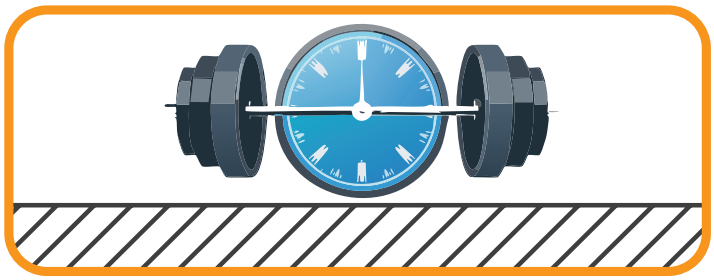


A Stable Position



Securely install the indoor unit on a structure that can support its weight. If the structure is too weak, the unit may fall and cause personal injury, unit and property damage, or death.

Must Support the Weight of the Indoor Unit



The structure that the equipment is suspended from must support the weight of the indoor unit.

Ample Room



- Enough room for installation and maintenance.
- Enough room for the connecting pipe and drainpipe.

NOTE

Remove all accessories and packing in the air outlet before installation.

- Please apply a sealant around the places where the wires, refrigerant pipes and condensate pipes enter the cabinet.
- Use duct tape or flexible sealant to seal closed any space around the holes where the drain lines exit the cabinet. Warm air must not be allowed to enter through any gaps or holes in the cabinet.

Installation

Step 1 - Mounting the Unit

Wall Mount

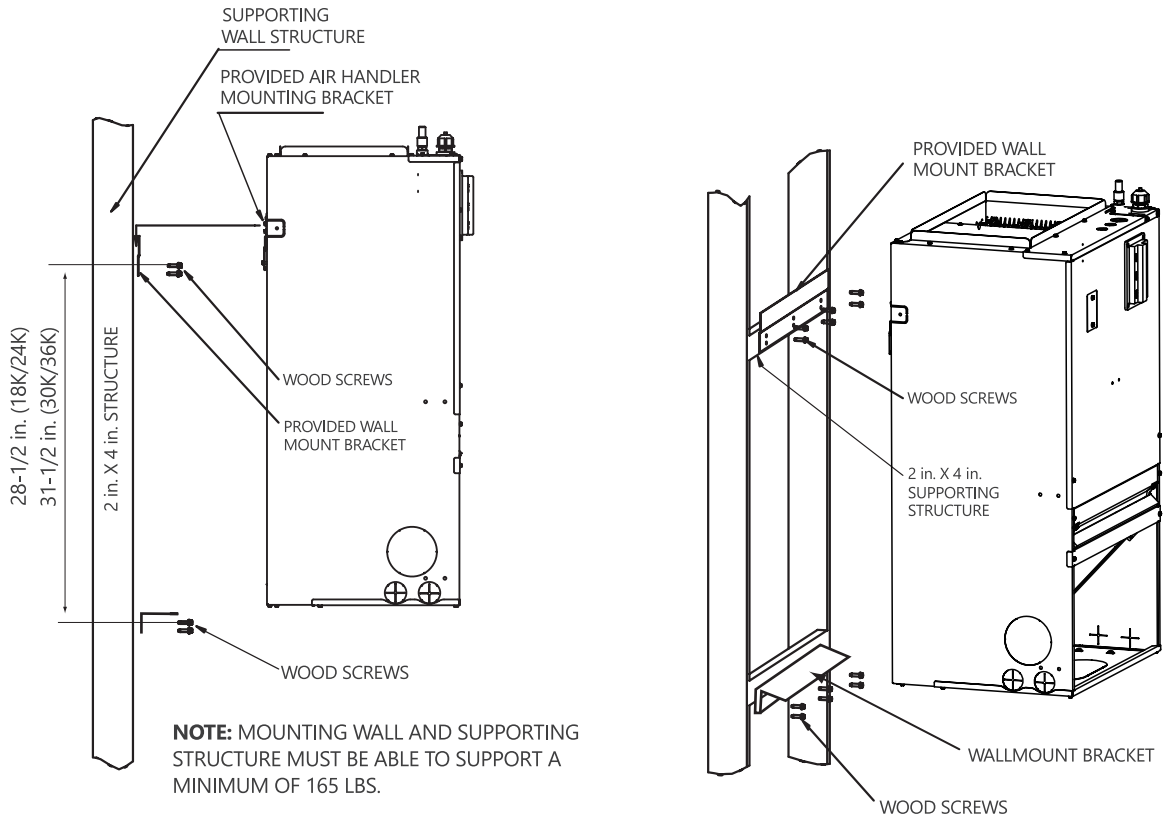


Fig. 1-1: Wall Mounting

Frame Mount

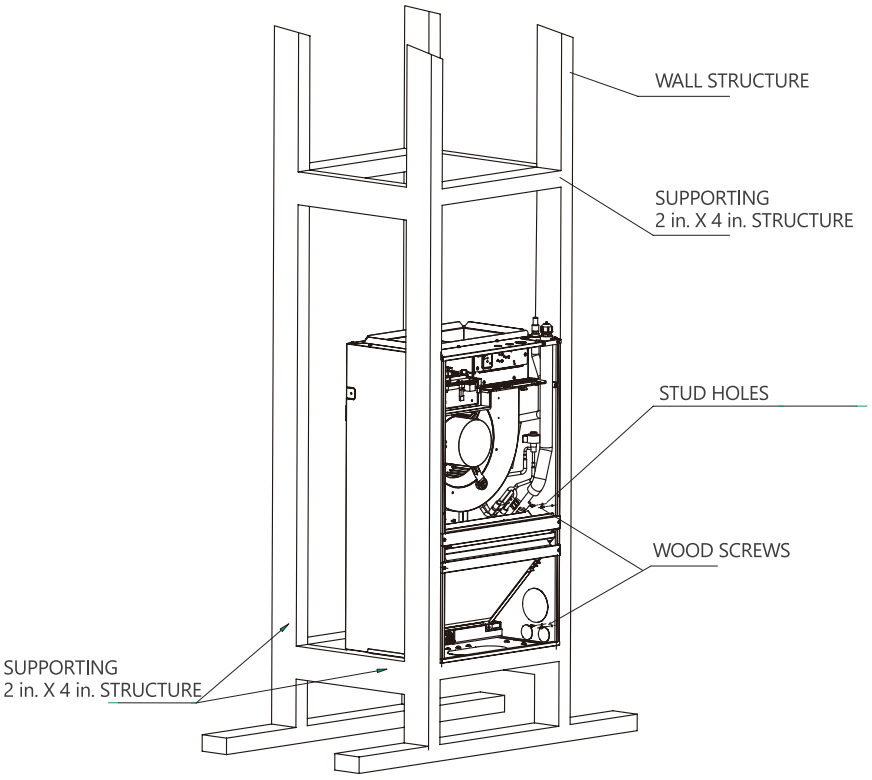


Fig. 1-2: Frame Mount

Cardboard Template for Pre-positioning

1. Cut the template from the shipping cardboard box with the mounting tabs along the dotted lines.

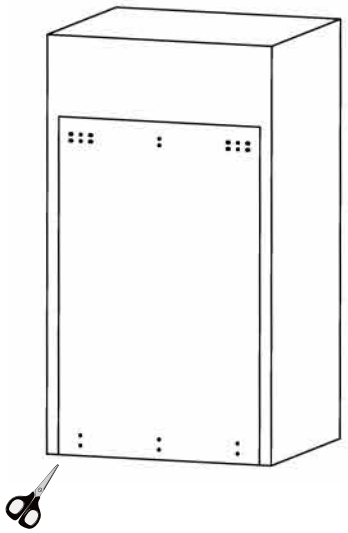


Fig. 1-3: Cut the Template Off the Box

2. The part you need to punch the mounting holes has a total of 12 screws.

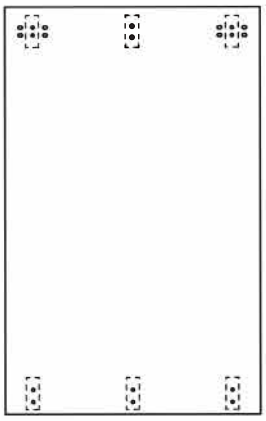


Fig. 1-4: Mounting Screw Holes

3. Attach the mounting template sheet horizontally to the mounting plate and drill holes in a solid black circle using a drill. There are 12 of these holes that must be drilled.

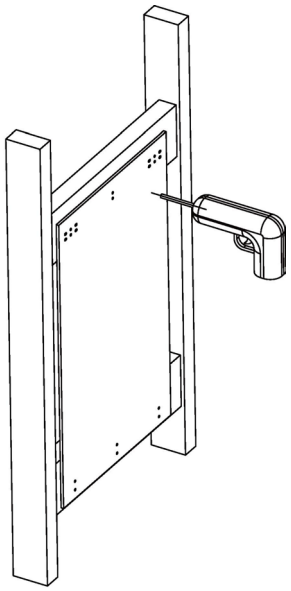


Fig. 1-5: Drill Holes Using the Template

4. Remove the wall brackets from the product.

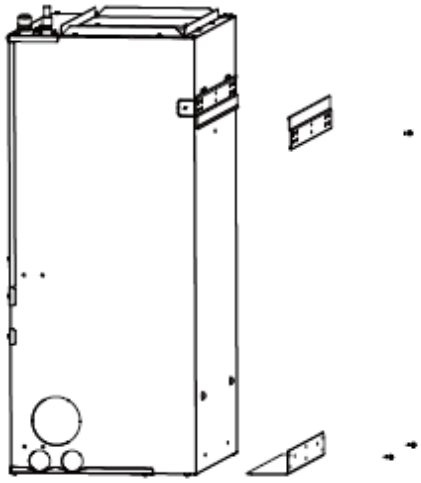


Fig. 1-6: Remove Brackets From The Unit

5. Remove the mounting template sheet, place the mounting bracket over the mounting hole, and attach the upper and lower brackets using six screws for each bracket.

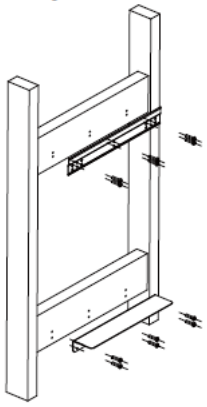


Fig. 1-7: Attach the Upper and Lower Brackets

Instructions for Hanging the Unit on the Support Frame and Using the Auxiliary Installation Hole.

1. Attach the unit to the stand that has already been constructed.

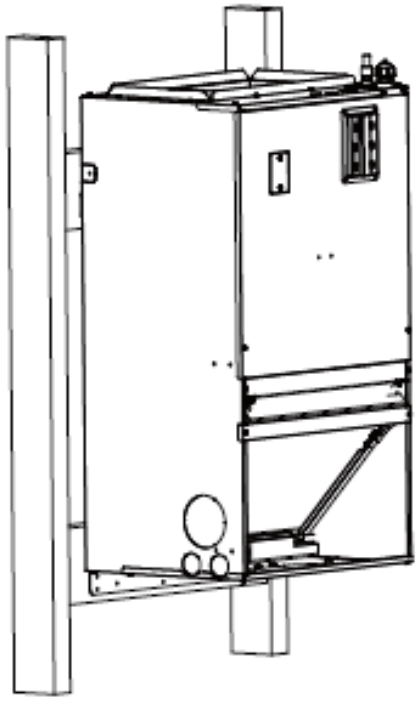


Fig. 1-8: Hang the Unit on the Stand

2. Cut both sides of the product's ear spreading and spread it flat, and attach it to the bracket with screws for auxiliary mounting.

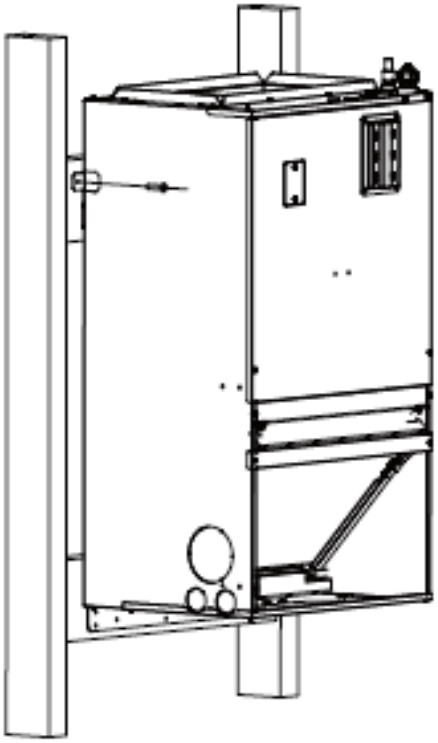


Fig. 1-9: Attach the Ears to the Bracket

3. The adapter tube of the product is securely attached to the body using two wrenches.

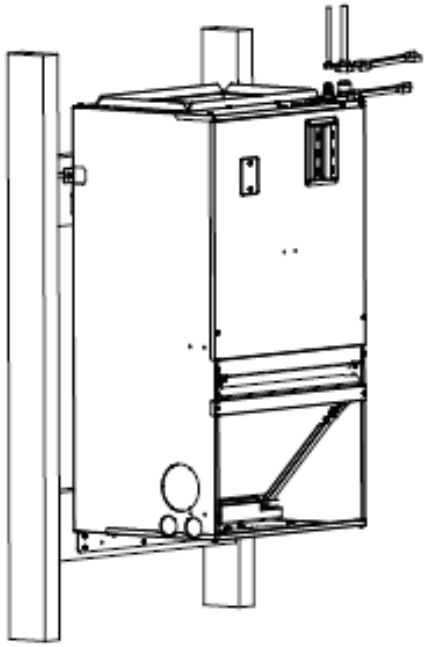


Fig. 1-10: Install the Adapter Tube

Step 2 - Drain Piping

Connection Of Drainage Pipe

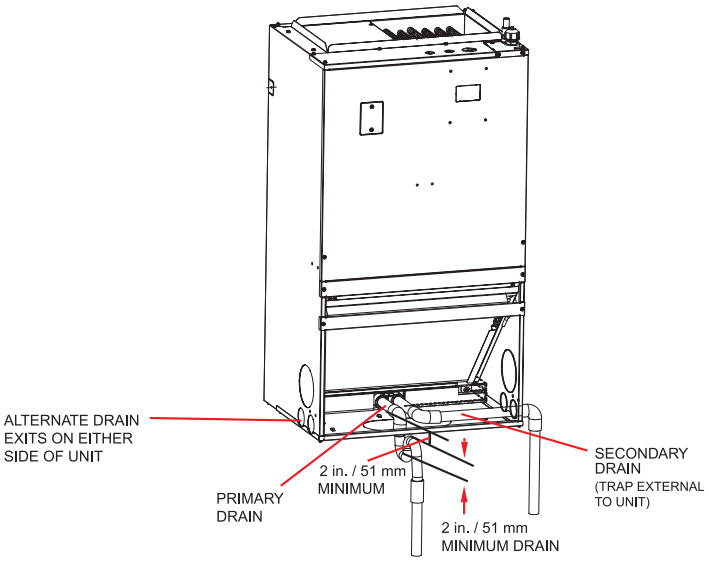


Fig. 2-1: Drainpipe Connections

NOTE

Use metal drains in the area above the cover.

FOR ALL PIPE INSTALLATION

- Insulate all piping to prevent condensation, which could lead to water damage.
- The drainpipe drains water away from the unit. If it is bent or installed incorrectly, water may leak, causing a water-level switch to malfunction.
- In HEAT mode, the outdoor unit will discharge water. Ensure that the drain hose is placed in an appropriate area to avoid water damage and icy conditions on

walkways.

- DO NOT pull the drainpipe forcefully. This could disconnect it.

NOTE

If installed above a finished living space, a secondary drain pan (as required by many building codes), must be installed under the entire unit and its condensate drain line must be routed to a location such that the user will see the condensate discharge.

NOTE

Installation requires PVC pipe or other suitable material per local and national codes, which can be obtained at your local hardware store or dealer.

- After removal of drain pan plug(s), check drain hole(s) to verify that the drain opening is fully open and free of any debris. Also, check to make sure that no debris has fallen into the drain pan during installation that may plug up the drain opening. Seal around the exiting drainpipe, liquid, and suction lines to prevent infiltration of humid air.
- On units of this type, where the blower "draws" rather than "blows" air through the coil, traps must be installed in the condensate drain lines (primary and auxiliary, if used). Traps prevent the blower from drawing air through the drain lines into the air supply.

FRONT RETURN AIR

The unit comes standard with the piping using the piping diagram in Fig. 2-1.

BOTTOM RETURN AIR

If you are using the bottom return air arrangement, use the alternete side drain exits on either side of the unit.

NOTE

A secondary drain or external drain pan can be mandatory, please refer to the local code.

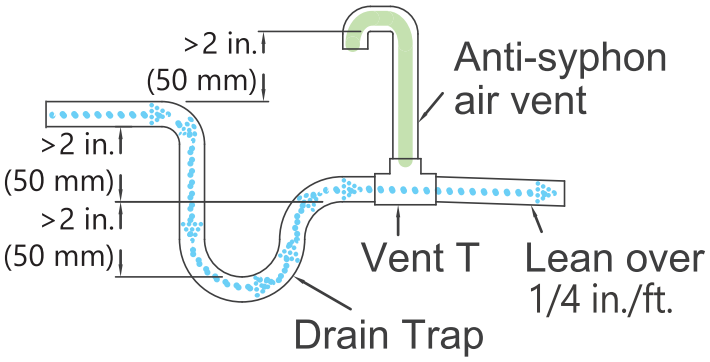


Fig. 2-2: Air Vent Arrangement

The drainpipe outlet should be at least 2 in. (5 cm) above the ground. If it touches the ground, the unit may become blocked and malfunction.

Step 3 - Ductwork

NOTE

When installing the air duct, it is necessary to keep the vertical direction, and the connection between the flange and the air outlet should be sealed with fireproof tape and fixed with screws to avoid air leakage.

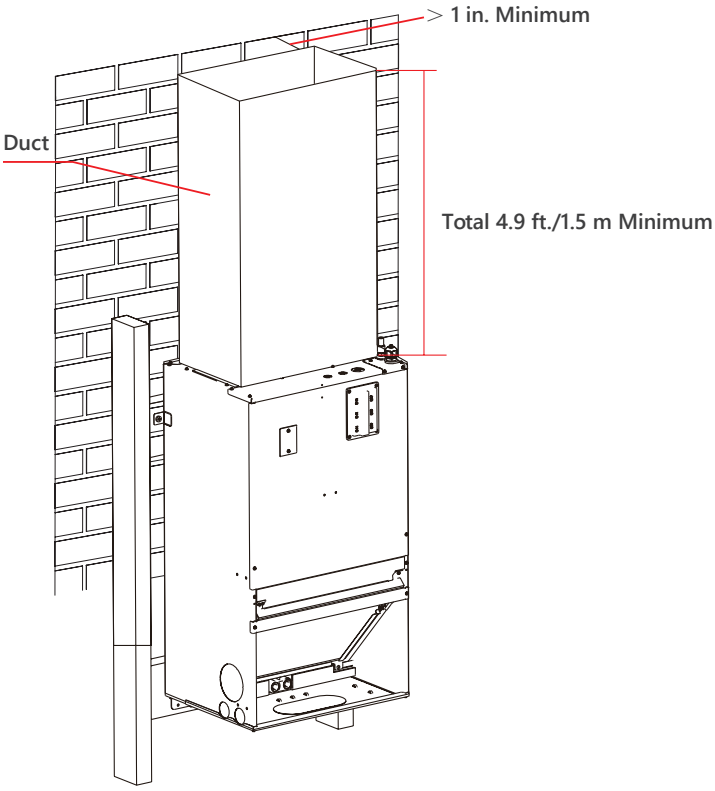


Fig. 3-1: Connection of Duct

NOTE

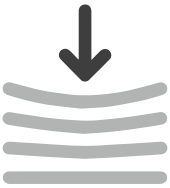
Duct Connection Requirements



- It should be assembled following the instructions.
- It should be insulated and use a Vapor Barrier.
- It should be Flexible suspension mounted and not fastened.



- It should be fabricated and installed following local and/or national codes.
- Air supply and return may be handled in one of several ways best suited to the installation (See Table D-1 for dimensions for duct inlet and outlet connections). Most problems with combination cooling systems can be linked to improperly designed or installed duct systems. It is therefore essential 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. Where the return air duct is short, or where sound could potentially be a problem, a sound-absorbing liner should be used inside the duct.



- The duct must be insulated where it runs through an unconditioned space during the cooling season.
- The use of a vapor barrier is recommended to prevent the absorption of moisture from the surrounding air into the insulation.



- The supply air duct connection should be properly sized

using a transition to match the 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 (free blow) applications.
- Ductwork should be fabricated and installed following local and/or national codes.

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 a 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 following SMACNA Construction Standard on Fibrous Glass Ducts. Ductwork must comply with the 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.

- The duct system must be designed within the range of external static pressure the unit is designed to operate against. The airflow system must be adequate. Make sure supply and return ductwork, grills, special filters, accessories, etc. are accounted for in total resistance. See airflow performance tables in this manual.
- Design the duct system following all the local installation codes.
- Supply plenum is attached to the ¾ in. duct flanges supplied with the unit. Attach flanges around the blower outlet.
- **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.
- **IMPORTANT:** The front flange on the return duct if 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 the insulation on wires located inside the unit.
- 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.
- The condensate drain line must be routed to a location such that the user will see the condensate discharge.

Airflow Performance

Airflow performance data is based on cooling performance with a coil and no filter in place. Select the performance table for the appropriate unit size external static applied to the unit allows operation within the minimum and maximum limits shown in the table below for both cooling and electric heat operation.

Table 3-1: Airflow Performance

Model	Setting	External Static Pressure (in. w.c.)				
	Watts	0	0.2	0.3	0.5	0.8
18K	Turbo	625	625	625	625	625
	Watts	82.6	108.3	121.3	152.1	196.3
	High	584	584	584	584	584
	Watts	70.7	99.6	104.5	132.3	181.3
	Med-High	536	536	536	536	536
	Watts	59.4	78.8	92.5	121.3	166.2
	Low	494	494	494	494	494
	Watts	50.6	75.3	85.5	110.4	152.3
24K	Turbo	833	833	833	833	833
	Watts	161	183	196	243	316
	High	768	768	768	768	768
	Watts	139.8	162	184	212.2	262.3
	Med-Low	702	702	702	702	702
	Watts	110.8	142.8	175.5	208.3	225.3
	Low	625	625	625	625	625
	Watts	82.6	108.3	121.3	152.1	196.3
30K	Turbo	995	995	995	995	995
	Watts	131	183	200.5	245.2	341
	High	912	912	912	912	912
	Watts	99.6	152.4	172.8	206.7	300
	Med-Low	806	806	806	806	806
	Watts	76.6	118.8	134.1	175.7	256.2
	Low	706	706	706	706	706
	Watts	54.9	93.8	112.1	153.1	216.2
36K	Turbo	1202	1202	1202	1202	1202
	Watts	181	259	279.4	337.3	441
	High	1083	1083	1083	1083	1083
	Watts	155.7	218.4	238.3	291.5	385
	Med-Low	971	971	971	971	971
	Watts	119.9	171.5	190.3	233.6	326
	Low	865	865	865	865	865
	Watts	88	135	152	196.4	277.5

Step 4 - Refrigerant Piping Connections

⚠ WARNING

All field piping must be completed by a licensed technician and must comply with local and national regulations.

- When the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration in the room from exceeding the safety limit in the event of refrigerant leakage. If the refrigerant leaks and its concentration exceeds its proper limit, hazards due to lack of oxygen may result.
- When installing the refrigeration system, ensure that air, dust, moisture, or foreign substances do not enter the refrigerant circuit. Contamination in the system may cause poor operating capacity, high pressure in the refrigeration cycle, explosion, or injury.
- Ventilate the area immediately if there is refrigerant leakage during the installation. Leaked refrigerant gas is both toxic and may be flammable. Ensure there is no refrigerant leakage after completing the installation work.

NOTE

Pipes are not included in the accessories, and you need to purchase them separately from the local dealer.

Insulate both the gas and liquid piping to prevent condensation.

IMPORTANT

Use refrigeration grade tubing **ONLY**. No other type of tubing may be used. The use of other types of tubing will void the manufacturer's warranty.

- The minimum refrigerant line length between the indoor and outdoor unit is 10 ft. (3 m).
- Do not open the service valves or remove the protective caps from the tubing ends until all connections are made.
- Bend the tubing with bending tools to avoid kinks and flat spots.
- Keep the tubing free of dirt, sand, moisture, and other contaminants to avoid damaging the refrigerant system.
- Once the pipes are flared at both ends or before brazing them, purge them with nitrogen to remove dirt and moisture before connecting them to an indoor or outdoor unit.
- Insulate both suction and liquid lines separately with insulation size as per Table 8-1.

⚠ CAUTION

DO NOT install the connecting pipe until both the indoor and outdoor units have been installed.

Table 4-1: Piping Sizes

System Size		18K	24K	30K	36K
Maximum Piping Length	ft. (m)	98.4 (30)	164 (50)	164 (50)	246 (75)
Minimum Piping Length		10 (3)			
Max. outdoor-indoor height difference (OU higher than IU)		65.6 (20)	82 (25)	82 (25)	98.4 (30)
Max. outdoor-indoor height difference (IU higher than OU)		65.6 (20)	82 (25)	82 (25)	98.4 (30)
Gas Pipe (size - connection type)	in. (mm)	ø3/4 (19)			
Liquid Pipe (size-connection)		ø3/8 (9.52)			
Unit Connection (in. flare)	Liquid	3/8			
	Gas	3/4			
Adapter at Outdoor Unit (in. flare to flare or braze)	Liquid	3/8 flare→3/8 braze			
	Gas	3/4 flare→3/4 braze			

NOTE

Ensure that the length of the refrigerant pipe, the number of bends, and the drop height between the indoor and outdoor units meet the requirements shown in Table 4-1.

Cut pipes

When preparing refrigerant pipes, take extra care to cut and flare them properly. This will ensure efficient operation and minimize the need for future maintenance.

1. Measure the distance between the indoor and outdoor units.
2. Using a pipe cutter, cut the pipe a little longer than the measured distance.
3. Make sure the pipe is cut at a perfect 90° angle.

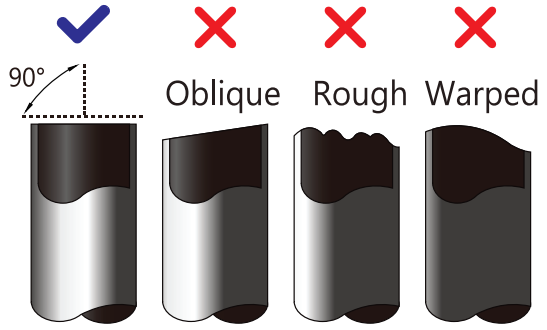


Fig. 4-1: Correct Pipe Cutting

NOTE

DO NOT DEFORM PIPE WHILE CUTTING

Be extra careful not to damage, dent, or deform the pipe while cutting. This will drastically reduce the heating efficiency of the unit.

4. Remove the Burrs

Burrs can affect the air-tight seal of the refrigerant piping connection. Therefore, they must be completely removed. To remove:

a. Hold the pipe at a downward angle to prevent burrs from falling into the pipe.
b. Using a reamer or deburring tool, remove all burrs from the cut section of the pipe

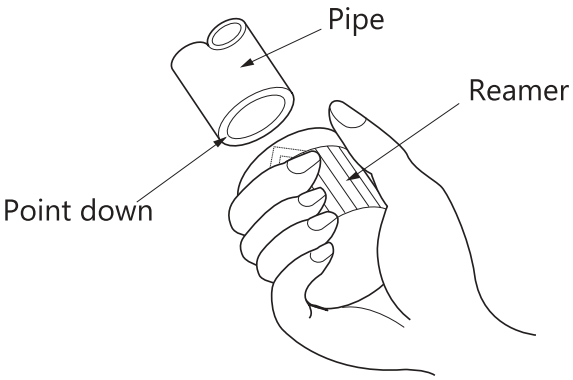


Fig. 4-2: Reamer Tool

5. Flare the Pipe Ends.

Proper flaring is essential to achieving an airtight seal.

a. After removing the burrs from the cut pipe, seal the ends with PVC tape to prevent foreign materials from entering the pipe.
b. Sheath the pipe with insulating material.
c. Place the factory flare nut on the pipe facing the proper direction. Make sure they are facing the right direction. Once the ends are flared, it is impossible to put them on or change their direction.

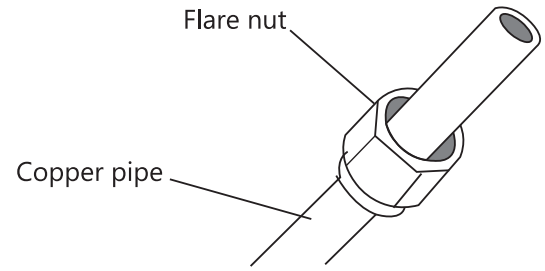


Fig. 4-3: Copper pipe and flare nut

d. Remove the PVC tape from the ends of the pipe when ready to perform the flaring work.
e. Clamp the flare block on the end of the pipe. The end of the pipe must extend beyond the flare form.

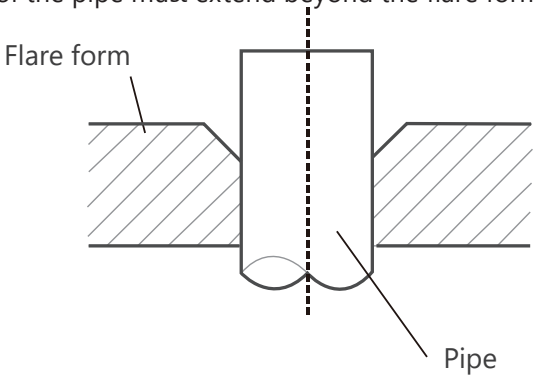


Fig. 4-4: Flare Form

f. Place the flaring tool onto the form.
g. Turn the handle of the flaring tool clockwise until the pipe is fully flared. Flare the pipe following the dimensions in Table 4-2.

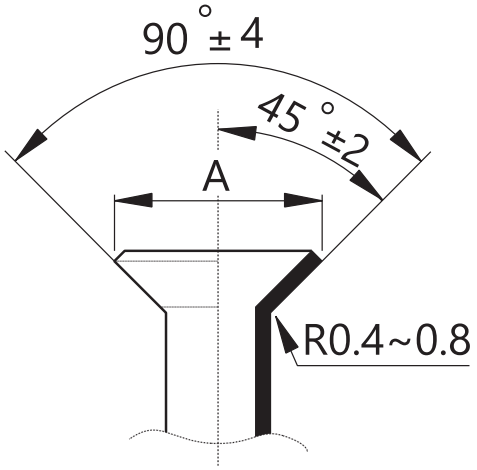


Fig. 4-5: Flare Shape

Table 4-2: Tightening Torque

Pipe Size Outside Diameter	Flare Dimensions (A)
in. (mm)	in. (mm)
Ø1/4 (6.35)	11/23 - 23/64 (~9.1)
Ø3/8 (9.52)	1/2 - 33/64 (~13.2)
Ø1/2 (12.7)	41/64 -31/32 (~16.6)
Ø5/8 (15.88)	49/64 - 35/32 (~19.7)
Ø3/4 (19.05)	-

Tightening Torque for Flare Nuts

Pipe Size Outside Diameter	Tightening Torque
in. (mm)	ft. - lbs. (N.m)
Ø1/4 (6.35)	13.02 - 14.47 (18~20)
Ø3/8 (9.52)	23.15 - 28.21 (32~39)
Ø1/2 (12.7)	35.44 - 42.67 (49~59)
Ø5/8 (15.88)	41.23-51.35 (57~71)
Ø3/4 (19.05)	48.46-73.05 (67~101)

h. Remove the flaring tool and flare block, then inspect the end of the pipe for cracks and even flaring.

6. Connect the Pipes

Connect the copper pipes to the indoor unit first, then connect the pipes to the outdoor unit. Connect the low-pressure pipe first, then connect the high-pressure pipe.

a. Align the center of the two pipes that you will connect.

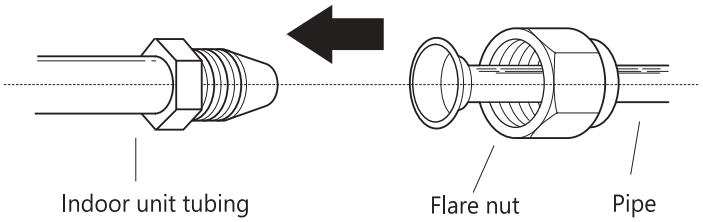


Fig. 4-6: Align the center of the two pipes

b. Tighten the flare nut as much as possible by hand.
c. Using a wrench, grip the nut on the unit tubing.
d. While firmly gripping the nut, use a torque wrench to tighten the flare nut according to the torque values listed in Table 4-2.

NOTE

Use both a spanner and a torque wrench when connecting or disconnecting pipes to/from the unit.

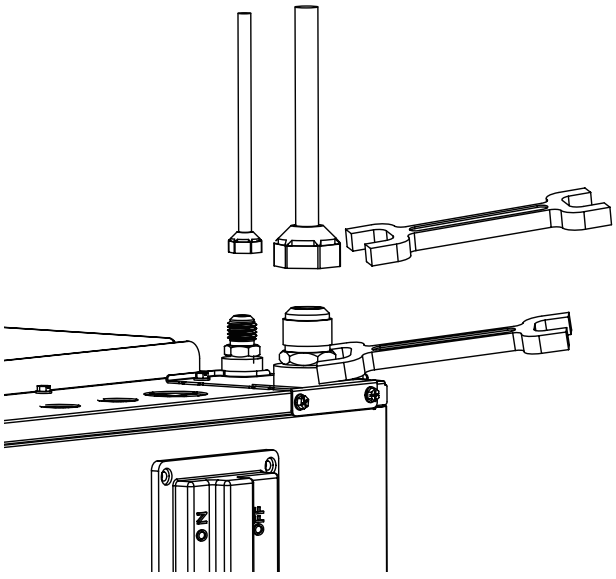


Fig. 4-7: Spanner and Backup Wrench

All tubing bends should be performed with a properly sized tubing bender to prevent kinking or damaging the tubing.

e. While firmly gripping the nut, use a torque wrench to tighten the flare nut according to the torque values listed in Table 3-2.

Ensure to wrap insulation around the piping. Direct contact with the bare piping may result in burns or frostbite.

- Make sure the pipe is properly connected.
- Over-tightening may damage the bell mouth and under-tightening may lead to leakage.

NOTE

MINIMUM BEND RADIUS

Carefully bend the tubing in the middle according to the diagram below. DO NOT bend the tubing over 90° or more than 3 times. Use care when bending pipe, do not kink pipe.

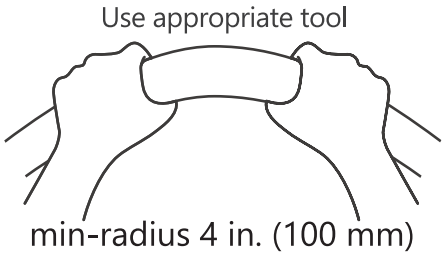


Fig. 4-8: Bend the Tubing

f. Thread this line set through the wall and connect it to the outdoor unit.
g. Insulate the suction line, including the outdoor unit valves.

Check to make sure there is no refrigerant leak after completing the installation work.

If there is a refrigerant leak, ventilate the area immediately and evacuate the system (refer to the Air Evacuation section of the outdoor unit manual).

NOTE

Do not install a suction-line filter drier in the liquid line.

8. Brazing Adapter (Optional)

When flare to braze adapter is used, follow these steps:

a. Refer to the liquid line and gas line connection O.D. sizes in Table 4-1 based on the model being installed. Cut and deburr the tubing (review "Remove the Burrs" in Step 4) to prepare it for brazing. Set up the nitrogen apparatus and connect it to the outside unit to flow nitrogen while brazing. Braze the tubing and any fittings to obtain a proper seal.
b. Insulate the suction line completely, including the outdoor unit valves.

9. Pressure test the piping:

a. Adjust the nitrogen apparatus to pressurize the system. Pressure test the system to a maximum of 500 psig for at least 60 minutes.

Only use Dry Nitrogen to pressure test refrigerant systems. The use of other gases can result in injury, property damage, or death.

10. Use a nitrogen regulator.

a. Attach the low side gauge hose to the 5/16" Schrader valve on the outdoor unit service valve.
b. Attach the charging hose to the regulator on the dry nitrogen tank.

c. Preset the nitrogen regulator to 500 psi.
d. Slowly pressurize the line set until the low side gauge reads 500 psi. Do not exceed 500 psi.
e. Close all the valves on the nitrogen tank and gauges.
f. Allow the pressure test to stand for a minimum of 60 minutes.
g. If the pressure goes down in the 60-minute delay, leak check the tubing and flare fittings to identify the source of the leak. Return to Step C, above.
h. If the pressure holds, release the nitrogen and proceed with "Step 7- Air Evacuation".

Leak Detection System

⚠ WARNING

PERSONAL INJURY OR PROPERTY DAMAGE HAZARD

Failure to follow proper R-454B mitigation system installation instructions can result in property damage, personal injury, or death. If any fault codes are listed, please troubleshoot to prevent system malfunction.

The units come equipped with a factory-wired R454B leak detection and dissipation system to ensure safe operation during a leak. The system consists of a bracket, a PCB, an A2L Detection Sensor, and a drain pan clip. Failure to install this system will result in potentially hazardous conditions and improper equipment operation and void all system warranties and liabilities.

All units are shipped with the A2L Detection Sensor located on the back side of the slope coil.

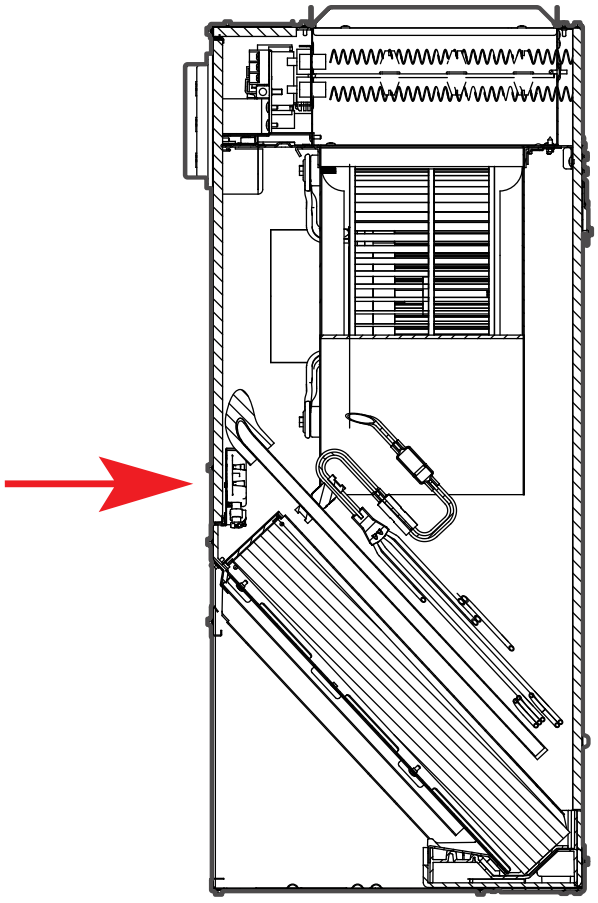


Fig. LD-1: Leak Detector Location

The A2L Detection Sensor is attached to a wiring harness that connects the sensor to the control board.

⚠ CAUTION

The refrigerant leakage sensor can only use the factory model, or the specified model indicated in the corresponding manual.

The R454B refrigerant leakage sensor must be used to activate the refrigerant shut-off device, the alarm device, incorporated circulation airflow, or other emergency controls, which shall give an electrical signal at a pre-determined alarm set point in response to the leaked refrigerant.

The location of leak sensors shall be chosen with the different installation scenarios. Please refer to the indoor unit installation manual for specific requirements. The installation of the refrigerant leakage sensor shall allow access for checking, repair, or replacement by an authorized person.

The refrigerant leakage sensor shall be installed so its function can be verified easily. The refrigerant leakage sensor should be protected to prevent tampering or unauthorized resetting of the pre-set value.

If the refrigerant leakage sensor detects a refrigerant leak, the fan will be turned on to the maximum, the compressor will stop running. You should immediately leave the leak area and notify a professional for handling.

The service life of the refrigerant sensor is 15 years, and it should be replaced after the service life.

⚠ WARNING

LEAK DETECTION SYSTEM installed on the indoor unit. The unit must be powered except for service. Continuous air circulation is required for proper functioning. The unit must be powered except for service. This unit is equipped with electrically powered safety measures. For optimal performance, the refrigerant leakage sensor must remain powered continuously after installation, except during service.

Confirmation of Indoor Unit

Table CIU-1: Units Without Electric Heat

Unit Size	Volts-Phase	Rated Current	MCA (Minimum Circuit Ampacity)	Branch Circuit	
				Min. Wire Size AWG	Fuse/CKT BKR Amps
18K	208/230 V-1*	3.0	4.0	14#	15.0
24K		3.0	4.0		
30K		4.5	6.0		
36K		5.0	6.5		

*The default voltage of the units is 208-203 V. If you need to switch to 115 V, please refer to the Installation Guide For AHU Using 115 V Power Supply in appendix.

Use copper wire only to connect the unit. If other than uncoated (non-plated) 75°C copper wire (solid wire for 10 AWG and smaller, stranded wire for larger than 10 AWG) is used consult applicable tables of the National Electric Code (ANSI/NFPA 70).

NOTE

The specifications may be different between different models, please refer to the indoor unit's nameplate. Please choose the right cable size according to the Minimum Circuit Ampacity indicated on the nameplate of the unit. Choose the cable type according to the local electrical codes and regulations.

Step 5 - Power Wiring Connections

⚠ WARNING

BEFORE PERFORMING ANY ELECTRICAL WORK, READ THESE WARNINGS.

- All wiring must comply with local and national electrical codes and regulations and must be installed by a licensed electrician.
- All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.
- If there is a serious safety issue with the power supply, stop work immediately. Explain your reasoning to the client, and refuse to install the unit until the safety issue is properly resolved.
- Power voltage should be within 90-110% of rated voltage. Insufficient power supply can cause malfunction, electrical shock, or fire.
- Installation of an external surge suppressor at the outdoor disconnect is recommended.
- Power must be connected, a switch or circuit breaker that disconnects all poles and has a contact separation of at least 1/8 in. (3 mm) must be incorporated into the fixed wiring. The qualified technician must use an approved circuit breaker or switch.
- Only connect the unit to an individual branch circuit. Do not connect another appliance to that circuit.
- Make sure to properly ground the air conditioner.
- Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.
- Do not let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.
- To avoid getting an electric shock, never touch the electrical components soon after the power supply has been turned off. After turning off the power, always wait 10 minutes or more before you touch the electrical components.
- Make sure that you do not cross your electrical wiring with your signal wiring. This may cause distortion, interference or possibly damage to circuit boards.
- No other equipment should be connected.
- Connect the outdoor wires before connecting the indoor wires.

⚠ WARNING

BEFORE PERFORMING ANY ELECTRICAL OR WIRING WORK, TURN OFF THE MAIN POWER TO THE SYSTEM.

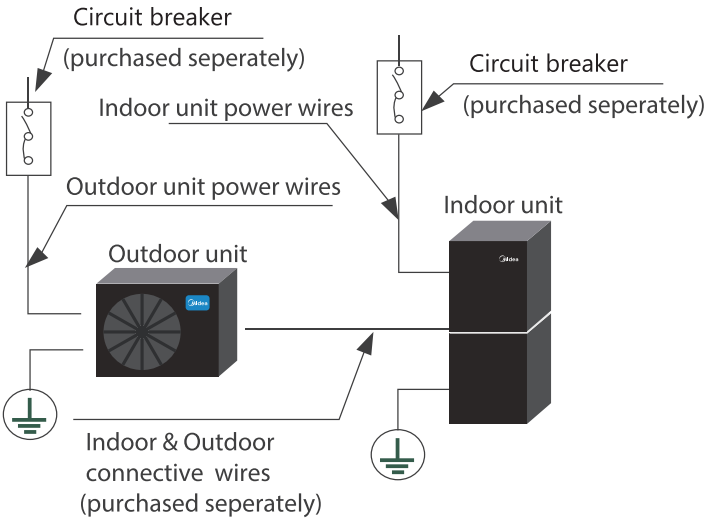


Fig. 5-1: Wiring Overview

NOTE

The diagrams are for explanation purposes only. Your machine may be slightly different. The actual diagram shall prevail.

Please pay attention to the safety of the alignment when installing the line control or thermostat and separate the strong and weak power alignment

⚠ WARNING

OUTDOOR UNIT WIRING

Before performing any electrical or wiring work, turn off the main power to the system.

Prepare the cable for connection.

1. Remove the wire cover from the unit by loosening the 3 screws.
2. Remove caps from the conduit panel.
3. Mount the conduit tubes (not included) on the conduit panel.

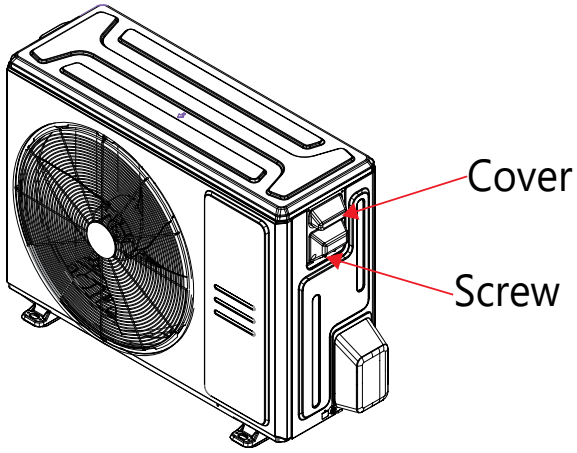


Fig. 5-2: Remove Electrical Cover

4. Properly connect both the power supply and control lines to the terminal block per the connection diagram for the appropriate unit capacity and voltage.
5. Ground the unit in accordance with NEC or CEC and local electrical codes.

NOTE

- When connecting the wires, strictly follow the wiring diagram found inside the electrical box cover.
- Choose the cable type according to the local electrical switches and regulations.
- Please choose the right cable size according to the Minimum Circuit Ampacity indicated on the nameplate of the unit.

6. Be sure to size each wire allowing several inches longer than the required length for wiring.

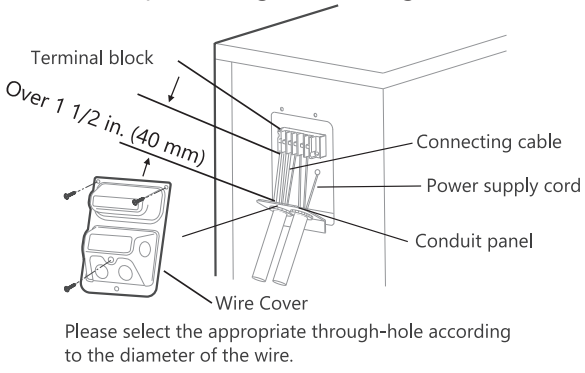


Fig. 5-3: Field Wiring Conduit Location

7. Use the lock nuts to secure the conduit.
8. Reinstall the field wiring cover.

⚠ WARNING

EQUIPMENT DAMAGE HAZARD



Failure to follow this caution may result in equipment damage or improper operation.

Be sure to comply with local codes while running wire from the indoor unit to the outdoor unit.

Every wire must be connected firmly. Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Therefore, ensure all wiring is tightly connected. No wire should be allowed to touch the refrigerant tubing, compressor, or any moving parts.

Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner. The connecting cable with the conduit shall be routed through a hole in the conduit panel.

An approved and listed fitting must be used to securely affix conduit in accordance with NEC and local codes.

Wiring

All wires must be sized per NEC (National Electrical Code) or CEC (Canadian Electrical Code) and local codes. See Table 6-3 MCA (minimum circuit amps) and MOP (maximum overcurrent protection) to correctly size the wires and the disconnect fuse or breakers respectively.

⚠ CAUTION

INDOOR UNIT WIRING

- While connecting the wires, please strictly follow the wiring diagram.
- The refrigerant circuit can become very hot. Keep the interconnection cable away from the copper tube.

Prepare the cable for connection.

1. Using wire strippers, strip the insulating jacket from both ends of the signal cable to reveal about 6 in. (150 mm) of the wire.
2. Strip the insulation from the ends of the wires.

Open the front panel of the indoor unit.

Using a screwdriver, remove the cover of the electric control box from your indoor unit.

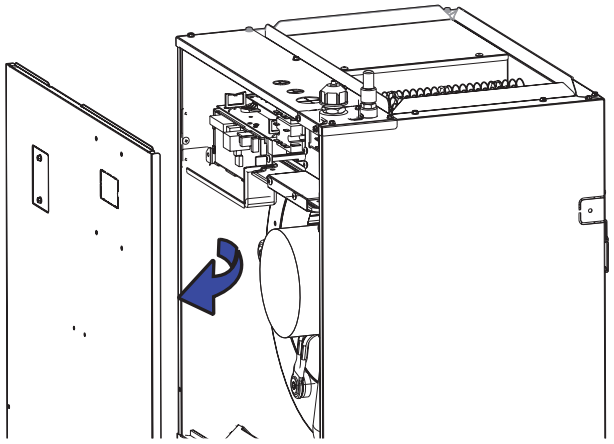
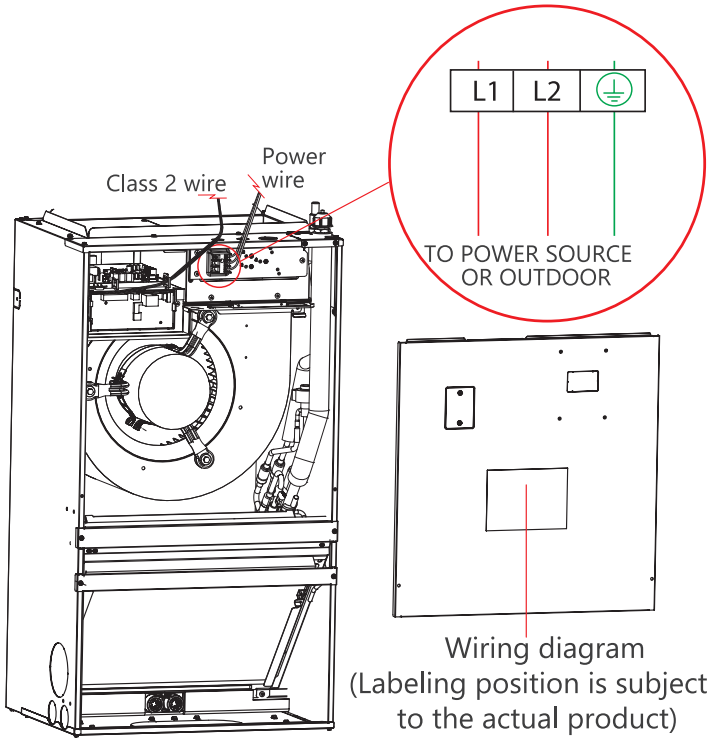


Fig. 5-5: Open the Upper Front Panel

Connect the wires to the terminals.

1. Thread the power cable and the signal cable through the wire outlet
2. Match the wire colors/labels with the labels on the terminal block. Firmly screw the wires of each wire to its corresponding terminal. Refer to the Serial Number and Wiring Diagram located on the cover of the electric control box. Terminal block wiring. When using 208 V or 230 V,connect L1 and L2. When using 115 V,connect L1 and L2 (L2 is used as N).



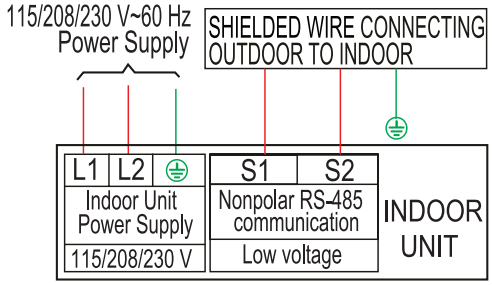


Fig. 5-6: Power Wiring Location

NOTE

The default voltage of the units is 208-203 V. If you need to switch to 115V, please refer to the Installation Guide For AHU Using 115 V Power Supply in the appendix.

⚠ WARNING

ISOLATE THE POWER SUPPLY LEADS AND COMMUNICATION LEADS BY THE STRAIN RELIEF AND KEEP POWER SUPPLY LEADS AWAY FROM COMMUNICATION LEADS.

3. Clamp down the cable with the cable clamp. The cable must not be loose or pull on the U-lugs.
4. Reattach the electric box cover.
5. Clamp down the cable with the cable clamp. The cable must not be loose or pull on the U-lugs.
6. Reattach the electric box cover.

⚠ CAUTION

- While connecting the wires, please strictly follow the wiring diagram.
- The refrigerant circuit can become very hot. Keep the interconnection cable away from the copper tube.
- The holes on the cover of the electronic control box must be threaded through with armored wires.

NOTE

While bundling these items together, **DO NOT** intertwine or cross the signal cable with any other wiring.

The motor has two pairs of plugs. The red color indicates that the motor is connected to the plug when powered by 115 V, and the white color indicates that the motor is connected to the plug when powered by 230 V (default is connected to the white pair of plugs). When using a 208-230 V power supply, this part remains unchanged; When using a 115 V power supply, the motor wiring requires the use of a 115V motor pair plug. At this time, the white motor pair plug needs to be removed, and the red motor pair plug needs to be connected. When the motor is plugged in red, the internal power supply must be 115 V. If it is powered by a 208-230 V power supply, the motor will be damaged.

Step 6 - Specific Wiring Methods

Please refer to the wiring nameplate for the wiring method. Do not connect the power cord to the communication line, as this may damage the system.

Table 6-1: Communication Wiring Sizes

Option	Communication Type	Reocommended Cable Size
1	Non-Polarity RS485 Communication (S1 - S2)	20 AWG (stranded shielded)
2	24 V communication	18 AWG 8 conductor thermostat wire

⚠ WARNING

EQUIPMENT DAMAGE HAZARD

Failure to follow this caution may result in equipment damage or improper operation. Wires should be sized based on NEDC and local codes.



NOTE

- Do not use the thermostat wire for any RS-485 connection between indoor and outdoor units.
- All connections between the indoor and outdoor units must be made as shown in Fig. 6-3

Power needs to be OFF before dip switch adjustments.

⚠ CAUTION

EQUIPMENT DAMAGE HAZARD



Failure to follow this caution may result in equipment damage or improper operation. Be sure to comply with local codes while running wire from the indoor unit to the outdoor unit. Every wire must be connected firmly. Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Ensure all wiring is tightly connected.

⚠ WARNING

No wire should touch the refrigerant tubing, compressor or any moving parts. Disconnecting means must be provided and shall be located within sight and readily accessible from the air conditioner. Connecting cable with conduit shall be routed through the hole in the conduit panel.

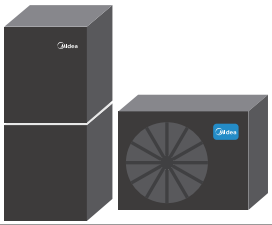
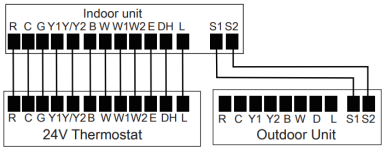
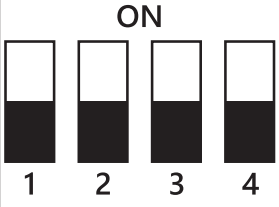
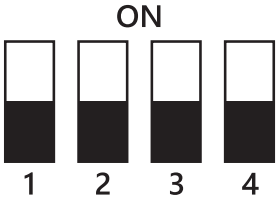
Table 6-2: Wiring Color Guide

THERMOSTAT				INDOOR UNIT	OUTDOOR UNIT
Heat - 2nd stage	W2	WHITE	→	W2	→ N/C
Emergency Heat - 1st stage	W1/E	BLACK	→	W1	→ D
		N/C		E	
		N/C		W	W
4 Way Valve	B	ORANGE	→	B	→ B
Cool - 2nd stage	Y2	BROWN	→	Y2	→ Y2
Cool - 1st stage	Y	YELLOW	→	Y	→ Y
Fan	G	GREEN	→	G	→ G
	L	GRAY	→	L	→ L
Power Common	C	BLUE	→	C	→ C
Power	R	RED	→	R	→ R
	DH	PURPLE	→	DH	→ N/C

Note

The adapter cable must be used when applying the full 24 V communication scheme. This will stop the operation of the outdoor unit for safety if refrigerant leakage happens.

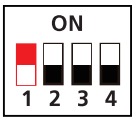
Scenario 1: EVOX Heat Pump and Air Handler 3rd Party 24 V Thermostat

Matchup	Thermostat	Wiring	AHU SW1	ODU SW
Midea AHU+Midea ODU 	3rd Party 24 V Thermostat 	24 V communication 		

*This is a general wiring diagram. Use the diagram that comes with your selected 24 V thermostat.

Fig. 6-1: Scenario 1 Wiring Diagram and Dip Switch Settings

- The IDU and ODU need separate power. See Step 5 - Power Wiring Connections.
- Bi Communication (IDU SW1-1&-4 and ODU SW-1) auto recognize.
- IDU and ODU need 2 non-polarities (5 V RS485 communication through S1 S2).
- IDU and Thermostat Controller Communicate with 24 VAC signal.
- Existing 24 V thermostat wire maybe used.
- IDU SW1 is factory designed for automatic control recognition (the system automatically identifies a communicating signal or a 24 V signal, the DIP switch is for verification and test purposes).
- When connecting a wired controller and 24 V thermostat, the 24 V signal will take priority.



Scenario 2: EVOX Heat Pump, Air Handler, and RS485 Communication

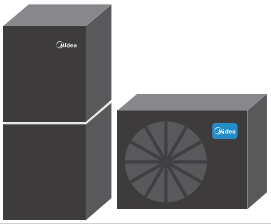
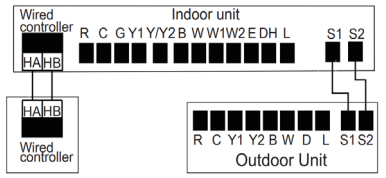
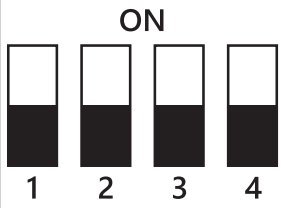
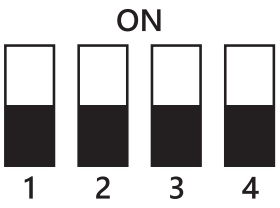
Matchup	Thermostat	Wiring	AHU SW1	ODU SW
Midea AHU+Midea ODU 	Midea Wired Thermostat 	Non-polarity RS485 communication 		

Fig. 6-2: Scenario 2 Wiring Diagram

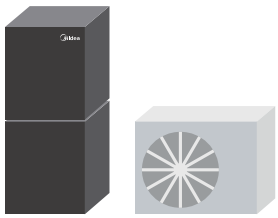
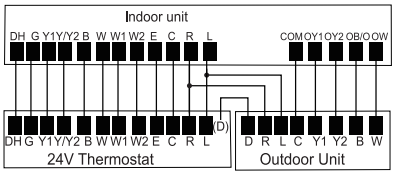
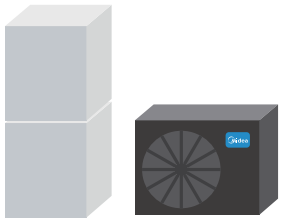
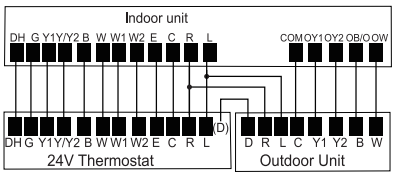
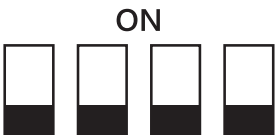
- The IDU and ODU need separate power. See Step 5 - Power Wiring Connections.
- IDU and ODU need 2 non-polarity (5 V RS485 S1 and S2 communication)
- IDU and Midea wired controller (HA & HB with 20 VDC)

NOTE

Wired Controllers use RS485communication and the connections cannot accept 16 AWG wire.

- Existing 24v thermostat wires maybe used.
- When connecting a wired controller and 24 V thermostat, the 24 V signal will take priority.

Scenario 3: Self-Adapt Mode with 3rd Party Equipment

Matchup	Thermostat	Wiring	AHU SW1	ODU SW
Midea AHU+Brand ODU 	3rd Party 24 V Thermostat 	24 V communication 	ON 	Other Brand Outdoor Unit
Brand AHU+Midea ODU 	3rd Party 24 V Thermostat 	24 V communication 	Other Brand Air Handling Unit	ON 

NOTE

For Brand AHU+Midea ODU, the 24V thermostat needs to be connected to a mainboard with a refrigerant sensor, and it should be able to cut off power to the outdoor unit in case of refrigerant leakage. Otherwise, there will be a risk of refrigerant leakage.

Fig. 6-3: Scenario 3 Wiring Diagram and Dip Switch Settings

- The IDU and ODU need separate power. See Step 5 - Power Wiring Connections or the 3rd party unit's instructions.
- A 24V signal controls IDU and ODU.

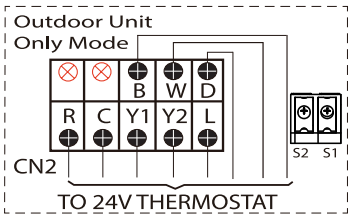
24 V Connection Diagrams

Table 6-4: Control Logic

Terminal	Location	Function
R	Thermostat/Indoor Unit/Outdoor Unit	24 V Power Connection
C	Thermostat/Indoor Unit/Outdoor Unit	Common
G	Indoor Unit	Fan Control
Y1	Thermostat/Indoor Unit/Outdoor Unit	Low Demand
Y2	Thermostat/Indoor Unit/Outdoor Unit	High Demand
B	Thermostat/Indoor Unit/Outdoor Unit	Heating Reversing Valve
W	Thermostat/Indoor Unit/Outdoor Unit	Heating Control
W1	Thermostat/Indoor Unit	Stage 1 Electric Heating
W2	Thermostat/Indoor Unit	Stage 2 Electric Heating
E/AUX	Indoor Unit	Emergency Heating
D	Outdoor Unit	Defrost - (24 V output signal)
L	Thermostat/Indoor Unit/Outdoor Unit	System Fault - (24 V output signal)
DH/BK	Thermostat/Indoor Unit	Dehumidification/Zoning Control
DS	Indoor Unit	Reserved Signal
W2	Thermostat/Indoor Unit	Second Stage Heating

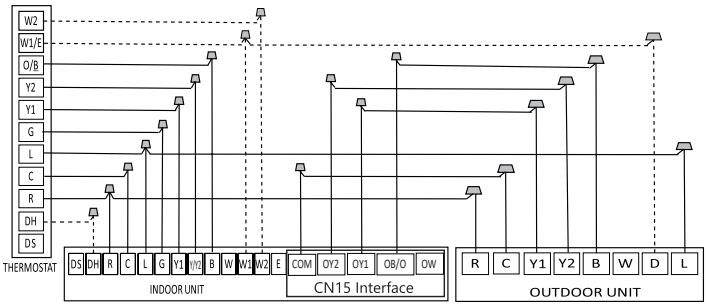
NOTE

Terminal D is now energized when the outdoor unit goes into defrost mode and can be used to enable electric heat. This feature is unavailable when the outdoor unit communicates with the indoor unit via non-polarity RS485 Communication S1-S2.



24 V must never be connected to S1 – S2. All wiring must be in compliance with the above scenarios. Incorrect wiring will cause irreversible damage to the control.

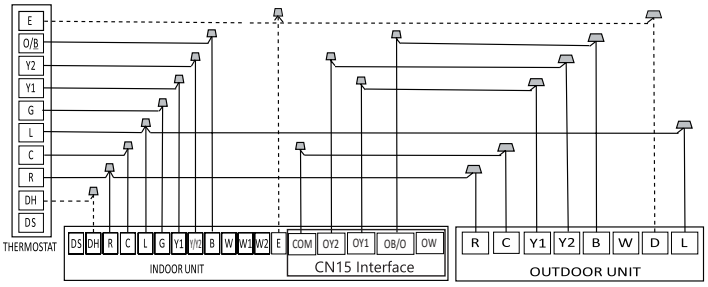
Fig. 6-4: Never Connect 24 V to S1-S2



S4-2 Default on, DH function off. Turn switch off to activate DH function.

S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

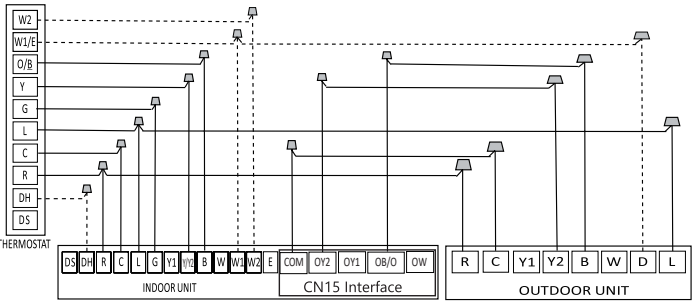
Fig. 6-5: Wiring for 4H and 2C Thermostat



S4-2 Default on, DH function off. Turn switch off to activate DH function.

Emergency heating control two groups of electric heating at the same time

Fig. 6-6: Wiring for 3H and 2C Thermostat



S4-2 Default on, DH function off. Turn switch off to activate DH function.

S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

Fig. 6-7: Wiring for 3H and 1C Thermostat

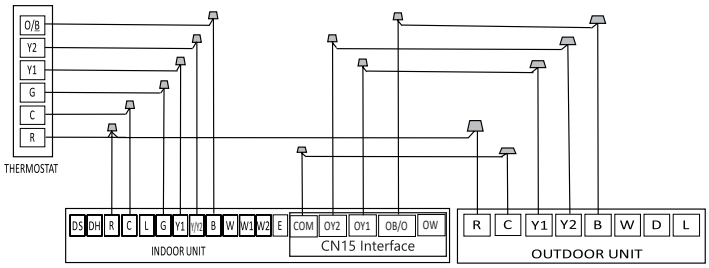
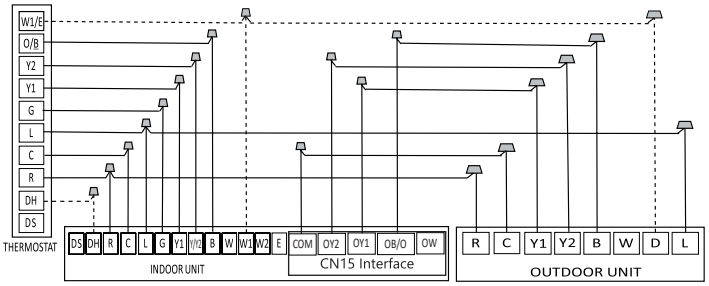


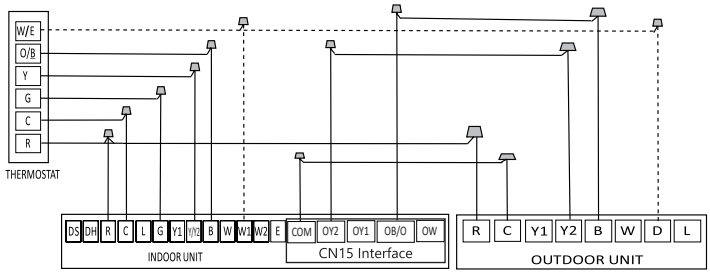
Fig. 6-8: Wiring for 2H and 2C Thermostat No Auxilary Heat



S4-2 Default on, DH function off. Turn switch off to activate DH function.

S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

Fig. 6-9: Wiring for 3H and 2C Thermostat



S4-4 Default on, W1 and W2 shorted for single stage Aux heat operation. Turn off to separate stages.

Fig. 6-10: Wiring for 2H and 1C Thermostat

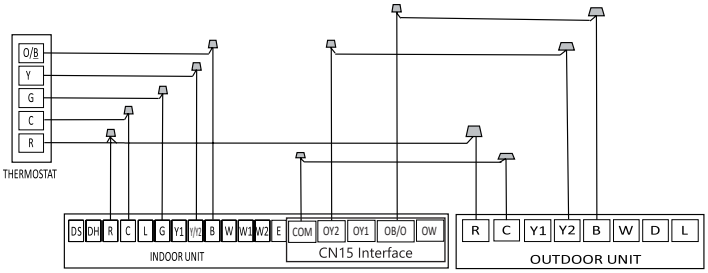


Fig. 6-11: Wiring for 1H and 1C Thermostat

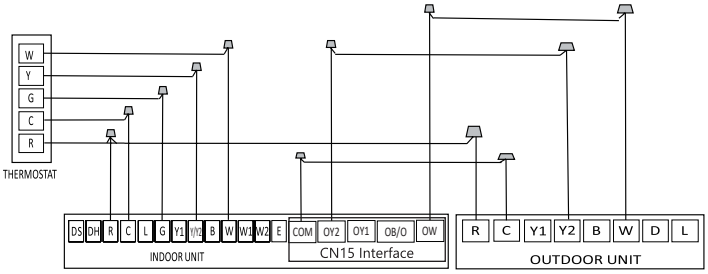


Fig. 6-12: Wiring for 1H and 1C Thermostat

NOTE

This is the least preferred method of control wiring and should only be used in emergencies. It may not achieve full capacity.

NOTE

If the outdoor condensing unit initiates defrost cycles frequently, then it is recommended to adjust the "thermal balance point" to a temperature that would decrease the recurrence of these cycles and prevent cold air from blowing during the duration of the defrost cycle. The thermal balance point is the outdoor ambient temperature at which the heat pump can no longer provide sufficient heating to the space on its own and compromises the reliability of the compressor.

Optional function wiring

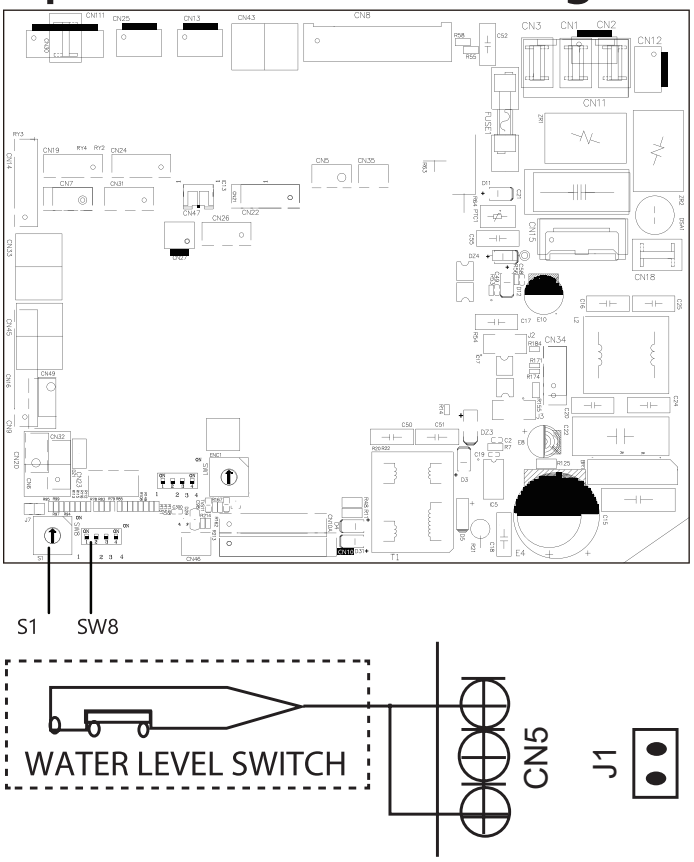


Fig. 6-13: Condensate Overflow Wiring

Condensate overflow switch:

The unit will accommodate a remote condensate overflow switch. To enable, remove jumper J1, and connect the installer-provided condensate overflow device to CN5 as shown below. When an overflow condition is present, the device should open the connection, signaling the unit to turn the system off.

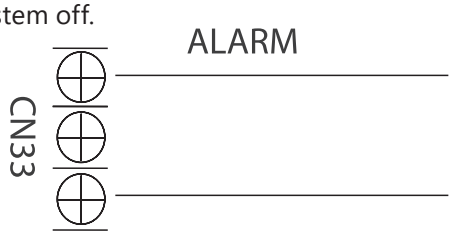


Fig. 6-14: Alarm Wiring

Alarm output:

An alarm output (CN33) can be utilized if actions are required when a fault is present. This is a passive outlet port, so you will need to input a voltage signal. The relay is normally open for normal operation and closed when the fault condition is active.

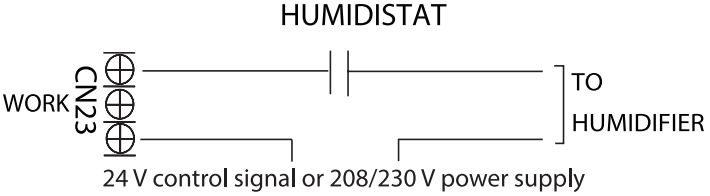


Fig. 6-15: Humidifier Wiring

Humidifier control:
To connect a humidifier, utilize the passive signal "WORK" output (CN23) port as well as the R and C wires on the controller, and wire the humidistat and humidifier per the above wiring diagram. When the fan is running, the CN23 relay will be closed, which will allow power to the humidifier when the humidistat is below the humidity setpoint. If the thermostat or zone controller has a HUM interface, connect the humidifier directly to the HUM and C ports.

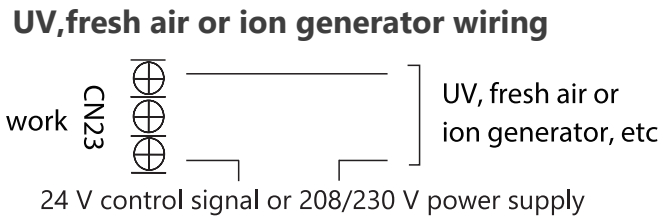


Fig. 6-16: Clean Air Wiring

UV, fresh air, or ion generator:
The WORK port is linked to the fan. When the fan is running, the relay is closed.

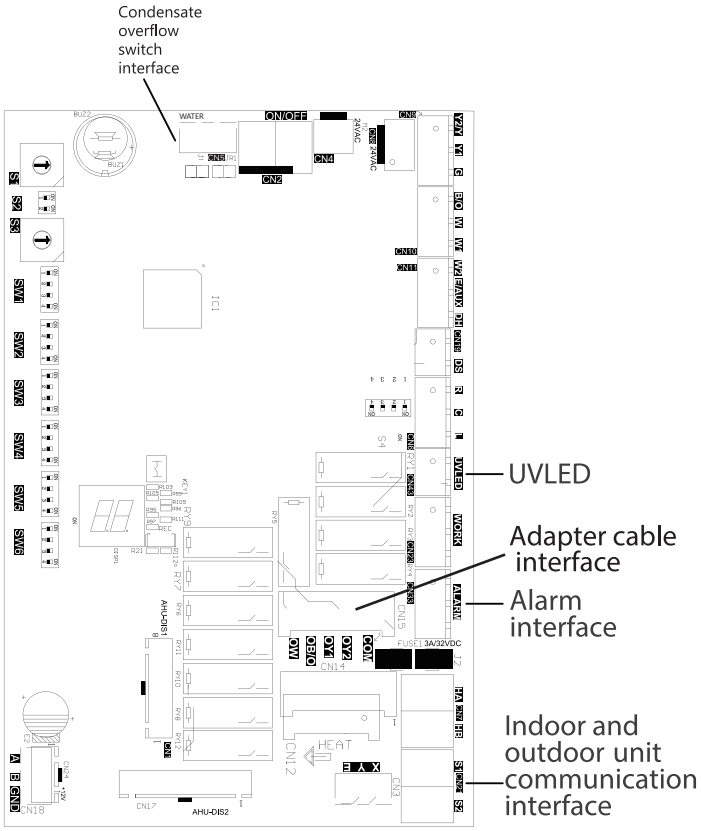


Fig. 6-17: Interface Wiring Locations

LED Display
The control displays unit status as well as any active fault codes on the LED display. If the unit is functioning normally, the LED will display the current temperature setpoint. When a fault code is active, the display will flash quickly the active fault code. Please refer to the fault code table located in the troubleshooting section of the manual for detailed fault code information.

KEY1 Instructions (For Wired Controller only)

- Press KEY1 to enter the forced automatic mode, press KEY1 again to enter the forced cooling mode (LED display FC), and press KEY1 again to shut down.
- Long press KEY1 under forced cooling mode (LED display FC) 5s to enter forced defrost mode.

DIP switch definitions

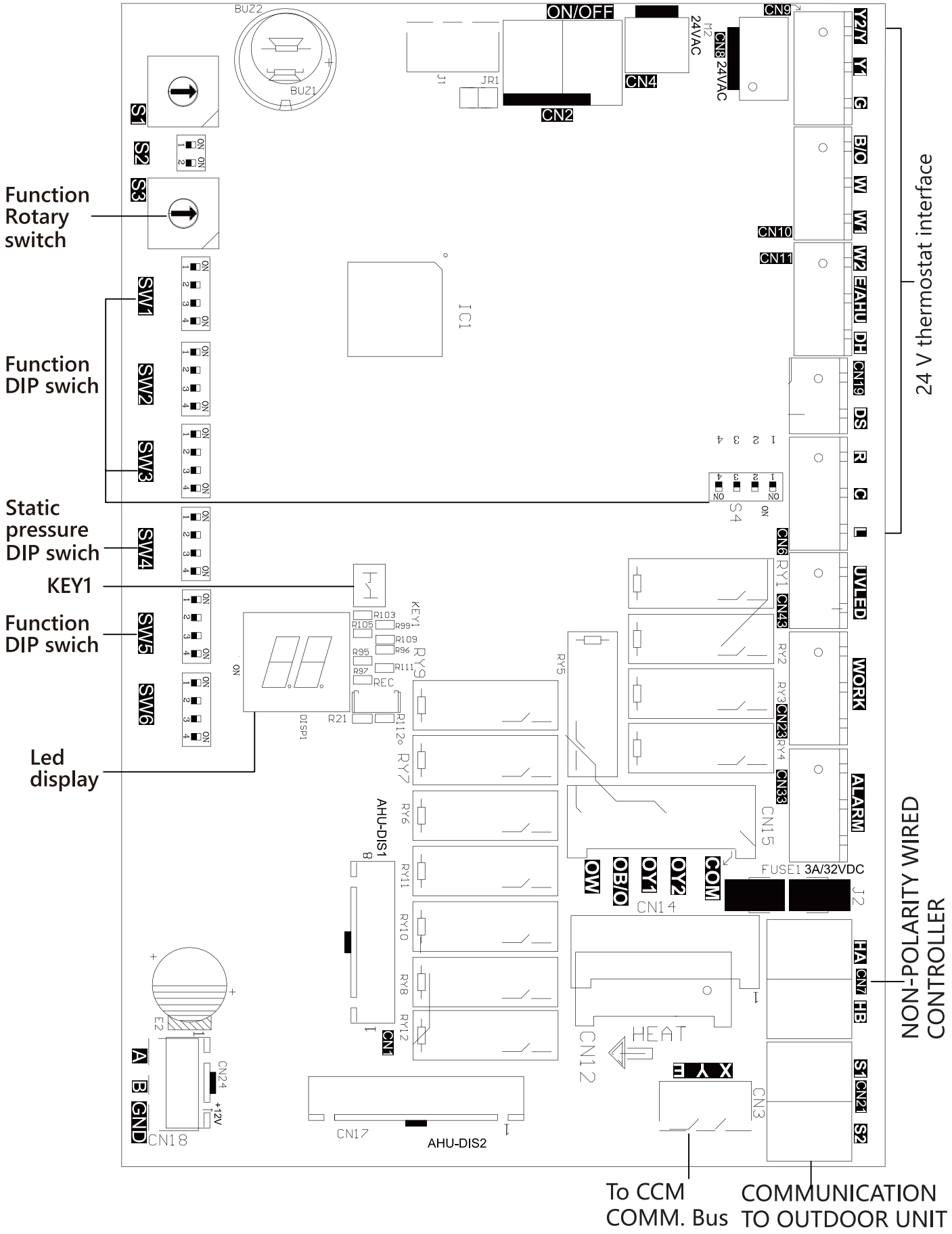
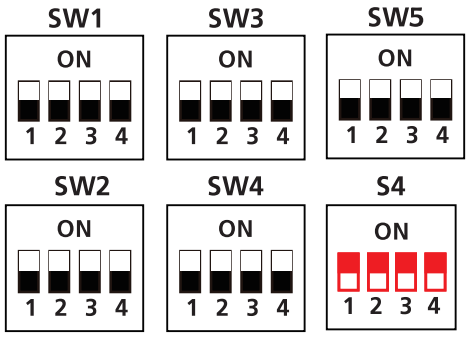


Fig 6-18: Dip Switch Layout

Function DIP switch settings:
The 24 V thermostat mode needs to refer to the following settings:



SW4-1	000 is the default 000/001/010/011/100/101/ 110/111, internal machines with different abilities, electric heating, and PSC classification for use.
SW4-2	
SW4-3	

Fig. 6-19: 24 V Thermostat Settings

Table 6-5: Function combination table of SW1-1 and SW1-4

SW1	Control Type	IDU & ODU Connection	Note
	Wired controller / 24 V thermostat	(S1+S2) / 24 V connection (S1+S2) / 24 V connection	Auto Discovery
	Wired controller	S1+S2	Scenario 2
	24 V Thermostat	S1+S2	Scenario 1
	24 V Thermostat	24 V connection	Scenario 3

Table 6-6: Indoor Unit Dip Switch Settings

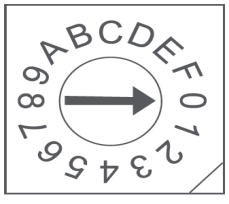
No.	Dial Code	Control Scenario	Function	ON	OFF	Note
1	SW1-2	1,2,3	Anti-cold blow protection option	NO	[Default] YES	
2	SW1-3	1,2,3	Single cooling / heating and cooling options	Cooling	[Default] Cooling & Heating	
3	SW2-1	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor	Only afects compressor and W1
4	SW2-1	2	Temperature diferential to activate first stage auxiliary heat (the GAP of T1 and Ts), Wire controller demand with heat pump+Electric heat working together	2°F (1°C)	[Default] 4°F (2°C)	
5	SW2-2	2	Electric heat on delay	YES	[Default]NO	
6	SW2-3	2	Electric auxiliary heating delay to start time	30 minutes	[Default] 15 minutes	Based on SW2-2 is ON
7	SW2-4	1	Compressor	The operation of the heat pump is limited by the outdoor temperature, and the operation of auxiliary heat is not limited. The system makes judgments based on the following rules: 1) The compressor cannot be operated when the outdoor temperature is lower than the S3 Rotary switch. 2) The compressor can be operated when the outdoor temperature is ≥S3 Rotary switch temperature +2 °C.		SW2-4 and S3 need to working together
8	SW2-4	2	Compressor/Auxiliary heat outdoor ambient lockout	The operation of heat pump is limited by the outdoor temperature, and the operation of auxiliary heat is not limited. The system makes judgments according to the following rules: 1) The compressor can be operated when the outdoor temperature is ≥S3 DIP switch temperature +2 °C. 2) The compressor cannot be operated when the outdoor temperature is lower than the S3 DIP switch temperature.	[Default]Only one heat pump or auxiliary heat can be operated .The system makes judgments according to the following rules: 1) When the outdoor temperature is lower than the S3 DIP switch temperature,the compressor is not allowed to operated, but auxiliary heat is allowed to operated ; 2) When the outdoor temperature is ≥S3 DIP switch temperature +2 (°C), the compressor can be operated, but auxiliary heat cannot be operated.	
9	Rotary Switch S3	1,2	Set outdoor temperature Limitation (for auxiliary heating or compressor)	See Table 6-8: Table A		

Table 6-6: Indoor Unit Dip Switch Settings (continued)

No.	Dial Code	Control Scenario	Function	ON	OFF	Note
10	SW3-1	1	Maximum continuous runtime allowed before system automatically stages up capacity to satisfy set point. This adds 1 to 5°F to the user set point in the calculated control point to increase capacity and satisfy user set point	30 minutes	[Default] 90 minutes	
11	SW3-2	1	Cooling and heating Y/Y2 temperature diferential adjustment.	Compressor slower speed	[Default] Faster Compressor	Only afects compressor
12	SW3-3	1	Compressor Running (demand working with heat pump+ Electric heat)	Compressor slower speed	[Default] Faster Compressor	Only afects compressor and W2
13	SW3-3	2	Temperature diferential to activate second stage auxiliary heating (the GAP of T1 and Ts)Wire controller demand with heat pump+Electric heat working together	4°F (2°C)	[Default] 6°F (3°C)	
14	SW3-4	1,3	Fan speed of cooling mode when 24 V Thermostat is applied for.	Turbo	High	
15	SW4-1 SW4-2 SW4-3	1,2,3	Electric heat nominal CFM adjustment	Available settings are 000/001/010/011. Each digit corresponds to an indiviual swith position. For example [SW4-1 OFF, SW4-2 ON, SW4 -3 OFF] = 010		
16	SW4-4	2	Temperature diferential to activate third stage auxiliary heating (the GAP of T1 and Ts) Wire controller demand with heat pump+ Electric heat working together	6°F (3°C)	[Default] 8°F (4°C)	Only valid for product which has three stage auxiliary heating.
17	S4-4	1,3	Default ON	[Default] For single stage supplemental heat,W1 and W2 are connected	For dual stage supplemental heat, W1 and W2 are controlled independently.	
18	S4-2	1,3	DH function selection	[Default] Dehumidification control not available	Dehumidification feature is enabled through thermostat	
19	SW5-3	1,2,3	L or Alarm relay selection	L output 24 V or alarm relay close only when refrigerant sensor fault or R454B refrigerant leakage be detected	[default] L output 24 V or alarm relay close when any fault be detected	
20	SW5-4	1,2,3	R output selection	R stop ouput 24 V when refrigerant sensor fault or R454B refrigerant leakage be detected	[default] R keep ouput 24 V even when refrigerant sensor fault or R454B refrigerant leakage be detected	

Control Scenario	24 V Tstat, S1+S2	1
	Wired Controller S1+S2	2
	Full 24 V	3

Address DIP switch:



Address dialing S1+SW8: When the user uses the centralized controller, address dialing is required.

Network address: The address silkscreen is the NET address, which is composed of a 16-bit address rotary code S1 plus a two-digit DIP switch SW8 [Set during engineering installation, no network function does not need to be set]

When SW8 is 00 (the dialing code is not connected), the network address value is the value of S1.

When SW8 is 10 (corresponding to the switch of the hardware connected to the 10K resistor), the network address value is S1 plus 16.

Determined by dial code SW8 1-10K 2-5.1K

When SW8 is 01 (corresponding to the dialing code of the 5.1K resistor connected to the hardware is turned on), the network address value is the value of S1 plus 32.

When SW8 is 11 (all dialing codes are on), the network address value is the value of S1 plus 48.

Table 6-7: Determined by dial code SW8 1-10K 2-5.1K

Dial Code Selection	Website Address
	S1 + 48
	S1 + 32
	S1 + 16
	S1

Table 6-8: Table A

S3	S3 (°F)	S3 (°C)
O	OFF	OFF
1	-22	-30
2	-18	-30
3	-15	-26
4	-11	-24
5	-8	-22
6	-4	-20
7	3	-16
8	10	-12
9	18	-8
A	25	-4
B	32	0
C	36	2
D	39	4
E	43	6
F	46	8

Step 7 - Air Evacuation

Please refer to the outdoor unit manual for details.

Step 8 - Insulate the Piping

After the unit is installed and tested, wrap the piping and brass fittings with foam tape.

You will need to wrap all the connected copper pipes into the insulation.

Wrap insulation around the piping. Direct contact with the bare piping may result in burns or frostbite. Ensure the pipe is properly connected. Over-tightening may damage the bell mouth and under-tightening may lead to leakage.

Insulation material selection for refrigerant pipe

- The burning performance should be over 248°F/120°C.
- Choose insulation materials according to local laws.

Table 8-1: Recommended Insulation Thickness

Humidity<80% RH	Humidity ≥80% RH
3/8 in./10 mm	5/8 in./15 mm

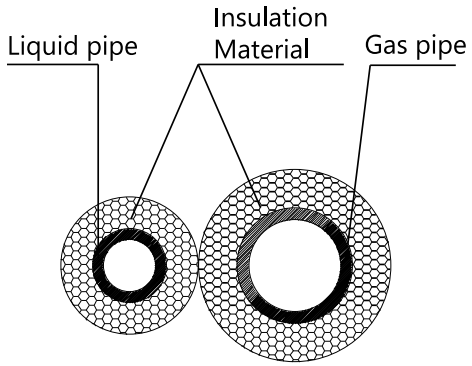


Fig. 8-1: Insulate Both Pipes Separately

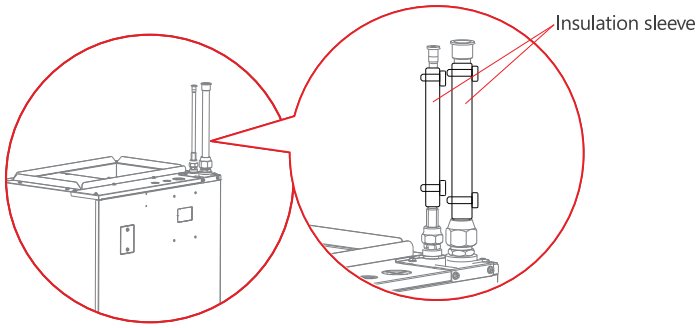


Fig. 8-2: Insulate All Connections

- Gas and liquid pipes must be insulated separately. Insulating them together will decrease the performance of the air conditioner.
- The insulation material at the joint pipe shall be 2-4 in./5-10 cm longer than the gap of the insulation material.
- The insulation material at the joint pipe shall be inserted into the gap of the insulation material.
- The joint pipe's insulation material shall be tightly banded to the gas and liquid pipes.

Be sure not to bind the insulation material or over-tighten it, this may compress the air in the material, cause bad insulation, and cause early decay of the material.

Insulation of drainage pipe

The temperature of condensate drainage water is very low. If the insulation is not enough, it will form dew and leak. This can cause damage to ceilings or walls.

Insulation material selection for drainage pipe

- The insulation material should be made of flame retardant material, and the flame retardancy of the material should be selected according to the local law.
- The thickness of the insulation layer is usually above 3/8 in. / 10 mm.
- Use specific glue to paste the seam of insulation material, and then bind with adhesive tape. The width of the tape shall not be less than 2 in./5 cm.
- The single pipe should be insulated before connecting to another pipe, the joint part should be insulated after the drainage test.
- There should be no insulation gap between the insulation material.

Test Run

⚠ CAUTION

Failure to perform the test run may result in unit damage, property damage, or personal injury.

Before the Test Run

A test run must be performed after the entire system has been completely installed. Confirm the following points before performing the test:

a. Indoor and outdoor units are properly installed.
b. Piping and wiring are properly connected.
c. No obstacles near the inlet and outlet of the unit that might cause poor performance or product malfunction.
d. The refrigeration system does not leak.
e. The drainage system is unimpeded and draining to a safe location.
f. Heating insulation is properly installed.
g. Grounding wires are properly connected.
h. Length of the piping and additional refrigerant capacity have been recorded.
i. Power voltage is the correct voltage for the air conditioner

Test run Instructions

1. Open both the liquid and gas service valves.
2. Turn on the main power switch and allow the unit to warm up.
3. Set the air conditioner to COOL mode.
4. For the Indoor Unit
   a. Double-check to see if the room temperature is being registered correctly.
   b. Check to see that the drainage system is unimpeded and draining smoothly.
   c. Ensure there is no vibration or abnormal noise during operation.
5. For the Outdoor Unit
   a. Check to see if the refrigeration system is leaking.
   b. Make sure there is no vibration or abnormal noise during operation.
   c. Ensure the wind, noise, and water generated by the unit do not disturb your neighbors or pose a safety hazard.
6. Drainage Test
   a. Ensure the drainpipe flows smoothly. New buildings should perform this test before finishing the ceiling.
   b. Turn on the main power switch and run the air conditioner in COOL mode.
   c. Check to see that the water is discharged. It may take up to one minute before the unit begins to drain depending on the drainpipe.
   d. Make sure that there are no leaks in any of the piping.
   e. Stop the air conditioner. Turn off the main power switch and reinstall the test cover.

NOTE

If the unit malfunctions or does not operate according to your expectations, please refer to the Troubleshooting section of the Service Manual before calling customer service.

Appendix

Table AP-1: Air Volume Table

Capacity	External Static Pressure Range	Fan speed	Electric auxiliary heat module	24 V thermostat		Wired controller		Airflow volume (CFM)
				DIP Switch	24 V terminal engaged	DIP Switch	Mode	
18K (1.5 Ton)	0-0.8 in. w.c.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	618
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	576
		Cooling Medium	—	—	Y1	—	Cool	529
		Cooling Low	—	—	—	—	Cool	488
		Heat Pump Turbo	—	—	—	—	Heat	565
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	541
		Heat Pump Medium	—	—	Y1	—	Heat	435
		Heat Pump Low	—	—	—	—	Heat	400
		Electric auxiliary heat module 0 (Default)	10 kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	882
		Electric auxiliary heat module 1	10 kW, 8 kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	624
		Electric auxiliary heat module 2	8k W	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	594
		Electric auxiliary heat module 3	5 kW, 3 kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	565
24K (2 Ton)	0-0.8 in. w.c.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	824
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	759
		Cooling Medium	—	—	Y1	—	Cool	694
		Cooling Low	—	—	—	—	Cool	629
		Heat Pump Turbo	—	—	—	—	Heat	788
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	753
		Heat Pump Medium	—	—	Y1	—	Heat	641
		Heat Pump Low	—	—	—	—	Heat	524
		Electric auxiliary heat module 0 (Default)	15 kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	988
		Electric auxiliary heat module 1	15 kW, 10 kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	841
		Electric auxiliary heat module 2	10 kW, 8 kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	818
		Electric auxiliary heat module 3	5 kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	788
30K (2.5 Ton)	0-0.8 in. w.c.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	988
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	894
		Cooling Medium	—	—	Y1	—	Cool	806
		Cooling Low	—	—	—	—	Cool	712
		Heat Pump Turbo	—	—	—	—	Heat	988
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	894
		Heat Pump Medium	—	—	Y1	—	Heat	806
		Heat Pump Low	—	—	—	—	Heat	712
		Electric auxiliary heat module 0 (Default)	15 kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	1088
		Electric auxiliary heat module 1	15 kW, 10 kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	1029
		Electric auxiliary heat module 2	10 kW, 8 kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	976
		Electric auxiliary heat module 3	5 kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	918

Capacity	External Static Pressure Range	Fan speed	Electric auxiliary heat module	24 V thermostat		Wired controller		Airflow volume (CFM)
				DIP Switch	24 V terminal engaged	DIP Switch	Mode	
36K (3 Ton)	0-0.8 in. w.c.	Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	1235
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	1147
		Cooling Medium	—	—	Y1	—	Cool	1059
		Cooling Low	—	—	—	—	Cool	971
		Heat Pump Turbo	—	—	—	—	Heat	1235
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	1147
		Heat Pump Medium	—	—	Y1	—	Heat	1059
		Heat Pump Low	—	—	—	—	Heat	971
		Electric auxiliary heat module 0 (Default)	20 kW	SW4-1=OFF SW4-2=OFF SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=OFF	Heat + AUX, AUX	1306
		Electric auxiliary heat module 1	15 kW	SW4-1=OFF SW4-2=OFF SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=OFF SW4-3=ON	Heat + AUX, AUX	1241
		Electric auxiliary heat module 2	10 kW, 8 kW	SW4-1=OFF SW4-2=ON SW4-3=OFF	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=OFF	Heat + AUX, AUX	1176
		Electric auxiliary heat module 3	5 kW, 8 kW	SW4-1=OFF SW4-2=ON SW4-3=ON	W1, W2, AUX	SW4-1=OFF SW4-2=ON SW4-3=ON	Heat + AUX, AUX	1112
		Cooling Turbo	—	SW3-4=ON	Y2/Y	—	Cool	1600
		Cooling High	—	SW3-4=OFF	Y2/Y	—	Cool	1441
		Cooling Medium	—	—	Y1	—	Cool	1265
		Cooling Low	—	—	—	—	Cool	1088
		Heat Pump Turbo	—	—	—	—	Heat	1471
		Heat Pump High	—	—	B+Y2/Y, W	—	Heat	1324
		Heat Pump Medium	—	—	Y1	—	Heat	1147
		Heat Pump Low	—	—	—	—	Heat	971

NOTE

The constant airflow volume motor is applied. So, the airflow volume is constant at all ESP within the stated range.

Table AP-2: 24 V Signal Chart

		24 V input terminal										
Mode	Priority	G	Y1	Y/Y2	B	W	W1	W2	E/AUX	DH	Fan speed	Display
OFF	/	0	0	0	0	0	0	0	0	*	OFF	00
FAN	7	1	0	0	*	0	0	0	0	*	Low	01
Cooling stage 1	6	*	1	0	0	0	0	0	0	1	Mid	02
Cooling stage 2		*	*	1	0	0	0	0	0	1	High	03
Dehumidification 1		*	1	0	0	0	0	0	0	0	Low	04
Dehumidification 2		*	*	1	0	0	0	0	0	0	Low	05
Heat pump stage 1	5	*	1	0	1	0	0	0	0	1	Mid	06
Heat pump stage 2		*	*	1	1	0	0	0	0	1	High	07
Heat pump stage 2		*	*	*	*	1	0	0	0	1	High	
Electric heater kit 1	3	*	0	0	*	0	1	0	0	*	Turbo	08
Electric heater kit 2		*	0	0	*	0	0	1	0	*	Turbo	
Electric heater kit 1 and kit 2		*	0	0	*	0	1	1	0	*	Turbo	09
Heat pump stage 1 + Electric heater kit 1	4	*	1	0	1	0	1	0	0	1	Turbo	10
Heat pump stage 1 + Electric heater kit 2		*	1	0	1	0	0	1	0	1	Turbo	
Heat pump stage 2 + Electric heater kit 1		*	*	1	1	0	1	0	0	1	Turbo	
Heat pump stage 2 + Electric heater kit 1		*	*	*	*	1	1	0	0	1	Turbo	
Heat pump stage 2 + Electric heater kit 2		*	*	1	1	0	0	1	0	1	Turbo	
Heat pump stage 2 + Electric heater kit 2		*	*	*	*	1	0	1	0	1	Turbo	
Heat pump stage 1 + Electric heater kit 1 and kit 2		*	1	0	1	0	1	1	0	1	Turbo	11
Heat pump stage 2 + Electric heater kit 1 and kit 2		*	*	1	1	0	1	1	0	1	Turbo	
Heat pump stage 2 + Electric heater kit 1 and kit 2		*	*	*	*	1	1	1	0	1	Turbo	
Emergency heat	1	*	*	*	*	*	*	*	1	*	Turbo	12
Heating zone control	2	*	1	0	1	0	*	*	0	0	Low	13
Heating zone control		*	*	1	1	0	*	*	0	0	Low	
Heating zone control		*	*	*	*	1	*	*	0	0	Low	

Note:
1: 24 V signal
0: No 24 V signal
*: 1 or 0.
The AHU will turn off if the 24 V input cannot meet the table.

Indoor Unit Diagnostic Guide

For ease of service, systems are equipped with diagnostic code display LEDs on the indoor and outdoor units. Outdoor diagnostics are displayed on the outdoor unit microprocessor board. The indoor unit may display a few error codes that might relate to the outdoor unit's problems. If possible, always check the diagnostic codes displayed on the indoor unit first. The diagnostic codes displayed on the outdoor units are listed in the outdoor unit manual.

Table AP-3: Indoor Unit Diagnostic Codes

Display	Error Information
EC07	ODU fan speed out of control
EC0d	ODU malfunction
EC51	ODU EEPROM parameter error
EC52	ODU coil temp. sensor (T3) error
EC53	ODU ambient temp. sensor (T4) error
EC54	COMP. discharge temp. sensor(TP) error
EC56	IDU coil outlet temp. sensor(T2B) errorMulti-zone)
ECC1	Other IDU refrigerant sensor detects leakage (Multi-zone)
EH00	IDU EEPROM malfunction
EH03	IDU fan speed out of control
EH0A	IDU EEPROM parameter error
EH0b	IDU main control board and display board communication error
EH0E	Water-level alarm malfunction
EH3A	External fan DC bus voltage is too low protection
EH3b	External fan DC bus voltage is too high fault
EH60	IDU room temp. sensor (T1) error
EH61	IDU coil temp. sensor(T2) error
EH62/EH66	Evaporator coil inlet temperature sensor T2B is in open circuit or short circuit
EH65	Evaporator coil temperature sensor T2A is in opencircuit or short circuit
EH6A	Communication malfunction between indoor unit and external fan module
EHC1	Refrigerant sensor detects leakage
EHC2	Refrigerant sensor is out of range and leakage is detected
EHC3	Refrigerant sensor is out of range
EL01	IDU & ODU communication error
EL0C	System lacks refrigerant
EL 16	Communication malfunction between adapter board and outdoor main board
FHCC	Refrigerant sensor error
FL09	Mismatch between the new and old platforms
PC00	ODU IPM module protection
PC01	ODU voltage protection
PC02	Compressor top (or IPM) temp. protection
PC03	Pressure protection (low or high pressure)
PC04	Inverter compressor drive error
PC0L	Low ambient temperature protection
-----	IDUs mode conflict(Multi-zone)

Installation Guide For AHU Using 115 V Power Supply

1. Open the upper cover.

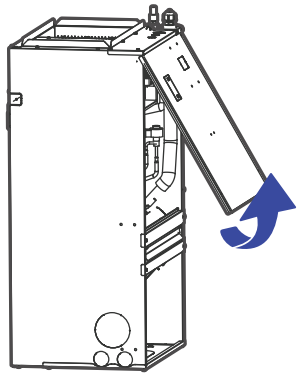


Fig. AP-1: Remove Upper Cover

2. When using a 115 V power supply, the fan motor wiring requires a 115 V fan motor pair plug. The white fan motor pair plug needs to be removed, and the red fan motor pair plug needs to be connected.

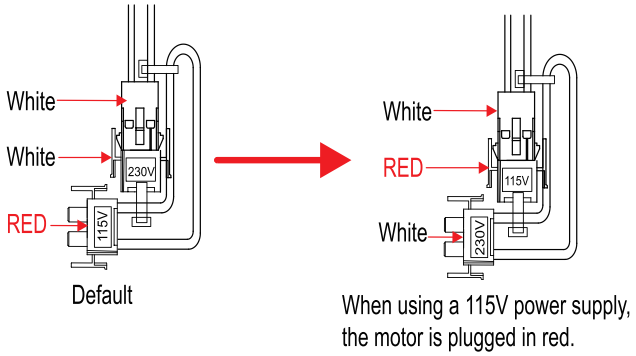


Fig. AP-2: Switch the Red Wire to 115 V

3. Unplug the temperature sensors T1, T2, T2A, and T2B, as well as the refrigerant detection sensor, electronic expansion valve (EEV), and the fan motor power pair plug (CN11) from the control board.
   T1: Indoor unit room temperature sensor (T1)
   T2: Indoor unit coil temperature sensor (T2)
   T2A: Evaporator coil temperature sensor (T2A)
   T2B: Evaporator coil inlet temperature sensor (T2B)

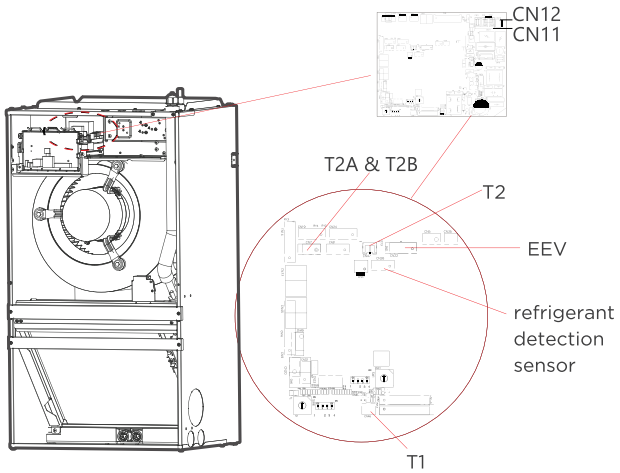


Fig. AP-3: Unplug Sensors From Contol Board

4. Remove the two screws in the electric cabinet and take out the control box.

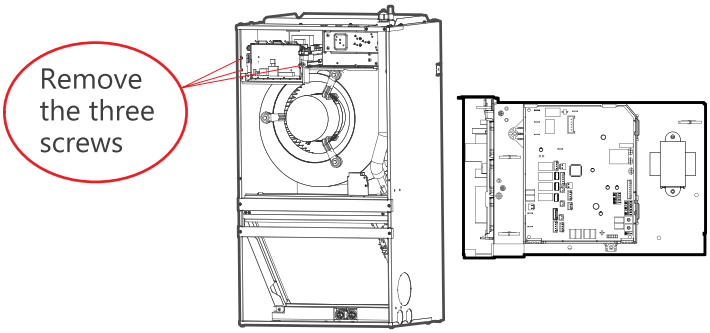


Fig. AP-4: Remove the Conrol Box

5. Remove the blue connector from the control board CN12 location.

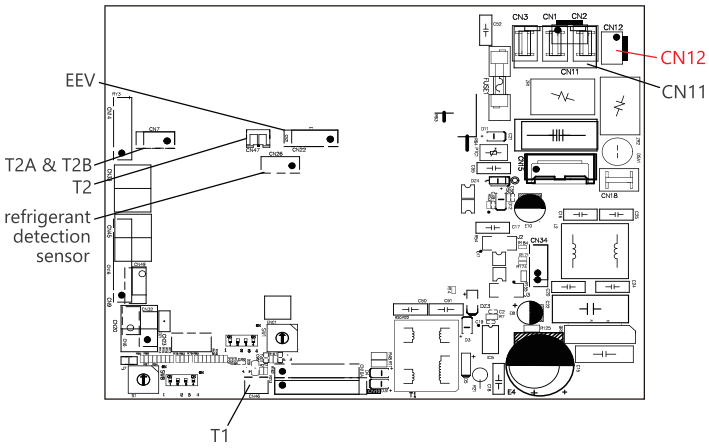


Fig. AP-5: Unplug CN12 Connector

6. Remove the red connector from the 24 V transformer.

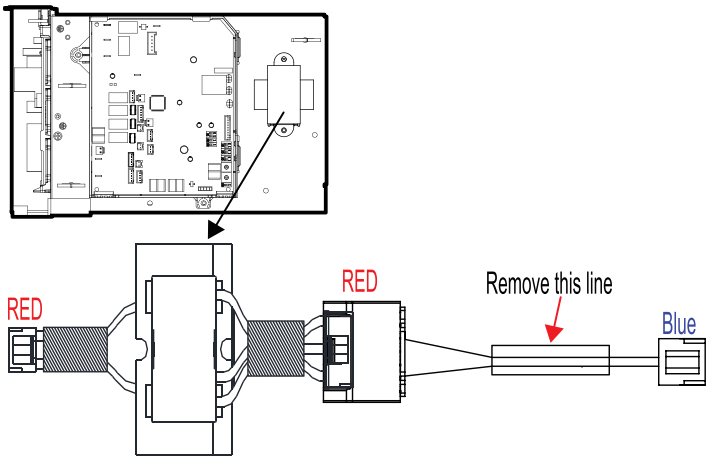


Fig. AP-6: Remove the Red Connector

7. Take the 24 V transformer connection wire out from the accessory package. Connect the red connector to the 24 V transformer and the blue connector to the control board CN12.

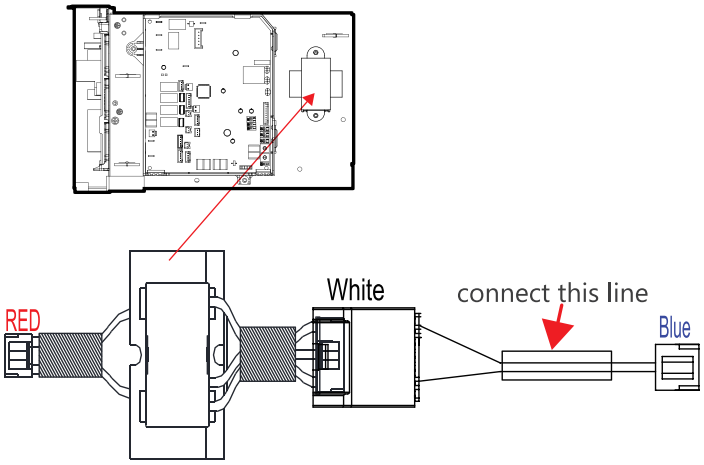


Fig. AP-7: Connect the Accessory Connection

8. Replace the electronic control box in the AHU, attach it with the screws that were removed in Step 4, and insert the wire body properly. Plug temperature sensors T1, T2, T2A, T2B, refrigerant detection sensor, electronic expansion valve (EEV), and fan motor power pair plug (CN11) from the control board.

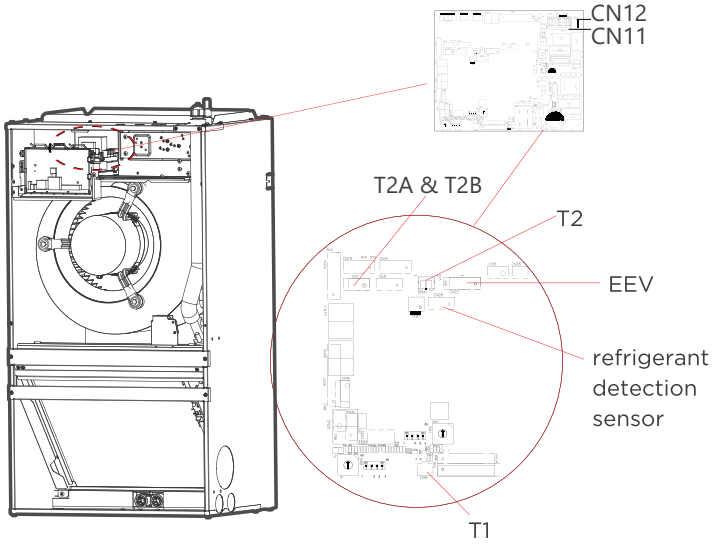


Fig. AP-8: Replace the Control Box and Reattach the Sensors

Important!
Product Warranty Information

The Warranty Registration below is a requirement to print a warranty certificate. You're not mandated to register your products to enjoy the Midea Standard Warranty; however, registration is highly recommended. Registering your warranty within 60 days ensures easy access to support and service when needed.

The design and specifications may change without prior notice in order to enhance the product. For detailed information, please consult your sales agency or the manufacturer. Any updates to the manual will be posted on the service website, so be sure to check for the latest version.

United States

https://www.mideacomfort.us/registration.html

Canada

https://www.mideacomfortna.ca/registration.html

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