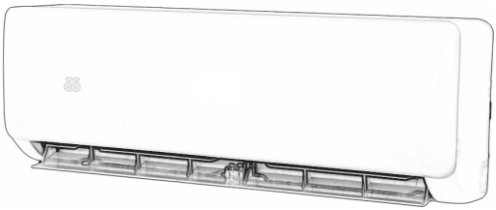
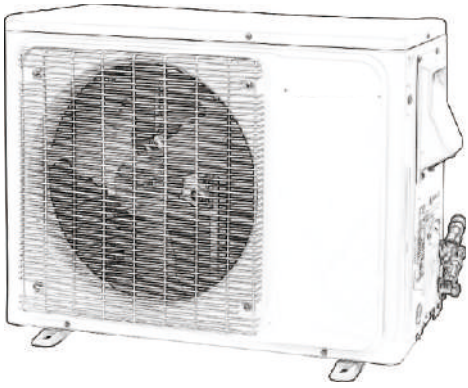
Split Air Conditioner





Customer & Technical Support Information
(Please contact us BEFORE returning product)

Website:www.auxusa.com
Contact Phone # : 1-909-979-9892(Mon-Fri, 9am-5pm/PST)
Email: support@auxusa.com

CONTENTS

PRODUCT REGISTRATION

Thank you for purchasing our Commercial Cool product. This easy-to-use manual will guide you in getting the best use of your split AC.

Remember to record the model and serial numbers. They are on a label in the rear.

Model number

Serial number

Date of purchase

Staple your receipt to your manual.
You will need it to obtain warranty service.

1. Safety Precautions

Read before Installation

This symbol indicates ignoring instructions may cause death or serious injury.

This symbol indicates that ignoring instructions may cause moderate injury to your person, damage to your unit, or other property.

This symbol indicates that you should NEVER perform the indicated action.

1.1 **People:**

⚠Warning

A. Installation is highly recommended to be performed by an authorized technician. *Improper installation may cause water leakage, electrical shock, or fire.*

B. The moving and relocation of the unit also requires consulting an authorized technician for the disconnection and re-installation steps.

C. Take into account strong winds, typhoons, or earthquakes when installing. Improper installation may result in the unit falling and causing accidents.

D. When installed 6ft (2m) higher above the floor, the outdoor unit must be tied with ropes and installer has to wear safety belt to prevent personal injury, as well as damage to units.

Caution

E. The heat exchanger fins are sharp enough to cut fingers. To avoid injury wear gloves or cover the fins while working around them.

F. Do not leave children unattended with the air conditioner.

1.2 Location:

⚠ Warning

A. Install the unit in a firm location that can support the unit's weight. If the installation location cannot support the weight, or the installation is performed improperly, the unit may fall and cause serious injury and/or damage.

B. Do not install the air conditioner and heat pump in the following locations:
(a)Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen. Plastic parts may deteriorate and fall off or result in water leakage.
(b) Where corrosive gas, such as sulfurous acid gas, is produced. Corroding cooper pipes or soldered parts may result in refrigerant leakage.
(c) Near machinery emitting electromagnetic waves. Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.
(d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled.

C. Install the unit where air inlet or air outlet is not blocked. Otherwise, the cooling or heating capacity will be weakened, even stop operating.

D. Do not let the air conditioner blow against the heater appliance.

1.3 Electricity:

⚠ Warning

A. Make sure that a separate power supply circuit is provided for this unit. An insufficient power supply capacity or improper electrical construction may lead to electric shock or fire.

B. The circuit must be protected with safety devices in accordance with local and national codes, i.e. a circuit breaker.

C. Do not ground units to water pipes, telephone wires or lightening rods because incomplete grounding could cause a severe shock hazard.

D. Do not modify the length of the power supply cord or use an extension cord to power the unit. Only use the specified power cord. If the power cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified person in order to avoid a hazard.

E. After connecting all wiring be sure to shape the cables so that they do not put undue stress on the electrical covers, panels or terminals. Install covers over the wires. Incomplete cover installation may cause terminal overheating, electrical shock, fire or equipment damage.

F. Do not turn on power until all work/installation has been competed.

G. For maintenance, turn off the power before touching any electrical part.

1.4 Refrigerant:

⚠ Warning

A. Refrigerant gas is heavier than air and replaces oxygen. If the refrigerant gas leaks during installation, ventilate the area immediately. A massive leak could lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.

B. When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.

Caution

C. Refrigerant R410A in the system must be kept clean, dry, and tight.

(a) Clean and Dry—Foreign materials (including mineral oils such as SUNISO oil, moisture or air) should be prevented from getting into the system.

(b) Tight- R410A does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection against harmful ultraviolet radiation. R410A can contribute to the greenhouse effect if it is released. Therefore, take proper measures to check for the tightness of the refrigerant piping installation.

D. Since R410A is a blend, the required additional refrigerant must be charge in its liquid state. If the refrigerant is charged in a state of gas, its composition can change and the system will not work properly.

E. During pump-down, stop the compressor before removing the refrigerant piping. If the compressor Is still running and the stop valve is open during pump-down, air will be sucked in when the refrigerant piping is remove, causing abnormally high pressure which could lead to equipment damage or and personal injury.

F. If the system ahs a leak-detection system installed, it should be checked for leaks at least every 12 months. Keeping a record of all leak checks for the lifetime of the unit is strongly recommended.

1.5 Recycle:

A. Safely dispose of the packing materials

Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries. Tear apart and throw away plastic packaging bags so that children will not play with them. Children playing with plastic bags face the danger of death by suffocation.

B. Refrigerant
At the end of the service life of this appliance and prior to it's environmental disposal, a person qualified to work with refrigerant circuits must recover the refrigerant from within the sealed system.

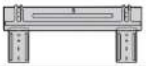
1.6 Regulation:

A. In North America, installation must be performed in accordance with the requirement of NEC and CEC (by authorized personnel only.) contact an authorized service technician for repair or maintenance of the unit.

B. Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.

2 Accessories:

The AUX air conditioning/heat pump system comes with the following accessories. Install the air conditioning system with all the parts and accessories below. Improper installation may cause water leakage, electrical shock, fire, or system failure.

PART	LOOKS LIKE...	QUANTITY	
Mounting plate		1	
Clip anchor		5-9 (depending on model)	
Mounting plate screw ST3.9 × 13		5-9 (depending on model)	
Remote control		1	
Fixing screw for remote controller holder ST3.9 × 13		2	Optional Parts
Remote control holder		1	
Air filter		1	
Neoprene		1 (Sealant for Wall Sleeve)	
Drain joint		1	
Documentation	Owner's manual Installation manual 	1 each	
Power cable: 3 wires		1	
Signal cable: 4 wires		1	
Drain hose		1	
Insulation tape		1	
Smart Controller Kit		1 (w/ Manual in Controller Box)	

3 Parts Overview

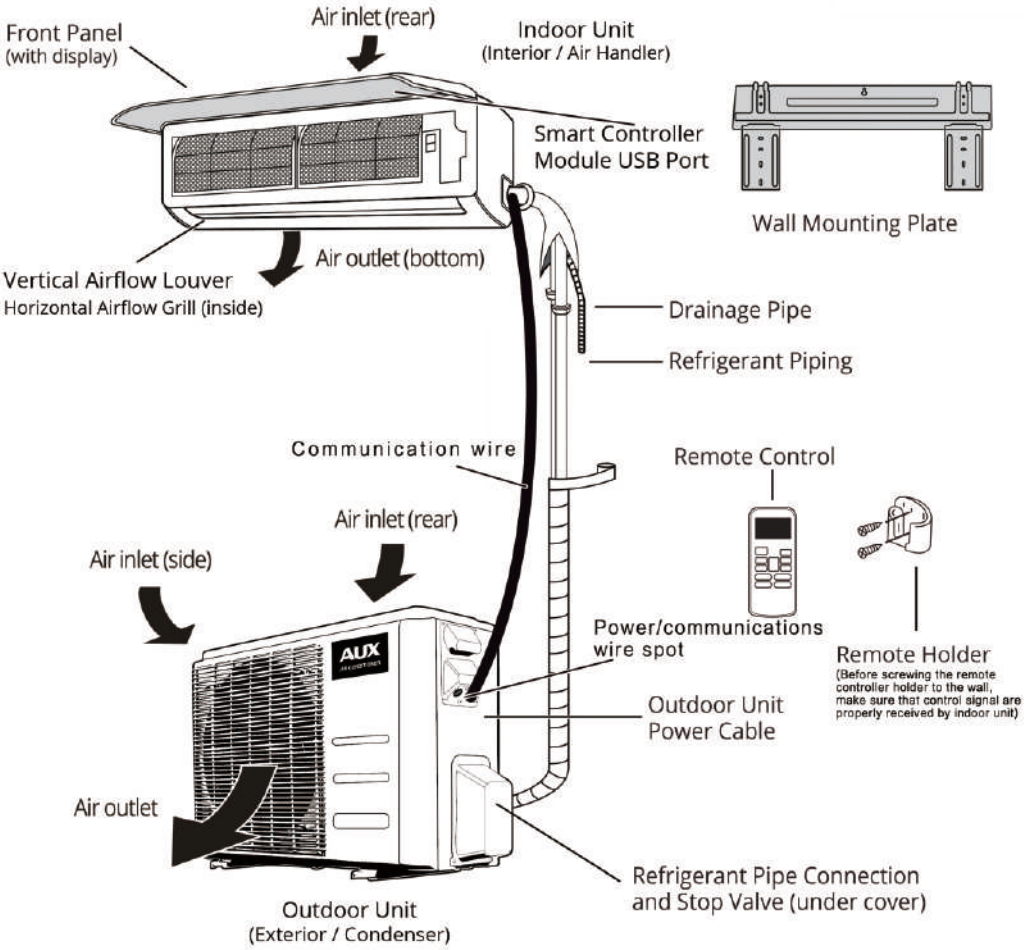


Fig 3.1.1

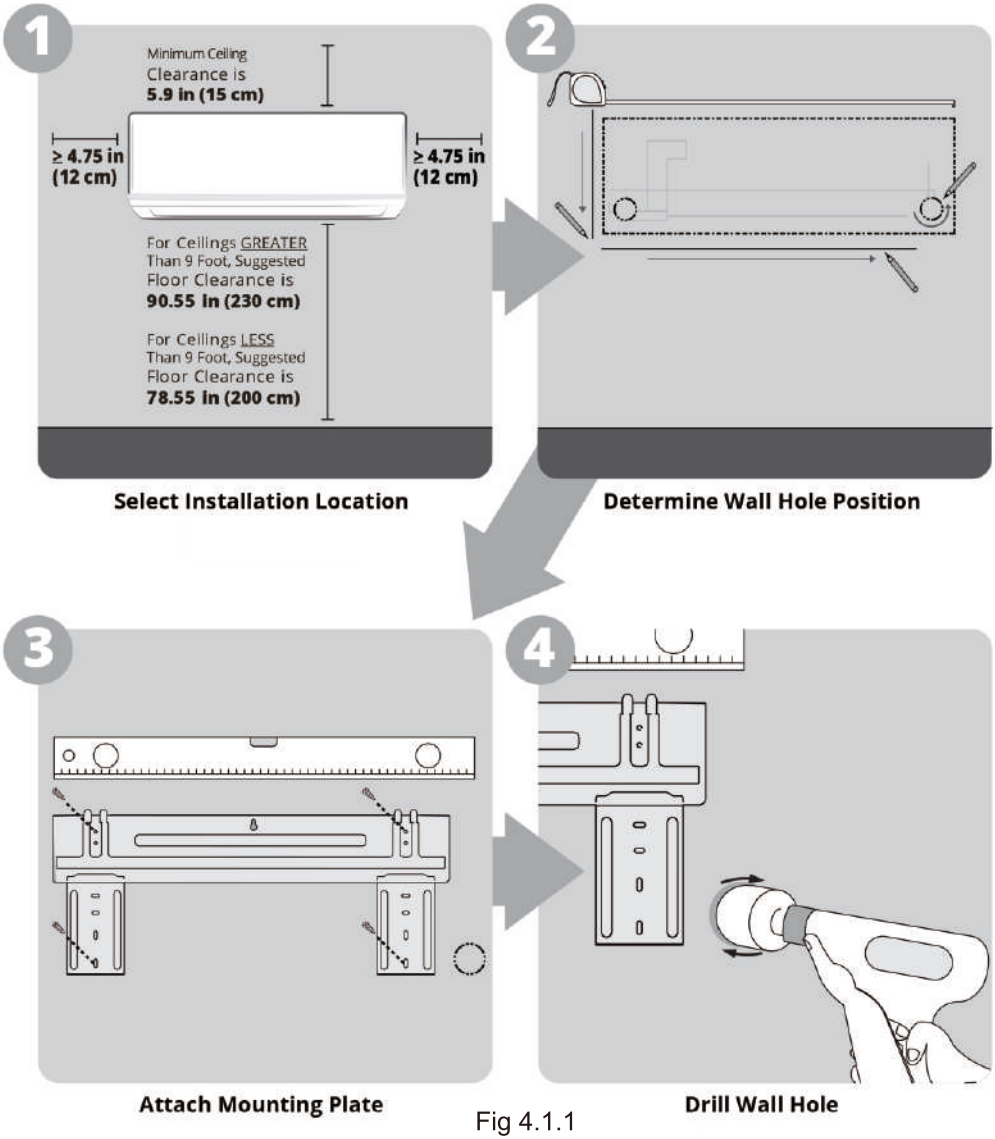

1
Minimum Ceiling
Clearance is
5.9 in (15 cm)
≥ 4.75 in
(12 cm)
≥ 4.75 in
(12 cm)
For Ceilings GREATER
Than 9 Foot, Suggested
Floor Clearance is
90.55 in (230 cm)
For Ceilings LESS
Than 9 Foot, Suggested
Floor Clearance is
78.55 in (200 cm)
Select Installation Location
2
Determine Wall Hole Position
3
Attach Mounting Plate
4
Drill Wall Hole

Fig 4.1.1

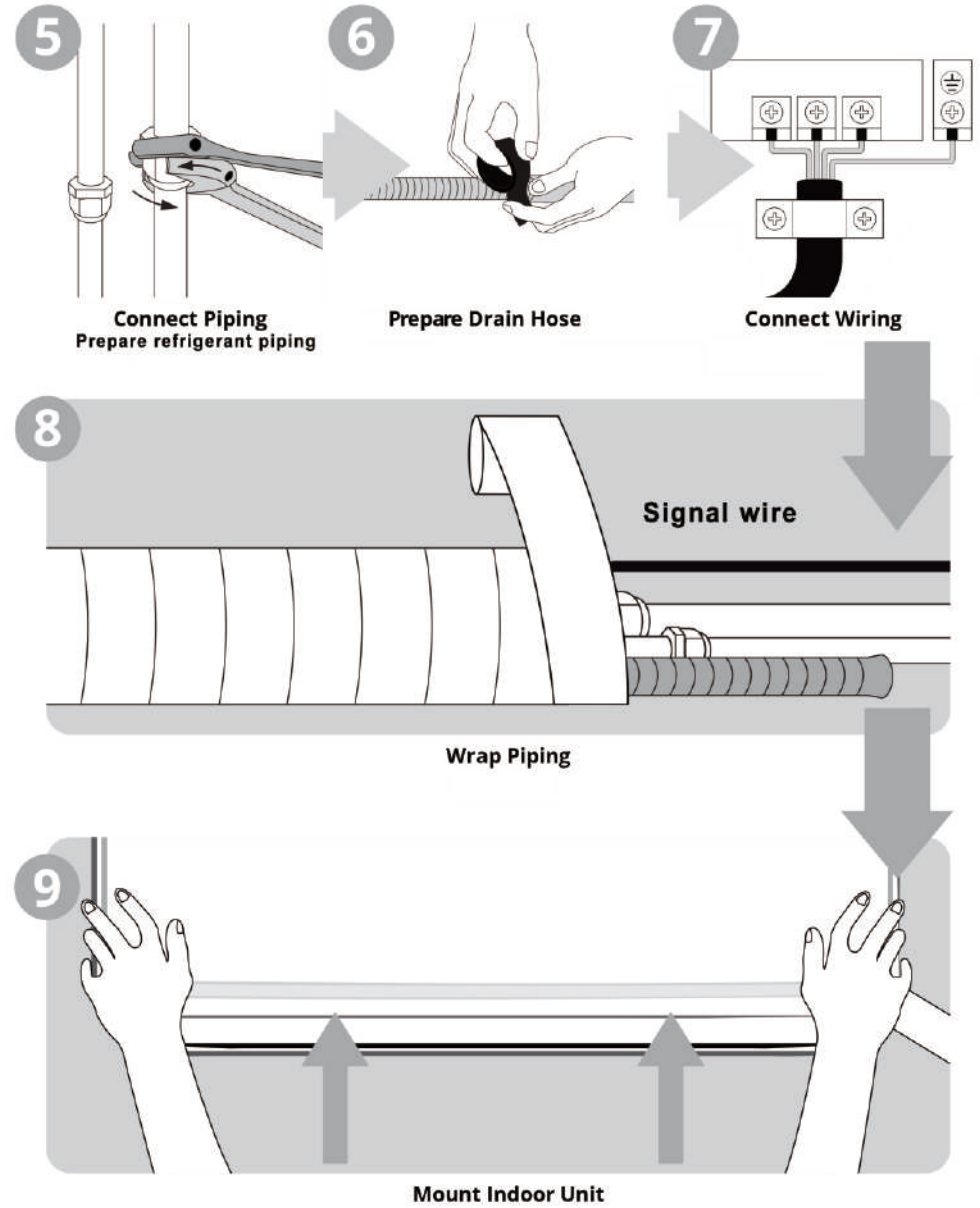

5
Connect Piping
Prepare refrigerant piping
6
Prepare Drain Hose
7
Connect Wiring
8
Signal wire
Wrap Piping
9
Mount Indoor Unit

Fig 4.2.1

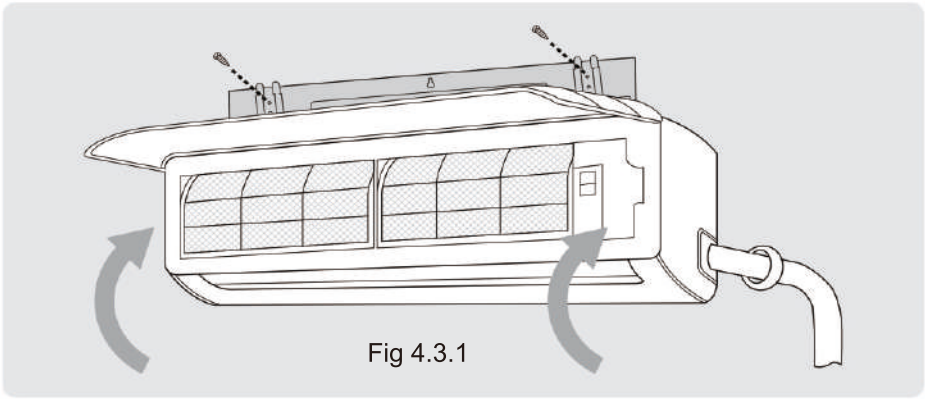


Fig 4.3.1

Installation Instructions – Indoor Unit

Refer to the following diagram to ensure proper distance from walls and ceiling:

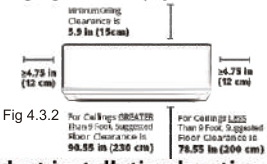


Fig 4.3.2

Step 1: Select installation location

Before installing the indoor unit, you must choose an appropriate location. The following are standards that help you choose an appropriate location.

Proper installation locations meet the following standards:

- ☑ Good air circulation
- ☑ Convenient drainage
- ☑ Noise from the unit will not disturb other people
- ☑ Firm and solid—the location will not vibrate
- ☑ Strong enough to support the weight of the unit
- ☑ A location at least one meter from all other electrical devices (e.g., TV, radio, computer)

DO NOT **install unit in the following locations:**

- ⊘ Near any source of heat, steam, or combustible gas
- ⊘ Near flammable items such as curtains or clothing
- ⊘ Near any obstacle that might block air circulation
- ⊘ Near a doorway
- ⊘ In a location subject to direct sunlight

Step 2: Determine wall hole position

NOTE ABOUT WALL HOLE:

If there is no fixed refrigerant piping: While choosing a location, be aware that you should leave ample room for a wall hole (see Drill wall hole for connective piping step) for the signal cable and refrigerant piping that connect the indoor and outdoor units. The default position for all piping is the right side of the indoor unit (while facing the unit). However, the unit can accommodate piping to left or right.

Step 3: Attach mounting plate to wall

The mounting plate is the device on which you will mount the indoor unit

1. Remove the screw that attaches the mounting plate to the back of the indoor unit.

Fig 4.4.1

2. Place the mounting plate against the wall in a location that meets the standards in the **Select Installation Location** step. (See **Mounting Plate Dimensions** for detailed information on mounting plate sizes.)

3. Drill holes for mounting screws in places that:
   - have studs and can support the weight of the unit
   - correspond to screw holes in the mounting plate

4. Secure the mounting plate to the wall with the screws provided.

5. Make sure that mounting plate is flat against the wall.

NOTE FOR CONCRETE OR BRICK WALLS:

If the wall is made of brick, concrete, or similar material, drill 0.2 in diameter (5 mm diameter) holes in the wall and insert the sleeve anchors provided. Secure the mounting plate to the wall by tightening the screws directly into the clip anchors.

Step 4: Drill wall hole for connective piping

Drill a hole in the wall for refrigerant piping, the drainage pipe, and the signal cable that will connect the indoor and outdoor units.

1. Determine the location of the wall hole based on the position of the mounting plate. Refer to **Mounting Plate Dimensions** on the next page to help you determine the optimal position. Refer to Fig 5.5.1 wall hole diameter and install at a slight angle to facilitate drainage.

2. Using a core drill [3.5 in (76.2 mm) for 24K & 36K units, 2.5 in (65 mm) for all others], drill a hole in the wall. Make sure that the hole is drilled at a slight downward angle, so that the outdoor end of the hole is lower than the indoor end by about 0.2 to 0.275 in (5 mm-7 mm). This will ensure proper water drainage.

NOTE: When the gas side connective pipe is 5/8 in (16 mm) or more, the wall hole should be 3.54 in (90 mm).

3. Place the protective wall cuff in the hole. This protects the edges of the hole and will help seal it when you finish the installation process.

! CAUTION

When drilling the wall hole, be sure to avoid wires, plumbing, and other sensitive components.

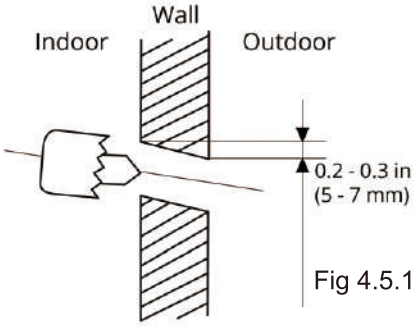


Fig 4.5.1

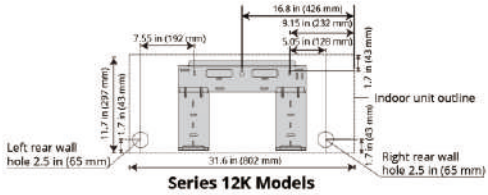


Fig 4.5.3

MOUNTING PLATE DIMENSIONS

Different models have different mounting plates. For the different customization requirements, the shape of the mounting plate may be slightly different. However, the installation dimensions are the same for the same size of indoor unit. In order to ensure that you have ample room to mount the indoor unit, the diagrams to the right show different types of mounting plates along with the following dimensions:

- Height & Width of mounting plate
- Height & Width of indoor unit relative to plate
- Recommended position of wall hole (both to the left and right of mounting plate)
- Relative distances between screw holes

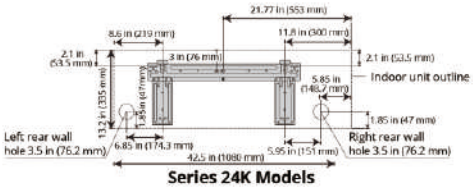
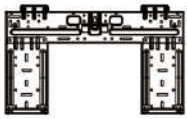


Fig 4.5.4



Correct orientation of Mounting Plate

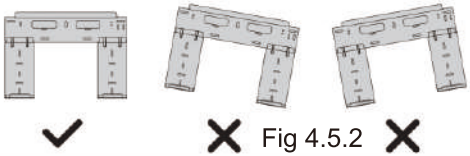


Fig 4.5.2

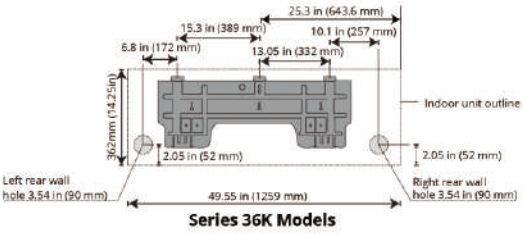
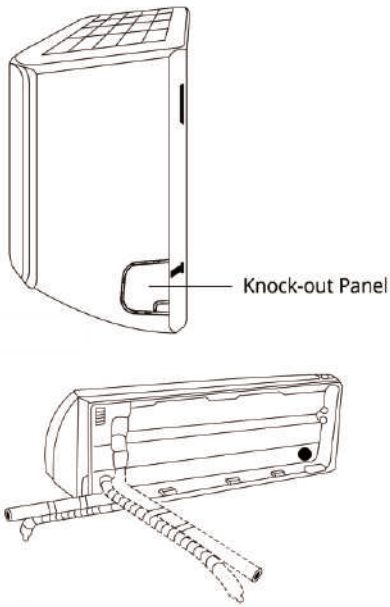


Fig 4.5.5

Step 5: Prepare refrigerant piping

The refrigerant piping is inside an insulating sleeve attached to the back of the unit. You must prepare the piping before passing it through the hole in the wall. Refer to the **Refrigerant Piping Connection** section of this manual for detailed instructions on pipe flaring and flare torque requirements, technique, etc.

1. Based on the position of the wall hole relative to the mounting plate, choose the side from which the piping will exit the unit.
2. If the wall hole is behind the unit, keep the knock-out panel in place. If the wall hole is to the side of the indoor unit, remove the plastic knock-out panel from that side of the unit. This will create a slot through which your piping can exit the unit. Use needle nose pliers if the plastic panel is too difficult to remove by hand.
3. Use scissors to cut down the length of the insulating sleeve to reveal about 6 in (15 cm) of the refrigerant piping. This serves two purposes:
   - To facilitate the **Refrigerant Piping Connection** process
   - To facilitate Gas Leak Checks and enable you to check for dents
4. If existing connective piping is already embedded in the wall, proceed directly to the **Connect Drain Hose** step. **If there is no embedded piping**, connect the indoor unit's refrigerant piping to the connective piping that will join the indoor and outdoor units. Refer to the **Refrigerant Piping Connection** section of this manual for detailed instructions.
5. Based on the position of the wall hole relative to the mounting plate, determine the necessary angle of your piping.
6. Grip the refrigerant piping at the base of the bend.
7. Slowly, with even pressure, bend the piping towards the hole. ***DO NOT*** dent or damage the piping during the process.



NOTE ON PIPING ANGLE

Refrigerant piping can exit the indoor unit from four different angles:

- **Left-hand side**
- **Left rear**
- **Right-hand side**
- **Right rear**

Refer to Fig 5.6.1 for details.

Fig 4.6.1

CAUTION

Be extremely careful not to dent or damage the piping while bending them away from the unit. Any dents in the piping will affect the unit's performance.

Step 6: Connect drain hose

By default, the drain hose is attached to the right-hand side of unit (when you're facing the front of the unit). However, it can also be attached to the right-hand side.

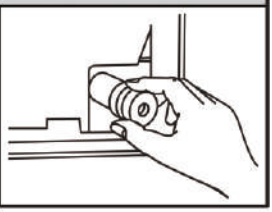
1. To ensure proper drainage, the drain hose must exit the unit on the same side as the refrigerant piping.
2. Wrap the connection point firmly with Teflon tape to ensure a good seal and to prevent leaks.
3. For the portion of the drain hose that will remain indoors, wrap it with foam pipe insulation to prevent condensation.
4. Remove the air filter and pour a small amount of water into the drain pan to make sure that water flows from the unit smoothly.

NOTE ON DRAIN HOSE PLACEMENT

CAUTION

Make sure to arrange the drain hose according to Fig 4.7.1.

- ***DO NOT*** **kink the drain hose.**
- ***DO NOT*** **create a water trap.**
- ***DO NOT*** **put the end of drain hose in water or a container that will collect water.**

ENSURE UNUSED DRAIN HOLE IS PLUGGED	
To prevent unwanted leaks be sure that the factory installed rubber plug is in the unused drain hole.	

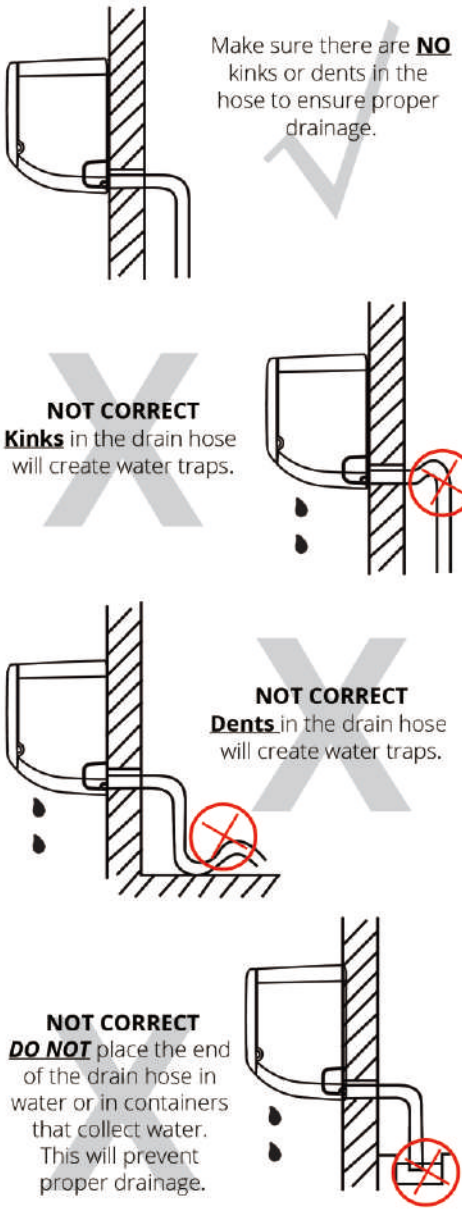


Fig 4.7.1

Test: Remove the upper front panel and their air filters.
Pour some water into the drain pan to check the water flows smoothly

Step 7: Connect signal cable

1. Prepare the cable for connection:
2. Open front panel of the indoor unit.

How to Open Front Panel:

*Hold the panel at the recesses on the main unit (2 recesses on right and left sides) and lift it up until it stops.

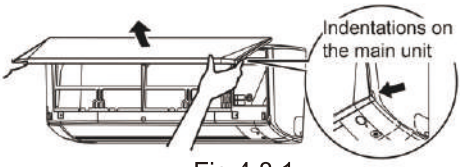


Fig 4.8.1

3. Using a screwdriver, open the wire box cover on the right side of the unit. This will reveal the terminal block.

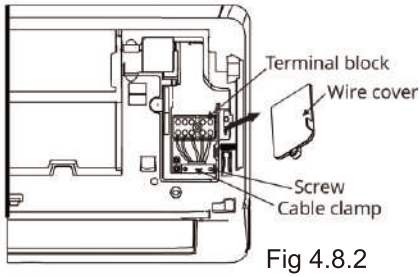


Fig 4.8.2

See Fig 5.8.3 for wiring diagram.
Wiring diagram also found inside lid of interior unit

⚠ WARNING

All wiring must be performed in accordance with the wiring diagram Fig. 4.7a shown on the previous page.

4. Unscrew the cable clamp below the terminal block and place it to the side.
5. Facing the back of the unit, remove the plastic panel on the bottom left-hand side.
6. Feed the signal wire (protected by conduit) through this slot, from the back of the unit to the front.
7. Facing the front of the unit, match the wire colors with the labels on the terminal block, connect the u-lug and firmly screw each wire to its corresponding terminal.

⚠ CAUTION

⊘ *DO NOT* MIX UP LIVE AND NULL WIRES
This is dangerous, and can cause the air conditioning unit to malfunction.

8. After checking to make sure every connection is secure, use the cable clamp to fasten the signal cable to the unit. Screw the cable clamp down tightly.
9. Place back the wire cover on the front of the unit, and the plastic panel on the back.

Signal wiring for indoor unit 12000 BTU 115V

12000 BTU 230V, 24000 BTU, 36000 BTU

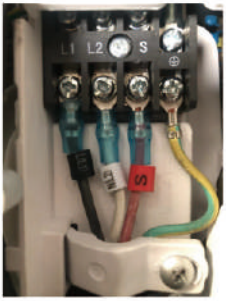


Fig 4.8.3

NOTE:

If refrigerant piping is already embedded in the wall, do the following:

1. Hook the top of the indoor unit on the upper hook of the mounting plate.
2. Use a bracket or wedge to prop up the unit, giving you enough room to connect the refrigerant piping, signal cable, and drain hose.

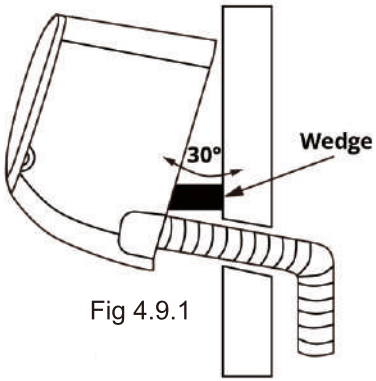


Fig 4.9.1

3. Connect drain hose and refrigerant piping (refer to **Refrigerant Piping Connection** section of this manual for instructions).
4. Keep piping connections exposed to perform the leak test (refer to **Electrical Checks and Leak Checks** section of this manual).
5. After the leak test, wrap the piping connection points with insulation tape.
6. Remove wedge bracket or wedge that is propping up the unit.
7. Using even pressure, push down on the bottom half of the unit. Keep pushing down until the unit snaps onto the hooks along the bottom of the mounting plate

UNIT IS ADJUSTABLE

Keep in mind that the hooks on the mounting plate are smaller than the holes on the back of the unit. If you find that you do not have ample room to connect embedded pipes to the indoor unit, the unit can be adjusted left or right by about 1.25 in -1.95 in (30 mm - 50 mm), depending on the model.

Fig 4.9.2

5 Outdoor unit installation

Step 1: Select installation location

Before installing the outdoor unit, you must choose an appropriate location. The following are standards that will help you choose an appropriate location for the unit.

- Proper installation locations meet the following standards:
  - Meets all spatial minimum requirements shown in Installation Space Requirements (Fig 5.1.1).

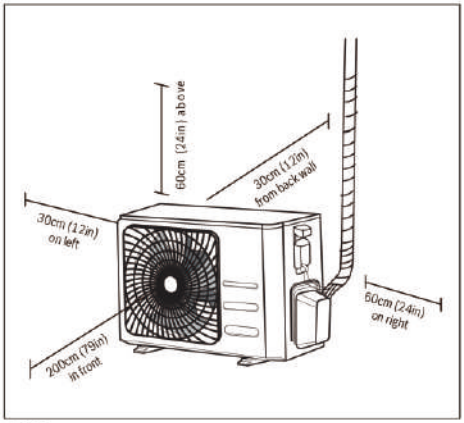


Fig 5.1.1

  - Good air circulation and ventilation
  - Firm and solid—the location can support the unit and will not vibrate
  - Noise from the unit will not disturb others
  - Protected from prolonged periods of direct sunlight or rain

- DO NOT install unit in the following locations:
  - Near an obstacle that will block air inlets and outlets
  - Near a public street, crowded areas, or where noise from the unit will disturb others
  - Near animals or plants that will be harmed by hot air discharge
  - Near any source of combustible gas
  - In a location that is exposed to large amounts of dust
  - In a location exposed to excessive amounts of salty air

NOTICE

- If the unit is exposed to heavy wind: Install unit so that air outlet fan is at a 90° angle to the direction of the wind. If needed, build a barrier in front of the unit to protect it from extremely heavy winds. See Figures 18 and 19.

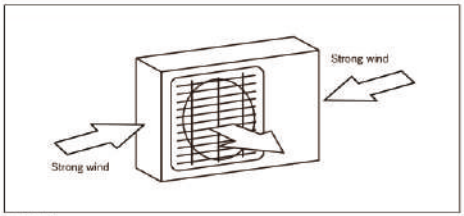


Fig 5.1.2

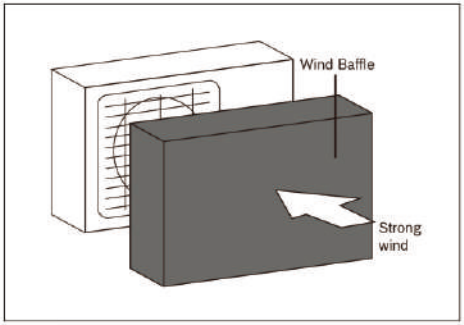


Fig 5.1.3

NOTICE

- If the unit is frequently exposed to heavy rain or snow:
  - Build a shelter above the unit it to protect it from the rain or snow. Be careful not to obstruct air flow around the unit.
- This unit is not designed for application in areas frequently exposed to salty air (seaside) conditions..

Direct Sunlight, Rain and Ice Protection

- If the outdoor unit is subjected to prolong exposure to direct sunlight with temperatures over 100°F (38°C) a canopy is recommended as illustrated in "Fig 5.2.1. Outdoor Unit on Pedestal and Protective Canopy"or "Fig 5.2.1. Dog House-Style Shelter" on page 5.2

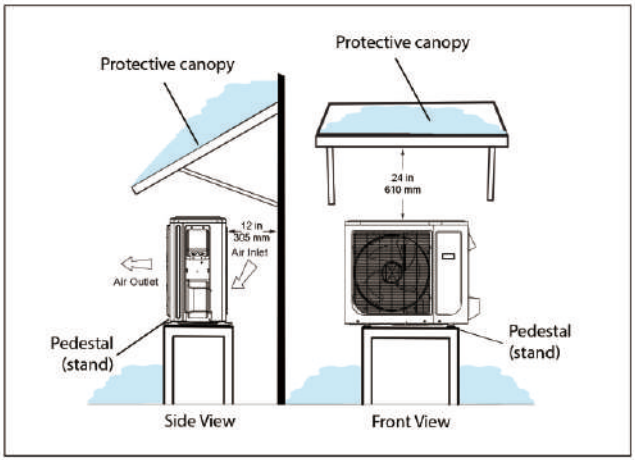


Fig 5.2.1. Outdoor Unit on Pedestal and Protective Canopy

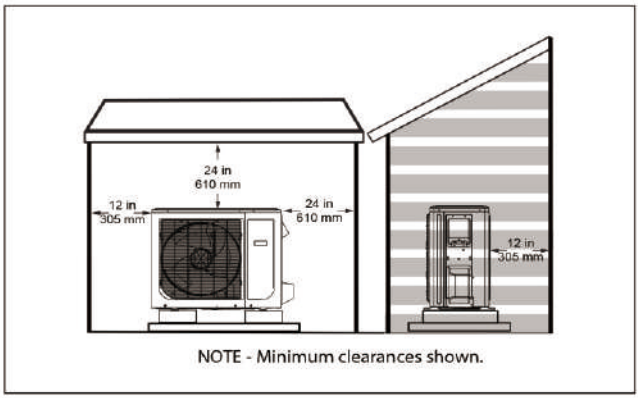


Fig 5.2.2. Dog House-Style Shelter

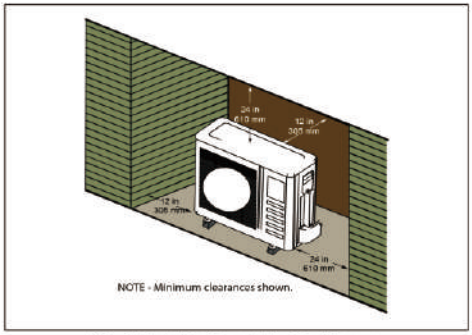


Fig 5.3.1. Unit installed in Alcove

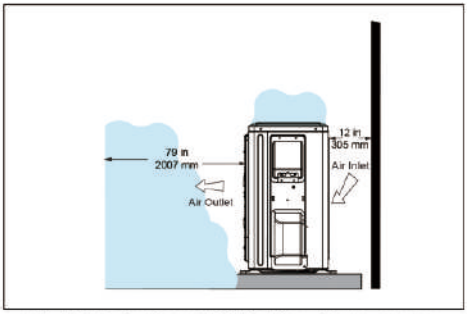


Fig 5.3.2. Outdoor Unit Air Flow Obstructed by Snow

IMPORTANT

The construction of a canopy or shade is necessary because of an ambient limit control set to 122°F (50°C) to protect the electronics. If the outdoor unit is placed in direct sunlight it is possible that the limit may activate and shut down the unit.

- Place unit away from overhanging roof lines which would allow water or ice to drop on, or in front of, coil or into unit. Construct a canopy as illustrated in "Fig-5.2.1 . Outdoor Unit on Pedestal and Protective Canopy".

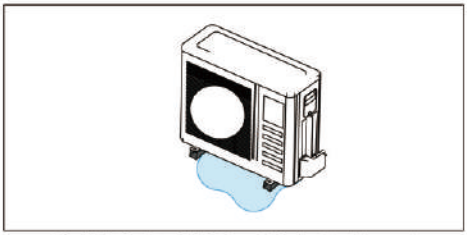


Fig 5.3.3. Avoid Defrost Water Ice Hazard

- The unit base should be elevated above the depth of average snows as illustrated in "Fig 5.3.4. Outdoor Unit on Brackets above Snow Line".
- In heavy snow areas, do not place the unit where drifting will occur as illustrated in "Fig 5.3.2. Outdoor Unit Air Flow Obstructed by Snow".
- Carefully consider how to manage defrost water disposal to prevent ice from blocking walkways or creating a safety hazard near the outdoor unit as illustrated in "Fig 5.3.3. Avoid Defrost Water Ice Hazard".

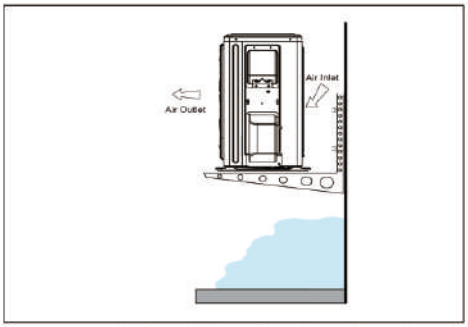


Fig 5.3.4. Outdoor Unit on Brackets above Snow Line

Step 2:Install drain joint

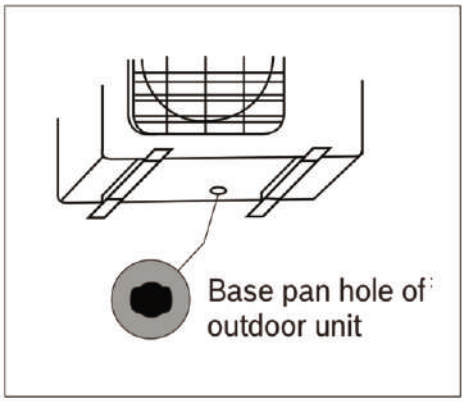
Heat pump units require a drain Before bolting the outdoor unit in place, you must install the drain joint at the bottom of the unit.

1.Insert the drain joint into the hole in the base ban of the unit. The drain joint will click in place.

2.Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

Notice:

► In cold climates, make sure that the drain hose is as vertical as possible to ensure swift water drainage. If water drains too slowly, it can freeze in the hose and flood the unit.



Step 3:Anchor Outdoor Unit

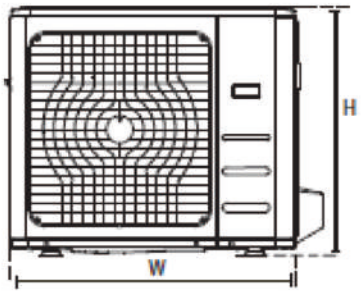
The outdoor unit can be anchored to a commercially available mounting pad on the ground or to a wall-mounted bracket (both sold separately).

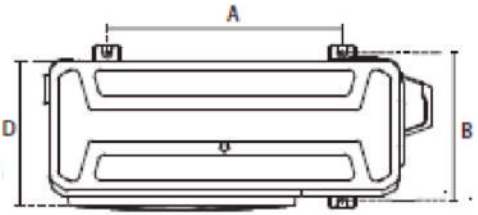
Notice: Property Damage / System Failure

► Never mount this unit directly on the ground. It must be anchored according to the guidance provided in these instructions, and/or local building codes.

Unit mounting dimensions

The following is a list of different outdoor unit sizes and the distance between their mounting feet. Prepare the installation base of the unit according to the dimensions below.





If you will install the unit on the ground or on a concrete mounting platform, do the following:

1. Mark the positions for four expansion bolts based on dimensions in the **Unit Mounting Dimensions** chart.
2. Pre-drill holes for expansion bolts.
3. Clean concrete dust away from holes.
4. Place a nut on the end of each expansion bolt.
5. Hammer expansion bolts into the pre-drilled holes.
6. Remove the nuts from expansion bolts, and place outdoor unit on the bolts.
7. Put a washer on each expansion bolt, then replace the nuts.
8. Using a wrench, tighten each nut until snug.

⚠ WARNING

WHEN DRILLING INTO CONCRETE, EYE PROTECTION IS RECOMMENDED AT ALL TIMES.

If you will install the unit on a wall-mounted bracket, do the following:

CAUTION

Before installing a wall-mounted unit, make sure that the wall is made of solid brick, concrete, or of similarly strong material. The wall must be able to support at least FOUR times the weight of the unit.

1. Mark the position of bracket holes based on dimensions in the Unit Mounting Dimensions chart.
2. Pre-drill the holes for the expansion bolts.
3. Clean dust and debris away from holes.
4. Place a washer and nut on the end of each expansion bolt.
5. Thread expansion bolts through holes in mounting brackets, put mounting brackets in position, and hammer expansion bolts into the wall.
6. Ensure that the mounting brackets are level.
7. Carefully lift the unit and place its mounting feet on the brackets.
8. Using a wrench, bolt the unit firmly to the brackets.

TO REDUCE VIBRATION OF WALL-MOUNTED UNIT

If allowed, you can install the wall-mounted unit with rubber gaskets to reduce vibration and noise.

Step 4: Connect signal and power cables

The outside unit's terminal block is protected by an electrical wiring cover on the side of the unit. A comprehensive wiring diagram is printed on the inside of the wiring cover.

BEFORE PERFORMING ELECTRICAL WORK, READ THESE REGULATIONS

1. **All wiring must comply with local and national electrical codes, and must be installed by a licensed electrician.**
2. **All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.**
3. **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.**
4. **Power voltage should be within 90-100% of rated voltage. Insufficient power supply can cause malfunction, electrical shock, or fire.**
5. **Circuit, including any switches, should have a capacity 1.5 times the maximum unit current (amps).**
6. **The qualified technician must use an approved circuit breaker or switch that disconnects all poles and has has a contact separation of at least 1/8 in (3 mm).**
7. **Make sure to properly ground the air conditioner.**
8. **Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in malfunction and possible fire.**

⊘ ***DO NOT*** **connect another appliance to the same circuit.**

⊘ ***DO NOT*** **let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.**

5 Outdoor unit installation

WARNING: ELECTRICAL HAZARD

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

1. Prepare the cable for connection:

Cable Types

- Outdoor Power Cable: SOOW type
- Signal/Power Cable: SOOW type

Minimum Cross-Sectional Area of Power Cables

Appliance Amps (A)	AWG
10	18
13	16
18	14
25	12
30	10

Table 4

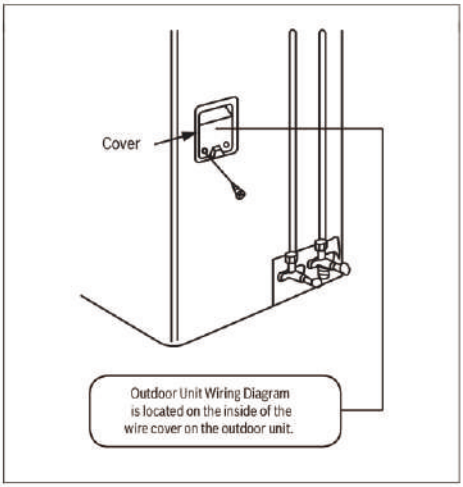
- Using wire strippers, strip the rubber jacket from both ends of signal/power cable to reveal about 40mm (1.57in) of the wires inside.
- Strip the insulation from the ends of the wires.
- Using wire crimper, crimp u-type lugs on the ends of the wires.

WARNING: ELECTRICAL HAZARD

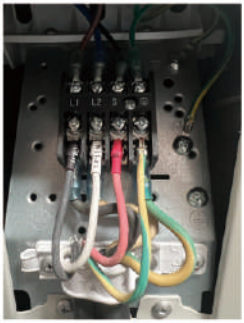
- While crimping wires, make sure you clearly distinguish the Live ("L") Wire from other wires.

WARNING: ELECTRICAL HAZARD

- All wiring must be performed strictly in accordance with the wiring diagram located on the inside of the indoor unit's wire cover.



2. Unscrew the electrical wiring cover and remove it.
3. Unscrew the cable clamp below the terminal block and place it to the side.
4. Match the wire colors/labels with the labels on the terminal block, and firmly screw the u-lug of each wire to its corresponding terminal.
5. After checking to make sure every connection is secure, loop the wires around to prevent rain water from flowing into the terminal.
6. Using the cable clamp, fasten the cable to the unit. Screw the cable clamp down tightly.
7. Insulate unused wires with PVC electrical tape. Arrange them so that they do not touch any electrical or metal parts.
8. Replace the wire cover on the side of the unit, and screw it in place.



12000 BTU 230V
24000 BTU
36000 BTU

12000 BTU 115V

6 After Connection, before operation

Step 1: Air Evacuation

Air Evacuation

Preparations and Precautions

Air and foreign matter in the refrigerant circuit can cause abnormal rises in pressure, which can damage the air conditioner, reduce its efficiency, and cause injury. Use a vacuum pump and manifold gauge to evacuate the refrigerant circuit, removing any non-condensable gas and moisture from the system.

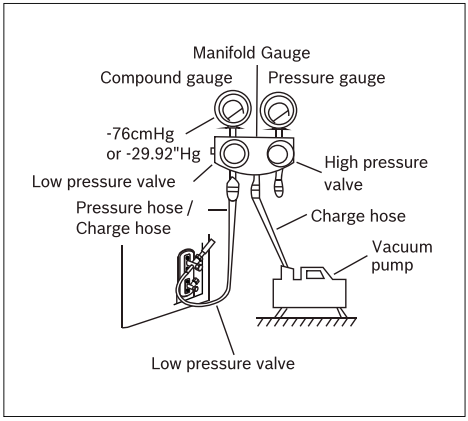
Evacuation should be performed upon initial installation and when unit is relocated.

Before performing evacuation

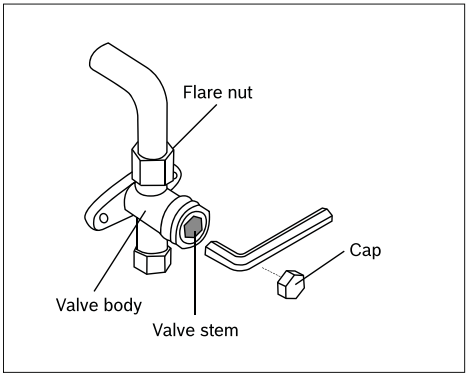
- Check to make sure that both high-pressure and low-pressure pipes between the indoor and outdoor units are connected properly in accordance with the Refrigerant Piping Connection section of this manual.
- Check to make sure all wiring is connected properly.

Evacuation Instructions

Before using the manifold gauge and vacuum pump, read their operation manuals to familiarize yourself with how to use them properly.



1. Connect the charge hose of the manifold gauge to service port on the outdoor unit's low pressure valve.
2. Connect another charge hose from the manifold gauge to the vacuum pump.
3. Open the Low Pressure side of the manifold gauge. Keep the High Pressure side closed.
4. Turn on the vacuum pump to evacuate the system.
5. Run the vacuum until the Compound Meter reads -76cmHg / -29.92"Hg (-101 kPa). It is recommended to use a micron gauge; run the vacuum until the micron gauge reads 350 to 500 microns or less.
6. Close the Low Pressure side of the manifold gauge, and turn off the vacuum pump.
7. Wait for approximately 10 to 15 minutes, then check that there has been no change in system pressure. It is recommended to use a micron gauge; check to make sure the system is still below 500 microns.
8. If there is a change in system pressure, refer to Gas Leak Check section for information on how to check for leaks. If there is no change in system pressure, unscrew the cap from the packed valve (high pressure valve).
9. Insert a 5mm allen wrench into the packed valve (high pressure valve) and open the valve by turning the wrench in a 1/4 counterclockwise turn. Listen for gas to exit the system, then close the valve after 5 seconds.
10. Watch the Pressure Gauge for one minute to make sure that there is no change in pressure. The Pressure Gauge should read slightly higher than atmospheric pressure.



11. Remove the charge hose from the service port.
12. Using hexagonal wrench, fully open both the high pressure and low pressure valves.
13. Tighten valve caps on all three valves (service port, high pressure, low pressure) by hand. You may tighten it further using a torque wrench if needed.

NOTICE: Open valve stems gently

- When opening valve stems, turn the hexagonal allen wrench until it hits against the stopper. Do not try to force the valve to open further.

Step 2: Electrical and Gas Leak Checks

Electrical and Gas Leak Checks

Electrical Safety Checks

After installation, confirm that all electrical wiring is installed in accordance with local and national codes / regulations, and according to the Installation Manual. All testing must be performed by a licensed electrician.

Before test run

- Check grounding work
- Measure grounding resistance by visual detection and with grounding resistance tester. Grounding resistance must be less than 0.1Ω.

This may not be required for some locations. Refer to local code requirements.

During test run

- Check for electrical leakage
- During the Test Run , use an electroprobe and multimeter to perform a comprehensive electrical leakage test. If electrical leakage is detected, turn off the unit immediately and call a licensed electrician to find and resolve the cause of the leakage.

This may not be required for some locations in the US.

WARNING: Risk of electric shock

- All wiring must comply with local and national electrical codes, and must be installed by a licensed electrician.

Gas Leak Checks

There are two different methods to check for gas leaks.

Soap and Water Method

Using a soft brush, apply soapy water or liquid detergent to all pipe connection points on the indoor unit and outdoor unit. The presence of bubbles indicates a leak.

Leak Detector Method

If using leak detector, refer to the device's operation manual for proper usage instructions.

After confirming that all pipe connection points DO NOT leak, replace the valve cover on the outside unit.

Step 3: Test Run

Test Run

Before Test Run

Only perform test run after you have completed the following steps:

- Electrical Safety Checks –
  Confirm that the unit's electrical system is safe and operating properly
- Gas Leak Checks –
  Check all flare nut connections and confirm that the system is not leaking
- Confirm that gas and liquid (high and low pressure) valves are fully open

Test Run Instructions

You should perform the Test Run for at least 30 minutes.

1. Energize service disconnect at the outdoor unit.
2. Press the ON/OFF button on the remote controller to turn it on.
3. Press the MODE button to scroll through the following functions, one at a time:
   - COOL – Select lowest possible temperature
   - HEAT – Select highest possible temperature
4. Let each function run for 5 minutes, and perform the following checks:

Test Items	Symptom	Check
Indoor and Outdoor units are isntalled securely	Fall, Vibration, Noise	
No refrigerant gas leaks	Incomplete cooling/ heating function	
Refrigent gas and liquid pipes and indoor drain hose extension are thermally insulated	Water leakage	
Draining line is properly installed	Water leakage	
System is properly grounded	Electrical leakage	
Only specified wires are used for all wiring, and all wires are connected correctly.	No operation or burn damage	
Indoor or outdoor unit's air inlet or air outlet are unobstructed.	Incomplete cooling/ heating function	
Stop valves are opened.	Incomplete cooling/ heating function	
Indoor unit properly receives remote controller commands	No operation	
Voltage between L and N is 115v; or between L1 and L2 is 220V	No operation	
Pipes and wires are connected to the corresponding terminal bloks/connection ports for the connected unit.	No cooling / heating	

WARNING: CONTAINS REFRIGERANT

- During operation, the pressure of the refrigerant circuit will increase. This may reveal leaks that were not present during your initial leak check. Take time during the Test Run to double-check that all refrigerant pipe connection points do not have leaks. Refer to Gas Leak Check section for instructions.

5. After the Test Run is successfully complete, and you confirm that all check points in List of Checks to Perform have PASSED, do the following:
   a. Using remote control, return unit to normal operating temperature.
   b. Using insulation tape, wrap the indoor refrigerant pipe connections that you left uncovered during the indoor unit installation process.

If ambient temperature is below 63°F (17°C)

You can't use the remote controller to turn on the COOL function when the ambient temperature is below 63°F (17°C). In this instance, you can use the MANUAL CONTROL button to test the COOL function.

1. Locate the MANUAL CONTROL button on the right-hand side panel of the unit. See Fig.38.
2. Press the MANUAL CONTROL button one time to activate FORCED AUTO mode.
3. Press the MANUAL CONTROL again to activate FORCED COOLING mode.
4. Perform Test Run as normal.