This product utilizes **R-454B** *refrigerant*

DIY® Series Multi-Zone Mini-Split System

INSTALLATION & OWNER'S MANUAL

MODELS:

DIY-**-HP-WMAH-230D25-O
DIY-MULTI*-**HP230D-O
DIYCASSETTE**HP-230D25-O

Read this manual carefully before installation and keep it where the operator can easily find it for future reference.

Due to updates and constantly improving performance, the information and instructions within this manual are subject to change without notice.

Version Date: May 29, 2025
Please visit www.mrcool.com/documentation
to ensure you have the latest version of this manual.

MRCOOL®
COMFORT MADE SIMPLE

CONTENTS

Safety Precautions

Read Before Using

Incorrect usage may cause serious damage or injury.

The symbols below are used throughout this manual to indicate instructions that should be followed closely or actions that should be avoided to prevent death, injury, and/or property damage.

WARNING	Indicates the possibility of personal injury or loss of life.
CAUTION	Indicates the possibility of property damage or serious consequences.

WARNING FOR PRODUCT INSTALLATION

INSTALLATION MUST BE PERFORMED BY AN AUTHORIZED DEALER OR SPECIALIST. DEFECTIVE INSTALLATION CAN CAUSE WATER LEAKAGE, ELECTRICAL SHOCK, OR FIRE.

******ELECTRICAL WORK MUST BE COMPLETED BY A QUALIFIED ELECTRICAL TECHNICIAN******

- ⊘ ***DO NOT*** **install the unit in a location that may be exposed to combustible gas leaks. If combustible gas accumulates around the unit, it could cause fire.**
- ⊘ ***DO NOT*** **turn on the power until the installation and all work has been completed.**

1. Installation must be performed according to the installation instructions. Improper installation could cause water leakage, electrical shock, or fire.
2. Contact an authorized service technician for repair or maintenance of this unit.
3. This appliance must be installed in accordance with national wiring regulations.
4. Only use the included accessories, parts, and specified parts for installation. Using non-standard parts can cause water leakage, electrical shock, fire, and/or failure of the unit.
5. Install the unit in a firm location that can support the unit's weight. If the location cannot support the unit's weight, or the installation is not done properly, the unit may drop and cause serious injury and damage.
6. Install the drainage piping according to the instructions in this manual. Improper drainage could cause water damage to your home and/or property.
7. When moving or relocating the air conditioner, consult experienced service technicians for disconnection and re-installation of the unit.
8. For detailed information of how to install the indoor and outdoor units to their respective supports, please refer to the indoor unit installation and outdoor unit installation sections of this manual.
9. USB device access, replacement, and maintenance operations must be carried out by professional staff.

WARNING FOR CLEANING & MAINTENANCE

1. **DO NOT** clean the unit with excessive amounts of water.
2. **DO NOT** clean the unit with combustible cleaning agents, as these could cause deformation and/or fire.
3. Turn off the device and disconnect the power before cleaning. Failure to do this could result in electrical shock.

TAKE NOTE OF FUSE SPECIFICATIONS

- The unit's circuit board (PCB) is designed with a fuse to provide over-current protection.
- The specifications of the fuse are printed on the circuit board, examples of such are T5A/250VAC and T10A/250VAC.

Note: Only a blast-proof ceramic fuse can be used.

1 SAFETY

WARNING FOR PRODUCT USE

- ⊘ ***DO NOT*** **insert fingers, rods, or other objects into the air inlet or outlet. This could cause injury, since the fan may be rotating at high speeds.**
- ⊘ ***DO NOT*** **use flammable sprays such as hair spray, lacquer, or paint near the unit, as this could cause fire and/or an explosion.**
- ⊘ ***DO NOT*** **operate the unit in places near or around combustible gases. Emitted gas may collect around the unit and cause an explosion.**
- ⊘ ***DO NOT*** **allow children to play with the appliance. Children must be supervised around the unit at all times.**
- ⊘ ***DO NOT*** **operate the unit in a room where it could be exposed to excessive amounts of water, such as a bathroom or laundry room. Exposure to excessive water amounts can cause the electrical components to short circuit.**
- ⊘ ***DO NOT*** **expose your body directly to direct cool airflow from the unit for a prolonged period of time.**

1. If the unit operates abnormally (emits strange noises or a burning smell), immediately turn off the unit and disconnect the power in order to avoid electric shock, fire, and/or injury. Call your local dealer, or MRCOOL® tech support at (270) 366-0457, for further assistance.
2. If the air conditioner is used together with burners or other heating devices, thoroughly ventilate the room in order to avoid an oxygen deficiency.
3. In certain functional environments (such as kitchens and server rooms etc.), the use of specially designed heating and air units is highly recommended.
4. 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.
5. Turn off the unit and disconnect the power before performing any cleaning, installation, or repairs. Failure to do so can cause electric shock.

CAUTION

- ⊘ ***DO NOT*** **allow the unit to operate for extended periods of time with the doors or windows open, or in very high humidity.**
- ⊘ ***DO NOT*** **operate the unit with wet hands, as this could cause electric shock.**
- ⊘ ***DO NOT*** **use device for any other purpose than its intended use.**
- ⊘ ***DO NOT*** **climb onto or place objects on top of the outdoor unit.**

1. Make sure that water condensation can drain smoothly and unhindered from the unit.
2. Turn off the unit and disconnect the power if the unit will not be used for an extended period of time.
3. Turn off and unplug the unit during storms.

ELECTRICAL WARNINGS

******ELECTRICAL WORK MUST BE COMPLETED BY A QUALIFIED ELECTRICAL TECHNICIAN******

- ⊘ ***DO NOT*** **share the power supply with other appliances. An improper or insufficient power supply could cause fire and/or electrical shock.**

1. Only use the specified wire. If the wire is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.
2. The product must be properly grounded during installation or electrical shock could occur.
3. Appropriate wiring standards, regulations, and the installation manual must be followed for all electrical work.
4. If connecting power to fixed wiring, an all-pole disconnection device must be incorporated in the fixed wiring in accordance with the wiring rules and must meet the following requirements: at least .3 cm (3 mm) of clearances in all poles, a leakage current that may exceed 10 mA, and a residual current device (RCD) having a rated residual operating current not exceeding 30 mA.
5. Connect cables tightly and clamp them securely to prevent external forces from damaging the terminal.

ELECTRICAL WARNINGS

Improper electrical connections could overheat, causing fire and/or electrical shock.

6. All electrical connections must be made according to the Electrical Connection Diagram located on the panels of the indoor and outdoor units.
7. All wiring must be properly arranged to ensure that the control board cover can close properly. If the control board cover is not properly closed, it can lead to corrosion and cause the connection points on the terminal to heat up, catch fire, or cause electrical shock.
8. Disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

FLAMMABLE REFRIGERANT WARNINGS

1. The installation of pipe-work should be kept to a minimum and should be protected from physical damage.
2. Refrigerant pipes should comply with national gas regulations.
3. All mechanical connections and ventilation openings should be kept clear of obstruction.
4. Utilize proper disposal processes based on national regulations.
5. Any person 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.
6. 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.
7. Do not use any means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
8. 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).
9. Do not allow foreign matter (oil, water, etc.) to enter the piping, and securely seal the opening by pinching, taping, etc.
10. Do not pierce or burn.
11. Refrigerants may not contain an odor.
12. Working procedures that affect safety should only be carried out by competent persons.
13. The unit should be stored in a well-ventilated area where the room size corresponds to the room area as specific for operation, and should be stored so as to prevent potential mechanical damage from occurring.
14. Joints should be tested with detection equipment with a capability of 5 g/year of refrigerant or better, with the equipment in standstill and under operation or under a pressure of at least these standstill or operation conditions after installation. Detachable joints should NOT be used in the indoor side of the unit (brazed, welded joint could be used).
15. A leak detection system is installed. The unit must be powered except for service. For units with a refrigerant sensor, 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 should only be replaced with the sensor specified by the manufacturer.
16. When a flammable refrigerant is used, the requirements for installation space of the appliance and/or ventilation requirements are determined according to:
    - The mass charge amount (M) used in the unit.
    - The installation location.
    - The type of ventilation of the location of the unit.
    - Piping material, pipe routing, and installation must include protection from physical damage in operation and service. This must be in compliance with local codes and standards, such as ASHRAE 15, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints must be accessible for inspection prior to being covered or enclosed.
    - Protection devices, piping and fittings must be protected as much as possible against adverse environmental effects. For example, against the danger of water collecting and freezing in relief pipes or against accumulation of dirt or debris.

FLAMMABLE REFRIGERANT WARNINGS

- Piping in refrigeration systems must be designed and installed to minimize the likelihood of hydraulic shock, resulting in damage from the system.
- Steel pipes and components must be protected against corrosion with a rust-proof coating before applying insulation.
- Precautions must be taken against excessive vibration or movement of the unit.
- The minimum floor area of the room must be mentioned in the form of a table or a single figure without reference to a formula.

17. After completion of field piping for split systems, the field pipework should be pressure tested with an inert gas and then vacuum tested prior to refrigerant charging, according to the following requirements:
    - The minimum test pressure for the low side of the system should be the low side design pressure and the minimum test pressure for the high side of the system should be the high side design pressure, unless the high side of the system cannot be isolated from the low side of the system in which case the entire system should not be pressure tested to the low side design pressure.
    - The test pressure after removal of pressure source shall be maintained for at least 1 hour with no decrease of pressure indicated by the test gauge, with test gauge resolution not exceeding 5% of the test pressure.
18. Prior to beginning work on systems containing flammable refrigerants, safety checks are necessary to ensure that the risk of ignition is minimized. For repairs to the refrigerating system, the following precautions shall be complied with prior to conducting work on the system.
19. Work should be undertaken under a controlled procedure so as to minimize the risk of a flammable gas or vapor being present while the work is being performed.
20. All maintenance staff and others working in the local area should be instructed on the nature of work being carried out. Avoid work in confined spaces.
21. The area should be checked with an appropriate refrigerant detector prior to 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.
22. If any hot work is to be conducted on the refrigeration equipment or any associated parts, appropriate fire extinguishing equipment should be on site and readily available. Have a dry power or CO2 fire extinguisher adjacent to the charging area.
23. No person carrying out work in relation to a refrigerating system which involves exposing any pipe work should use any sources of ignition in such a manner that it may lead to the risk of fire or explosion. All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing, and disposal, during which refrigerant can possibly be released to the surrounding space. Prior to work taking 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 should be displayed.
24. 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.
25. 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 ad service guidelines shall be followed. If in doubt, consult the manufacturer's technical department for assistance. The following checks should 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 should be checked for the presence of refrigerant;
    - marking to the equipment continues to be visible and legible, marking and signs that are illegible should be corrected;
    - refrigerant pipe or components are installed in a position where they are unlikely to be exposed to any substance which may corrode refrigerant containing components, unless the components are constructed of materials which are inherently resistant to or protected against corrosion.

FLAMMABLE REFRIGERANT WARNINGS

26. Repair and maintenance to 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 but it is necessary to continue operation, an adequate temporary solution should be used.
27. Initial safety checks should include:
    - that capacitors are discharged: this should be done in a safe manner to avoid the possibility of sparking;
    - that there are no live electrical components and wiring are exposed while charging, recovering, or purging the system;
    - that there is continuity of earth bonding.
28. Sealed electrical components should be replaced if damaged.
29. Intrinsically safe components should be replaced if damaged.
30. Check that wiring 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.
31. Under no circumstances should 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) should 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 should be calibrated to the refrigerant employed, and the appropriate percentage of gas (25% minimum) is confirmed. Leak detection fluids are also suitable for use with most refrigerants but the use of detergents containing chlorine may react with the refrigerant and corrode the copper work. Examples of leak detection fluids are the bubble method, fluorescent method agents, etc. If a leak is suspected, all naked flames should be removed/extinguished. If a leakage of refrigerant is found which requires brazing, all of the refrigerant should be recovered from the system, or isolated (by means of shut-off valves) in a part of the system remote from the leak. See the following instructions of removal of refrigerant.
32. When breaking into the refrigerant circuit to make repairs, or for any other purpose, conventional procedures should be used. However, for flammable refrigerants, it is even more vital to follow best practice. The following procedure should 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 flame to open circuit;
    - open the circuit
33. The refrigerant charge should be recovered into the correct recovery cylinders if venting is not allowed by local and national codes. For units containing flammable refrigerants, the system should 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 should be achieved by breaking the vacuum in the system with oxygen-free nitrogen and continuing to fill the working pressure is achieved, then venting to atmosphere, and finally pulling down to a vacuum. This process should be repeated until no refrigerant is within the system. When the final oxygen-free nitrogen charge is used, the system should be vented down to atmospheric pressure to enable work to take place. The outlet for the vacuum pump should not be close to any potential ignition sources, and ventilation should be available.
34. In addition to conventional charging procedures, the following requirements should be followed:
    - Work should 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.

FLAMMABLE REFRIGERANT WARNINGS

- Ensure that the refrigeration system is grounded prior to charging the system with refrigerant.
- Label the system when charging is complete (if not already).
- Extreme care should be taken not to overfill the refrigeration system.
- Prior to recharging the system, it should be pressure tested with oxygen-free nitrogen (OFN). The system should be leak-tested on completion of charging but prior to commissioning. A follow-up leak test shall be carried out prior to leaving the site.

35. Before carrying out this procedure, it is essential that the technician is completely familiar with the equipment and all its detail. It is good recommended practice that all refrigerants are recovered safely. Prior to the task being carried out, an oil and refrigerant sample should be taken in case analysis is required prior to re-use of recovered refrigerant. It is essential that electrical power is available before the task is commenced.
    a. Become familiar with the equipment and its operation.
    b. Isolate the 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 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 in accordance with 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 equipment are removed from the site promptly and all isolation valves on the equipment are closed off.
    k. Recovered refrigerant should not be charged into another refrigeration system unless it has been cleaned and checked.
36. Equipment shall be labeled stating that it has been decommissioned and emptied of refrigerant. The label should be dated and signed. For appliances containing flammable refrigerants, ensure that there are labels on the equipment stating the equipment contains flammable refrigerant.
37. When removing refrigerant from a system, either for servicing or decommissioning, it is good recommended 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 should be 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 valve and associated shut-off valves in good working order. Empty recovery cylinders are evacuated and, if possible, cooled before recovery occurs. The recovery equipment should be in good working order with a set of instructions concerning the equipment that is at hand and should 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 should be available and in good working order. Hoses should be complete with leak-free disconnect couplings and in good condition. The recovered refrigerant should 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 and especially not in cylinders.
38. 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 should not be heated by an open flame or other ignition sources to accelerate this process. When oil is drained from a system, it should be carried out safely.
39. An unventilated area where the appliance using flammable refrigerants is installed should be constructed so that should any refrigerant leak, it will not stagnate so as to create a fire or explosion hazard. If appliances connected via an air duct system to one or more rooms below the ventilation requirements,

FLAMMABLE REFRIGERANT WARNINGS

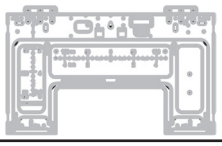
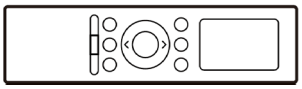
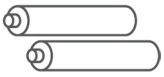
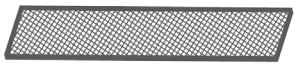
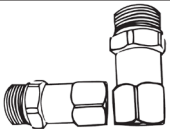
that room should never contain potential ignition sources. A flame-producing device may be installed in the space if the device is provided with an effective flame arrest. Auxiliary devices which may be a potential ignition source should not be installed in the duct work. Examples of such are hot surfaces with a temperature exceeding 1292°F (700°C) and electric switching devices. Only auxiliary devices (such as a certified heater kit) approved by the manufacturer or declared suitable with the refrigerant should be installed in connecting ductwork. False 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 should only be replaced with sensors specified by the manufacturer. A leak detection system is installed. The unit must be powered except for service.

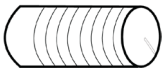
40. Transport of equipment containing flammable refrigerants should comply with transportation regulations.
41. Marking of equipment using signs should comply with local regulations.
42. Disposal of equipment using flammable refrigerants should comply with national regulations.
43. Storage of equipment/appliances should be in accordance with the manufacturer's instructions.
44. Storage of packed (unsold) equipment should be constructed so 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.
45. 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 minutes. The vacuum pressure level should be specified in the manual, and should be the lessor of 500 microns of 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 should be tightness-tested according to the following requirements: the test method should 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 should be detected.
    - Any servicing should be performed only as recommended by MRCOOL®.
46. Any maintenance, service, or repair operations must be performed by qualified personnel. Every working procedure that affects safety should only be carried out by competent persons that are both trained and certified. The training of these procedures should be 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 should follow the ANNEX HH requirements of UL 60334-2-40 4th Edition.
    Examples of such working procedures are:
    - breaking into a refrigerant circuit
    - opening of sealed components
    - opening of ventilated enclosures

Symbols Displayed on Indoor & Outdoor Unit		
	**WARNING**	This symbol shows that this appliance uses 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 a service personnel should be handling this equipment with reference to the installation manual.
	**CAUTION**	
	**CAUTION**	This symbol shows that information is available such as the operating manual or installation manual.

2.1 Packing List

This system comes with the following accessories. Use all of the installation parts and accessories to install the unit. Improper installation may result in water leakage, electrical shock and fire, or cause the equipment to fail. The items that are not included with the air conditioner must be purchased separately.

PART	LOOKS LIKE	QUANTITY
Manuals		**2 (Installation & Remote)**
Drain Joint		**1**
Seal		**1**
Mounting Plate & Template		**2 1 - Metal Mounting Plate 1 - Cardboard Template**
Anchor		**5-8**
Mounting Plate Fixing Screw		**5-8**
Remote Control		**1**
Battery		**2**
Remote Control Holder		**1**
Fixing Screw for Remote Control Holder		**2**
Small Filter *(To be installed on the back of the main air filter by an authorized technician during installation.)*		**2**
DIY® Quick Connect® Line Set		**1**
Neoprene		**1 (wall sleeve sealant)**
Line Set Adapter Set		**1-liquid side adapter / 1-suction side adapter (used for installing units rated 24K or greater.)**
Allen Wrench		**1**

PART	LOOKS LIKE	QUANTITY
Insulation Sheath *(Apply to the quick-connectors of the pipe.)*		**2**
Non-Adhesive UV Tape		**1**
Drain Pipe		**1 (16ft/5m)**
Plastic Wall Sleeve		**1**
Smart Controller Kit		**1 (w/ Manual in Remote Box)**

Name	Model	Pipe Specification	
		Liquid Side	Gas Side
Connecting Pipe Assembly	9K/12K	Ø1/4in (Ø6.35)	Ø3/8in (Ø9.52)
	18K	Ø1/4in (Ø6.35)	Ø1/2in (Ø12.7)
	24K/36K	Ø3/8in (Ø9.52)	Ø5/8in (Ø16)

2.2 Specifications

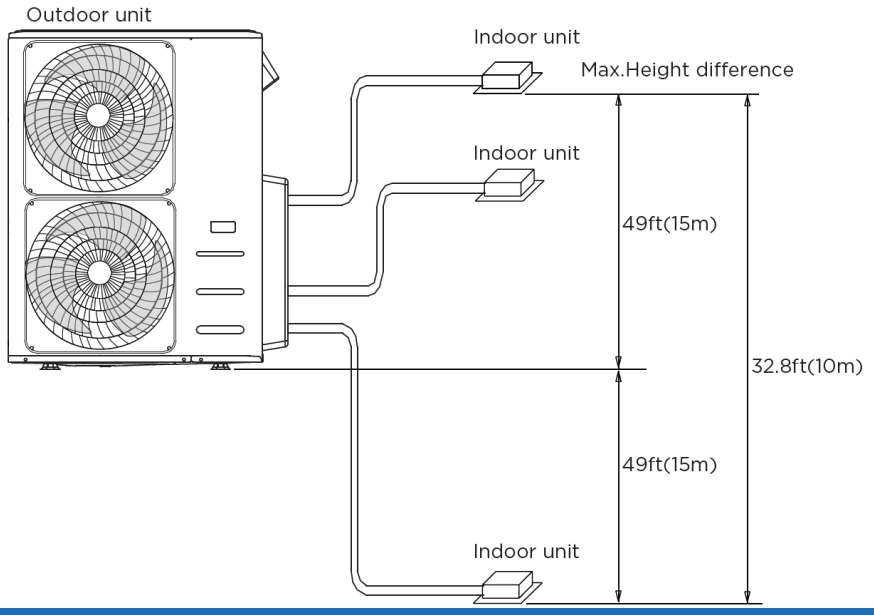
Unit: ft/m

Possible Number of Connected Units	1-6 Units	
Compressor Stop/Start Frequency	3 Minutes or More	
Power Source Voltage	**Voltage Fluctuation**	Within ±10% of rated voltage
	Voltage Drop During Start	Within ±15% of rated voltage
	Interval Balance	Within ±3% of rated voltage

Unit: ft/m

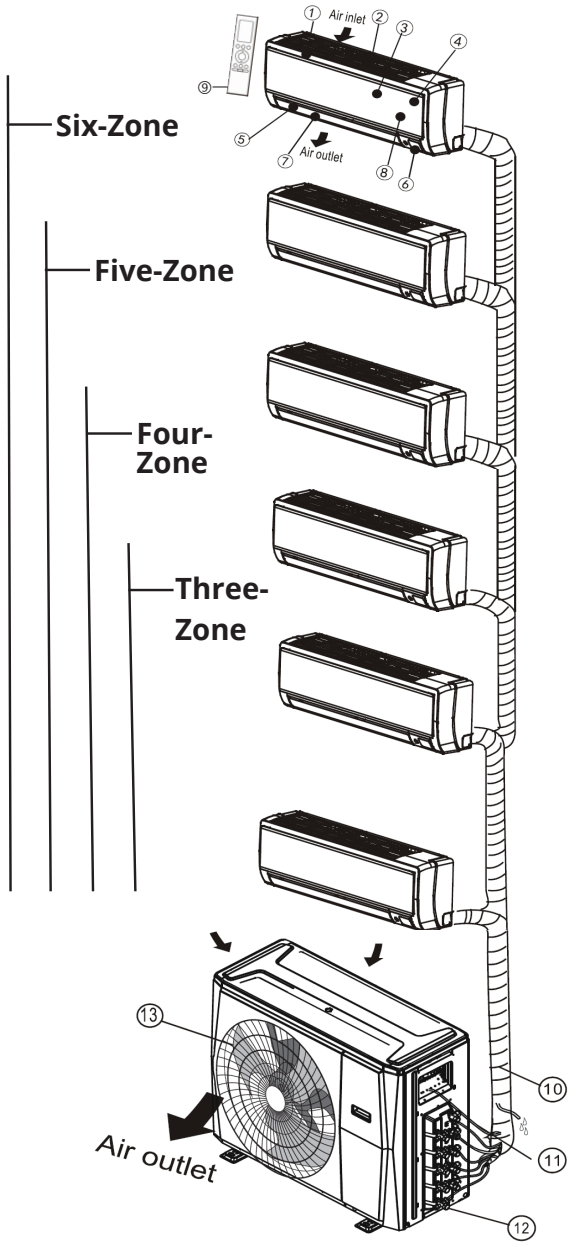
	3-Zone	4-Zone	5-Zone	6-Zone	6-Zone
Max. Length for All Rooms	123/37.5	172/52.5	221/67.5	221/67.5	221/67.5
Max. Length for One Indoor Unit	73/22.5	73/22.5	73/22.5	73/22.5	73/22.5
Max. Length Diff. Between Indoor & Outdoor Unit	33/10	33/10	33/10	33/10	33/10
Max. Height Diff. Between Indoor Units	24/7.5	24/7.5	24/7.5	24/7.5	24/7.5

When installing multiple indoor units with a single outdoor unit, ensure that the length of the refrigerant pipe and the drop height between the indoor and outdoor units meet the requirements illustrated in the following diagram:



2.3 Product Overview

(A) Wall-Mounted Air Handler



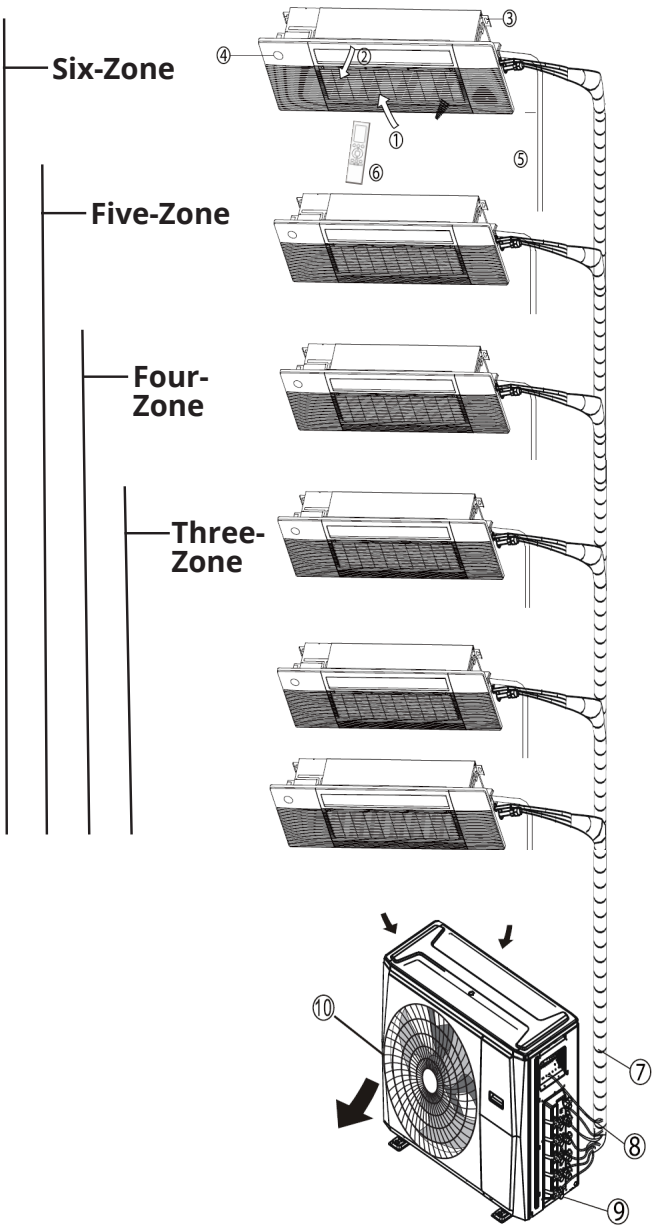
Indoor Unit

1. Panel Frame
2. Rear Air Intake Grille
3. Front Panel
4. Air Purifying Filter & Air Filter (Behind)
5. Horizontal Louver
6. LCD Display Window
7. Vertical Louver
8. Manual Control Button (Behind)
9. Remote Control

Outdoor Unit

10. Drain Hose, Refrigerant Connecting Pipe
11. Connective Cable
12. Stop Valve
13. Fan Hood

(B) One-Way Cassette



Indoor Unit

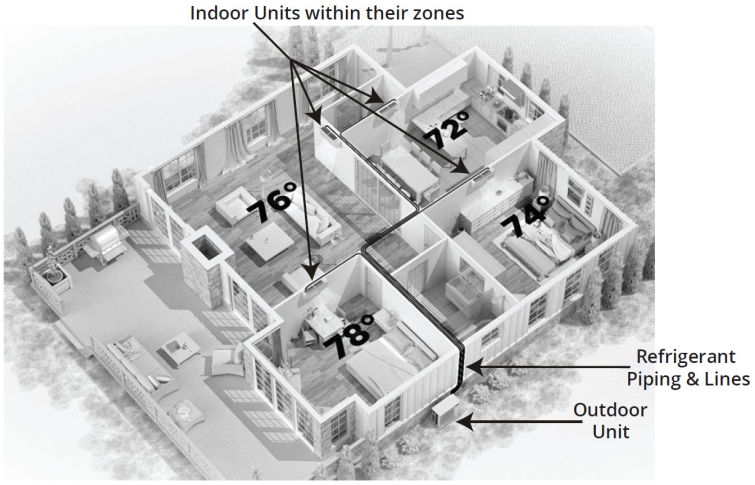
1. Air Inlet (w/ air filter inside)
2. Air Flow Louver (at air outlet)
3. Hanging Bracket
4. Display Panel
5. Drain Pipe
6. Remote Control

Outdoor Unit

7. Refrigerant Connecting Piping
8. Connecting Cable
9. Stop Valve
10. Fan Hood

NOTE

- For multi-split type units, one outdoor unit can be matched to different types of indoor units. All of the pictures in this manual are for demonstration purposes only. Your unit may be slightly different or similar in shape.
- If there is aneed for electrical disconnection after installation and there isn't a switch already incorporated, the disconnection may be achieved by having the plug accessible or by incorporating a switch in the fixed wiring in accordance with the wiring rules.
- Please read this instruction manual fully before you attempt to install this system. Because there are multiple units, pipes, and lines to be installed in different locations, and heating/cooling zones to consider, planning your installation is necessary in order to help prevent any potential problems. Taking proper measurements is also vital to determine the line set lengths needed to connect the indoor units to the outdoor unit. If you find the standard line set length is not sufficient for your application, you may need to purchase additional line sets and coupler kits. It should be noted that it is easier to install the air handlers to the outer walls. If they are to be mounted to interior walls, line sets will need to be run to a central location, such as an attic, basement, or crawlspace, and have them exit the house (to the outdoor unit) from that location.



2.4 Operating Conditions

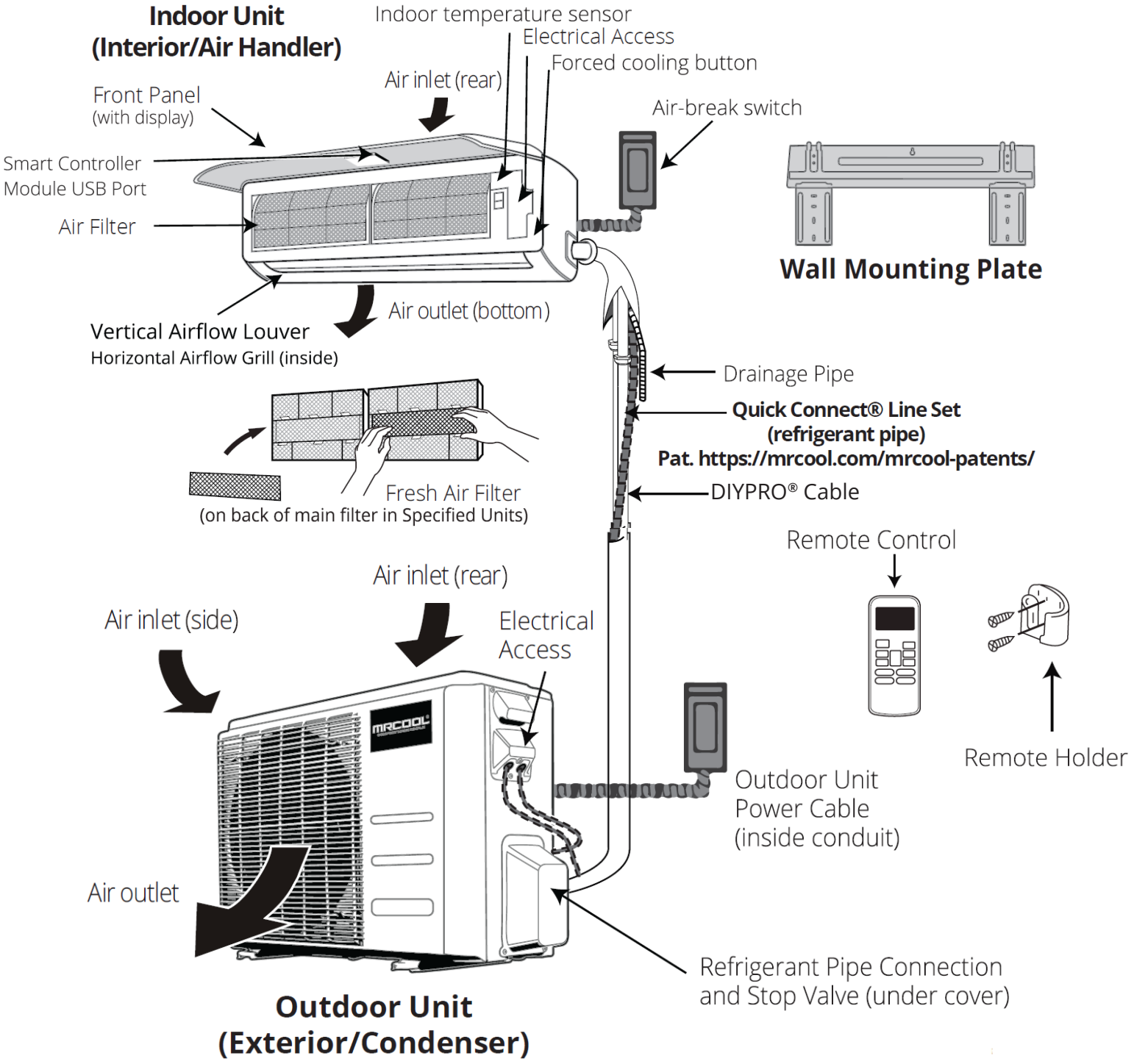
When your unit is used outside of the following temperature ranges, certain safety protection features may activate and cause the unit to disable.

	Cool Mode	Heat Mode	Dry Mode
Room Temperature	60°F-90°F (16°C-90°C)	32°F-86°F (0°C-30°C)	50°F-90°F (10°C-32°C)
Outdoor Temperature	-13°F-122°F (-25°C-50°C)	-13°F-75°F (-25°C-24°C)	32°F-122°F (0°C-50°C)
	-22°F-122°F (-30°C-50°C)	-22°F-75°F (-22°F-75°F)	

2.5 Parts Overview

NOTE

The installation must be performed in accordance with the requirements of local and national standards. The installation may be slightly different in different areas.



NOTE

Illustrations in this manual are for explanatory purposes. The actual shape of your unit may vary.

2.6 Packing & Unpacking the Unit

Unpacking the Indoor Unit

1. Cut the sealing tape on the carton on the left, one cut in the middle, and one cut on the right.
2. Use pliers to take out the sealing nails on the top of the carton.
3. Open the carton.
4. Take out the middle support plate if it is included.
5. Take out the accessory package, then take out the connecting wire (if included).
6. Lift the machine out of the carton and lay it flat.
7. Remove the packing foam, and untie the packaging bag.

Unpacking the Outdoor Unit

1. Cut the packing belt.
2. Take the unit out of the carton.
3. Remove the foam from the unit.
4. Remove the packaging bag from the unit.

Packing the Indoor Unit

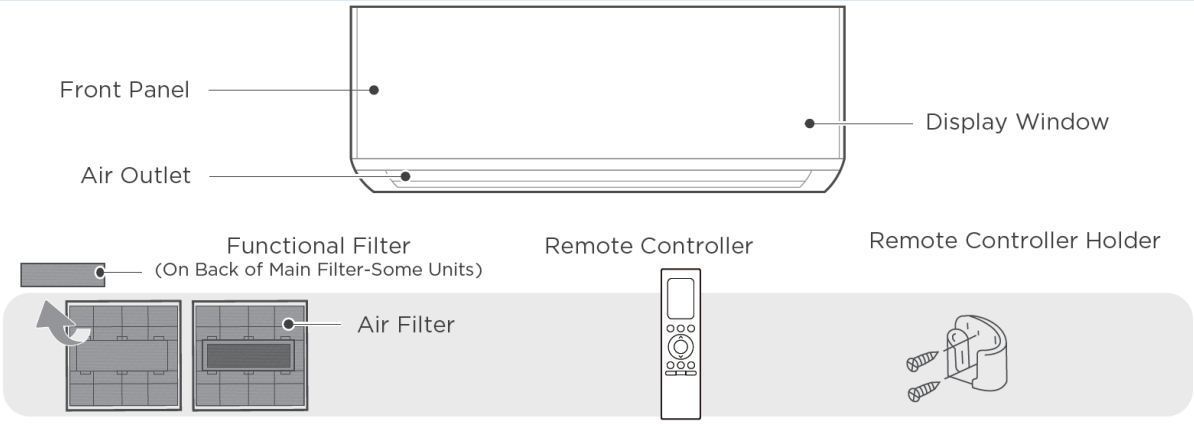
1. Place the indoor unit into the packing bag.
2. Attach the packing foam to the unit.
3. Place the unit into the carton, then add the accessory package.
4. Close the carton and seal it with packing tape.
5. Use the packing belt, if necessary.

Packing the Outdoor Unit

1. Place the outdoor unit into the packing bag.
2. Place the packing foam into the box.
3. Place the unit into the carton, then put the upper packing foam on the unit.
4. Close the carton and seal it with packing tape.
5. Use the packing belt, if necessary.

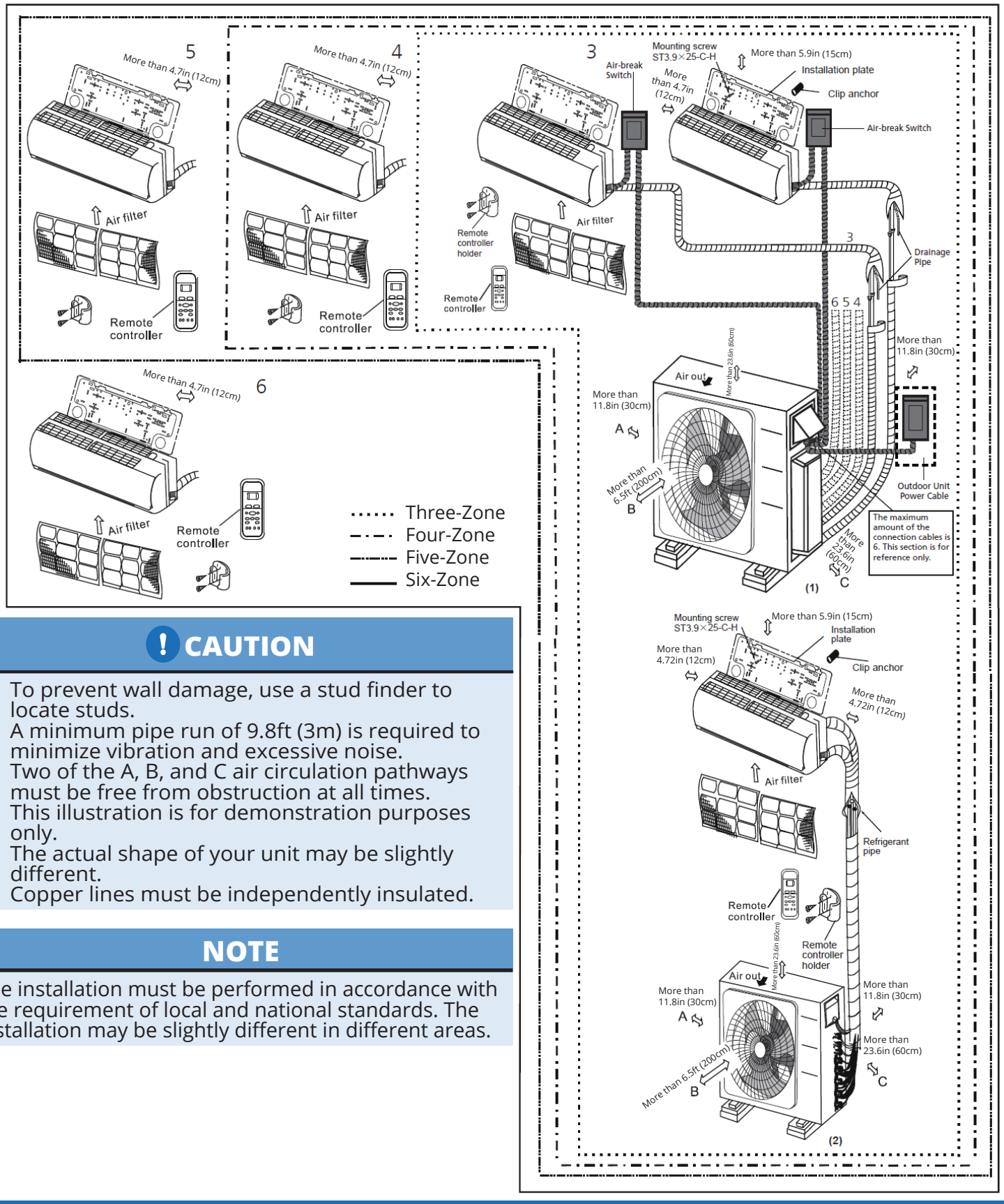
2.7 Indoor Unit Display

Only use compatible modules certified for use with the model. Refer to the Electric Auxiliary Heat Model specification for additional details to ensure proper selection and installation.



Display Code	Display Code Meaning
	• When Wireless Control feature is activated (For App-controlled units)
	• Displays temperature, operation feature and Error codes:
 *(for 3 seconds)*	• TIMER ON is set (if the unit is OFF, "  " remains on when TIMER ON is set). • SWING, TURBO or SILENCE feature is turned on.
 *(for 3 seconds)*	• TIMER OFF is set. • SWING, TURBO or SILENCE feature is turned off.
	• When defrosting.
	• When Active Clean feature is turned on.
	• When 46°F (8°C) heating feature is turned on.

2.8 Installation Diagram



! CAUTION

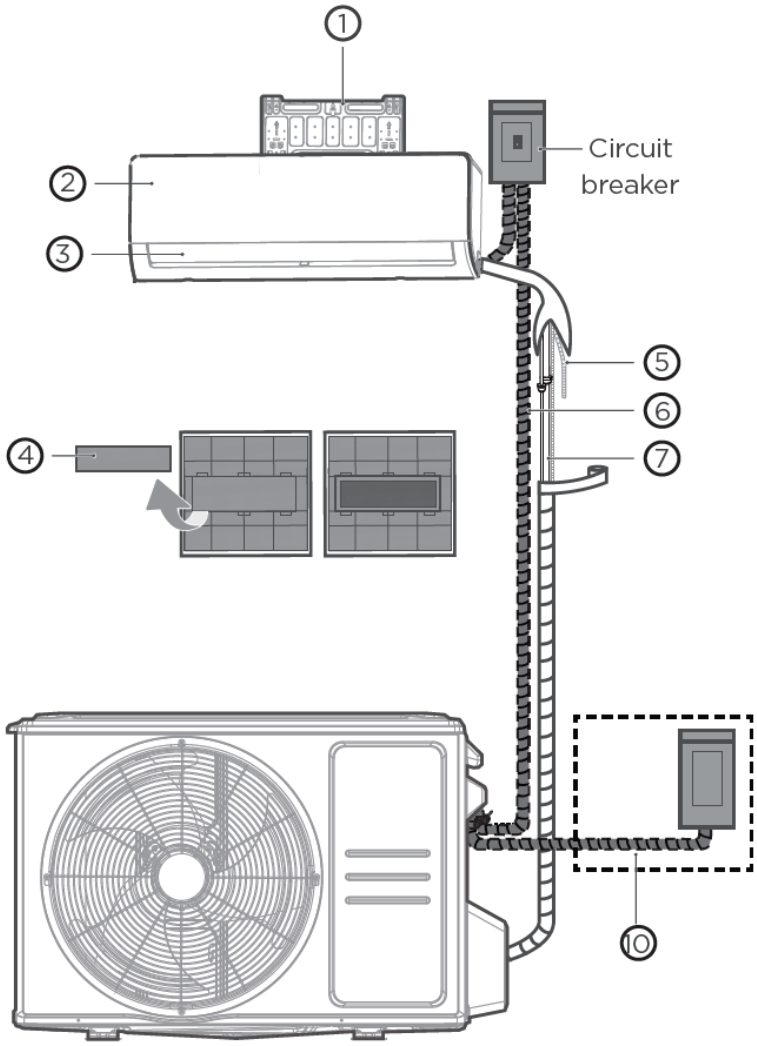
- To prevent wall damage, use a stud finder to locate studs.
- A minimum pipe run of 9.8ft (3m) is required to minimize vibration and excessive noise.
- Two of the A, B, and C air circulation pathways must be free from obstruction at all times.
- This illustration is for demonstration purposes only.
- The actual shape of your unit may be slightly different.
- Copper lines must be independently insulated.

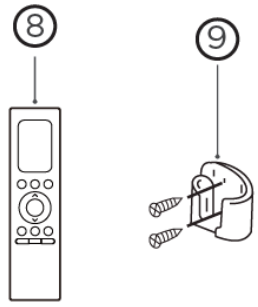
NOTE

The installation must be performed in accordance with the requirement of local and national standards. The installation may be slightly different in different areas.

3.1 Installation Overview

Note: Illustrations in this manual are for explanatory purposes. The shape of your actual unit may be slightly different.





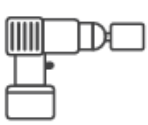
1. Wall Mounting Plate
2. Front Panel
3. Louver
4. Air Filter
5. Drain Pipe
6. Connection Cable
7. Refrigerant Piping
8. Remote Control
9. Remote Control Holder
10. Outdoor Unit Power Cable

Tools NOT Included:


Gloves


Screwdriver & Wrench


Hammer Drill


Core Drill


Goggles & Masks

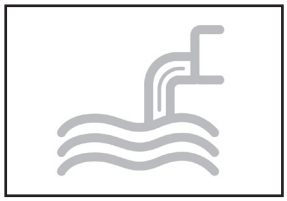

Vinyl Tape

3.2 Installation Location

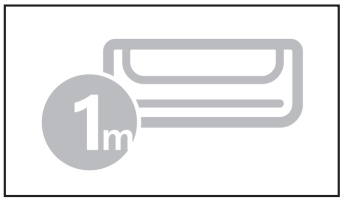
Note: Before you begin installation, refer to the label on the product box to make sure that the model number of the indoor unit matches the model number of the outdoor unit.

The following standards will help you choose an appropriate location for the unit. Proper installation must meet the following specifications:

☑ *Good air circulation & ventilation.*



☑ *Convenient Drainage*



☑ *A location at least 1m from all other electrical devices (e.g., TV, radio, computer)*

☑ *Noise from the unit will not disturb other people.*

☑ *Firm & Solid - the location will not vibrate & is strong enough to support the weight of the unit.*

Do NOT install the 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 that is subject to direct sunlight.

Note for Product Installation:

When choosing a location, be aware that you should leave ample room for a wall hole (see steps for drilling a wall hole for connecting piping) 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 (when facing the unit).

For R454B Refrigerant Charge Amount and Minimum Room Area:

The following are the requirements for room area limits using R454B refrigerant in unventilated areas. All systems are confirmed to meet the requirement of Enhanced Tightness Refrigerating Systems. Minimum room area (Amin) of operating or storage should be determined according to the refrigerant charge (Mc) or releasable charge (mREL) of the system, as specified in the following tables.

Units installed at 7.2ft (2.2m) or lower:

mc or mREL [oz/kg]	Amin [ft²/m²]	mc or mREL [oz/kg]	Amin [ft²/m²]
≤62.7/1.776	12/1.10	119.9/3.4	112/10.44
63.5/1.8	60/5.53	127/3.6	119/11.06
70.5/2.0	66/6.14	134/3.8	126/11.67
77.6/2.2	73/6.76	141.1/4.0	132/12.29
84.6/2.4	79/7.37	148.1/4.2	139/12.9
91.7/2.6	86/7.99	155.2/4.4	145/13.51
98.8/2.8	93/8.6	162.2/4.6	152/14.13
105.8/3.0	99/9.21	169.3/4.8	159/14.74
112.9/3.2	106/9.83	176.4/5.0	165/15.36

Area Formula:

Amin is the required minimum room area in ft²/m².
mc is the actual refrigerant charge in the system oz/kg.
mREL is the refrigerant releasable charge in oz/kg (Applicable to the unit with the refrigerant sensor only.)
hinst is the height of the bottom of the appliance relative to the floor of the room after installation.

Units installed at 7.2ft (2.2m) or higher:

Amin [ft²/m²]	hinst[ft/m]				
mc or mREL [oz/kg]	7.5/2.3	7.9/2.4	8.5/2.6	9.2/2.8	9.8/3.0
<=62.7/1.776	12/1.10				
63.5/1.8	57/5.29	55/5.07	50/4.68	47/4.34	44/4.05
70.5/2.0	63/5.88	61/5.63	56/5.2	52/4.83	48/4.5
77.6/2.2	70/6.46	67/6.19	62/5.72	57/5.31	53/4.95
84.6/2.4	76/7.05	73/6.76	67/6.24	62/5.79	58/5.41
91.7/2.6	82/7.64	79/7.32	73/6.76	67/6.27	63/5.86
98.8/2.8	89/8.23	85/7.88	78/7.28	73/6.76	68/6.31
105.8/3	95/8.81	91/8.45	84/7.8	78/7.24	73/6.76
112.9/3.2	101/9.4	97/9.01	90/8.32	83/7.72	78/7.21
119.9/3.4	107/9.99	103/9.57	95/8.84	88/8.2	82/7.66
127/3.6	114/10.58	109/10.14	101/9.36	94/8.69	87/8.11
134/3.8	120/11.16	115/10.7	106/9.88	99/9.17	92/8.56
141.1/4.0	126/11.75	121/11.26	112/10.4	104/9.65	97/9.01
148.1/4.2	133/12.34	127/11.82	117/10.91	109/10.14	102/9.46
155.2/4.4	139/12.93	133/12.39	123/11.43	114/10.62	107/9.91
162.2/4.6	145/13.51	139/12.95	129/11.95	119/11.1	111/10.36
169.3/4.8	152/14.1	145/13.51	134/12.47	125/11.58	116/10.81
176.4/5.0	158/14.69	152/14.08	140/12.99	130/12.07	121/11.26

When the unit detects a refrigerant leak, the minimum airflow of the indoor unit is as follows:

Model	Indoor Unit	Outdoor Unit	Indoor Normal Air Volume	
18K	DIY-18-HP-WMAH-230D25-O	DIY-18-HP-C-230D25-O	800m³/h	470CFM
23K	DIY-24-HP-WMAH-230D25-O	DIY-24-HP-C-230D25-O	1000m³/h	588CFM
36K	DIY-36-HP-WMAH-230D25-O	DIY-36-HP-C-230D25-O	1000m³/h	588CFM

Safety Shut-Off Valves:

Safety shut-off valves are included in some outdoor units for the purposes of limited releasable charge and are activated by a leak detection system.

⚠ WARNING

Safety shut-off valves default to a fully-closed position when the unit is disconnected from power, so refrigerant will not be completely released even when it is dismantled. Ensure the complete release of refrigerant through one of the following methods before repairing the machine.
Method 1: Release refrigerant while the machine is powered on.
Method 2: Remove the coil of safety shut-off valve before powering off.
Method 3: Manually open the safety shut-off valve using a magnetic ring.

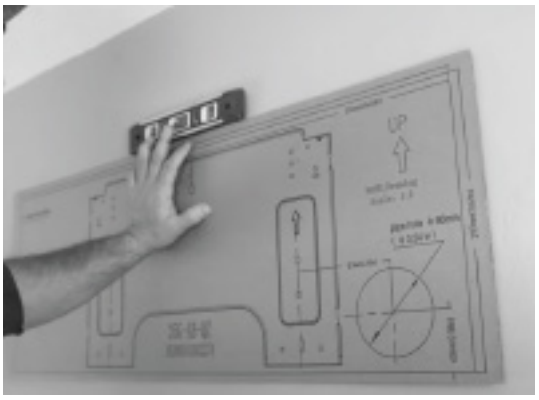
Model	Releasable Charge Limited System
DIY-MULTI3-18HP230D-O	No
DIY-MULTI4-27HP230D-O	Yes
DIY-MULTI5-36HP230D-O	Yes
DIY-MULTI6-48HP230D-O	Yes
DIY-MULTI6-55HP230D-O	Yes

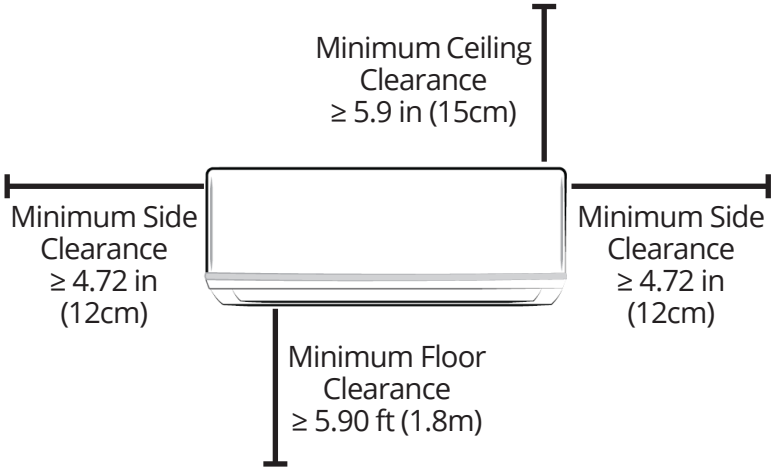
Releasable charge (mrel) of system should be calculated based on internal volume of all indoor units and connecting pipes. Each indoor unit corresponds to a releasable charge in the following table. Add them up based on the combination of indoor units, then add to the basic releasable charge of 204g, and you will get the total releasable charge of the system.

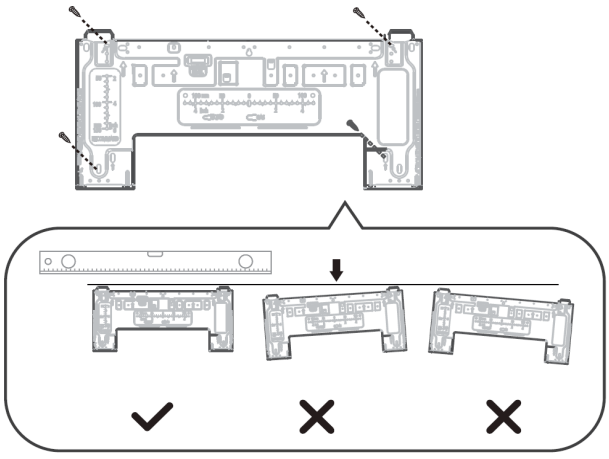
Note: The calculation is based on the standard connection pipe length of 24.6ft (7.5m) for each indoor unit. An extra releasable charge should be added per meter exceeding 24.6ft (7.5m).

Model	Releasable Charge per Unit	Basic Releasable Charge	Extra Releasable Charge	Total Releasable Charge
DIY-06-HP-WMAH-230D25-O	12.910oz/0.366kg	7.19oz/0.204kg (Leakage at a rate of 6.8g/s for 30s)	0 oz/kg when connection pipe length for each outdoor unit is within 24.6ft/7.5m. 0.705oz/0.020kg per meter exceeding 24.6ft/7.5m for each 6/9/12/18K unit. 1.764oz/0.050kg per meter exceeding 24.6ft/7.5m for each 24/36K	Add 3 parts of releasable charge based on the combination of indoor units, resulting in the total releasable charge of the system.
DIY-09-HP-WMAH-230D25-O	12.910oz/0.366kg			
DIY-12-HP-WMAH-230D25-O	12.910oz/0.366kg			
DIY-18-HP-WMAH-230D25-O	17.884oz/0.507kg			
DIY-24-HP-WMAH-230D25-O	26.209oz/0.743kg			
DIY-36-HP-WMAH-230D25-O	38.131oz/1.081kg			

3.3 Attach Mounting Plate







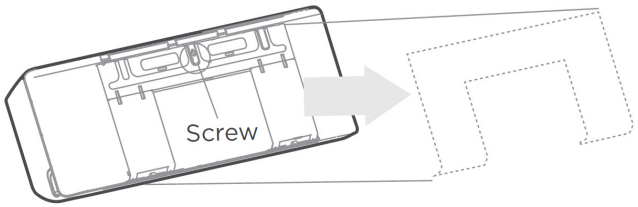
Correct orientation of Mounting Plate

NOTE

A cardboard template of the mounting plate is included to aid in installation. It can be placed against the wall in place of the actual mounting plate before drilling into the wall.

You must drill a hole in the wall for the refrigerant piping, drainage pipe, and signal cable to pass through in order to connect the indoor and outdoor units.

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



Step 2:
Secure the mounting plate to the wall with the screws provided. Ensure the mounting plate is flat against the wall.

Step 3:
Drill holes for wall plate mounting screws in places that have the following:

- studs that can support the weight of the unit.
- correspond to the holes in the mounting plate.

Step 4:
Secure the mounting plate to the wall with the supplied screws.

Step 5:
Make sure that the 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 0.2in-diameter (5mm-diameter) holes in the wall and insert the sleeve anchors provided. Then, secure the mounting plate to the wall by tightening the screws directly into the clip anchors.

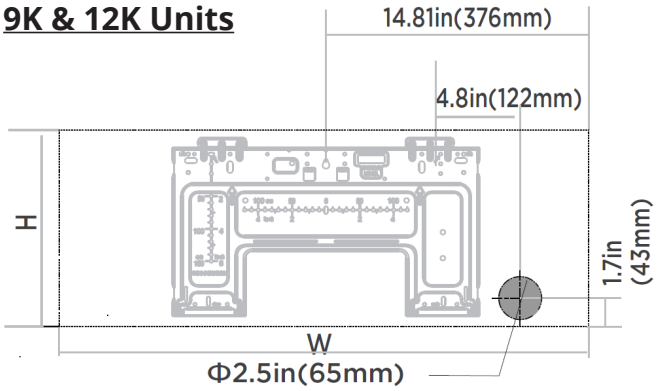
3.4 Drill Wall Hole

You must drill a hole in the wall for the refrigerant piping, drainage pipe, and signal cable to pass through in order to connect the indoor and outdoor units.

Step 1:

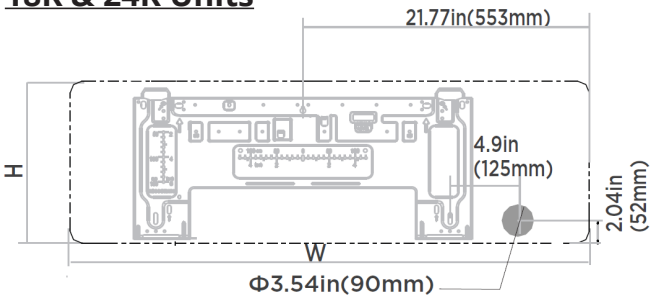
Determine the location of the wall hole based on the position of the mounting plate. Determine which of the following figures applies to your unit to assist you in determining the optimal position for the hole.

9K & 12K Units



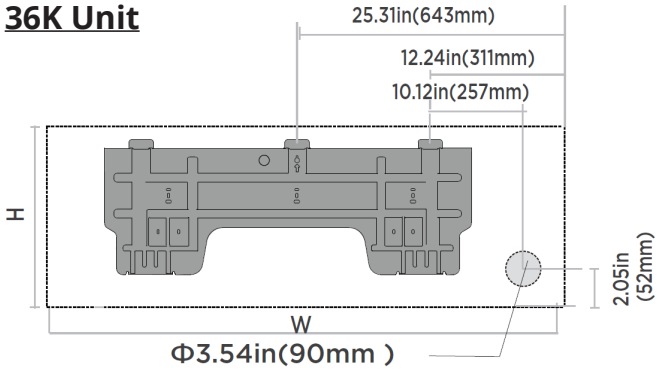
Indoor unit dimensions(WxH):
31.54in(802mm)x11.69in(297mm)

18K & 24K Units



Indoor unit dimensions(WxH):
42.52in(1080mm)x13.19(335mm)

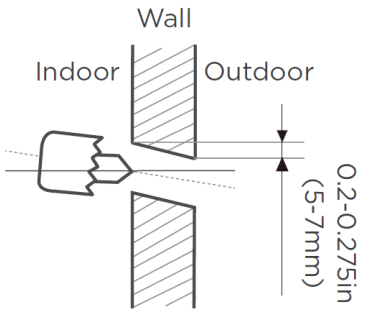
36K Unit



Indoor unit dimensions(WxH):
49.57in(1259mm)x14.25in(362mm)

Step 2:

Using a core drill with a 2.5in (65mm) diameter, drill a hole in the wall at a slightly downward angle, so that the indoor end of the hole is higher than the outdoor end of the hole, by approximately 0.2in (5mm) to 0.275in (7mm). This will ensure proper water drainage from the indoor unit.



Drill the wall hole

Step 3:

Insert the protective wall sleeve through the hole of the inside wall, noting the amount it protrudes from the exterior wall. Then, trim the excess with a utility knife or a saw to make it flush with the exterior wall. This will protect the edges of the hole and help seal it when you finish the installation process.

! CAUTION

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

NOTE: UNIT IS ADJUSTABLE

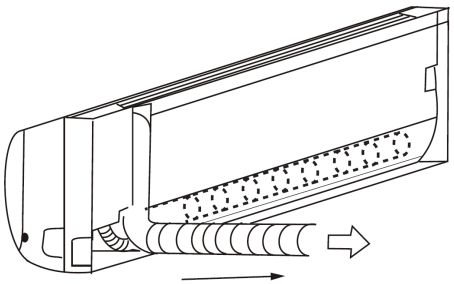
Keep in mind that the hooks on the mounting plate are smaller than the holes on the back of the unit. If you find that you don't have ample room to connect embedded pipes to the indoor unit, the unit can be adjusted left or right by approximately 1.18-1.96in (30-50mm), depending on the model.

Move to left or right

3.5 Prepare Refrigerant Piping

The piping of the indoor unit is attached to the back of the unit towards the bottom. It will be covered with insulation, and there will also be a drain pipe with these. The piping will need to be bent and prepared before it can be fed through the wall hole.

NOTE: Refrigerant piping should exit the indoor unit from the right-hand side (when facing the front of the unit).



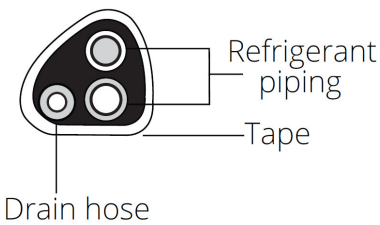
Step 1:
Based on the position of the wall hole, relative to the mounting plate, determine the necessary angle the piping will need to be bent to pass through the wall hole when the unit is mounted to the bracket.

Step 2:
Grip the refrigerant piping at the base of the bend. Then, slowly, and with even pressure, bend the piping away from the back of the unit roughly 90°. The piping should be sticking straight out from behind the unit once completed.

! CAUTION

Be extremely careful not to dent or damage the piping while bending it away from the unit, as this could negatively affect the performance.

Step 3:
Now, you will need to lightly tape the refrigerant piping and drain pipe together in a bundle, using electrical tape, making sure that the drain pipe is at the bottom. DO NOT tape the ends of the piping (connectors). See the images below for the correct orientation of the piping when taping.



DRAIN HOSE MUST BE ON BOTTOM: The drain hose must be places at the bottom of the bundle. If it is not, it could cause the drain pan to overflow, which could lead to fire or water damage.

3.6 Mount Indoor Unit

In the following steps the indoor unit will now be mounted to the wall bracket and the piping and wires will be fed through the wall hole.

Step 1:
Double-check that the ends of the refrigerant pipes are sealed (screw-on caps are still in place) to prevent any dirt or foreign material from entering the pipes.

Step 2:
Feed the DIYPRO® through the wall hole.

Step 3:
Carefully lift the indoor air handler, and slowly feed the taped bundle of refrigerant pipes and drain hose through the wall hole, as you position it to mount to the wall bracket.

NOTE: Positioning the air handler onto the wall bracket, while feeding the piping through the wall hole, might be difficult for a single person to manage. If so, it may be necessary to seek the assistance of another person for this step.

Step 4:
Slightly lean the top of the air handler toward the wall and hook the top of the indoor unit on the upper hook of the wall-mounting plate.

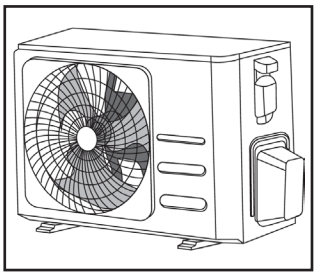
Step 5:
Check that the unit is hooked firmly on the mounting plate by applying slight pressure to the left and right-hand sides of the unit. The unit should not jiggle or shift.

Step 6:
Using even pressure, push down on the bottom half of the unit. Continue pushing down until the unit snaps onto the hooks along the bottom of the mounting plate.

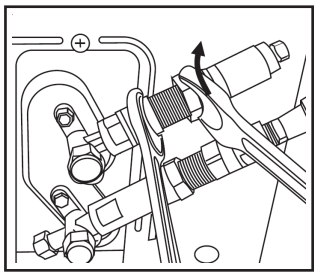
Step 7:
Again, check that the unit is firmly mounted to the wall bracket by applying slight pressure to the left and right-hand sides of the unit.

Step 8:
Repeat these steps for each of the additional air handlers you are installing.

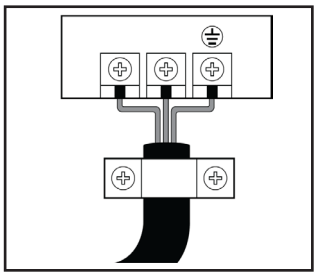
4.1 Installation Summary



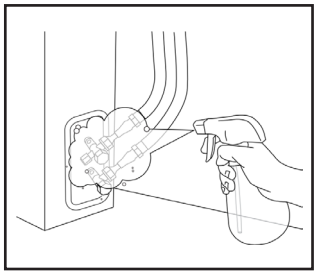
Install the outdoor unit.



Connect the refrigerant pipes.



Connect the wires.



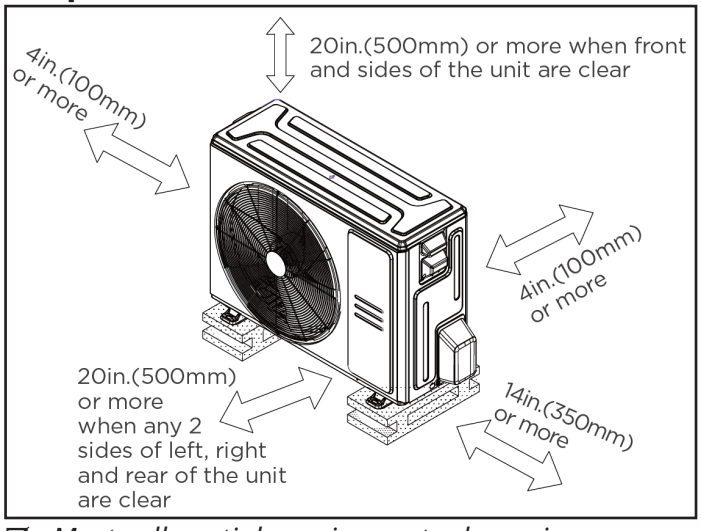
Perform a test run.

4.2 Location Selection

NOTE: PRIOR TO INSTALLATION

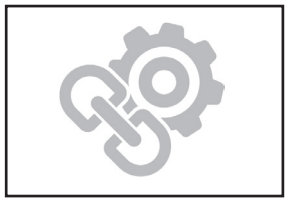
Before installing the outdoor unit, you must choose an appropriate location. The following are standards that will help you choose an appropriate location for the unit.

Proper Installation Locations Meet the Following Standards:



☑ *Meets all spatial requirements shown in Installation requirements above.*

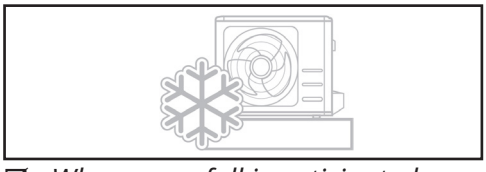
☑ *Good air circulation & ventilation.*



☑ *Firm & solid-the location can support the unit & will not vibrate.*

☑ *Noise from the unit will not disturb other people.*

☑ *Protected from prolonged periods of direct sunlight or rain.*

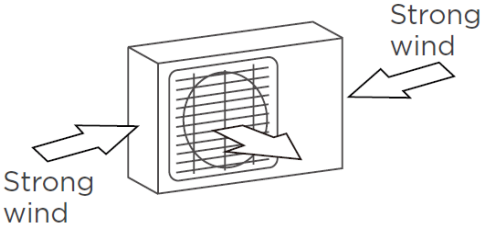


☑ *Where snowfall is anticipated, take appropriate measures to prevent ice buildup & coil damage.*

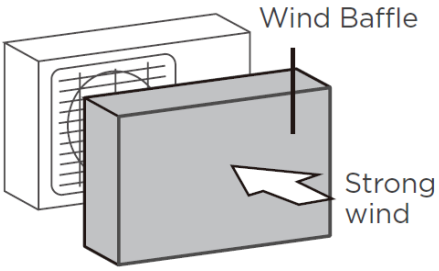
NOTE: Install the unit by following local codes and regulations. These may differ slightly between different regions.

! CAUTION: SPECIAL CONSIDERATIONS FOR EXTREME WEATHER

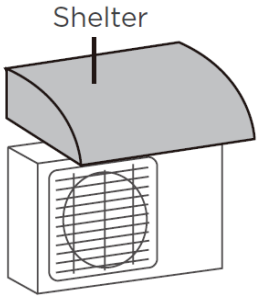
If the unit is exposed to heavy wind:
Install the unit so that the air outlet fan is at a 90° angle to the direction of the wind. If needed, build a barrier in front of the unit to protect it from extremely heavy winds.
If the unit is frequently exposed to heavy rain or snow:
Build a shelter above the unit to protect it from the rain or snow. Be careful not to obstruct air flow around the unit.
If the unit is frequently exposed to salty air (seaside):
Use an outdoor unit that is specially designed to resist corrosion.



90° angle to the direction of the wind



Build a wind baffle to protect the unit.



Build a shelter to protect the unit.

DO NOT install the unit in the following locations:

- ⊘ *Near an obstacle that will block air inlets & outlets.*
- ⊘ *Near a public street, crowded areas, or where noise from the unit will disturb others.*
- ⊘ *In a location exposed to excessive amounts of salty air.*
- ⊘ *Near animals or plants that will be harmed by hot air discharge.*
- ⊘ *Near any source of combustible gas.*
- ⊘ *In a location exposed to large amounts of dust.*

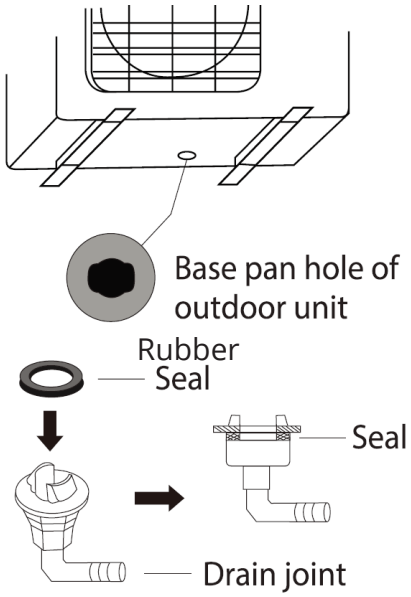
4.3 Drain Joint Installation

NOTE: PRIOR TO INSTALLATION

Before bolting the outdoor unit in place, you must install the drain joint at the bottom of the unit. For the units with a base pan built-in with multiple holes for proper draining during defrost, the drain joint does not need to be installed.

Step 1:
Find the base pan hole on the outdoor unit.

Step 2:
- Fit the rubber seal on the end of the drain joint that will connect to the outdoor unit.
- Insert the drain joint into the hole in the base pan of the unit.
- Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.



NOTE: In cold climates, ensure 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.

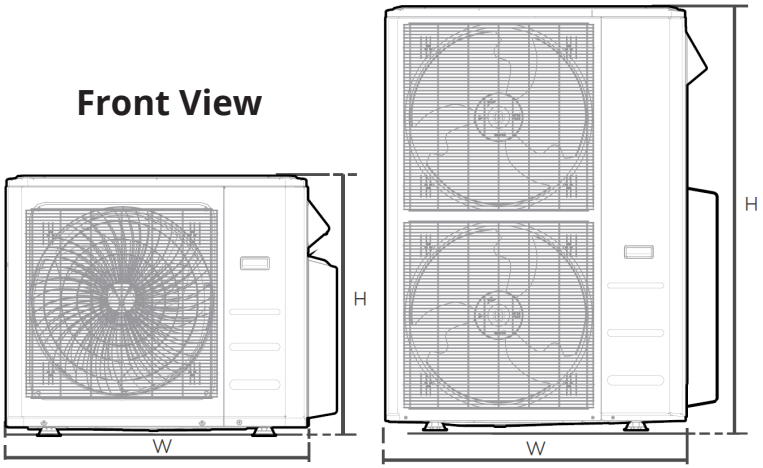
4.4 Anchor Outdoor Unit

WARNING

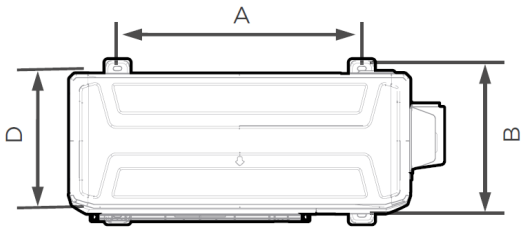
When drilling into concrete, eye protection is recommended at all times.

- The outdoor unit can be anchored to the ground or to a wall-mounted bracket with bolts (M10). Prepare the installation base on the unit according to the dimensions below.
- 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.

Front View



Top View

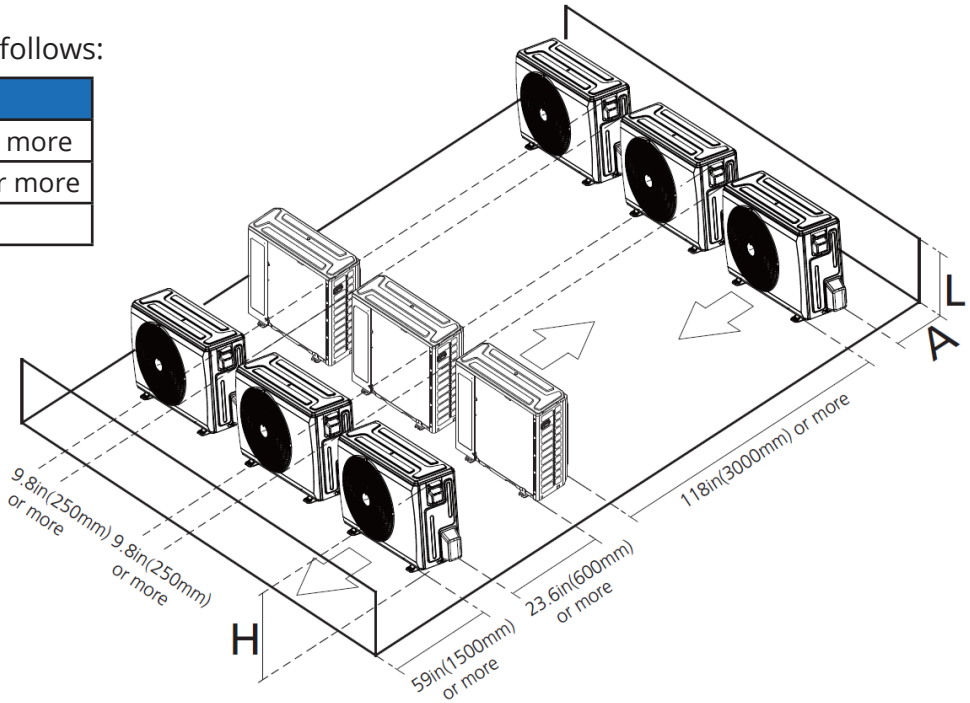


Outdoor Unit Model	Outdoor Unit Dimensions W x H x D	Mounting Dimensions	
		Distance A	Distance B
DIY-MULTI3-18HP230D-O	35.0in x 26.5in x 13.5in (890mm x 673mm x 342mm)	26.1in (663mm)	13.9in (354mm)
DIY-MULTI4-27HP230D-O	37.2in x 31.9in x 16.1in (946mm x 810mm x 410mm)	26.5in (673mm)	15.87in (403mm)
DIY-MULTI5-36HP230D-O			
DIY-MULTI6-48HP230D-O	37.5in x 52.5in x 16.34in (952mm x 1333mm x 415mm)	24.96in (634mm)	15.9in (404mm)
DIY-MULTI6-55HP230D-O			

Rows of Series Installation

The relations between H, A, and L are as follows:

	L	A
L ≤ H	L ≤ 1/2H	9.8in (250mm) or more
	1/2H < L ≤ H	11.8in (300mm) or more
L > H	Cannot be installed	



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

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

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

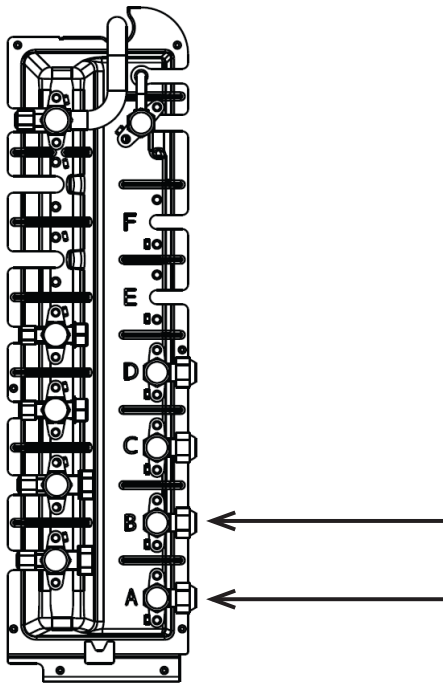
1. Mark the position of the bracket holes based on the dimensions chart.
2. Pre-drill the holes for the expansion bolts.
3. Place a washer and nut on the end of each expansion bolt.
4. Thread expansion bolts through holes in the mounting brackets, put the mounting brackets in position, and hammer expansion bolts into the wall.
5. Check that the mounting brackets are level.
6. Carefully lift unit and place its mounting feet on the brackets.
7. If allowed, install the unit with rubber gaskets to reduce vibrations and noise.

! CAUTION

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 unit's weight.

For Maximum Performance:

If you are connecting a 24K, 30K, or 36K indoor unit, utilize the "A" port demonstrated on the image below. If you are connecting two 24K, 30K, or 36K indoor units, utilize the "A" and "B" ports demonstrated on the image below.



The connection ports on the outdoor condenser are labeled A, B, C, D, E, etc. The capacities of the air handlers you use will determine which ports they should be connected to. The largest capacity air handler should be connected to the "A" port. Then, the next largest capacity air handler should be connected to the "B" port and so on. To distinguish the connectors to be connected to the indoor units and outdoor unit, the refrigerant pipe connectors have been labeled "A", "B", "C", "D", and "E". Ensure the marks on the connectors match the indoor units and outdoor unit respectively during connection.

5.1 Prepare Exterior Wall Hole

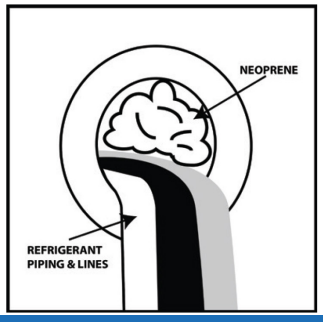
Step 1:
Before the refrigerant piping can be installed and connected to the indoor and outdoor units, some additional steps are required to prepare the exterior.

Step 2:
Place your hand on the underside of the piping coming through the exterior wall hole (from indoor unit), close to the wall. With your other hand, using even pressure, carefully bend the piping downward toward the wall, being mindful not to damage or dent the piping in the process.

! CAUTION

Be extremely careful not to dent or damage the piping while bending it down the exterior wall as this could negatively affect the performance of the unit.

Step 3:
Pack the wall hole with the supplied neoprene (or spray foam can also be used) to seal the hole, filling any space that was not taken up by the refrigerant piping and lines.



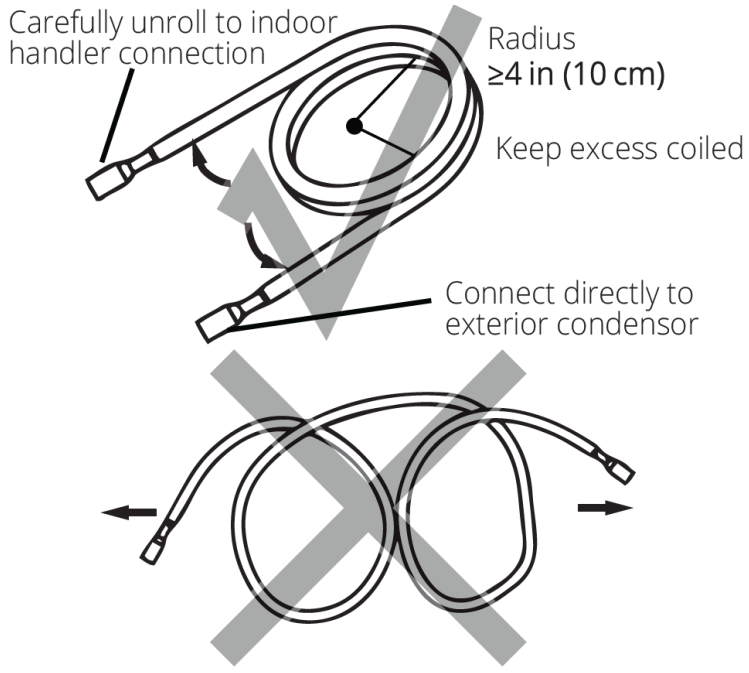
5.2 Unwind Quick Connect® Line Set

Step 1:
Use your hands to slowly unwind the copper piping of one end of the Quick Connect® Line Set. The end you unwind will connect to the indoor unit piping. You should unwind the end until the connectors are close to flat on the ground (with little to no bend). If this is not done, it could make the line set difficult to maneuver when aligning the connectors with the air handler piping. Only unwind as much as necessary for your application, and allow any excess to remain coiled.

MINIMUM BEND RADIUS:
When bending connective refrigerant piping, it needs to have a minimum bend radius of 4 inches.

! CAUTION

If the pipe is repeatedly bent or extended, it will become hard and difficult to manipulate. Avoid bending or extending the pipe more than 3 times, or at an angle greater than 90°, as it could break.



5.3 Connect Line Set to Indoor Unit

NOTE: Depending on the capacity rating of your unit, the wrench sizes needed will vary. Refer to the table below (the unit uses metric sizes, the standard sizes are approximations). Based on the availability of wrenches in some of the sizes needed, the recommended method is to use crescent wrenches that can be adjusted to fit the size that each step requires.

Tools Needed:

- Open-Ended Wrench (1x of each)

12K & 18K	24K & 36K
• 3/4" (19mm) • 7/8" (22mm) • 15/16" (24mm) • 1" (26mm)	• 3/4" (19mm) • 15/16" (24mm) • 1" (26mm) • 1-1/8" (29mm) • 1-1/4" (31mm)

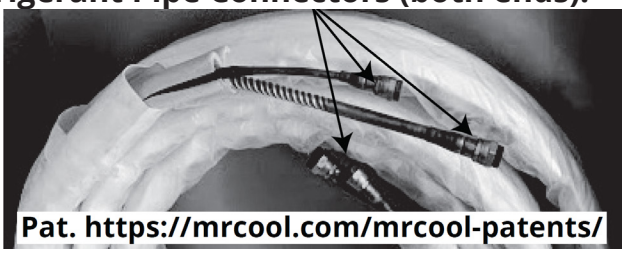
Or 2x Crescent (Adjustable-Type) Wrenches

- 1x HVAC Torque Wrench (if available)
- 1x Allen Key (5mm)
- 1x Phillips-Head Screwdriver
- 1x leak-detection spray or a soapy water solution (liquid detergent/mix applied by brush or spray bottle)

PLEASE FULLY READ BEFORE PROCEEDING TO THE NEXT STEP.

- Follow the detailed instructions for connecting the line set to the indoor unit and outdoor units.
- We can only provide a warranty if the line set is installed correctly as described in the instructions.
- To prevent leaks, ensure that the Quick Connect® connectors are free of dirt. Moisture or foreign bodies will adversely affect the function of the connectors and could lead to a risk of refrigerant loss (not covered by the warranty).
- Only install the line set outdoors in dry weather.
- The line set must not be plastered over after being installed.
- Always wear work glvoes and googles and use caution when handling refrigerant. Please make sure that refrigerant is never allowed to enter the environment. Improper handling of refrigerant may be harmful to your health.
- The equipment must never be operated without the line set connected, otherwise the equipment will be damaged immediately.
- Quick Connect® line set connections must only be tightened using the appropriate open-ended or crescent (adjustable-type) wrenches.
- DO NOT remove the sealing caps and stoppers from the line set or valves until immediately before they are to be connected.
- DO NOT smoke during the installation.

Refrigerant Pipe Connectors (both ends):



If the screw connections are tightened with too little torque, they will leak. If they are tightened with too much torque, the screw connections could suffer damage. Please refer to the torque requirements section for more information. If you do not feel confident connecting the line set connectors yourself, it is imperative that you contact the MRCOOL® customer service team or an HVAC professional.

IMPORTANT:

The line sets are designed to only be installed once. The seal within the line set cannot be guaranteed if they are installed more than once. This will void the warranty. They also contain a compression fitting to seal and do not require a thread sealant (Teflon tape, etc.). Using a sealant may actually cause the connection to leak over time.

Connecting the Quick Connect® Line Set to Indoor Unit

1. Do not remove the plastic seals of the piping coming from the indoor unit, or the appropriate line set connector, until immediately before they are to be connected. The plastic seals on each of the connectors should be color-coded to match the seals of the corresponding pipes they are to be connected to.
2. Align the refrigerant pipes correctly, making sure the dimensions of the connecting refrigerant pipe match. Unscrew the seals and place the screw connector of the line set just onto the threads of the piping from the indoor unit and tighten the first few threads by hand.

Before you continue, it is essential that you read the following instructions fully and carefully.

TORQUE REQUIREMENTS

1. Excessive force can break the connector or damage the refrigerant piping. You must not exceed the torque requirements shown in the table below.
2. You can find the outer pipe diameter stamped (in inches) on the valve set of the condenser. Refer to this when finding and applying the torque values in the table below.
3. Please note that there may be differences in torque wrenches (i.e. automotive torque wrench vs. an HVAC torque wrench) and that a socket-style wrench cannot be used in this installation.

NOTE: Torque ratings in the table below are to be used if you have access to an HVAC torque wrench. These are available for purchase from online retailers. However, it is possible to complete installation of refrigerant line sets with conventional open-ended/crescent wrenches. It is imperative, however, that you not overtighten the connector, and that once the lines have been fully connected, you follow the steps to check for leaks. If you do not feel comfortable attempting this, please contact a qualified HVAC technician.

3. Using the image below as a guide, and the steps outlined in this paragraph, you will now tighten the nuts of the screw connectors of the line set to the indoor unit. Using two appropriate-sized open-ended wrenches (depending on the dimensions of the connector) or adjustable crescent wrenches, place one of the wrenches on the nut marked "1" and the other wrench on the nut marked "2", as shown in the image below. Now, turn the wrench marked "2" in the direction of the rotational arrows, as shown, while holding the other wrench in place. Continue to tighten the connector until snug.

NOTE: Work quickly and make sure the screw connectors do not become crooked as you tighten them.

***If an HVAC torque wrench is available:** Once the connector is snug, using the torque wrench, tighten the connector to the specified torque rating, as listed in the table to the right (based on pipe/coupling size).

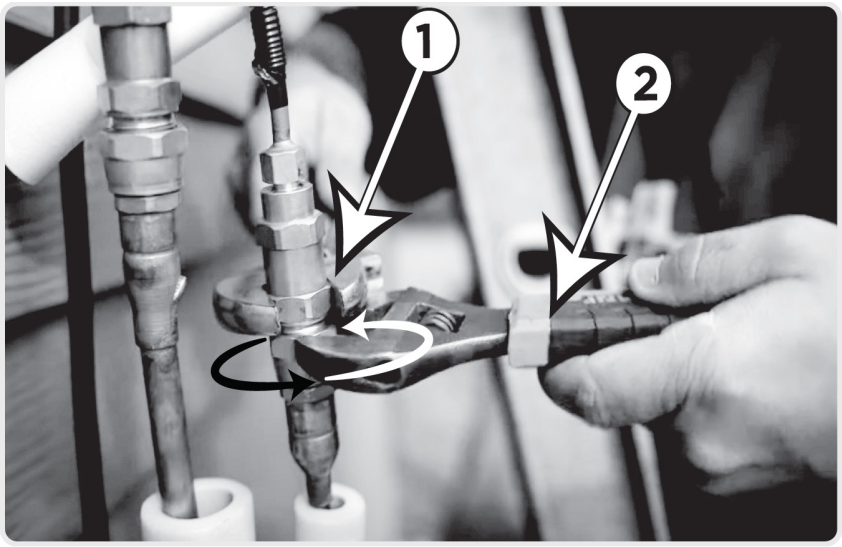
***If an HVAC torque wrench is NOT available:** Using two wrenches you used to tighten the connector, once the connector is snug, turn the wrench slightly beyond that point to torque the connector, but do not overtighten it.

4. Repeat the same process for the second line.

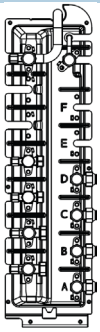
Stamp (on connector)	Coupling Size in (mm)	Tightening Torque lb-ft (N-m)
FA06	3/8" (9.5mm)	18-20 lb/ft (24.4-27.1 Nm)
FA09	1/2" (12.7mm)	30-35 lb/ft (40.6-47.4 Nm)
FA12	3/4" (19.1mm)	45-50 lb/ft (61.0-67.7 Nm)
FA16	1" (25.4mm)	60-65 lb/ft (81.3-88.1 Nm)

! CAUTION

For your safety, always wear goggles and work gloves when connecting the pipes.



5.4 Connect Line Set to Outdoor Unit

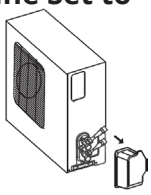


NOTE

The connection ports on the outdoor condenser are labeled A, B, C, D, E, etc. The capacities of the air handlers you use will determine which ports they should be connected to. The largest capacity air handler should be connected to the "A" port. Then, the next largest capacity air handler should be connected to the "B" port and so on. To distinguish the connectors to be connected to the indoor units and outdoor unit, the refrigerant pipe connectors have been labeled "A", "B", "C", "D", and "E". Ensure the marks on the connectors match the indoor units and outdoor unit respectively during connection.

Connecting the Quick Connect® Line Set to Outdoor Unit

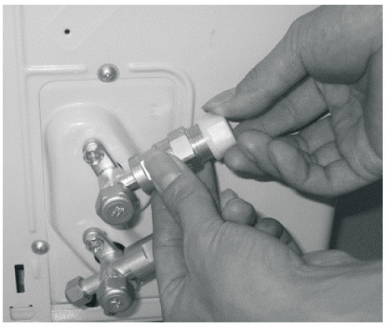
1. First remove the water tray on the outdoor unit as shown in the illustration to the right.

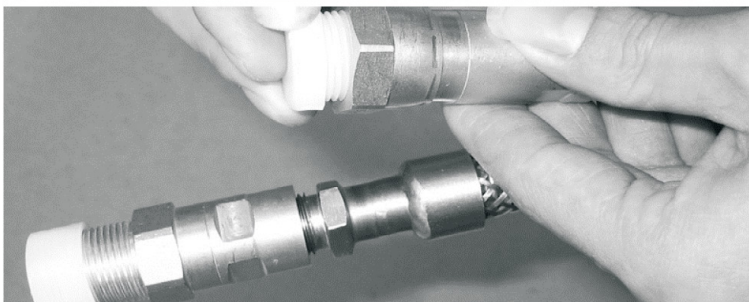


IMPORTANT

If you are using a 24K or greater capacity air handler with a 5-zone or 6-zone condenser, a line set adapter kit (included) needs to be installed on the outdoor unit before the next steps can be completed. Please refer to the Installation Steps for Line Set Adapter Kit section on the next page and complete before continuing.

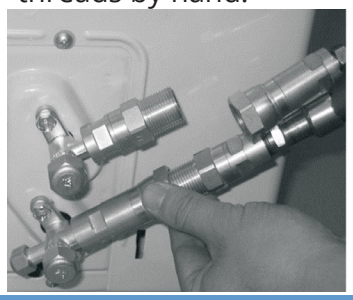
2. Do not remove the plastic seals from the outdoor unit piping connectors and corresponding refrigerant pipes (line set to be attached) until immediately before you connect them.

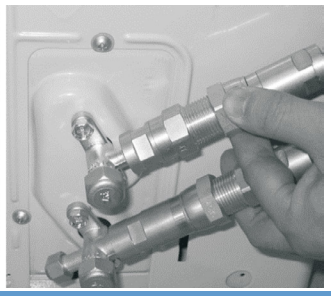




NOTE: Ensure the adapters attached to the outdoor valves have been tightened properly before attempting to connect the line set.

3. Align the refrigerant pipes so they line up with the corresponding valves and have enough slack. **NOTE: The refrigerant pipes must be connected to the valves with as little stress as possible.** Unscrew the plastic seals and place the screw connector of the refrigerant line just onto the threads of the outdoor unit, tightening the first few threads by hand.





IMPORTANT

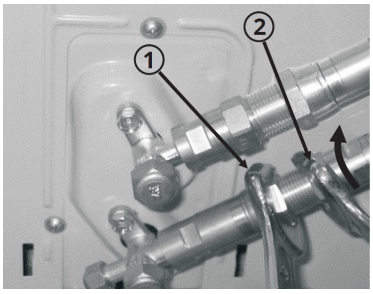
Before you continue, it is essential that you read the following instructions carefully.

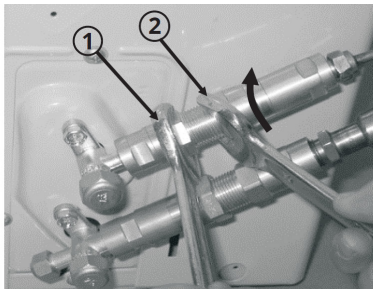
4. Using the first of the following images as a guide, you will now tighten the line set to the outdoor unit. Using two appropriate sized open-ended wrenches (depending on the dimensions of the connector), or adjustable crescent wrenches, place one of the wrenches on the nut marked "1", and the other wrench on the nut marked "2". Now, turn the wrench on nut "2" in the direction of the rotational arrow, while holding the other wrench in place, as seen in the first image. Continue to tighten the connector until snug. **NOTE: Work quickly and make sure the screw connectors do not become crooked as you tighten them.**

***If an HVAC torque wrench is available:** Once the connector is snug, using the torque wrench, tighten the connector to the specified torque rating, listed in the table on the next page (based on the pipe/coupling size).

***If an HVAC torque wrench is NOT available:** Using the two wrenches you used to tighten the connector, once the connector is snug, turn the wrench slightly beyond that point to torque the connector but do not overtighten it.

5. Repeat the same process for the top screw connector, using the second image below as a guide. Then, repeat all of these steps for every line set for all other air handlers to be connected.





IMPORTANT

The coupling of the outdoor unit uses tapping rings. If you disconnect and reconnect the refrigerant pipes, it could cause it to leak. This will also void the warranty.

NOTE: Keep excess refrigerant hose coiled. Wrap with protective tape and store behind the condenser in a horizontal position (flat with the ground).

TORQUE REQUIREMENTS

1. Excessive force can break the connector or damage the refrigerant piping. You must not exceed the torque requirements shown in the table below.
2. You can find the outer pipe diameter stamped (in inches) on the valve set of the condenser. Refer to this when finding and applying the torque values in the table below.
3. Please note that there may be differences in torque wrenches (i.e. automotive torque wrench vs. an HVAC torque wrench) and that a socket-style wrench cannot be used in this installation.

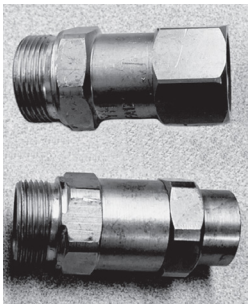
NOTE: Torque ratings in the table below are to be used if you have access to an HVAC torque wrench. These are available for purchase from online retailers. However, it is possible to complete installation of refrigerant line sets with conventional open-ended/crescent wrenches. It is imperative, however, that you not overtighten the connector, and that once the lines have been fully connected, you follow the steps to check for leaks. If you do not feel comfortable attempting this, please contact a qualified HVAC technician.

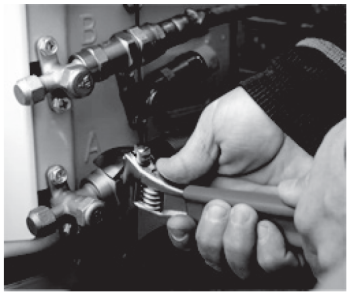
Stamp (on connector)	Coupling Size in (mm)	Tightening Torque lb-ft (N-m)
FA06	3/8" (9.5mm)	18-20 lb/ft (24.4-27.1 Nm)
FA09	1/2" (12.7mm)	30-35 lb/ft(40.6-47.4 Nm)
FA12	3/4" (19.1mm)	45-50 lb/ft(61.0-67.7 Nm)
FA16	1" (25.4mm)	60-65 lb/ft(81.3-88.1 Nm)

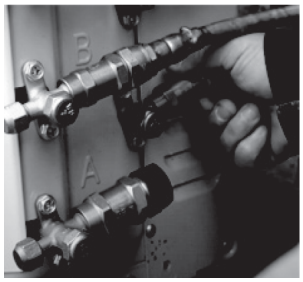
Installation Steps for Line Set Adapter Kit (for use with 24K or greater capacity air handler)

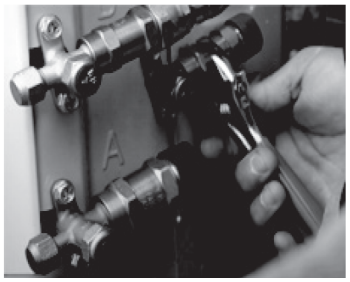
If you are using a 24K or greater capacity air handler with a 5-zone or 6-zone condenser, you will need to install the included line set adapter kit to the outside unit, before the line set can be connected. This requires you to replace both of the connected couplings that are on Port A of the outside unit, so the air handler can be connected.

1. Unscrew the couplings from both connectors of port A of the outside unit by hand.
2. Screw each of the provided couplings, from the line set adapter kit, to the appropriate connector of the outside unit by hand.
3. Now, using an open-ended wrench, or a crescent (adjustable-style) wrench, tighten both of the couplings securely.
4. Once completed, revert back to the instructions for connecting the line set to the outdoor unit, and continue the installation.









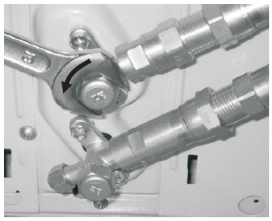
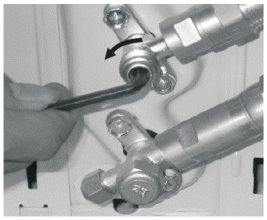
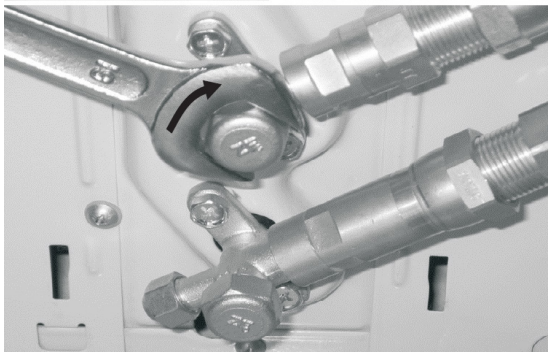
IMPORTANT: Later in the installation process you will be asked to check for leaks at the piping connections. Be sure to include checking these adapters at both ends during your check.

5.5 Opening Refrigerant Valves

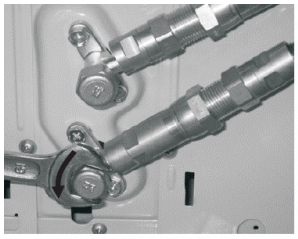
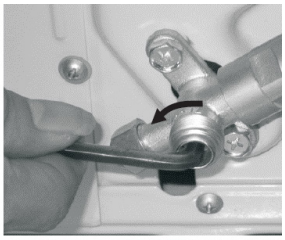
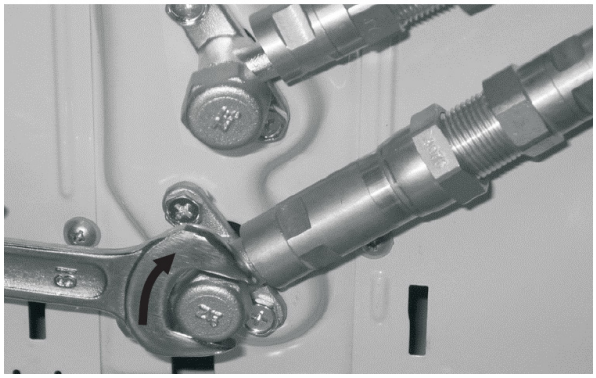
! CAUTION

All of these steps must be completed BEFORE powering on the unit, or else it could become damaged.

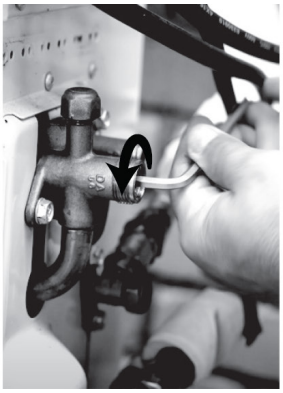
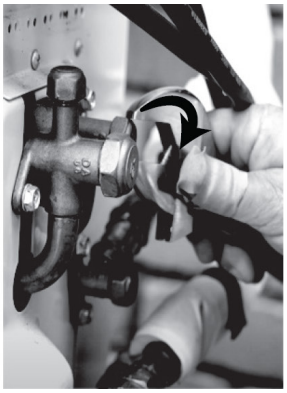
1. Using the images below as a guide, remove the cover on the top valve, using a 19mm open-ended wrench or a crescent (adjustable-type) wrench. Then, insert a 5mm Allen key and open the valve by turning it counter-clockwise as far as it will go. ***DO NOT*** **force it.** The valve is now open. Screw the cover back onto the top valve and tighten it well to ensure that it is properly sealed.

2. Using the images below as a guide, repeat the same process for the bottom valve. Remove the cover on the bottom valve, using a 19mm open-ended wrench or a crescent (adjustable-type) wrench. Then, insert a 5mm Allen key and open the valve by turning it counter-clockwise as far as it will go. ***DO NOT*** **force it.** Screw the cover back onto the bottom valve and tighten it well to ensure that it is properly sealed.

3. If you're installing a 4, 5, or 6-zone condenser, after opening all of the line set connection valves, you must also open the two main valves (King Valves), as shown in the images below. To do this, first unscrew the caps from the valves in a counter-clockwise direction using an appropriate-sized wrench, or crescent (adjustable-type) wrench. Then, insert a 5mm Allen key and open each of the valves by turning them counter-clockwise as far as they will go. ***DO NOT*** **force it.** Then, reinstall the caps and tighten them securely to ensure that they are properly sealed.

! CAUTION

If the King Valves are not fully opened, the system could malfunction and suffer damage.

4. You will now need to check all of the piping connections (at indoor unit and outdoor unit) for leaks. You can do this by using leak detection spray, or applying a soapy water solution (liquid detergent/water mixture) to the connection via a spray bottle or brush. If any bubbles begin to form, that indicates there is a leak, and the connection needs to be re-tightened. Tighten the connection and recheck it for leaks. Refer to the Electrical and Gas Leak Checks section of this manual for more information.

IMPORTANT: You will be asked to check for leaks at the piping connections multiple times throughout the following steps of the installation, because the pressures within the lines will change once the unit is turned on and this could reveal leaks not present during the initial check. These are imperative to make sure your connections are not allowing refrigerant to escape the system. When checking for leaks, if any bubbles form, it indicates the system has a leak and the screw connector needs to be re-tightened.

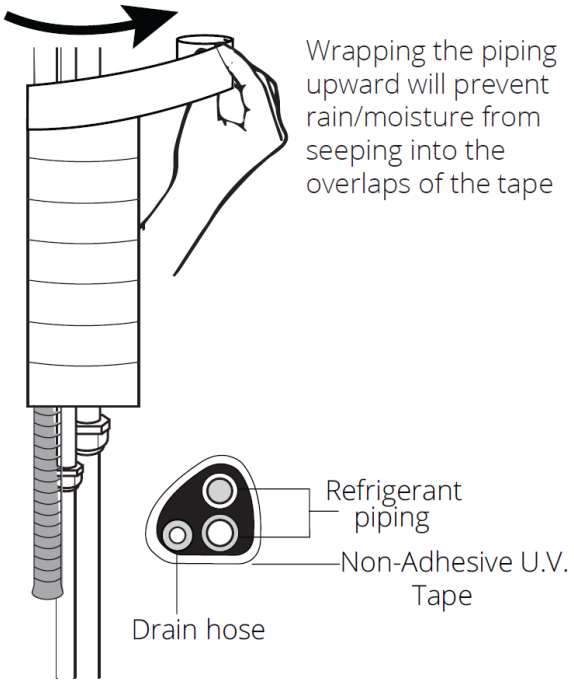
5.6 Wrap Piping Connections

In this step you will wrap and insulate the exposed line connections coming from the indoor air handler.

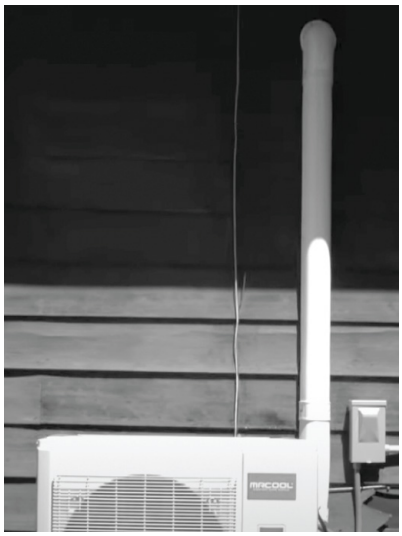
IMPORTANT: Do not complete these steps until all of the refrigerant piping connections have been checked for leaks.

1. Wrap the supplied insulation material over the connectors and exposed refrigerant piping.

2. Starting where the line set is not covered with the factory plastic (close to the indoor air handler connection, you will wrap the line set upward to the wall hole, using the supplied non-adhesive U.V. tape. This will cover the insulated line set connections, cables, and drain hose. The drain pipe will need to be at the bottom of the bundle. **DO NOT** wrap the end of the drain hose.



If you would like the exterior piping on the side of your home to have a sleeker, more attractive look and add extra protection in the process, you can purchase a line set cover separately. This will encase your refrigerant piping and lines, protecting them from harsh weather conditions and sun exposure, which will extend the life of your system. These covers are available in various sizes to fit your particular application.



5.7 Connect Drain Pipe

In this step you will connect the drain hose extension to the drain hose exiting from the indoor unit that is within the piping bundle you wrapped in the previous steps.

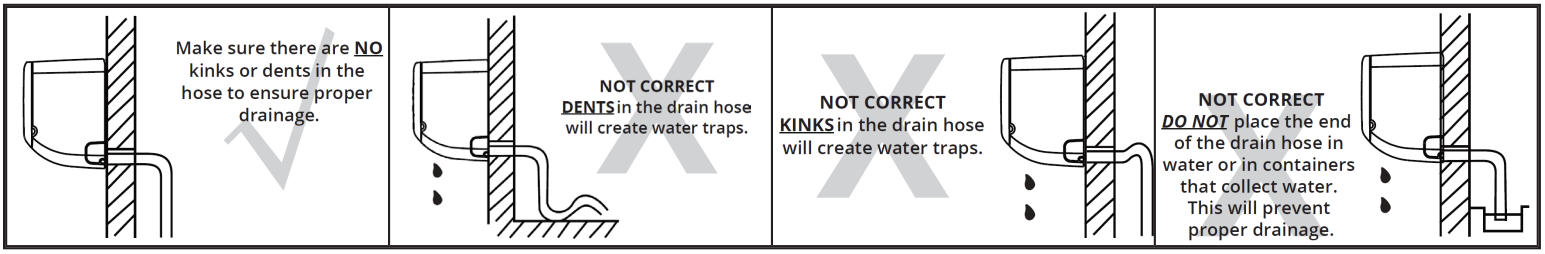
1. Securely connect the drain hose extension to the drain piping from the indoor unit.

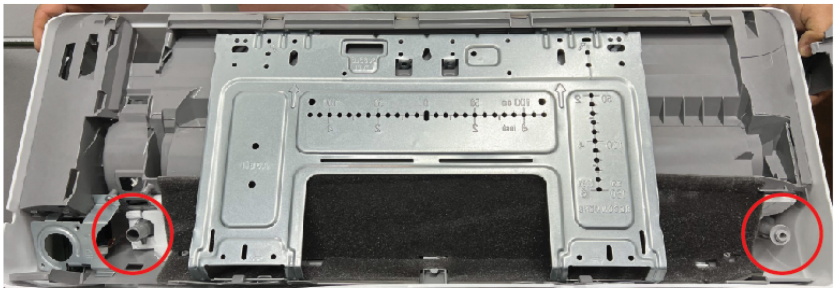
2. Use the first example in the following images to make sure your drain pipe is run in a similar manner. The other examples represent things you should avoid when installing your drain pipe.
3. Remove the air filter from the indoor unit and pour a small amount of water across the coils to test the drain pan. Ensure that the water exits the bottom of the unit and flows through the drain and drain pipe smoothly.

! CAUTION

Make sure to arrange the drain hose correctly according to the following images.

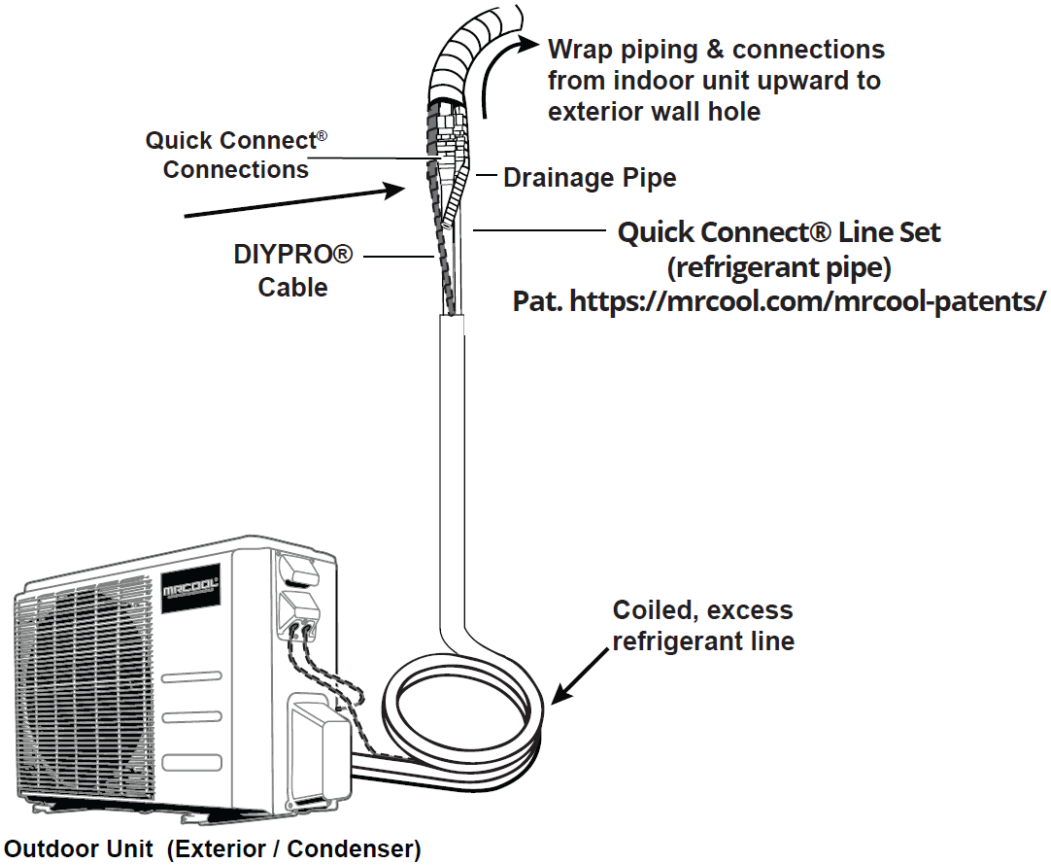
- ***DO NOT* kink the drain hose.**
- ***DO NOT* create a water trap.**
- ***DO NOT* put the end of the drain hose in water or a container that will collect water.**





ENSURE DRAIN HOLE IS PLUGGED

As shown in the figure above, there are two drain holes on the indoor unit: one on the left, and one on the right. The unit arrives with the drain hose connected to the left hole and a hollow center rubber plug in the right. Connect the drain hose to the drain hole that best works for your installation location. To prevent unwanted leaks, be sure that the plug is installed in the unused drain hole. The plug is depicted in the right hole in the figure.



6.1 Wiring Precautions

⚠ WARNING

Before performing any electrical work, read the following warnings.

1. All wiring must comply with local and national electrical codes, regulations, 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 has been resolved properly.
4. Power voltage should be within 90-110% of rated voltage. Insufficient power supply can cause malfunction, electrical shock, or fire.
5. Installation of an external surge suppressor at the outdoor disconnect is recommended.
6. If connecting power to fixed wiring, a switch or circuit breaker that disconnects all poles and has a contact separation of at least 1/8in. (3mm) must be incorporated in the fixed wiring. The qualified technician must use an approved circuit breaker or switch.

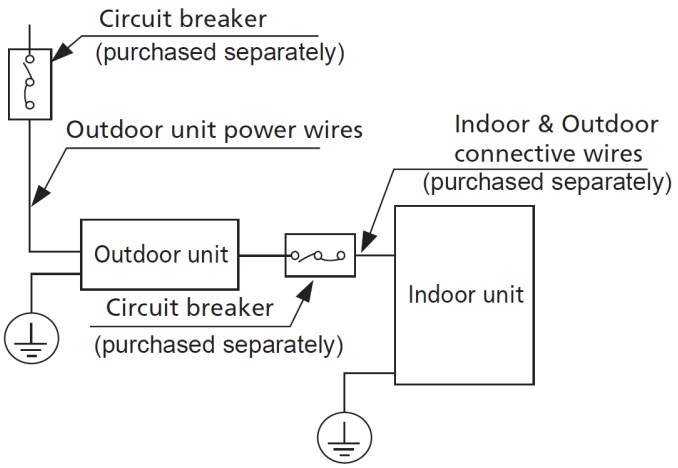
7. Only connect the unit to an individual branch circuit outlet. Do not connect another appliance to that outlet.
8. Make sure to properly ground the unit.
9. Every wire must be firmly connected. Loose wiring can cause the terminal to overheat, resulting in product malfunction and possible fire.
10. Do not let wires touch or rest against refrigerant tubing, the compressor, or any moving parts within the unit.
11. 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.
12. Make sure not to cross your electrical wiring with your signal wiring. This may cause distortion, interference, or possibly damage to the circuit boards.
13. No other equipment should be connected to the same power circuit.
14. 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.

NOTE ON CIRCUIT BREAKER:
When the maximum current of the unit is more than 16A, a circuit breaker or leakage protection switch with protective device shall be used (purchased separately). When the maximum current of the air conditioner is less than 16A, the power cord of the unit shall be equipped with a plug (purchased separately). In North America, the appliance should be wired according to the NEC and CEC requirements.

NOTE:
The illustrations are for explanatory purposes only. Your unit may be slightly different. The actual shape shall prevail.

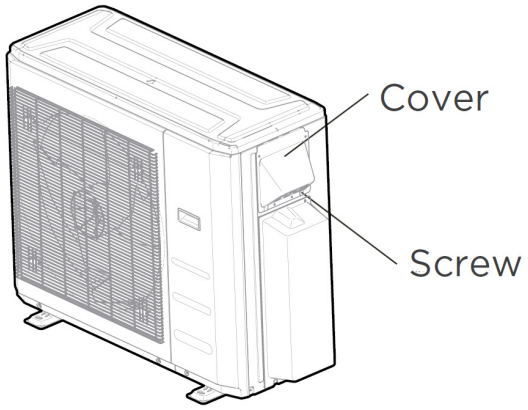


6.2 Outdoor Unit Wiring

1. Prepare cable for connection.
   a. Choose the right cable size.
   The size of the power supply cable, signal cable, fuse, and switch needed is determined by the maximum current of the unit. Refer to the nameplate to choose the right cable, fuse, and switch.
   NOTE: In North America, please choose the right cable size according to the Minimum Circuit Ampacity indicated on the nameplate of the unit.
   b. Using wire strippers, strip the rubber jacket from both ends of the signal cable to reveal approximately 5.9in. (150mm) of wire.
   c. Strip the insulation from the ends.
   d. Using a wire crimper, crimp u-lugs on the ends.

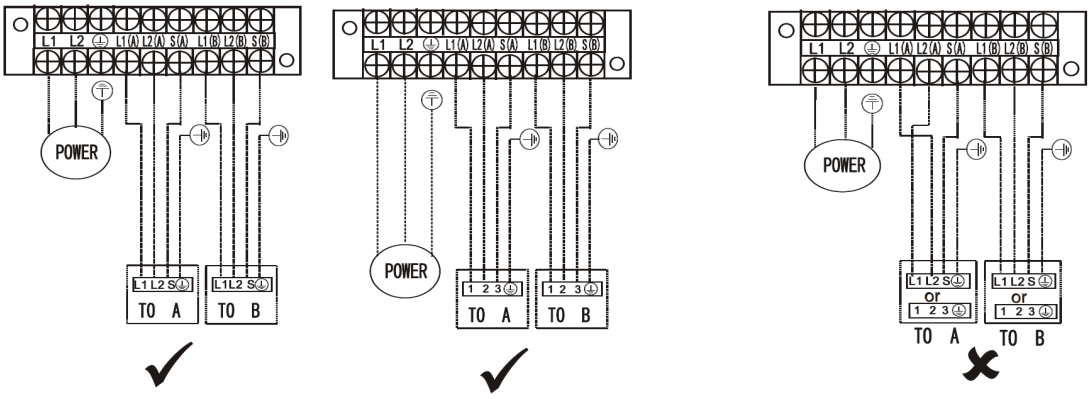
NOTE:
When connecting the wires, strictly follow the wiring diagram found inside the electrical box cover.

2. Remove the electric cover of the outdoor unit. If there is no cover on the outdoor unit, take off the bolts from the maintenance board and remove the protection board.
3. Connect the u-lugs to the terminals. Match the wire colors/labels with the labels of each wire to its corresponding terminal.
4. Clamp down the cable with the cable clamp.
5. Insulate unused wires with electrical tape. Keep them away from any electrical or metal parts.
6. Reinstall the cover of the electric control box.



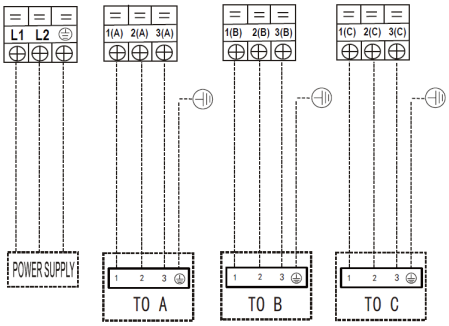
! CAUTION

Connect the connective cables to the terminals as identified, with their matching numbers on the terminal block of the indoor and outdoor units. For example, Terminal L1(A) of the outdoor unit must connect with terminal L1/1 on the indoor unit. The outdoor unit can match different types of indoor units. The numbers on the terminal block of the indoor unit may be slightly different. Please pay special attention when connecting the wires.

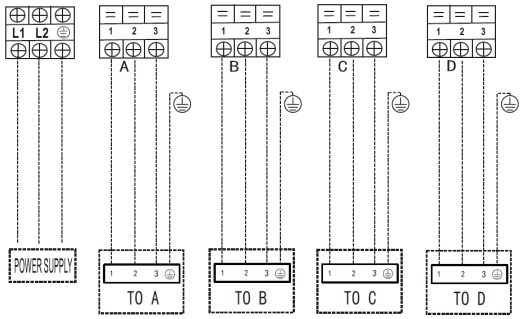


NOTE: For models utilizing Quick-Connect, refer to the manual packed with the indoor unit. Refer to the following figures if end-users wish to perform their own wiring. Run the main power cord through the lower line-outlet of the cord clamp. This symbol ---- indicates field wiring.

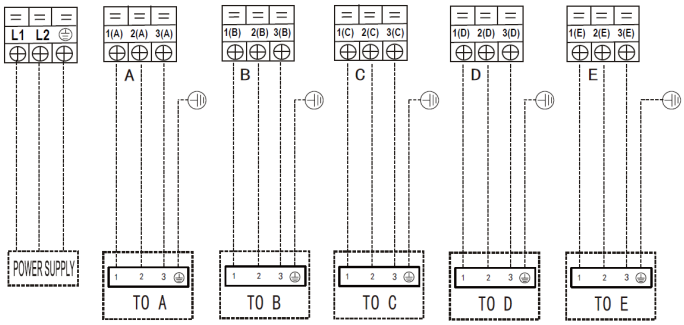
3-Zone Models:



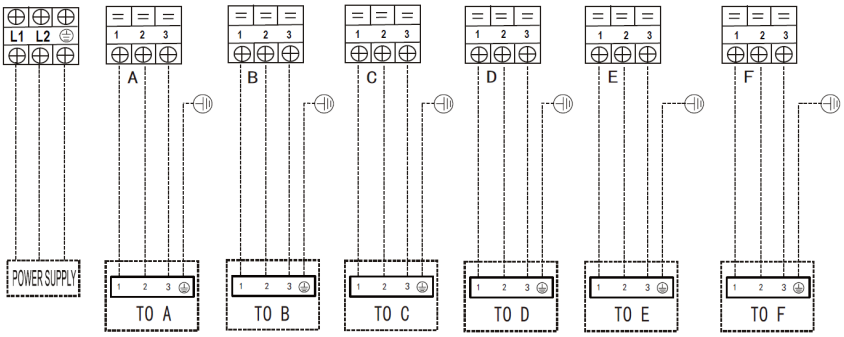
4-Zone Models:



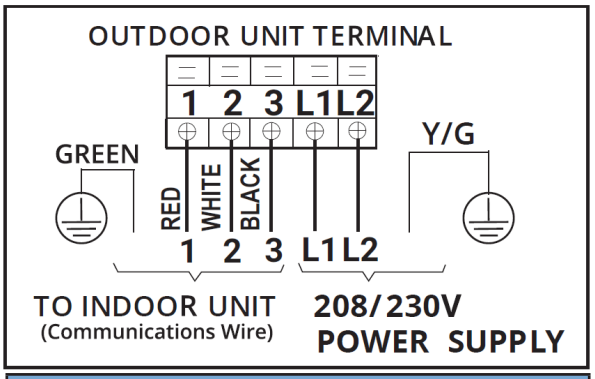
5-Zone Models:



6-Zone Models:



Wiring Diagram:



Wire Identification	
Number	**Color**
1	Red
2	White
3	Black

! CAUTION

After confirmation of the above conditions, follow these guidelines when performing wiring:

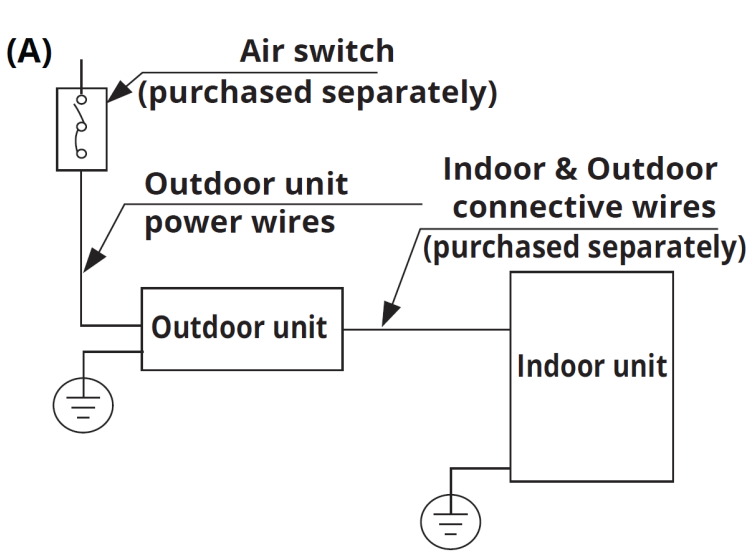
- Always have an individual power circuit specifically for the unit. Always follow the circuit diagram posted on the inside of the control cover.
- Screws (fastening the wiring in the casing of electrical fittings) may come loose during transportation. Because loose screws may cause wire burn-out, check that the screws are tightly fastened.
- Check the specifications for the power source.
- Confirm that the electrical capacity is sufficient.
- Confirm that the starting voltage is maintained at more than 90% of the rated voltage marked on the name plate.
- Confirm that the cable thickness is as specified in the power source specifications.
- Always install a ground circuit breaker in wet or moist areas.
- The following can be caused by a drop in voltage: vibration of a magnetic switch, damaging the contact point, broken fuses, and disturbance of normal functioning.
- Disconnection from a power supply must be incorporated into the fixed wiring. It must have an air gap contact separation of at least 3mm in each active (phase) conductors.
- Before accessing terminals, all supply circuits must be disconnected.

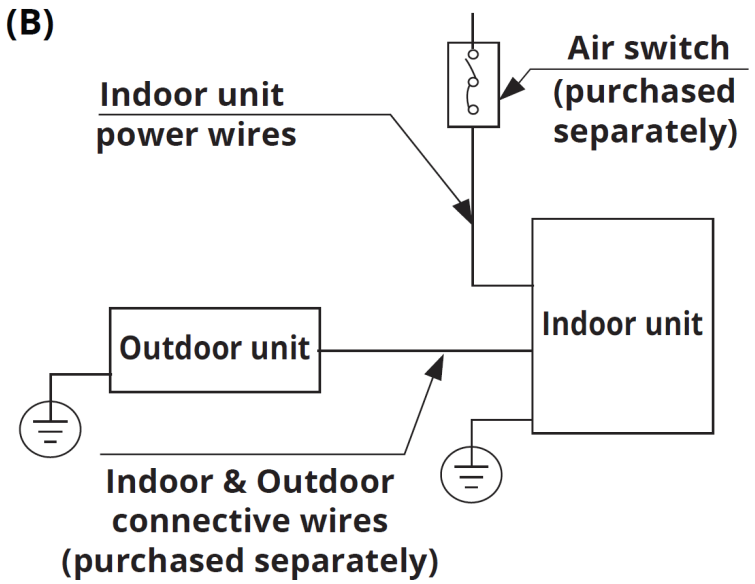
NOTE: To satisfy the EMC compulsory regulations, which is required by the international standard CISPR 14-1:2005/A2:2011 in specific countries or districts, please make sure you apply the correct magnetic rings on your equipment according to the wiring diagram that adhere to your equipment. Please contact your distributor or installer to get further information and purchase magnetic rings. (The supplier of magnetic rings is TDK, model ZCAT3035-1330, or similar.)

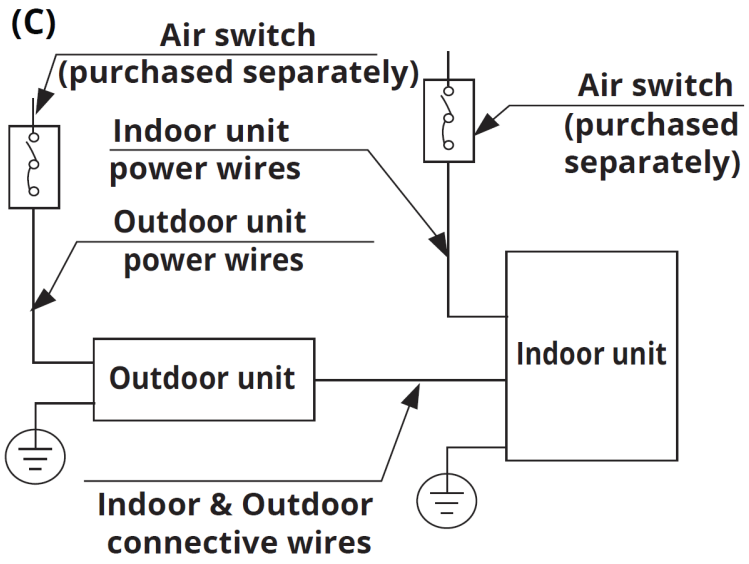
6.3 Air Switch

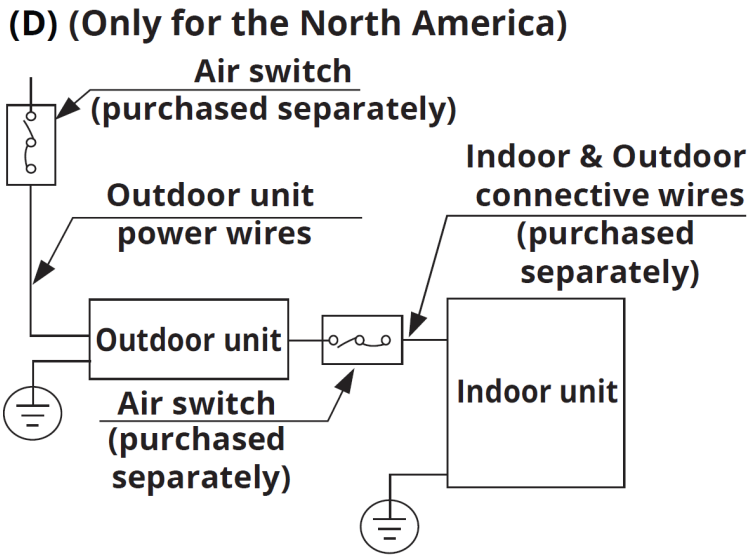
NOTE ON AIR SWITCH

When the maximum current of the unit is more than 16A, an air switch or leakage protection switch with protective device shall be used (purchased separately).
When the maximum current of the unit is less than 16A, the power cord of the air conditioner should be equipped with a plug.
Systems in the North American market should be wired according to NEC and CEC requirements and regulations.
Please refer to the different air switch wiring diagrams below.





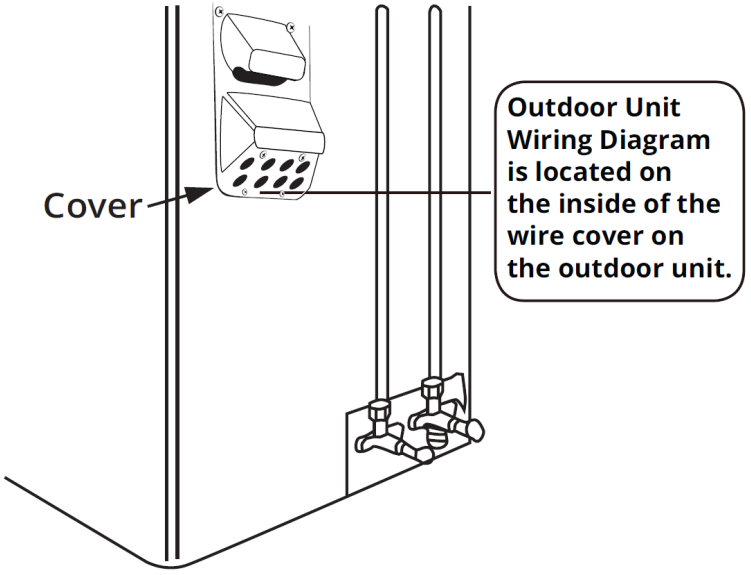




Note: The diagrams above are for illustration/reference purposes only.

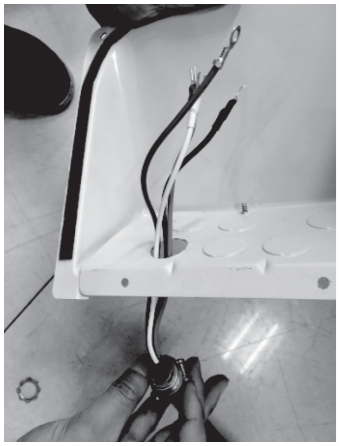
6.4 DIYPRO® Cable Connection

1. Remove the screws from the electrical wiring cover from the outdoor condenser, as shown in the image below, and remove it.



2. Remove the retaining nut from the end of the DIYPRO® cable that you fed through the wall hole earlier in the installation, as shown in the image below.

3. Pull the end of the DIYPRO® cable through the hole of the electrical cover you removed earlier. Refer to the images below.



SELECT THE CORRECT CABLE
See table below for gauge requirements
NOTE: The table below is a standard chart, the AWG ratings and wiring

Minimum Wire Gauge for Power Cables

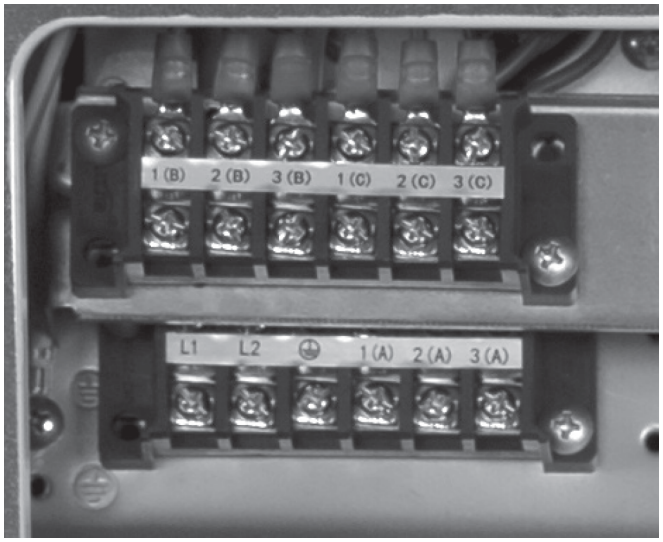
Model Series	Appliance Amps (A)		AWG	
	MCA	MOP	Min.	Pref.
18K	18	25	12	10
27K	26	40	10	8
36K	27	45	10	8
48K	40	60	8	6

⚠ WARNING

ALL WIRING MUST BE INSTALLED STRICTLY IN ACCORDANCE WITH THE WIRING DIAGRAM.

4. Now, secure the DIYPRO® cable to the electrical cover by pushing the threaded end of the cable into the hole and reinstalling the retaining nut previously removed. Refer to the images below. Continue to do this for each of the DIYPRO® cables coming from each of the air handlers installed.

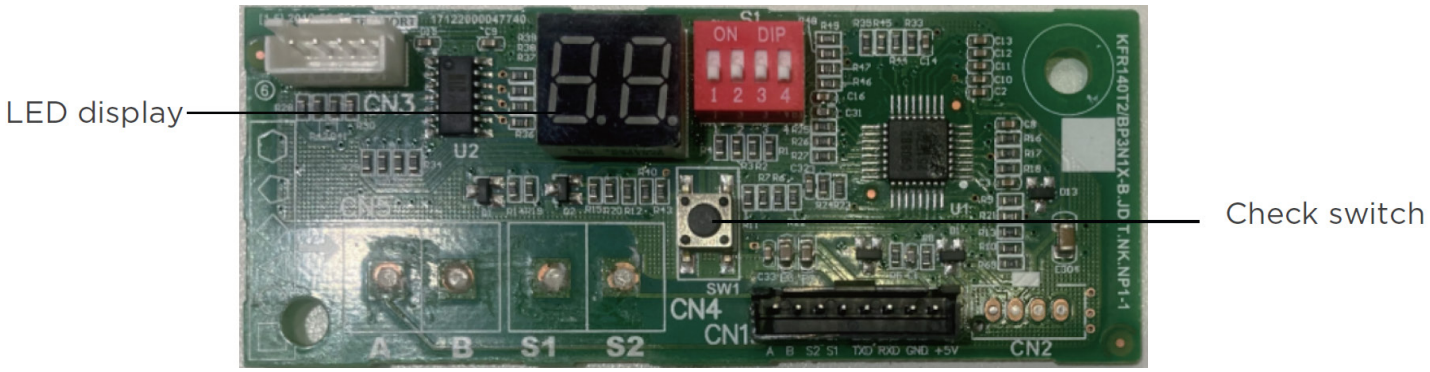
5. Then, you will connect the wires to the terminal block. Each wire should be numbered and correspond with a connection port on the terminal block. Match up each wire with the correct port, and firmly screw the u-lug of each wire to its corresponding terminal. Now, screw the ground wire into the bottom screw of the terminal block, as shown in the image below. Continue to do this with all of the MC cables from each of the air handlers, using the wiring diagram for your system on the previous pages as a guide, until they are all connected to the condenser.

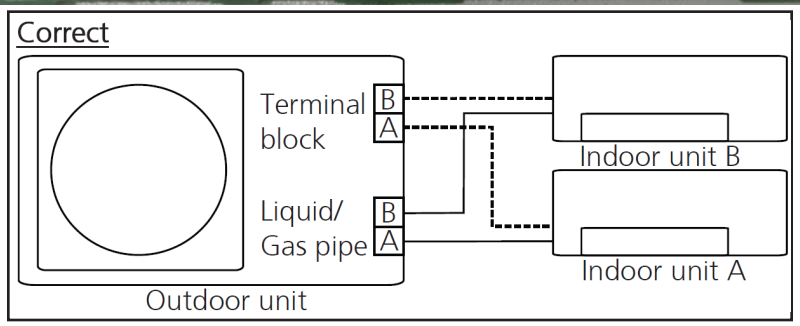


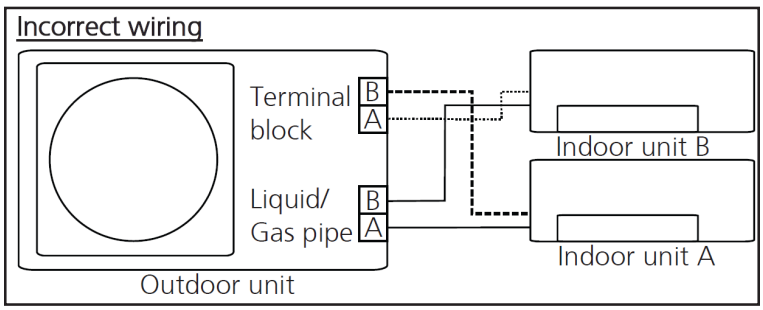
6. Finally, reinstall the electrical wiring cover and secure it by reinstalling the screws you previously removed.

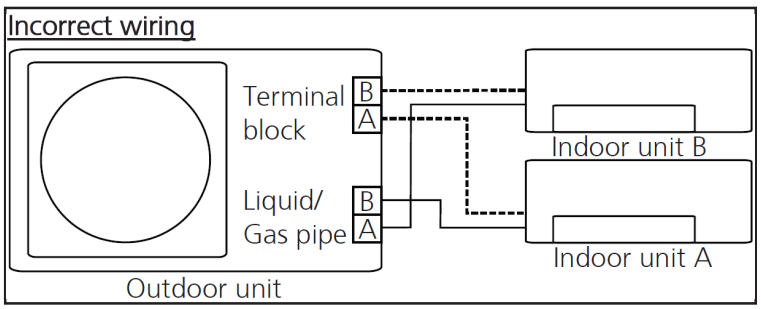
6.5 Automatic Wiring/Piping Connection

This feature allows for automatic correction of wiring/piping errors. Press the "check switch" on the outdoor unit PCB board for 5 seconds until the LED displays "CE", indicating that this function is working. Approximately 5-10 minutes after the switch is pressed, the "CE" disappears, meaning that the wiring/piping error is corrected and all wiring/piping is properly connected.









How to Activate this Function:

1. Check that outside temperature is above 41°F (5°C). (This function does not work when the outside temperature is not above 41°F (5°C).)
2. Check that the stop valves of the liquid pipe and gas pipe are open.
3. Turn on the breaker and wait at least 2 minutes.
4. Press and hold the check switch on the outdoor PCB board unit until the LED displays "CE".

7 POST-INSTALLATION

7.1 Electrical & Gas Leak Checks

Electrical Safety Check

After installation is complete, confirm that all electrical wiring has been installed in accordance with local and national regulations, and according to the installation manual.

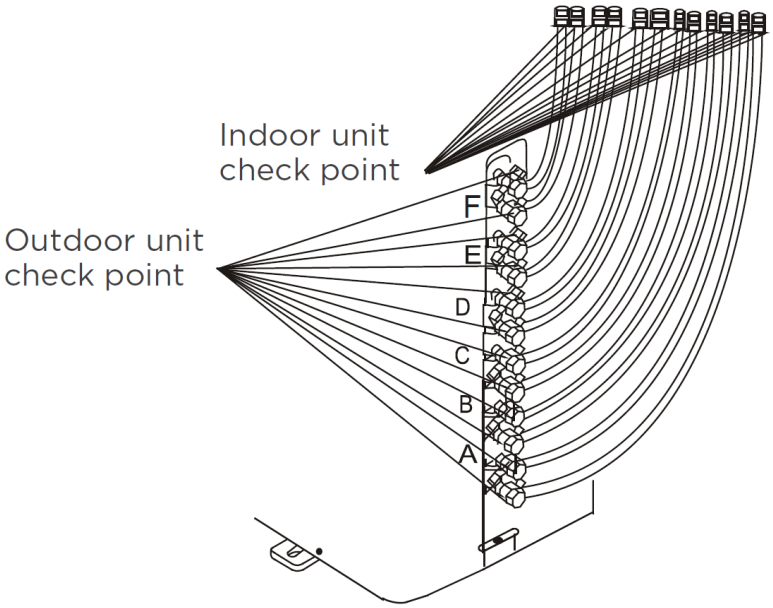
- ☑ **Check Insulated Resistance** - the insulated resistance must be more than 2MΩ.
- ☑ **Check Grounding Work -** After finishing grounding work, measure the grounding resistance by visual detection and using the grounding resistance tester. Make sure the grounding resistance is less than 4Ω.
- ☑ **Electrical Leakage Check (performed during test while unit is on) -** During a test operation after completing installation, use the electro-probe and multimeter to perform an electrical leakage check. Turn off the unit immediately if leakage happens. Try and evaluate different solutions until the unit operates properly.

Gas Leak Check

There are two different methods to check for gaseous leaks. Use one of the options below on critical points to check for leaks.

1. Soap & Water Method: Apply a soapy water solution on all indoor and outdoor unit connections with a soft brush to check for leakage of the connecting points of the piping. If bubbles emerge, the pipes are experiencing leakage.
2. Leak Detector: Use the leak detector to check for leakage. Refer to the device's operation/instruction manual for proper usage instructions.

NOTE: The illustration is for explanation purposes only. The actual order of A, B, C, D, E, and F on the machine may be slightly different from the unit you purchased but the general shape will remain the same.



A, B, C, D are points for a **4-zone system**.
A, B, C, D, & E are points for a **5-zone system**.
A, B, C, D, E, & F are points for a **6-zone system**.

7.2 Additional Refrigerant

! CAUTION

- Refrigerant charging must be performed after wiring, vacuuming, and leak testing.
- **DO NOT** exceed the maximum allowable quantity of refrigerant or overcharge the system. Doing so can damage the unit or impact its functionality.
- Charging with unsuitable substances may cause explosions or accidents. Ensure that the appropriate refrigerant is used.
- Refrigerant containers must be opened slowly. Always use protective gear when charging the system.
- **DO NOT** mix refrigerant types.

Depending on the length of the connective piping or the pressure of the evacuated system, you may need to add refrigerant. Refer to the table below for refrigerant amounts to be added:

Connective Pipe Length (m)	Air Purging Method	Additional Refrigerant	
< Standard Pipe Length*N	Vacuum Pump	N/A	
> Standard Pipe Length*N	Vacuum Pump	Liquid Side: Ø1/4" (Ø6.35) R545B (Total Pipe Length - Standard Length*N) x15g/m (Total Pipe Length - Standard Length*N) x0.16oz/ft	Liquid Side: Ø3/8" (Ø9.52) R545B (Total Pipe Length - Standard Length*N) x30g/m (Total Pipe Length - Standard Length*N) x0.32oz/ft

NOTE:
- The standard pipe length for each indoor unit is 24.6ft/7.5m.
- N=3 for 3-zone models, N=4 for 4-zone models, N=5 for 5-zone models, N=6 for 6-zone models.
- Additional 17.6 oz (0.5kg) refrigerant shall be added when AHU units are used in the system.

7.3 Test Run

Before Test Run

A test run must be performed after the entire system has been completely installed. Complete and confirm the list of checks before performing a test run.

Before Test Run Checkpoints
The indoor & O=outdoor units are properly installed.
Piping and wiring are properly connected.
No obstacles near the inlet and outlet of the unit that might cause poor performance or product malfunction.
The refrigeration system does not leak.
Drainage system is unimpeded and draining to a safe location.
The heating insulation is properly installed.
The grounding wires are properly connected.
The length of the piping and additional refrigerant stow capacity have been recorded.
The power voltage is the correct voltage for the unit.
The wall hole sleeve is packed airtight.
Ensure all connection valves and King valves on the outdoor condenser are fully opened.

Test Run Instructions

⚠ WARNING

Failure to perform the test run could result in damage to the unit, property, or personal injury. Only perform a test run after you have ensured the following steps have been completed:

- **Electrical Safety Checks -** Confirm that the unit's electrical system is safe and operating properly.
- **Gas Leak Checks -** Check all refrigerant piping/ line set connections and confirm that the system is not leaking.
- Confirm that the gas and liquid (high and low pressure) stop valves are fully open. **If the valves are not fully opened before the system is turned on, damage could occur.**

7 POST-INSTALLATION

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

1. Open both the liquid and gas stop valves.
2. Connect power to the unit. Then, turn on the main power switch and allow the unit to warm up.
3. Press the **ON/OFF** button on the remote control to turn on the system.
4. Press the **Mode** button to scroll through the following functions, one at a time:
   - **COOL -** Select the lowest possible temperature
   - **HEAT -** Select the highest possible temperature
5. Let each function run for 5 minutes and then perform the checks listed in the tables below.

Indoor Unit Checks:
Ensure the remote control and its buttons work properly.
Ensure the louvers move properly and can be changed using the remote control.
Double-check to see if the room temperature is being registered correctly.
Ensure the indicators on the remote control and the display panel on the indoor unit work properly.
Ensure the manual buttons on the indoor unit works properly.
Check to see that the drainage system is unimpeded and draining smoothly.
Ensure there is no vibration or abnormal noise during operation.

Outdoor Unit Checks:
Check to see if the refrigeration system is leaking.
Make sure there is no vibration or abnormal noise during operation.
Ensure the wind, noise, and water generated by the unit do not disturb your neighbors or pose a safety hazard.

6. After the test run is successfully completed, and you confirm all check points have passed, do the following:
   a. Using the remote control, return the 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.

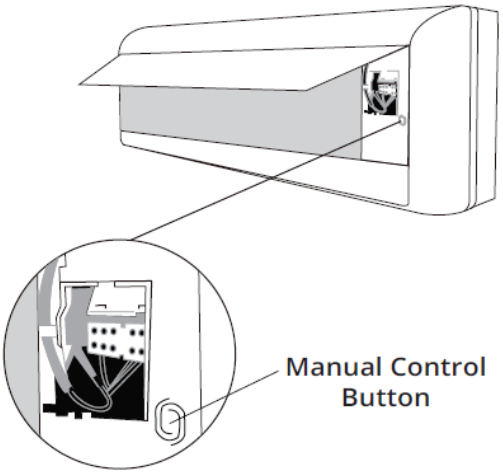
NOTE: If the unit malfunctions or does not operate according to your expectations, please refer to the Troubleshooting section of this manual before contacting technical support.

DOUBLE-CHECK PIPE CONNECTIONS

During operation, the pressure of the refrigerant circuit/piping 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 the Gas Leak section for instructions.

IF THE AMBIENT TEMPERATURE IS BELOW 63°F (17°C)

If the ambient temperature is below 63°F (17°C), the remote control cannot be used to turn on the Cool function. In this instance, you will need to use the manual control button to test the Cool function. Follow the steps below to access this function:



7.4 Manual Operation

While two or more indoor unit are simultaneously operating, make sure the modes do not conflict with each other. The heat mode claims precedence over all other modes. If the unit initially started to operate in Heat mode, the other units can operate in heat mode only. For example: if the unit initially started operating under cool or fan mode, the other units can operate under any mode except heat. If one of the units selects heat mode, the other operating units will stop operation and display "--" (for units with display window only) or the auto and operation indication light will flash rapidly, the defrost indication light will turn off, and the timer indication light will remain on (for units without a display window). Alternatively, the defrost and alarm indication light (if applicable) will light up, or the operation indication light will flash rapidly, and the timer indication light will turn off.

7.5 Care & Maintenance

! CAUTION

The power supply must be disconnected before attempting any kind of cleaning or service. Before performing maintenance, turn the power off to the unit and then disconnect the power to the circuit at the breaker. Failure to do this could cause electrical shock or injury.

- ⊘ **DO NOT** use benzene, thinner, polishing powder, or similar solvents for cleaning. This could cause the plastic to deform and/or crack.
- ⊘ **DO NOT** clean the unit with excessive amounts of water.
- ⊘ **DO NOT** touch the metal parts of the unit when removing the filter. Injuries can occur when handling the sharp metal edges.
- ⊘ **DO NOT** use water to clean the inside of the unit. Exposure to water can destroy the insulation, which could lead to electric shock.
- ⊘ **DO NOT** use a chemically treated cloth or duster to clean the unit.
- ⊘ **DO NOT** touch the air freshing (plasma) filter for at least 10 minutes after turning off the unit.
- ⊘ **DO NOT** clean the unit with combustible cleaning agents. These could cause fire and/or deformation of the unit.
- ⊘ **DO NOT** wash the air filter with water hotter than 104°F (40°C).
- ⊘ **DO NOT** expose the filter to direct sunlight, as this could cause it to shrink. Allow the filter to dry in the shade.

Cleaning the Unit:

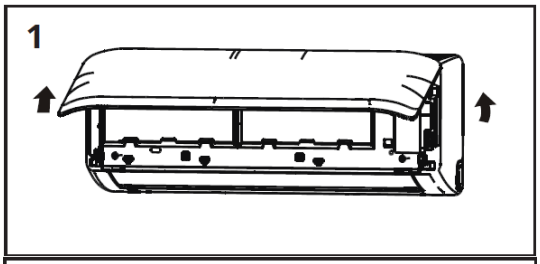
Wipe the unit with a soft, dry cloth. If the unit is very dirty, wipe it with a cloth soaked in warm water.

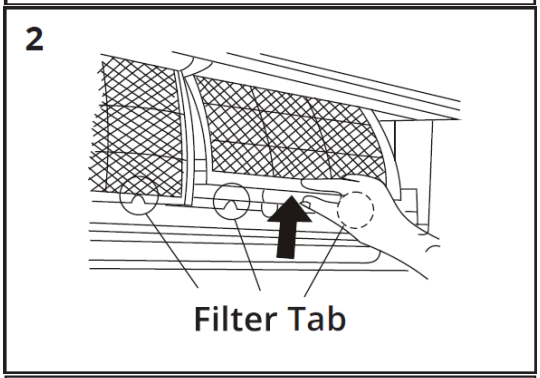
DO NOT use bleach or abrasives.

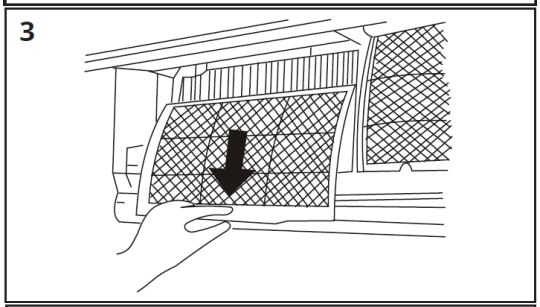
NOTE: A clogged air filter can greatly reduce heating and cooling efficiency of this unit. It is recommended to clean the unit every 2 weeks.

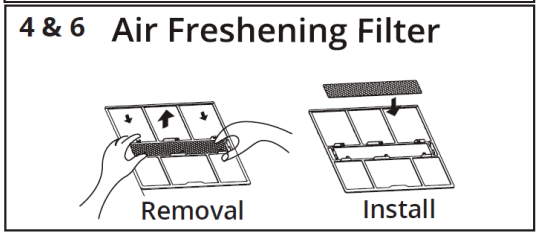
Cleaning the Air Filter & Air Freshener:

1. Open the front by carefully lifting both ends at the same time. As you continue lifting, at a certain angle there will be an audible click and the lid will become self-supporting. Some models are equipped with suspension bars that are required to prop the lid open.
2. Use the filter tabs to lift the filter slightly upward and then pull it toward you.
3. Then, extract the filter by gently drawing it downward. Replace as necessary.
4. Unclip the small air freshening filter from the larger air filter. Replace if necessary. Otherwise, clean it with a vacuum and click it back into place after cleaning the larger air filter as outlined in step 5.
5. Clean the large air filter with warm, soapy water. Be sure to use a mild detergent and rinse with fresh water. Shake off the excess water and allow it to dry in a cool area.
6. Re-clip the small air freshening filter into the large air filter by reversing step 4.

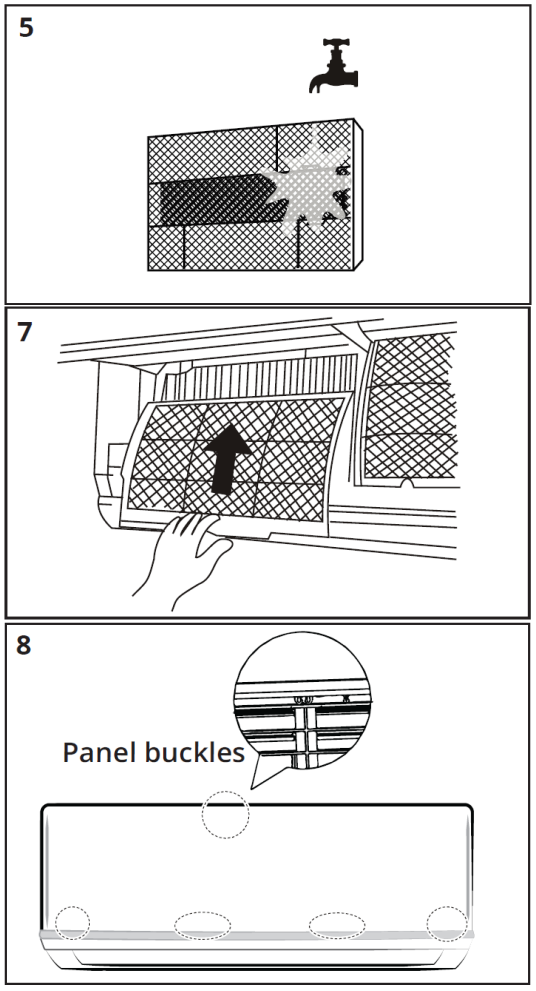








7. Re-fit air filter back into the unit by reversing steps 2 and 3 by gently pushing the top of the filter up into the unit and then lowering the bottom portion into place.
8. Close the front panel of the unit. Make sure that it buckles securely and the panel is completely closed.



Preparation for Extended Non-Operation:

If you plan to not run the unit for an extended period of time (e.g. from the end of summer to the beginning of the following summer), perform the following:

1. Clean the indoor unit and filters as outlined in the previous steps.
2. Operate the unit in Fan-Only mode for at least 8 hours to dry out the inside of the unit.
3. Turn off the unit. Then, turn off the power to the circuit at the breaker. The unit should be the only appliance on this circuit.
4. Remove the batteries from the remote control.
5. The outdoor unit also requires periodic maintenance. However, it is highly recommended you contact a qualified service professional to perform this. Please do not attempt to do this on your own.

Pre-Season Inspection:

After prolonged non-operation, perform the following:

1. Use a dry cloth to wipe off any dust that has accumulated on the rear air intake grille. This will avoid any dust from being dispersed from the indoor unit.
2. Check for any damaged or disconnected wires.
3. Clean or replace the filters and ensure they are properly installed.
4. Check for water and oil leaks.
5. Check for blockages in the airflow inlet and outlet.
6. Replace batteries in the remote control.

Optimal Operation

To achieve optimal performance, please note the following:

- Adjust the direction of airflow so that it is not blowing directly on people.
- Adjust the temperature to achieve the highest possible level of comfort. Do not adjust the unit to excessive temperature levels.
- Close doors and windows in cool mode or heat mode.
- Use the timer function to select a time you want to start the unit.
- Do not place any object near the air inlet or air outlet, as the efficiency of the unit may be reduced and the unit may stop running.
- Clean the air filter periodically, otherwise cooling or heating performance may be reduced.
- Do not operate unit with horizontal louver in a closed position.

7.6 Troubleshooting

! CAUTION

If any of the following conditions occur, turn off the unit immediately.

- The power cord is damaged or abnormally warm.
- You smell a burning odor.
- The unit emits loud or abnormal sounds.
- A power fuse blows or the circuit breaker frequently trips.
- Water or other objects fall into or out of the unit.

DO NOT ATTEMPT TO FIX THESE YOURSELF! CONTACT AN AUTHORIZED SERVICE PROVIDER IMMEDIATELY.

The following problems are not a malfunction, and in most situations will not require repairs.

Issue	Possible Causes
Unit does not turn on when pressing ON/OFF button.	The unit has a 3-minute protection feature that prevents the unit from overloading. The unit cannot be restarted within 3 minutes of being turned off.
	If the operation light and PRE-DEF indicators are lit up, the outdoor temperature is too cold and the unit's anti-cold wind is activated in order to defrost the unit.
The unit changes from COOL/ HEAT mode to FAN mode.	The unit may change its setting to prevent frost from forming on the unit. Once the temperature increases, the unit will start operating in the previously selected mode again.
	The set temperature has been reached, at which point the unit turns off the compressor. The unit will continue operating when the temperature fluctuates again.
The indoor unit emits white mist.	In humid regions, a large temperature difference between the room's air and the conditioned air can cause white mist.
Both the indoor and outdoor units emit white mist.	When the unit restarts in heat mode after defrosting, white mist may be emitted due to moisture generated from the defrosting process.
The indoor unit makes noises.	A squeaking sound is heard when the system is off or in cool mode. The noise is also heard when the drain pump (optional) is in operation.
	A squeaking sound may occur after running the unit in heat mode due to expansion and contraction of the unit's plastic parts.
Both the indoor unit and the outdoor unit make noises.	Low hissing sound during operation: this is normal and is caused by refrigerant gas flowing through both indoor and outdoor units.
	Low hissing sound when the system starts, has just stopped running, or is defrosting: this noise is normal and is caused by the refrigerant gas stopping or changing direction.
The outdoor unit makes noises.	The unit will make different sounds based on its current operating mode.
Dust is emitted from either the indoor or outdoor unit.	The unit may accumulate dust during extended periods of non-use, which will be emitted when the unit is turned on. This can be mitigated by covering the unit during long periods of inactivity.
The unit emits a bad odor.	The unit may absorb odors from the environment (such as furniture, cooking, cigarettes, etc.) which will be emitted during operation.
	The unit's filters have become moldy and should be cleaned.
The fan of the outdoor unit does not operate.	During operation, the fan speed is controlled to optimize product operation.

Note: If a problem persists, contact a local dealer or MRCOOL® customer service. Provide them with a detailed description of the unit malfunction as well as your model number.

7 POST-INSTALLATION

When trouble occurs, please check the following points before contacting a repair company.

Problem	Possible Causes	Solution
Poor Cooling Performance	**Temperature setting may be higher than ambient room temperature.**	Lower the temperature setting.
	The heat exchanger on the indoor or outdoor unit is dirty.	Clean the affected heat exchanger.
	The air filter is dirty.	Remove the filter and clean it according to instructions.
	The air inlet or outlet of either unit is blocked.	Turn the unit off, remove the obstruction and turn it back on.
	Doors and windows are open.	Make sure that all doors and windows are closed while operating the unit.
	Excessive heat is generated by sunlight.	Close windows and curtains during periods of high heat or bright sunshine.
	Low refrigerant due to leak or long-term use.	Check for leaks, re-seal if necessary, and top off refrigerant.
The unit is not working	**Power failure**	Wait for the power to be restored.
	The power is turned off.	Turn on the power.
	The fuse is burned out.	Replace the fuse.
	Remote control batteries are dead.	Replace batteries
	The unit's 3-minute protection has been activated.	Wait three minutes after restarting the unit.
The unit starts and stops frequently.	**There's too much or too little refrigerant in the system.**	Call a technician to check for leaks and recharge the system with refrigerant.
	Incompressible gas, air, or moisture, or foreign material has entered the system.	Call a technician to evacuate and recharge the system with refrigerant.
	System circuit is blocked.	Determine which circuit is blocked and replace the malfunctioning piece of equipment.
	The compressor is broken.	Call a technician to replace the compressor.
	The voltage is too high or too low.	Install a manostat to regulate the voltage.
Poor heating performance	**The outdoor temperature is lower than 44.5°F (7°C)**	Check for leaks and recharge the system with refrigerant.
	Cold air is entering through doors and windows.	Make sure that all doors and windows are closed during use.
	Low refrigerant due to leak or long-term use.	Call a technician to check for leaks, re-seal if necessary, and top off refrigerant.

Note: If your problem persists after performing the checks and diagnostics above, turn off your unit immediately and contact a local dealer or MRCOOL® customer service.

7.7 Error Display (Indoor Unit)

Display	Error Information	Solution
dF	Defrost	Normal Display, not error code
FC	Forced Cooling	
EC 07	ODU Fan Speed Out of Control	TS16
EC 71	Overcurrent Failure of Outdoor DC Fan Motor	TS16
EC 72	Lack Phase Failure of Outdoor DC Fan Motor	TS23
EC 50	ODU Temperature Sensor Error (T3, T4, TP)	TS18
EC 51	ODU EEPROM Parameter Error	TS12
EC 52	ODU Coil Temperature Sensor (T3) Error	TS18
EC 53	ODU Ambient Temperature Sensor (T4) Error	TS18
EC 54	Comp. Discharge Temperature Sensor (TP) Error	TS18
EC 55	ODU IPM Module Temperature Sensor Malfunction	TS42
EC 56	IDU Coil Outlet Temperature Sensor (T2B) Error	TS18
EC 57	Refrigerant Pipe Temperature Sensor Error	TS18
EC 5A	Failure of Enthalpy Inlet Temperature Sensor	TS18
EC 5b	Failure of Enthalpy Outlet Temperature Sensor	TS18
EC 5E	Condenser Temperature Sensor (T3B) Failure	TS18
EC 5C	Pressure Sensor Failure	TS43
EH C1	Refrigerant Sensor Detects Leakage	TS41
EL 01	IDU & ODU Communication Error	TS13
PC 00	IPM Module Protection	TS21
PC 02	Compressor Top (or IPM) Temperature Protection	TS32
PC 06	Discharge Temperature Protection of Compressor	TS29
PC 08	Outdoor Overcurrent Protection	TS19
PC 0A	High Temperature Protection of Condenser	TS30
PC 0F	PFC Module Protection	TS27
PC 0L	Low Ambient Temperature Protection	TS10-S
PC 10	ODU Low AC Voltage Protection	TS23
PC 11	ODU Main Control Board DC Bus High Voltage Protection	TS23
PC 12	ODU Main Control Board DC Bus Low Voltage Protection / 341 MCE Error	TS23
PC 13	The AC Power is Cut Off or the AC Voltage Detection Circuit Fails	TS44
PC 30	System High Pressure Protection	TS34
PC 31	System Low Pressure Protection	TS36
PC 40	Communication Error between ODU Main Chip & Compressor Driven Chip	TS26
PC 43	ODU Compressor Lack Phase Protection	TS39
PC 44	ODU Zero Speed Protection	TS19
PC 45	ODU IR Chip Drive Failure	TS40
PC 46	Compressor Speed has been Out of Control	TS19
PC 49	Compressor Overcurrent Failure	TS19
PC A1	Condensation Protection of Refrigerant Pipe	TS45
LC 06	High Temperature Protection of Inverter Module (IPM)	TS32

For other errors:
The display board may show a garbled code or a code undefined by the service manual. Ensure that this code is not a temperature reading.

Troubleshooting:
Test the unit using the remote control. If the unit does not respond to the remote, the indoor PCB requires replacement. If the unit responds, the display board requires replacement.

7.8 Outdoor Unit Point Check Function

- A check switch is included on the auxiliary PCB.
- Push SW1 to check the unit's status while running. The digital display shows the following codes each time the SW1 is pushed.

Number of Presses	Display	Remark
0	Normal Display	Displays running frequency, running state, or malfunction code.
1	Quantity of Indoor Units with Working Connection	Display number of indoor units
2	Outdoor unit running mode code	Standby: 0, Fan Only: 1, Cooling/Drying: 2, Heating: 3, Forced Cooling: 6, Forced Defrosting: A
3	Indoor Unit A Capacity	The capacity unit is horse power. If the indoor unit is not connected, the digital display shows the following: "--" (6K: 0.6HP, 7K: 0.8HP, 9K: 1.0HP, 12K: 1.2HP, 18K: 1.5HP, 24K: 2.5HP, 30K: 3.0HP, 36K: 3.2HP)
4	Indoor Unit B Capacity	
5	Indoor Unit C Capacity	
6	Indoor Unit D Capacity	
7	Indoor Unit E Capacity	
8	Indoor Unit A Capacity Demand Code	Norm Code*HP (6K: 0.6HP, 7K: 0.8HP, 9K: 1.0HP, 12K: 1.2HP, 18K: 1.5HP, 24K: 2.5HP, 30K: 3.0HP, 36K: 3.2HP)
9	Indoor Unit B Capacity Demand Code	
10	Indoor Unit C Capacity Demand Code	
11	Indoor Unit D Capacity Demand Code	
12	Indoor Unit E Capacity Demand Code	
13	Outdoor Unit Amendatory Capacity Demand Code	
14	The frequency corresponding to the total indoor units' amendatory capacity demand	
15	The frequency after the frequency Limit	
16	The frequency sending to compressor control chip	
17	Indoor Unit A Evaporator Outlet Temperature (T2BA)	If the temperature is lower than 16°F (-9°C), the digital display shows "-9". If the temperature is higher than 158°F (70°C), the digital display shows "70". If the indoor unit is not connected, the digital display shows "--".
18	Indoor Unit B Evaporator Outlet Temperature (T2BB)	
19	Indoor Unit C Evaporator Outlet Temperature (T2BC)	
20	Indoor Unit D Evaporator Outlet Temperature (T2BD)	
21	Indoor Unit E Evaporator Outlet Temperature (T2BE)	
22	Indoor Unit A Room Temperature (T1A)	If the temperature is lower than 32°F (0°C), the digital display shows "0". If the temperature is higher than 158°F (70°C), the digital display shows "70". If the indoor unit is not connected, the digital display shows: "--".
23	Indoor Unit B Room Temperature (T1B)	
24	Indoor Unit C Room Temperature (T1C)	
25	Indoor Unit D Room Temperature (T1D)	
26	Indoor Unit E Room Temperature (T1E)	
27	Indoor Unit A Evaporator Temperature (T2A)	If the temperature is lower than 15.8°F (-9°C), the digital display shows "-9". If the temperature is higher than 158°F (70°C), the digital display shows "70". If the indoor unit is not connected, the digital display shows "--".
28	Indoor Unit B Evaporator Temperature (T2B)	
29	Indoor Unit C Evaporator Temperature (T2C)	
30	Indoor Unit D Evaporator Temperature (T2D)	
31	Indoor Unit E Evaporator Temperature (T2E)	
32	Condenser Pipe Temperature (T3)	
33	Outdoor Ambient Temperature (T4)	
34	Compressor Discharge Temperature (TP)	The display value is between 86°~264°F (30-129°C). If the temperature is lower than 86°F (30°C), the digital display shows "30". If the temperature is higher than 48°F (99°C), the digital display shows single and double digits. For example, if the display shows 0.5: 0.5 is multiplied by 10 to become 5, then added to 100 to become 221°F (105°C).

<table>
<tr><th>Number of Presses</th><th>Display</th><th colspan="3">Remark</th></tr>
<tr><td>35</td><td>AD Value of Current</td><td colspan="3" rowspan="3">• The display value is a hex number.
• For example, the digital display tube shows "Cd", so C*16^1+d*16^0=12*16+13=205, it means AD value is 205.
• AD Value is detected by the chip. Both 6-zone condensers' actual AD value is AD value plus 60.</td></tr>
<tr><td>36</td><td>AD Value of AC Voltage</td></tr>
<tr><td>37</td><td>AD Value of DC Voltage</td></tr>
<tr><td>38</td><td>EXV Open Angle for A Indoor Unit</td><td colspan="3" rowspan="7">Actual data/4.
If the value is higher than 99, the digital display shows single and double digits.
For example, if the digital display shows "2.0": 2.0 multiplied by 10 to become 20, then added to 100 to become 120, the EXV open angle is 120x4=480p.</td></tr>
<tr><td>39</td><td>EXV Open Angle for B Indoor Unit</td></tr>
<tr><td>40</td><td>EXV Open Angle for C Indoor Unit</td></tr>
<tr><td>41</td><td>EXV Open Angle for D Indoor Unit</td></tr>
<tr><td>42</td><td>EXV Open Angle for E Indoor Unit</td></tr>
<tr><td>43</td><td>MVI Open Angle (For Some Models)</td></tr>
<tr><td>44</td><td>EXI Open Angle (For Some Models)</td></tr>
<tr><td rowspan="8">45</td><td rowspan="8">Frequency Limit Symbol</td><td>Bit7</td><td>Reserved</td><td rowspan="8">The display value is hexadecimal number. For example, the digital display shows 2A, the corresponding binary is 101010, so Bit5=1, Bit3=1, and Bit1=1.</td></tr>
<tr><td>Bit6</td><td>Frequency limit caused by voltage.</td></tr>
<tr><td>Bit5</td><td>Frequency limit caused by current.</td></tr>
<tr><td>Bit4</td><td>Reserved</td></tr>
<tr><td>Bit3</td><td>Frequency limit caused by IPM.</td></tr>
<tr><td>Bit2</td><td>Frequency limit caused by Compressor discharge temperature (T5)</td></tr>
<tr><td>Bit1</td><td>Frequency limit caused by outdoor heat exchanger pipe temperature (T3)</td></tr>
<tr><td>Bit0</td><td>Frequency limit caused by middle indoor heat exchanger coil temperature (T2)</td></tr>
<tr><td>46</td><td>T2B Fault</td><td colspan="3">00: No Fault, 01: T2B-A fault, 02: T2B-B fault, 03: T2B-C fault, 04: T2B-D fault, 05: T2B-E fault, 06: T2B-F fault (the display priority is A-B-C-D-E-F)</td></tr>
<tr><td>47</td><td>Average value of T2</td><td colspan="3">(Sum T2 value of all indoor units) / (Number of indoor units in good collection) (The heating is the average value of T2, and the cooling is the average value of T2B)
If the temperature is lower than 16°F (-9°C), the digital display shows "-9".</td></tr>
<tr><td>48</td><td>Outdoor Unit Fan Speed</td><td colspan="3">See next list</td></tr>
<tr><td>49</td><td>Reason of Stop</td><td colspan="3"></td></tr>
<tr><td>50~59</td><td>Reserved</td><td colspan="3"></td></tr>
<tr><td>60</td><td>Air injection enthalpy inlet temperature (for hyper heat models)</td><td colspan="3" rowspan="4">If the temperature is lower than 16°F (9°C), the digital display shows "-9". If the temperature is higher than 158°F (70°C), the digital display shows "70". If the indoor unit is not connected, the digital display shows "--".</td></tr>
<tr><td>61</td><td>Air injection enthalpy outlet temperature (for hyper heat models)</td></tr>
<tr><td>62</td><td>Condenser coil middle temperature (for hyper heat models)</td></tr>
<tr><td>63</td><td>Refrigerant tube inlet temperature (for hyper heat models)</td></tr>
<tr><td>64</td><td>Target discharge temperature</td><td colspan="3">The display value is between 32-390°F (0-199°C) If the temperature is lower than 86°F (30°C), the digital display shows "30". If the temperature is higher than 210°F (99°C), the digital display shows single and double digits. For example, if the display shows 0.5: 0.5 multiplied by 10 to become 5, then added to 100 to become 221°F (105°C)</td></tr>
<tr><td>65</td><td>Indoor Unit F Capacity</td><td colspan="3">The capacity unit is horse power. If the indoor unit is now connected, the digital display shows the following: "--"</td></tr>
<tr><td>66</td><td>Indoor Unit F Capacity Demand Code</td><td colspan="3">Norm Code*HP (9K: 1HP, 12K: 1.2HP, 18K: 1.5HP)</td></tr>
</table>

Number of Presses	Display	Remark
67	Indoor Unit F Evaporator Outlet Temperature (T2BF)	If the temperature is lower than 15.8°F (-9°C), the digital display shows "-9". If the temperature is higher than 158°F (70°C), the digital display shows "70". If the indoor unit is not connected, the digital display shows: "--".
68	Indoor Unit F Room Temperature (T1F)	If the temperature is lower than 32°F (0°C), the digital display shows "0". If the temperature is higher than 158°F (70°C), the digital display shows "70". If the indoor unit is not connected, the digital display shows "--"
69	Indoor Unit F Evaporator Temperature (T2F)	If the temperature is lower than 15.8°F (-9°C), the digital display shows "-9". If the temperature is higher than 158°F (70°C), the digital display shows "70". If the indoor unit is not connected, the digital display shows "--".
70	EXV Open Angle for F Indoor Unit	Actual Data/4. If the value is higher than 99, the digital display shows single and double digits.
71	IPM Module Temperature	The display value is between 32-390°F (0-199°C). If the temperature is higher than 210°F (99°C), the digital display shows single and double digits. For example, if the display shows 5.0: 5.0 multiplied by 10 becomes 50, then added to 100 to become 302°F (150°C).
72	The high pressure sensor detects the pressure corresponding to the condensation temperature	The digital display shows: "--"
73	Reserved	
74		

Outdoor Unit Fan Speed:

Outdoor Unit Fan Speed	Display
>600rpm	02
>300rpm & ≤600rpm	03
≤300rpm	04

7.9 Quick Maintenance by Error Code

If you do not have the time to test which specific parts are faulty, you can change the required parts according to the error code. You can find the parts to replace by error code in the following table.

Part Requiring Replacement	Error Code											
	EL 01	EC 50	EC 51	EC 52	EC 53	EC 54	EC 55	EC 56	EC 57	EC 58	EC 59	EC 5E
Indoor PCB	√	X	X	X	X	X	X	X	X	X	X	X
Outdoor PCB	√	√	√	√	√	√	√	√	√	√	√	√
ODU Coil Temperature Sensor	X	√	X	√	X	X	X	X	X	X	X	X
ODU Ambient Temperature Sensor	X	√	X	X	√	X	X	X	X	X	X	X
COMP. Discharge Temperature Sensor	X	√	X	X	X	√	X	X	X	X	X	X
IPM Module Temperature Sensor	X	X	X	X	X	X	√	X	X	X	X	X
IDU Coil Outlet Temperature Sensor	X	X	X	X	X	X	X	√	X	X	X	X
Refrigerant Pipe Temperature Sensor	X	X	X	X	X	X	X	X	√	X	X	X
Enthalpy Inlet Temperature Sensor	X	X	X	X	X	X	X	X	X	√	X	X
Enthalpy Outlet Temperature Sensor	X	X	X	X	X	X	X	X	X	X	√	X
Condenser Temperature Sensor	X	X	X	X	X	X	X	X	X	X	X	√
Reactor	√	X	X	X	X	X	X	X	X	X	X	X
IPM Module Board	√	X	X	X	X	X	X	X	X	X	X	X

Part Requiring Replacement	Error Code									
	EC 5C	EH C1	EC 07/ EC 71	PC 00	PC 01/ PC 10/ PC 11/ PC 12	PC 02	PC 08/ PC 44/ PC 46/ PC 49	PC 13	PC A1	PC 0F
Outdoor PCB	√	X	√	√	√	√	√	√	√	√
Outdoor Fan Motor	X	X	√	√	X	X	√	X	X	X
Reactor or Inductance	X	X	X	√	√	X	√	X	X	√
Compressor	X	X	X	√	X	X	X	X	X	X
IPM Module Board	X	X	X	√	√	X	√	X	X	X
Bridge Rectifier	X	X	X	√	√	X	√	X	X	X
Pressure Sensor	√	X	X	X	X	X	X	X	X	X
PFC Module	X	X	X	X	X	X	X	X	X	√
Additional Refrigerant	X	√	X	X	X	X	X	X	X	X
Overload Protector	X	X	X	X	X	√	X	X	X	X
ODU Ambient Temperature Sensor	X	X	X	X	X	X	X	X	√	X
Refrigerant Temperature Sensor	X	X	X	X	X	X	X	X	√	X

Part Requiring Replacement	Error Code							
	PC 40	EC 72	PC 43	PC 45	PC 06	PC 0A	PC 30	PC 31
Outdoor PCB	√	X	√	√	√	√	√	√
Outdoor Fan Motor	X	X	√	√	X	X	√	X
ODU Coil Temperature Sensor	X	X	X	√	√	X	√	X
COMP. Discharge Temperature Sensor	X	X	X	√	X	X	X	X
Compressor	X	X	X	√	√	X	√	X
IPM Module Board	X	X	X	√	√	X	√	X
Additional Refrigerant	√	X	X	X	X	X	X	X
Electric Control Box	X	X	X	X	X	X	X	X
High Pressure Switch	X	√	X	X	X	X	X	X
Low Pressure Switch	X	X	X	X	X	√	X	X

This marking indicates that this product should not be disposed with other household wastes throughout North America. To prevent possible harm to the environment or human health from uncontrolled waste disposal, recycle it responsibly to promote the sustainable reuse of material resources. To return your used device, please use the return and collection systems or contact the retailer where the product was purchased. They can take this product for environmental safe recycling.

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