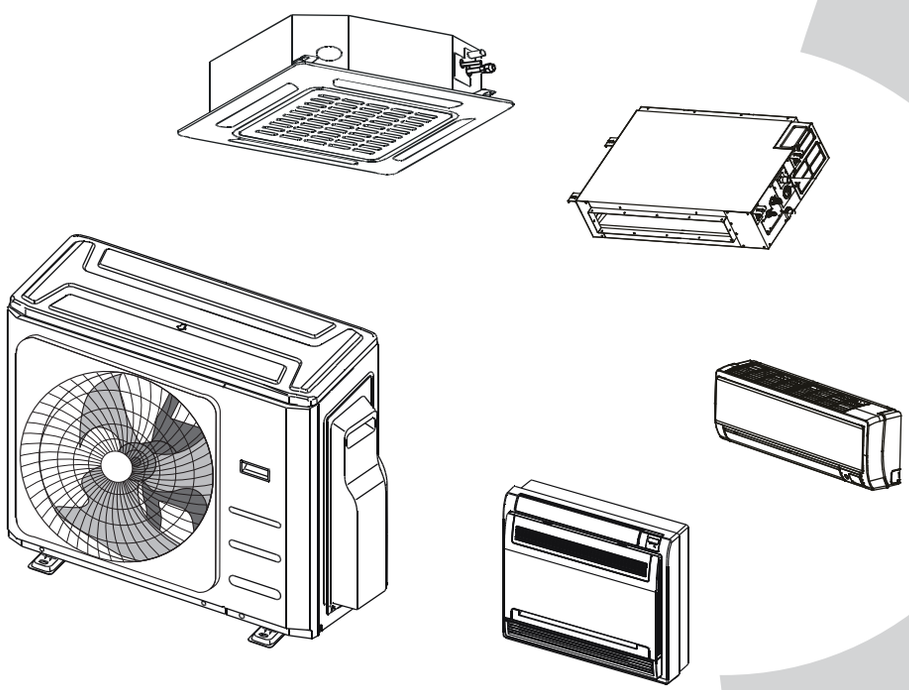
INVERTER ONE-TWO/ONE-THREE/ONE-FOUR/ONE-FIVE SPLIT-TYPE AIR CONDITIONER

Installation Manual



IMPORTANT NOTE:

- Read this manual carefully before installing or operating your new air conditioning unit. Make sure to save this manual for future reference.
- This manual only describes the installation of outdoor unit. When installing the indoor unit, refer to the installation manual of indoor unit.

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08152019v2

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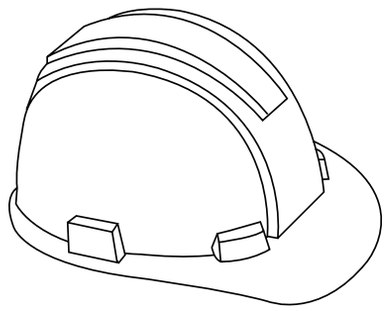

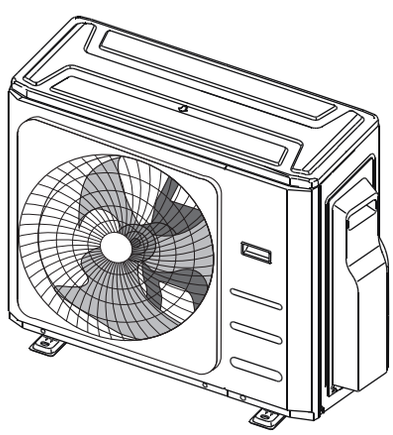

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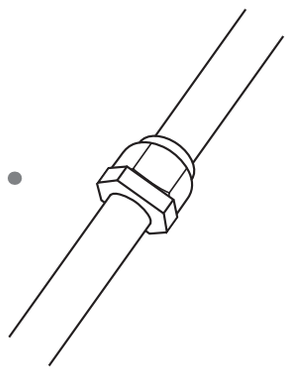

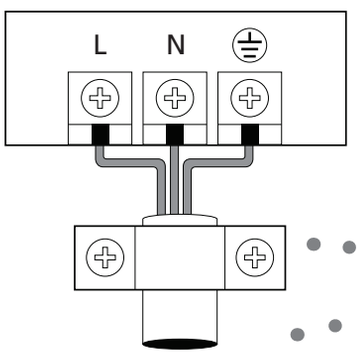

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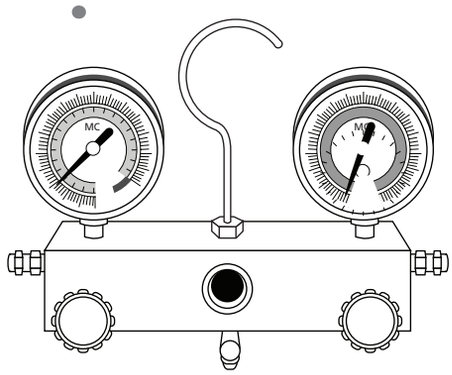

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Safety Precautions

1

Read Safety Precautions Before Installation

Incorrect installation due to ignoring instructions can cause serious damage or injury.
The seriousness of potential damage or injuries is classified as either a **WARNING** or **CAUTION.**

WARNING

Failure to observe a warning may result in death. The appliance must be installed in accordance with national regulations.

CAUTION

Failure to observe a caution may result in injury or equipment damage.

This symbol indicates that you must never perform the action indicated.

⚠ WARNING

1. Carefully read the Safety Precautions before installation.
2. In certain functional environments, such as kitchens, server rooms, etc., the use of specially designed air-conditioning units is highly recommended.
3. Only trained and certified technicians should install, repair and service this air conditioning unit.
4. Improper installation may result in electrical shock, short circuit, leaks, fire or other damage to the equipment and personal property.
   (In North America,installation must be performed in accordance with the requirement of NEC and CEC by authorized personnel only.)
5. Strictly follow the installation instructions set forth in this manual.
6. Before you install the unit, consider strong winds, typhoons and earthquakes that might affect your unit and locate it accordingly. Failure to do so could cause the equipment to fail.
7. This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved. Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
8. Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
9. 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.
10. Children should be supervised to ensure that they do not play with the appliance..
    (IEC Standard requirement)
11. If the supply cord is damaged, it must be replaced by the manufacturer,its service agent or similarly qualified persons in order to avoid a hazard.
12. The appliance shall be installed in accordance with national wiring regulations.

⚠ WARNING

An all-pole disconnection device which has at least 1/8in clearances in all poles, and have a leakage current that may exceed 10mA,the residual current device (RCD) having a rated residual operating current not exceeding 30mA,and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.

The appliance disconnection must be incorporated with an all-pole disconnection device in the fixed wiring in accordance with the wiring rules.

Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorises their competence to handle refrigerants safely in accordance with an industry recognised assessment specification.

Servicing shall only be performed as recommended by the equipment manufacturer.

7 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.

The appliance shall be stored so as to prevent mechanical damage from occurring.

Keep ventilation openings clear of obstruction.

Do not turn on the power until all work has been completed.

When moving or relocating the air conditioner, consult experienced service technicians for disconnection and reinstallation of the unit

In certain functional environments, such as kitchens, server rooms, etc., the use of specially designed air-conditioning units is highly recommended.

Removal of the plug has to be such that an operator can check from any of the points to which he has access that the plug remains removed.

If this is not possible, due to the construction of the appliance or its installation, a disconnection with a locking system in the isolated position shall be provided.

⚠ CAUTION

⊘ For units that have an auxiliary electric heater, do not install the unit within 1 meter (3 feet) of any combustible materials.

⊘ Do not install the unit in a location that may be exposed to combustible gas leaks. If combustible gas accumulates around the unit, it may cause fire.

⊘ Do not operate your air conditioner in a wet room such as a bathroom or laundry room. Too much exposure to water can cause electrical components to short circuit.

1. The product must be properly grounded at the time of installation, or electrical shock may occur.
2. Install drainage piping according to the instructions in this manual. Improper drainage may cause water damage to your home and property.

Note about Fluorinated Gasses

1. This air-conditioning unit contains fluorinated greenhouse gasses. For specific information on the type of gas and the amount, please refer to the relevant label on the unit itself or the "Owner's Manual - Product Fiche " in the packaging of the outdoor unit. (European Union products only).
2. Installation, service, maintenance and repair of this unit must be performed by a certified technician.
3. Product uninstallation and recycling must be performed by a certified technician.
4. For equipment that contains fluorinated greenhouse gases in quantities of 5 tons of CO_2 equivalent or more, but of less than 50 tons of CO_2 equivalent if the system has a leak detection system installed, it must be checked for leaks at least every 24 months.
5. When the unit is checked for leaks, proper record-keeping of all checks is strongly recommended.

Explanation of symbols displayed on the indoor unit or 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.

Accessories

2

The air conditioning system comes with the following accessories. Use all of the installation parts and accessories to install the air conditioner. Improper installation may result in water leakage, electrical shock and fire, or equipment failure.

Name			Shape	Quantity
Installation plate				1
Plastic expansion sheath				5-8 (depending on models)
Self-Tapping Screw A ST3.9X25				5-8 (depending on models)
Drain joint (some models)				1
Seal ring (some models)				1
Connecting pipe assembly	Liquid side	Ø1/4in		Parts you must purchase. Consult a technician for the proper size.
		Ø3/8in		
	Gas side	Ø3/8in		
		Ø1/2in		
		Ø5/8in		
Owner's manual				1
Installation manual				1
Transfer connector (packed with the indoor or outdoor unit, depending on models) NOTE: Pipe size may differ from appliance to appliance. To meet different pipe size requirements, sometimes the pipe connections need a transfer connector installed on the outdoor unit .				Optional part (one piece/one indoor unit)
				Optional part (1-5 pieces for outdoor unit, depending on models)
Magnetic ring (Hitch on the connective cable between the indoor unit and outdoor unit after installation.)				Optional part (one piece/one cable)
Cord protection rubber ring (If the cord clamp cannot fasten on a small cord, use the cord protection rubber ring [supplied with accessories] to wrap around the cord. Then fix it in place with the cord clamp.)				1 (on some models)

Optional Accessories

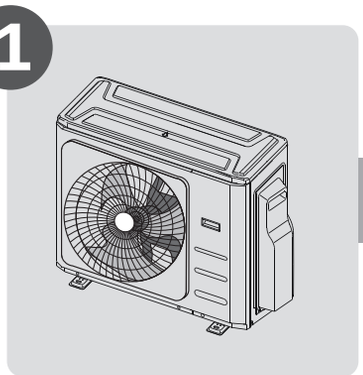
There are two types of remote controls: wired and wireless.
Select a remote controller based on customer preferences and requirements and install in an appropriate place.
Refer to catalogues and technical literature for guidance on selecting a suitable remote controller.

Installation Overview

3

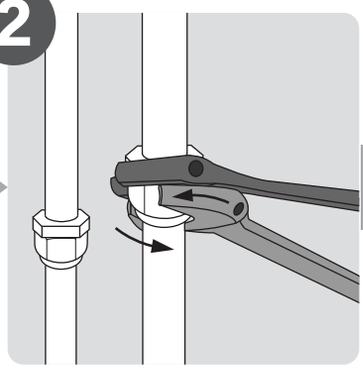
INSTALLATION ORDER

1



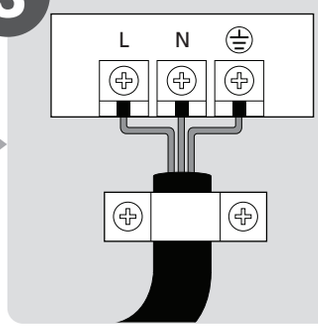
Install the outdoor unit
(Page 10)

2



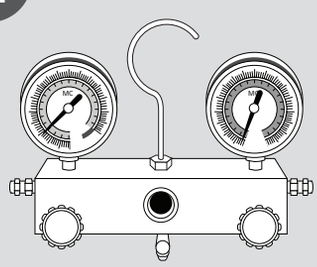
Connect the refrigerant pipes
(Page 15)

3



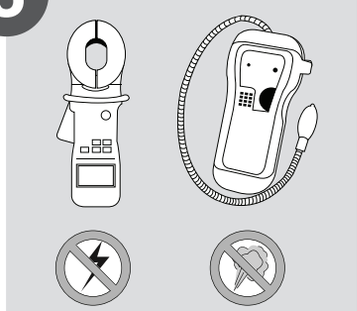
Connect the wires
(Page 18)

4



Evacuate the refrigeration system
(Page 24)

5



Perform a test run
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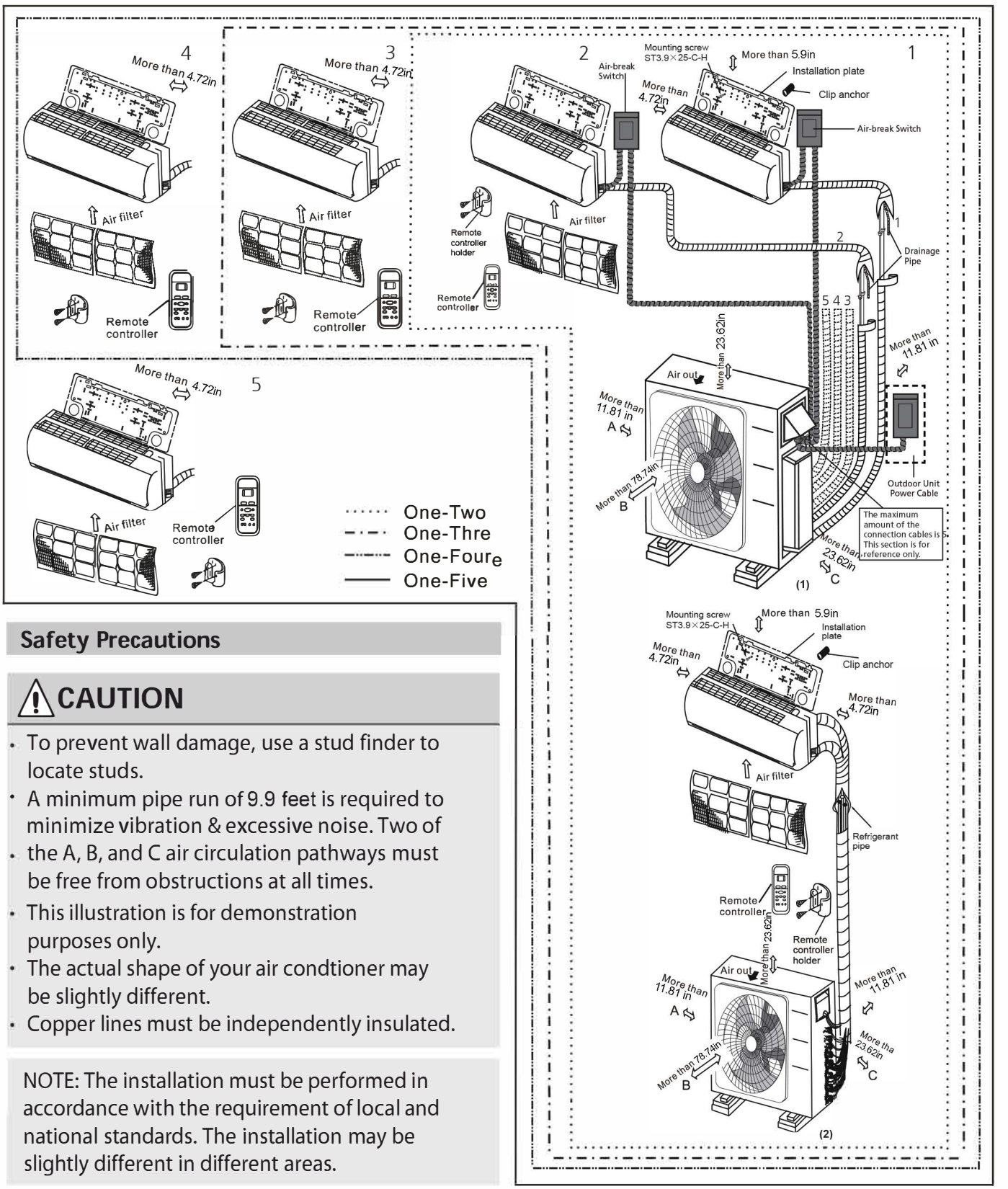
Installation Diagram

4

Installation Diagram



Safety Precautions

⚠ CAUTION

- To prevent wall damage, use a stud finder to locate studs.
- A minimum pipe run of 9.9 feet is required to minimize vibration & excessive noise. Two of
- the A, B, and C air circulation pathways must be free from obstructions at all times.
- This illustration is for demonstration purposes only.
- The actual shape of your air condtioner 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.

Specifications

5

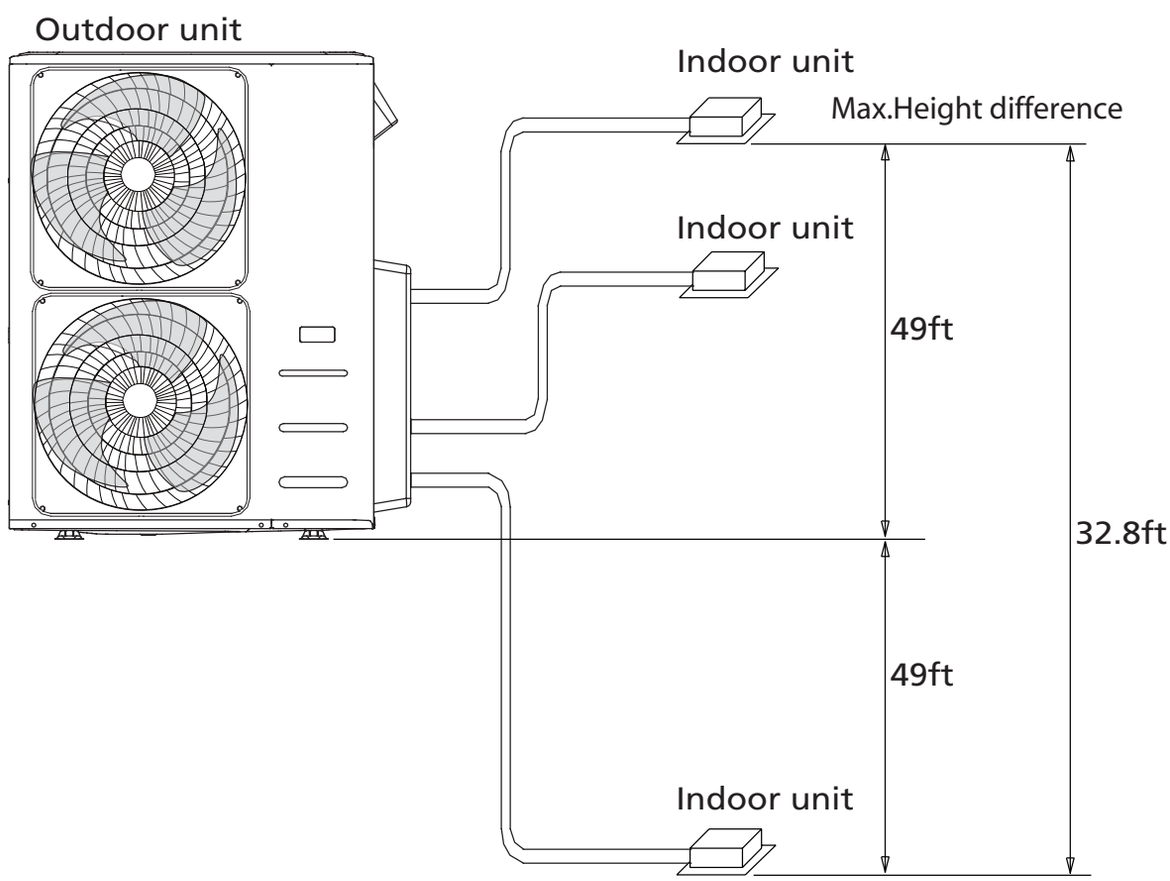
Table 5.1

Number of units that can be used together	Connected units	1-5 units
Compressor stop/start frequency	Stop time	3 min or more
Power source voltage	voltage fluctuation	within ±10% of rated voltage
	voltage drop during start	within ±15% of rated voltage
	interval unbalance	within ±3% of rated voltage

Table 5.2 **Unit: ft.**

	1 drive 2	1 drive 3	1 drive 4	1 drive 5
Max. length for all rooms	131	197	262	262
Max. length for one indoor unit	82	98	115	115
Max. height different between indoor and outdoor unit	49	49	49	49
Max. height different between indoor units	33	33	33	33

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:



Outdoor Unit Installation

6

Outdoor Unit Installation Instructions

Step 1: Select installation location.

The outdoor unit should be installed in the location that meets the following requirements:

- ☑ Place the outdoor unit as close to the indoor unit as possible.
- ☑ Ensure that there is enough room for installation and maintenance.
- ☑ The air inlet and outlet must not be obstructed or exposed to strong wind.
- ☑ Ensure the location of the unit will not be subject to snowdrifts, accumulation of leaves or other seasonal debris. If possible, provide an awning for the unit. Ensure the awning does not obstruct airflow.
- ☑ The installation area must be dry and well ventilated.
- ☑ There must be enough room to install the connecting pipes and cables and to access them for maintenance.

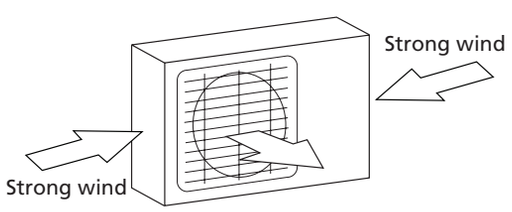


Fig. 6.1

- ☑ The area must be free of combustible gases and chemicals.
- ☑ The pipe length between the outdoor and indoor unit may not exceed the maximum allowable pipe length.
- ☑ If possible, **DO NOT** install the unit where it is exposed to direct sunlight.
- ☑ If possible, make sure the unit is located far away from your neighbors' property so that the noise from the unit will not disturb them.
- ☐ If the location is exposed to strong winds (for example: near a seaside), the unit must be placed against the wall to shelter it from the wind. If necessary, use an awning. (See Fig. 6.1 & 6.2)
- ☐ Install the indoor and outdoor units, cables and wires at least 1 meter from televisions or radios to prevent static or image distortion. Depending on the radio waves, a 3.2 feet distance may not be enough to eliminate all interference.

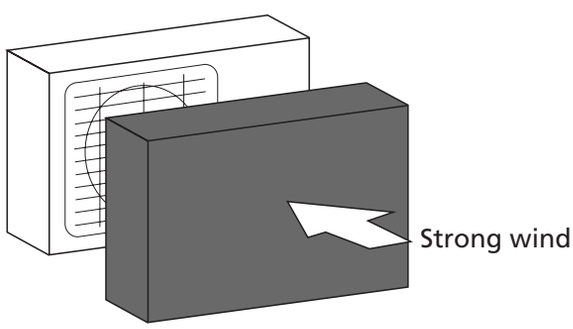


Fig. 6.2

Step 2: Install outdoor unit.

Fix the outdoor unit with anchor bolts (M10)

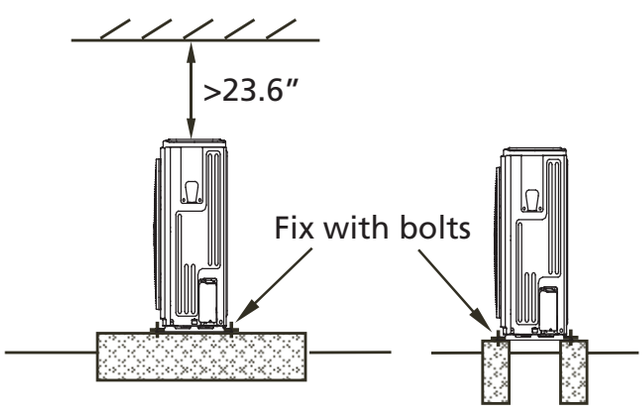


Fig. 6.3

⚠ CAUTION

- Be sure to remove any obstacles that may block air circulation.
- Make sure you refer to Length Specifications to ensure there is enough room for installation and maintenance.

Split Type Outdoor Unit

(Refer to Fig 6.4, 6.5, 6.6, 6.10 and Table 6.1)

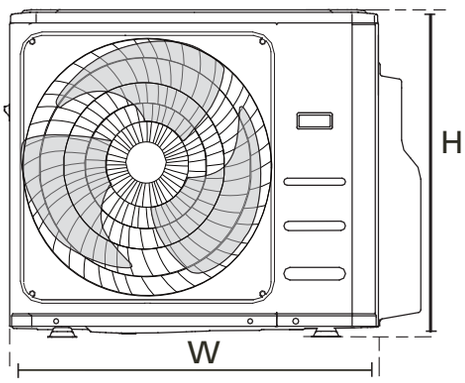


Fig. 6.4

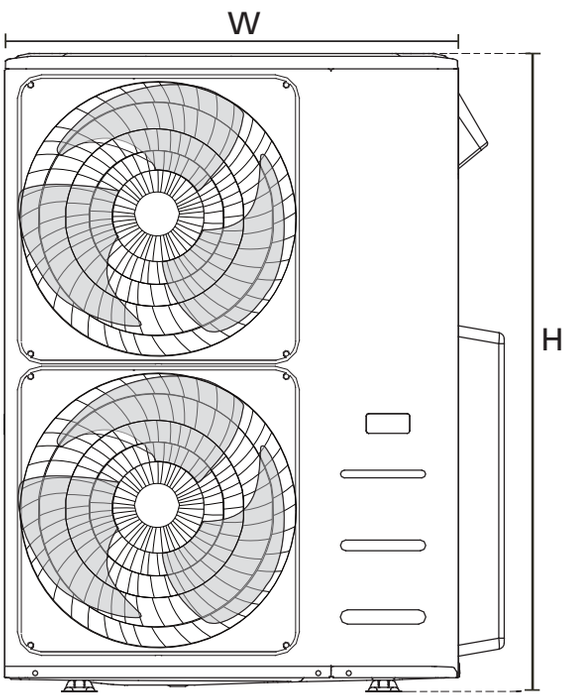


Fig. 6.5

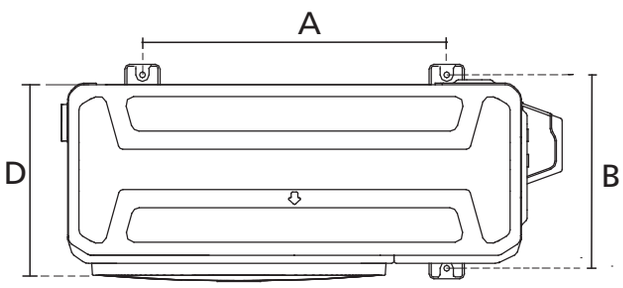


Fig. 6.6

Table 6.1: Length Specifications of Split Type Outdoor Unit (unit: inch

Outdoor Unit Dimensions W x H x D	Mounting Dimensions	
	Distance A	Distance B
29.9x23.2x11.2	20.85	11.4
31.9x22x12.2	21.6	12.8
33.27x27.5x12.6	22	13.2
35.4x33.85x12.4	23.2	13.1
37.2x31.9x15.55	25.2	15.95
38.98x38x13.58	24.58	14.4
36.93x53.9x15.43	24.96	15.9
35.4x46x13.8	23.2	14.88
31.5x21.8x13.1	20.24	13.39
33.27x27.6x14.3	21.26	13.8
37.2x31.9x16.53	26.5	15.87
37.2x31.9x16.14	26.5	15.87
37.5x52.5x16.14	24.96	15.9
37.5x52.5x16.14	24.96	15.9

Rows of series installation

Table 6.2 The relations between H, A and L are as follows.

	L	A
L ≤ H	L ≤ 1/2H	9.8″ or more
	1/2H < L ≤ H	11.8″ or more
L > H	Can not be installed	

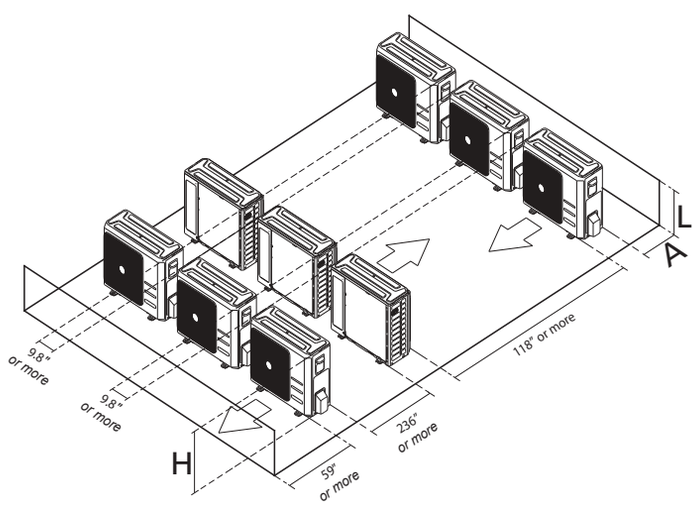


Fig. 6.7

NOTE: The minimum distance between the outdoor unit and walls described in the installation guide does not apply to airtight rooms. Be sure to keep the unit unobstructed in at least two of the three directions (M, N, P) (See Fig. 6.8)

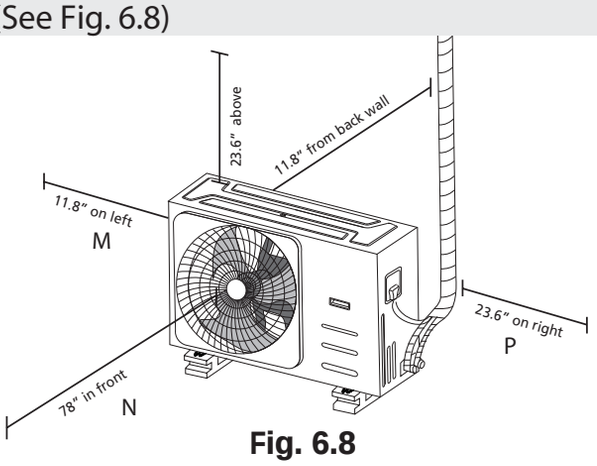


Fig. 6.8

Drain Joint Installation

If the drain joint comes with a rubber seal (see Fig. 6.9 - A), do the following:

1. Fit the rubber seal on the end of the drain joint that will connect to the outdoor unit.
2. Insert the drain joint into the hole in the base pan of the unit.
3. Rotate the drain joint 90° until it clicks in place facing the front of the unit.
4. Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

If the drain joint doesn't come with a rubber seal (see Fig. 6.9 - B), do the following:

1. Insert the drain joint into the hole in the base pan of the unit. The drain joint will click in place.
2. Connect a drain hose extension (not included) to the drain joint to redirect water from the unit during heating mode.

NOTE: Make sure the water drains to a safe location where it will not cause water damage or a slipping hazard.

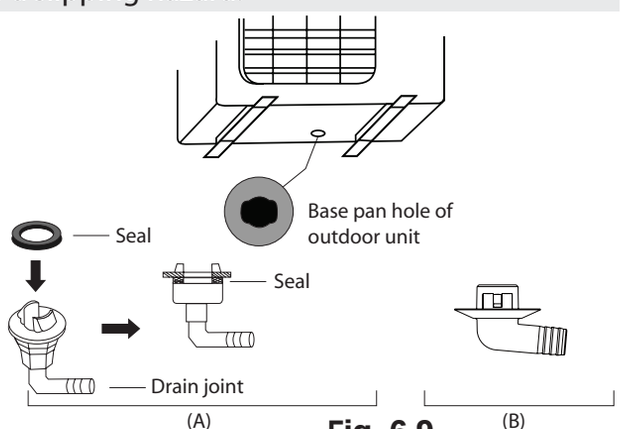


Fig. 6.9

Notes On Drilling Hole In Wall

You must drill a hole in the wall for the refrigerant piping, and the signal cable that will connect the indoor and outdoor units.

1. Determine the location of the wall hole based on the location of the outdoor unit.
2. Using a 2.5" core drill, drill a hole in the wall.

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

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

When Select a 24K Indoor Unit

The 24K indoor unit can only be connected with an A system. If there are two 24K indoor units, they can be connected with A and B systems. (See Fig. 6.10)

Table 6.3: Connective pipe size of an A and B system (unit: inch)

Indoor Unit capacity (Btu/h)	Liquid	Gas
7K/9K/12K	1/4	3/8
12K/18K	1/4	1/2
24K	3/8	5/8

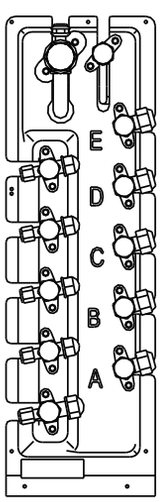


Fig. 6.10

Refrigerant Piping Connection

7

Safety Precautions

⚠ WARNING

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

Refrigerant Piping Connection Instructions

⚠ CAUTION

- The branching pipe must be installed horizontally. An angle of more than 10° may cause malfunction.
- **DO NOT** install the connecting pipe until both indoor and outdoor units have been installed.
- Insulate both the gas and liquid piping to prevent water leakage.

Step1: Cut pipes

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

1. Measure the distance between the indoor and outdoor units.
2. Using a pipe cutter, cut the pipe a little longer than the measured distance.

⚠ CAUTION

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

1. Make sure that the pipe is cut at a perfect 90° angle. Refer to Fig. 7.1 for examples of bad cuts

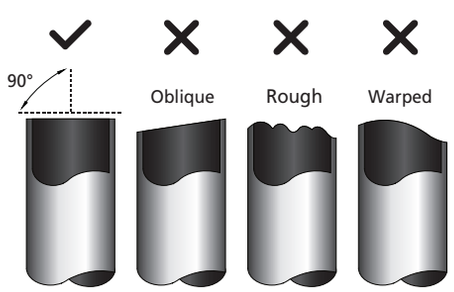


Fig. 7.1

Step 2: Remove burrs.

Burrs can affect the air-tight seal of refrigerant piping connection. They must be completely removed.

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

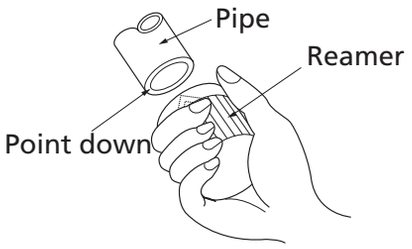


Fig. 7.2

Step 3: Flare pipe ends

Proper flaring is essential to achieve an airtight seal.

1. After removing burrs from cut pipe, seal the ends with PVC tape to prevent foreign materials from entering the pipe.
2. Sheath the pipe with insulating material.
3. Place flare nuts on both ends of pipe. Make sure they are facing in the right direction, because you can't put them on or change their direction after flaring. See Fig. 7.3

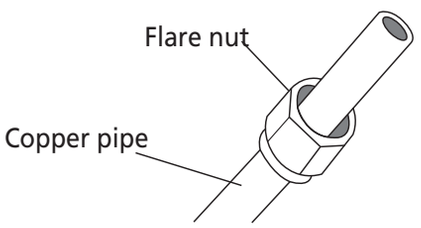


Fig. 7.3

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

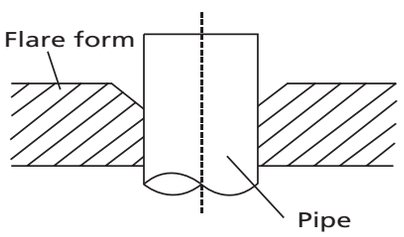


Fig. 7.4

6. Place flaring tool onto the form.
7. Turn the handle of the flaring tool clockwise until the pipe is fully flared. Flare the pipe in accordance with the dimensions shown in table 7.1.

Table 7.1: PIPING EXTENSION BEYOND FLARE FORM

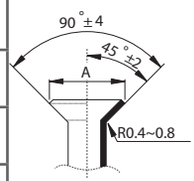
Pipe gauge	Tightening torque	Flare dimension (A) (Unit: Inch)		Flare shape
		Min.	Max.	
Ø 6.4	13-15 ft.lbs	0.33	0.34	
Ø 9.5	23-29 ft.lbs	0.52	0.53	
Ø 12.7	36-43 ft.lbs	0.64	0.65	
Ø 15.9	42-52 ft.lbs	0.76	0.78	
Ø 19.1	49-74 ft.lbs	0.91	0.93	
Ø 22	53-63 ft.lbs	1.04	1.06	

Fig. 7.5

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

Step 4: Connect pipes

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

1. When connecting the flare nuts, apply a thin coat of refrigeration oil to the flared ends of the pipes.
2. Align the center of the two pipes that you will connect.

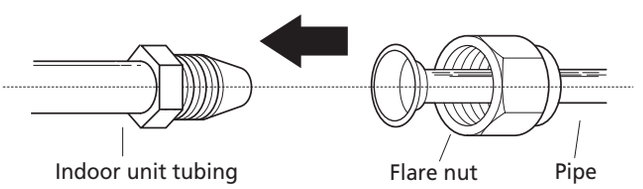


Fig. 7.6

3. Tighten the flare nut as tightly as possible by hand.
4. Using a spanner, grip the nut on the unit tubing.
5. While firmly gripping the nut, use a torque wrench to tighten the flare nut according to the torque values in table 7.1.

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

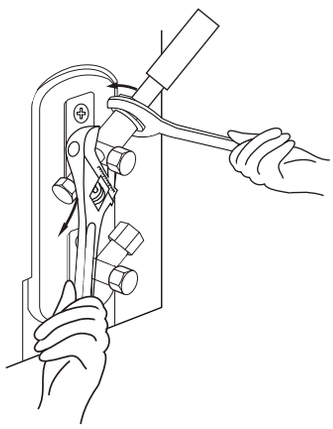


Fig. 7.7

⚠ CAUTION

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

NOTE ON MINIMUM BEND RADIUS

Carefully bend the tubing in the middle according to the diagram below. **DO NOT** bend the tubing more than 90° or more than 3 times.

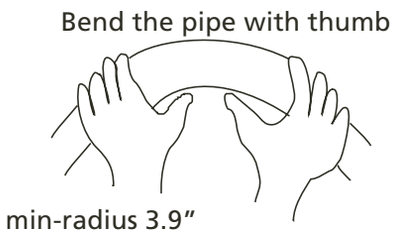


Fig. 7.8

6. After connecting the copper pipes to the indoor unit, wrap the power cable, signal cable and the piping together with binding tape.

NOTE: DO NOT intertwine signal cable with other wires. While bundling these items together, do not intertwine or cross the signal cable with any other wiring.

7. Thread this pipeline through the wall and connect it to the outdoor unit.
8. Insulate all the piping, including the valves of the outdoor unit.
9. Open the stop valves of the outdoor unit to start the flow of the refrigerant between the indoor and outdoor unit.

⚠ CAUTION

Check to make sure there is no refrigerant leak after completing the installation work. If there is a refrigerant leak, ventilate the area immediately and evacuate the system (refer to the Air Evacuation section of this manual).

Wiring

8

Safety Precautions

⚠ WARNING

- Be sure to disconnect the power supply before working on the unit.
- All electrical wiring must be done according to local and national regulations.
- Electrical wiring must be done by a qualified technician. Improper connections may cause electrical malfunction, injury and fire.
- An independent circuit and single outlet must be used for this unit. **DO NOT** plug another appliance or charger into the same outlet.If the electrical circuit capacity is not enough or there is a defect in the electrical work, it can lead to shock, fire, unit and property damage.
- Connect the power cable to the terminals and fasten it with a clamp. An insecure connection may cause fire.
- Make sure that all wiring is done correctly and the control board cover is properly installed. Failure to do so can cause overheating at the connection points, fire, and electrical shock.
- Ensure that main supply connection is made through a switch that disconnects all poles, with contact gap of a least 0.118".
- **DO NOT** modify the length of the power cord or use an extension cord.

⚠ CAUTION

- Connect the outdoor wires before connecting the indoor wires.
- Make sure you ground the unit. The grounding wire should be away from gas pipes, water pipes, lightning rods, telephone or other grounding wires. Improper grounding may cause electrical shock.
- **DO NOT** connect the unit with the power source until all wiring and piping is completed.
- Make sure that you do not cross your electrical wiring with your signal wiring, as this can cause distortion and interference.

Follow these instructions to prevent distortion when the compressor starts:

- The unit must be connected to the main outlet. Normally, the power supply must have a low output impedance of 32 ohms.
- No other equipment should be connected to the same power circuit.
- The unit's power information can be found on the rating sticker on the product.

TAKE NOTE OF FUSE SPECIFICATIONS

The air conditioner's circuit board(PCB) is designed with a fuse to provide overcurrent protection. The specifications of the fuse are printed on the circuit board, such as:
Outdoor unit: T20A/250VAC(for <24000Btu/h unit), T30A/250VAC(for >24000Btu/h unit)

NOTE: The fuse is made of ceramic.

Outdoor Unit Wiring

⚠ WARNING

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

1. Prepare the cable for connection
   a. You must first choose the right cable size before preparing it for connection. Be sure to use H07RN-F cables.

Table 8.1: Minimum Cross-Sectional Area of Power and Signal Cables North America

Rated Current of Appliance (A)	AWG
≤7	18
7 - 13	16
13 - 18	14
18 - 25	12
25 - 30	10

b. Using wire strippers, strip the rubber jacket from both ends of signal cable to reveal about 5.9” of the wires inside.

c. Strip the insulation from the ends of the wires.

d. Using a wire crimper, crimp u-lugs on the ends of the wires.

NOTE: While connecting the wires, please 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, disassemble the bolts from the maintenance board and remove the protection board. (See Fig. 8.1)

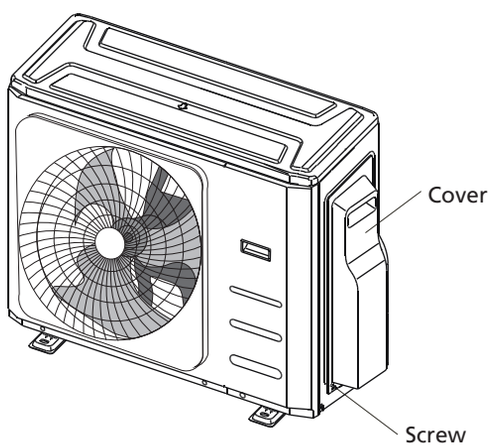


Fig. 8.1

3. Connect the u-lugs to the terminals
   Match the wire colors/labels with the labels on the terminal block, and firmly screw the u-lug of each wire to its corresponding terminal.
4. Clamp down the cable with designated 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.

Harmonic declaration

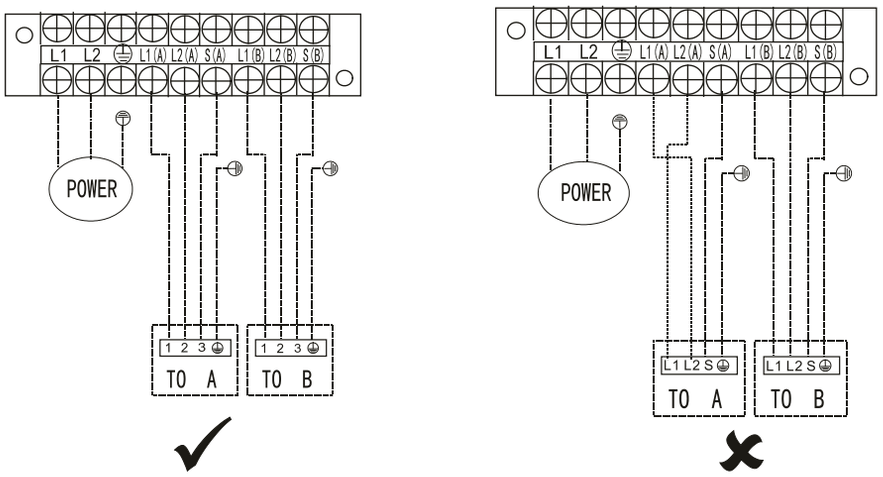
"The equipment M4OB-36HFN8-Q complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to 4787737.5 at the interface point between the user’s supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is con-nected only to a supply with a short-circuit power Ssc greater than or equal to 4787737.5."

"The equipment M5OD-42HFN8-Q complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to 3190042.5 at the interface point between the user’s supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is con-nected only to a supply with a short-circuit power Ssc greater than or equal to 3190042.5."

Wiring Figure

⚠ CAUTION

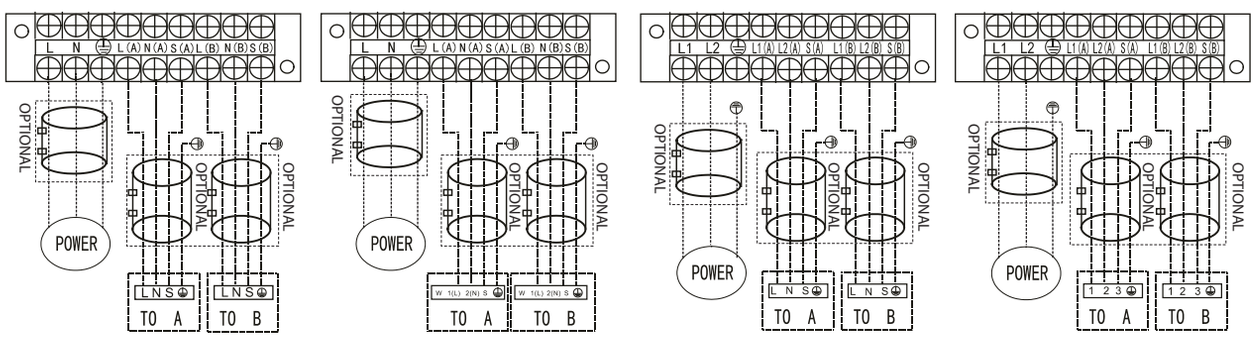
Connect the connective cables to the terminals, as identified, with their matching numbers on the terminal block of the indoor and outdoor units. For example, in the US models shown in the following diagram, Terminal L1(A) of the outdoor unit must connect with terminal L1 on the indoor unit.



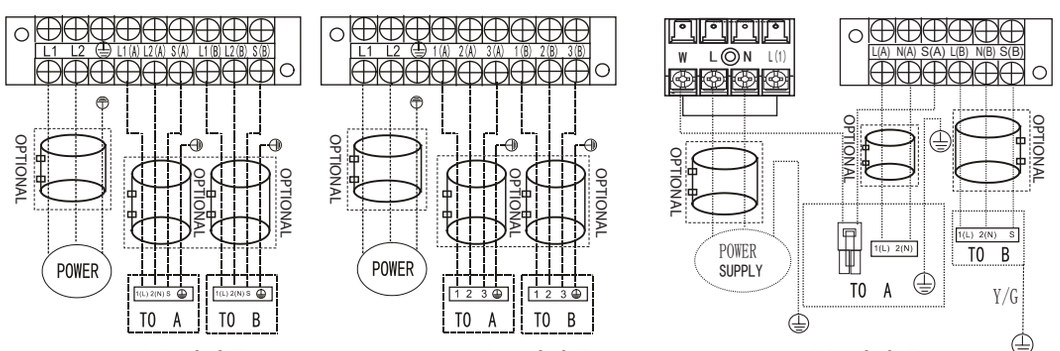
NOTE: Refer to the following figures if end-users wish to perform their own wiring.
Run the main power cord through the lower line-outlet of the cord clamp.
---- This symbol indicates field wiring.

Wiring

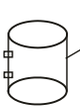
One-two models:



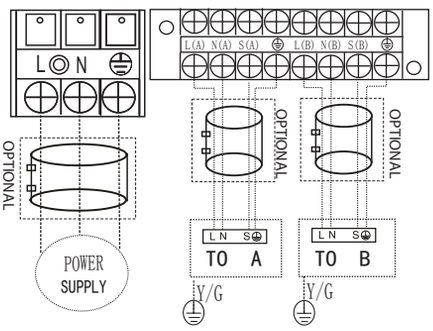
Model A Model B Model C Model D



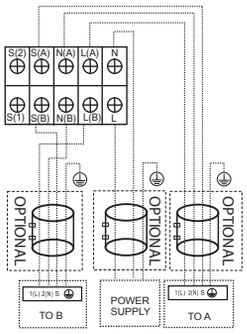
Model E Model F Model G



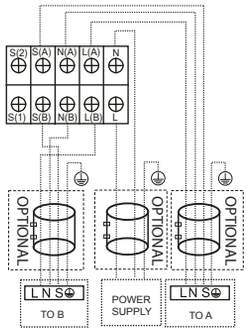
NOTE:Use the magnetic ring (not supplied, optional part) to hitch the connective cable of indoorand outdoor units after installation.One magnetic ring is used for one cable.



Model H



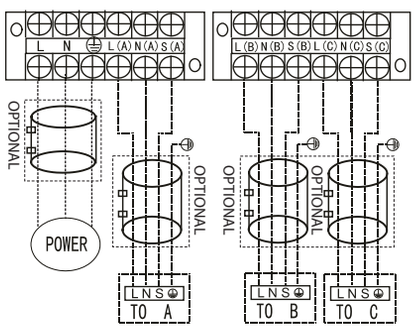
Model I



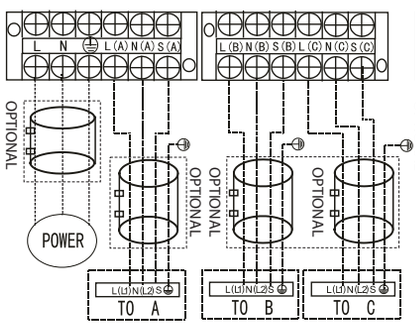
Model J

NOTE: Please refer to the following figures if end-users wish to perform their own wiring.

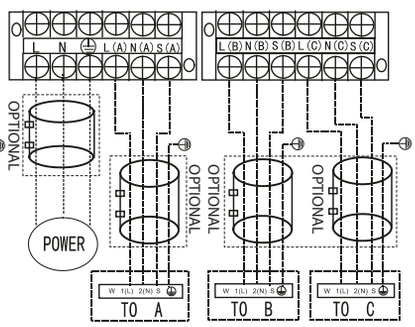
One-three models:



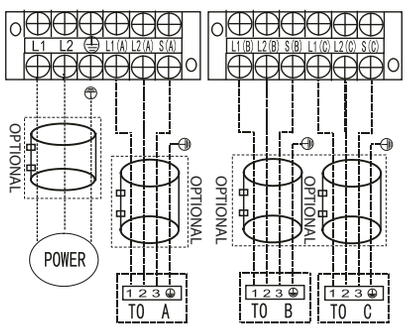
Model A



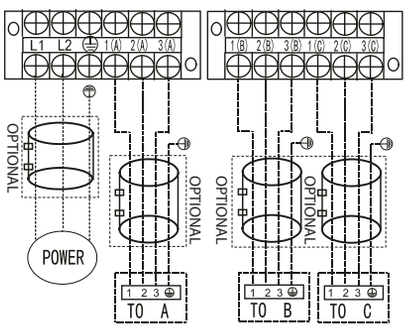
Model B



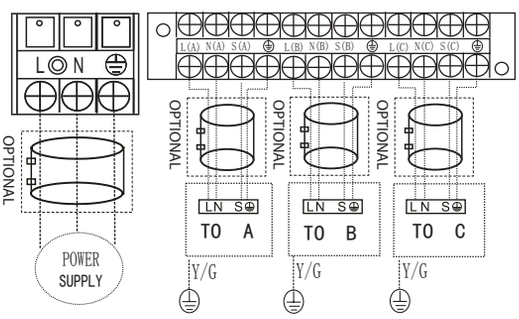
Model C



Model D

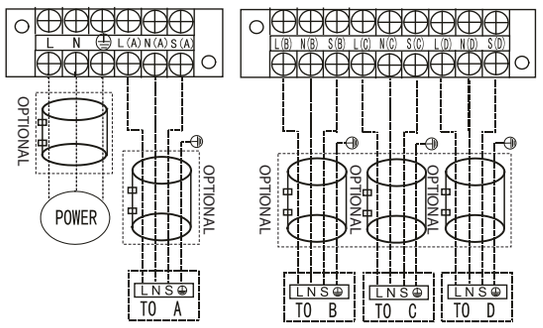


Model E

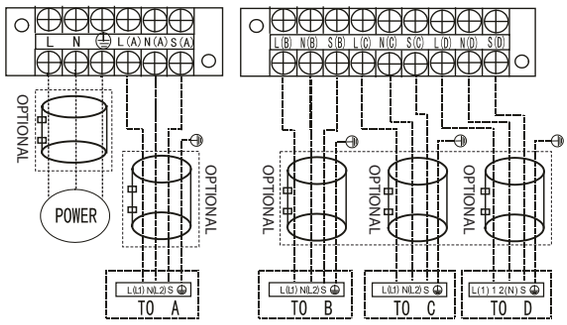


Model F

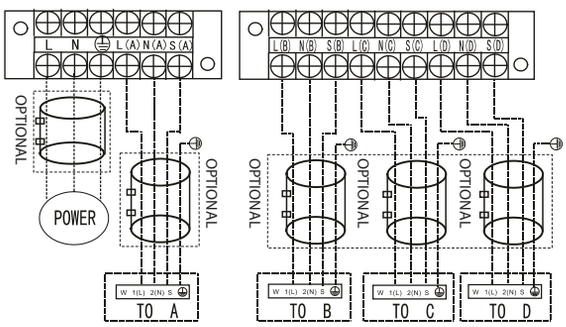
One-four models:



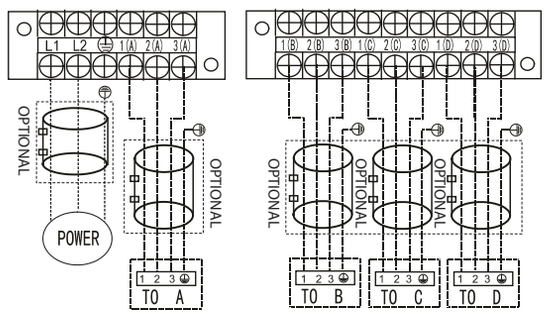
Model A



Model B



Model C



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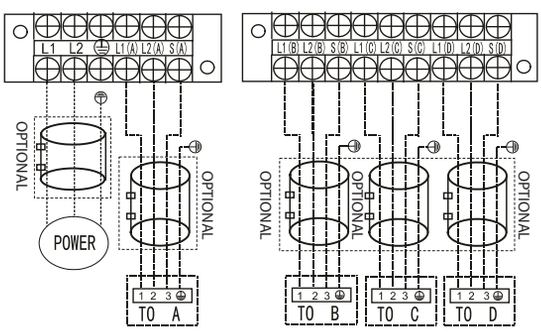
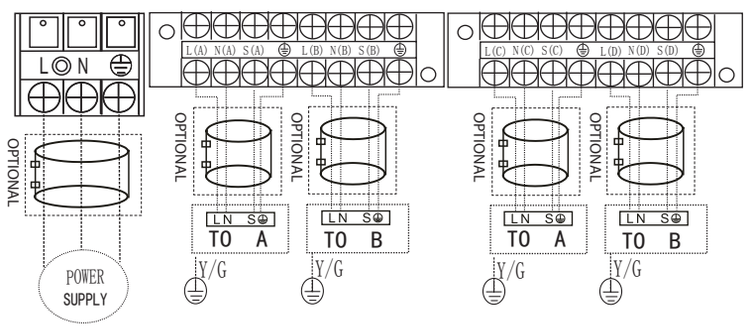
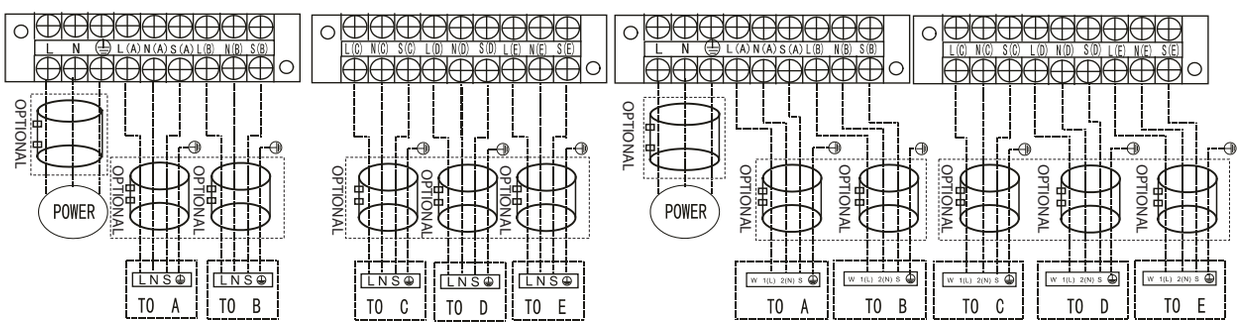


Model E



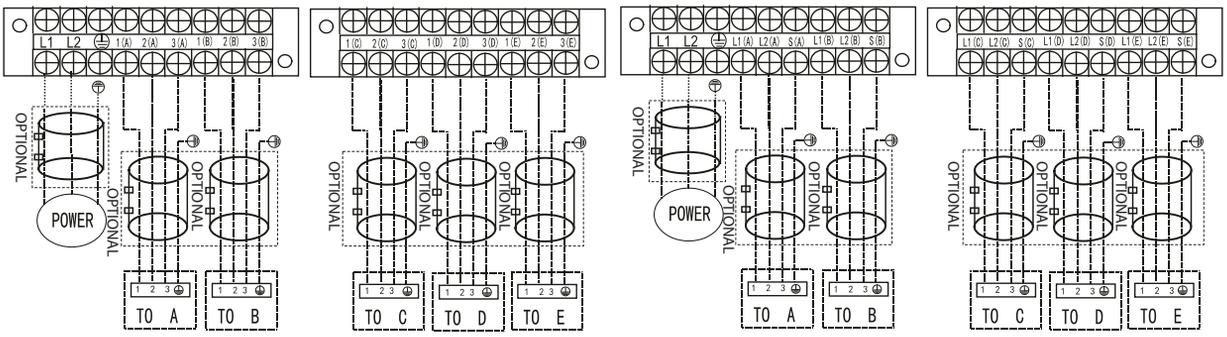
Model F

One-five models:



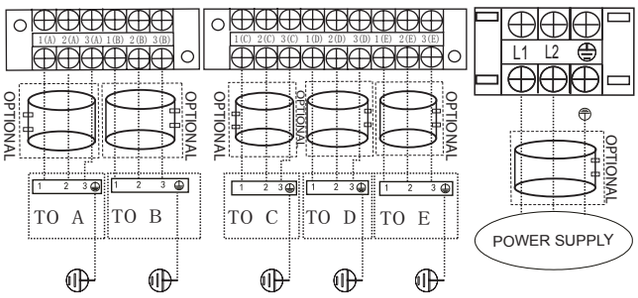
Model A

Model B

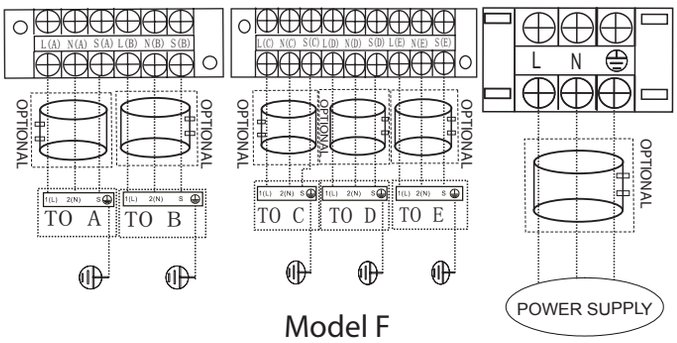


Model C

Model D



Model E



Model F

⚠ CAUTION

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

- Always have an individual power circuit specifically for the air conditioner. 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 transporation. Because loose screws may cause wire burn-ou, check that the screws are tightly fastened.
- Check the specifications for the power source.
- Confirm that electrical capacity is sufficient.
- Confirm that starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- Confirm that the cable thickness is as specified in the power source specifications.
- Always install an earth leakage 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 .118 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 the your equipment .

Please contact your distributor or installer to get further information and purchase magnetic rings (The supplier of magnetic ring is TDK（model ZCAT3035-1330） or similar) .

Air Evacuation

9

Evacuation Instructions

Before using a manifold gauge and a vacuum pump, read their operation manuals to make sure you know how to use them properly.

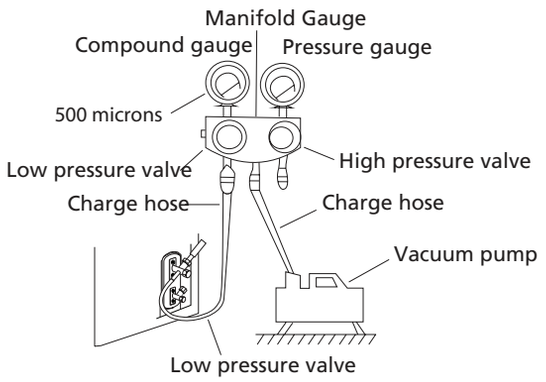


Fig. 9.1

1. Connect the manifold gauge's charge hose to the service port on the outdoor unit's low pressure valve.
2. Connect the manifold gauge's charge hose from the to the vacuum pump.
3. Open the Low Pressure side of the manifold gauge. Keep the High Pressure side closed.
4. Turn on the vacuum pump to evacuate the system.
5. Run the vacuum for at least 15 minutes, or until the Compound Meter reads 500 microns.
6. Close the manifold gauge's Low Pressure valve and turn off the vacuum pump.
7. Wait for 5 minutes, then check that there has been no change in system pressure.

NOTE: If there is no change in system pressure, unscrew the cap from the packed valve (high pressure valve). If there is a change in system pressure, there may be a gas leak.

8. Insert hexagonal wrench into the packed valve (high pressure valve) and open the valve by turning the wrench 1/4 counterclockwise. Listen for gas to exit the system, then close the valve after 5 seconds.

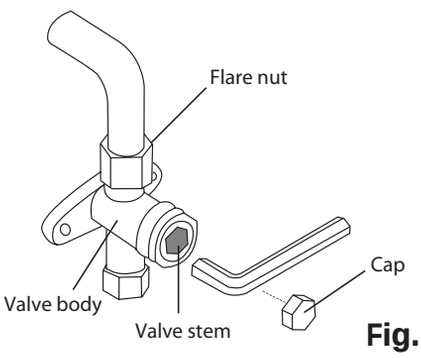


Fig. 9.2

9. Watch the Pressure Gauge for one minute to make sure that there is no change in pressure. It should read slightly higher than the atmospheric pressure.
10. Remove the charge hose from the service port.
11. Using hexagonal wrench, fully open both the high pressure and low pressure valves.

OPEN VALVE STEMS GENTLY

When opening valve stems, turn the hexagonal wrench until it hits against the stopper. **DO NOT** try to force the valve to open further.

12. Tighten valve caps by hand, then tighten it using the proper tool.
13. If the outdoor unit uses all vacuum valves, and the vacuum position is at the main valve, the system is not connected with the indoor unit. The valve must be tightened with a screw nut. Check for gas leaks before operation to prevent leakage.

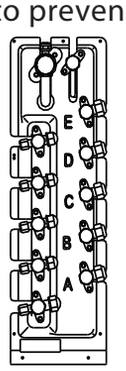


Fig. 9.3

Note On Adding Refrigerant

⚠ CAUTION

- Refrigerant charging must be performed after wiring, vacuuming, and the leak testing.
- **DO NOT** exceed the maximum allowable quantity of refrigerant or overcharge the system. Doing so can damage the unit or impact it's functioning.
- 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 refrigerants types.

N=2(one-twin models), N=3(one-three models), N=4(one-four models), N=5(one-five models). Depending on the length of connective piping or the pressure of the evacuated system, you made need to add refrigerant. Refer to table below for refrigerant amounts to be added:

ADDITIONAL REFRIGERANT PER PIPE LENGTH

Connective Pipe Length(m)	Air Purging Method	Additional Refrigerant	
Pre-charge pipe length (ft/m) (pre-charge pipe length xN)	Vacuum Pump	N/A	
More than (pre-charge pipe lengthxN) ft/m	Vacuum Pump	Liquid Side: Ø 6.35 (Ø 1/4") R410A (Total pipe length - pre-charge pipe lengthxN) x0.16oZ/ft	Liquid Side: Ø 9.52 (Ø 3/8") R410A (Total pipe length - pre-charge pipe lengthxN) x0.32oZ/ft

Note: The pre-charge pipe length is 24.6'.

Test Run

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Before Test Run

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

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

⚠ CAUTION

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

Test Run Instructions

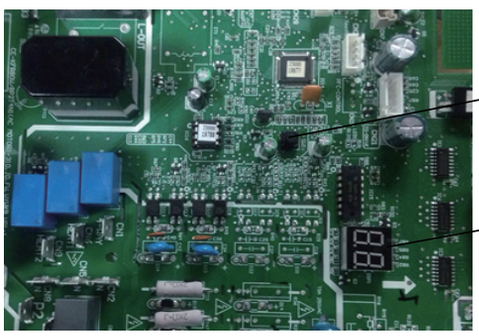
1. Open both the liquid and gas stop valves.
2. Turn on the main power switch and allow the unit to warm up.
3. Set the air conditioner to COOL mode.
4. For the Indoor Unit
   a. Ensure the remote control and its buttons work properly.
   b. Ensure the louvers move properly and can be changed using the remote control.
   c. Double check to see if the room temperature is being registered correctly.
   d. Ensure the indicators on the remote control and the display panel on the indoor unit work properly.
   e. Ensure the manual buttons on the indoor unit works properly.
   f. Check to see that the drainage system is unimpeded and draining smoothly.
   g. Ensure there is no vibration or abnormal noise during operation.
5. For the Outdoor Unit
   a. Check to see if the refrigeration system is leaking.
   b. Make sure there is no vibration or abnormal noise during operation.
   c. Ensure the wind, noise, and water generated by the unit do not disturb your neighbors or pose a safety hazard.

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

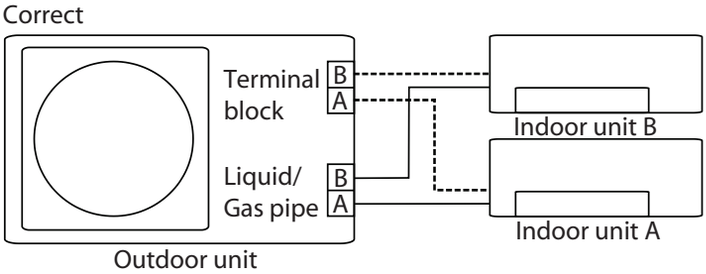
Function of Automatic Wiring/Piping Correction 11

Automatic Wiring/Piping Correction Function

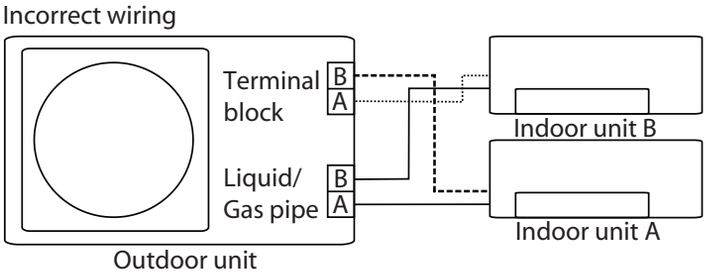
More recent models now feature automatic correction of wiring/piping errors. Press the "check switch" on the outdoor unit PCB board for 5 seconds until the LED displays "CE", indicatomg that this function is working, Approximately 5-10 minutes after the switch is pressed, the "CE" disappears, meaning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



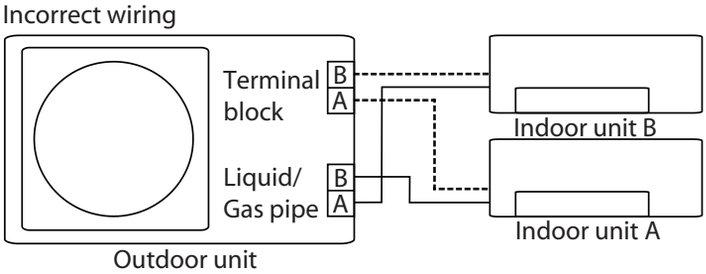
Correct



Incorrect wiring



Incorrect wiring



How To Activate This Function

1. Check that outside temperature is above 41°F.
   (This function does not work when outside temperature is not above 41°F)
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 the check switch on the outdoor PCB board unit LED display "C E".

The design and specifications are subject to change without prior notice for product improvement. Consult with the sales agency or manufacturer for details. Any updates to the manual will be uploaded to the service website, please check for the latest version.