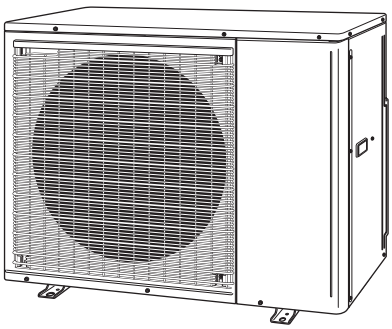
English

Français

Español



DAIKIN ROOM AIR CONDITIONER

INSTALLATION MANUAL

R32 Split Series

INVERTER

Installation manual
Manuel d'installation
Manual de instalación

MODELS

3MXT24AVJU8
3MXTH24AVJU8
4MXT36AVJU8
4MXTH36AVJU8
5MXT40AVJU8
5MXTH40AVJU8
5MXM48AVJU8
3MXT24AVJU9
3MXTH24AVJU9
4MXT36AVJU9
4MXTH36AVJU9
5MXT40AVJU9
5MXTH40AVJU9
5MXM48AVJU9

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The pictures in this document are for illustrative purposes only.

Safety Considerations

Refer also to the General Safety Considerations in the separate booklet.

	**Read the precautions in this manual carefully before operating the unit.**
	**This appliance is filled with R32.**

Read these **Safety Considerations for Installation** carefully before installing an air conditioner or heat pump. After completing the installation, make sure that the unit operates properly during the startup operation.
Instruct the user on how to operate and maintain the unit.
Inform users that they should store this installation manual with the operation manual for future reference.
Always use a licensed installer or contractor to install this product.
Improper installation can result in water or refrigerant leakage, electric shock, fire, or explosion.
Meanings of **DANGER**, **WARNING**, **CAUTION**, and **NOTE** Symbols:

⚠ **DANGER** ····· Indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury.

⚠ **WARNING** ····· Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

⚠ **CAUTION** ····· Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

⚠ **NOTE** ····· Indicates situations that may result in equipment or property damage accidents only.

⚠ **DANGER**

- Refrigerant gas is heavier than air and replaces oxygen. A massive leak can lead to oxygen depletion, especially in basements, and an asphyxiation hazard could occur leading to serious injury or death.
- Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death.
  Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.
- If refrigerant gas leaks during installation, ventilate the area immediately. Refrigerant gas may produce toxic gas if it comes into contact with fire. Exposure to this gas could cause severe injury or death.
- After completing the installation work, check that the refrigerant gas does not leak throughout the system.
- Do not install unit in an area where flammable materials are present due to risk of explosions that can cause serious injury or death.
- Safely dispose all packing and transportation materials in accordance with federal/state/local laws or ordinances. Packing materials such as nails and other metal or wood parts, including plastic packing materials used for transportation may cause injury or death by suffocation.
- All possible ignition sources, including cigarette smoking, should be kept sufficiently far away from the site of installation, repairing, removing and disposal.

⚠ WARNING

- During installation, attach the refrigerant piping securely before operating the compressor. If the refrigerant pipes are not attached and the stop valve is open when the compressor is operated, air will be sucked in, causing abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.
- During pump down, stop the compressor before removing the refrigerant piping. If the compressor is still operating and the stop valve is open during pump down, air will be sucked in when the refrigerant piping is removed, causing abnormal pressure in the refrigeration cycle, which may result in equipment damage and even injury.
- Only qualified personnel licensed or certified in their jurisdiction must carry out the installation work. Installation must be done in accordance with this installation manual. Improper installation may result in water leakage, electric shock, or fire.
- Pipe-work including piping material, pipe routing, and installation shall include protection from physical damage in operation and service, and be in compliance with national and local codes and standards, such as ASHRAE 15, ASHRAE 15.2, IAPMO Uniform Mechanical Code, ICC International Mechanical Code, or CSA B52. All field joints shall be accessible for inspection prior to being covered or enclosed.
- When installing the unit in a small room, take measures to keep the refrigerant concentration from exceeding allowable safety limits. Excessive refrigerant leaks, in the event of an accident in a closed ambient space, can lead to oxygen deficiency.
- Use only specified accessories and parts for installation work. Failure to use specified parts may result in water leakage, electric shock, fire, or the unit falling.
- Install the air conditioner or heat pump on a foundation strong enough that it can withstand the weight of the unit. A foundation of insufficient strength may result in the unit falling and causing injury.
- Take into account strong winds, typhoons, or earthquakes when installing. Improper installation may result in the unit falling and causing accidents.
- The unit must have an uninterrupted, unbroken electrical ground to minimize the possibility of personal injury if an electrical fault should occur.
  The electrical ground circuit may consist of an appropriately sized electrical wire connecting the ground lug in the unit and control box wire to the building's electrical service panel.
  Other methods of grounding are permitted if performed in accordance with the "National Electrical Code" (NEC)/ "American National Standards Institute" (ANSI)/ "National Fire Protection Association" (NFPA) 70 and local/state codes.
  In CANADA, electrical grounding is to be in accordance with the Canadian Electrical Code CSA C22.1.
  Failure to observe this warning can result in electrical shock that can cause personal injury or death.
- Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel licensed or certified in their jurisdiction according to local, state, and national regulations. An insufficient power supply capacity or improper electrical construction may lead to electric shock or fire.
- Make sure that all wiring is secured, that specified wires are used, and that no external forces act on the terminal connections or wires. Improper connections or installation may result in fire.
- When wiring, position the wires so that the protection plates can be securely fastened. Improper positioning of the protection plates may result in electric shock, fire, or the terminals overheating.
- Before touching electrical parts, turn off the unit.
- The circuit must be protected with safety devices in accordance with local and national codes, i.e. a circuit breaker.
- Securely fasten the outdoor unit outer plates. If the outer plates are not installed properly, dust or water may enter the outdoor unit causing fire or electric shock.
- When installing or relocating the system, keep the refrigerant circuit free from substances other than the specified refrigerant (R32) such as air. Any presence of air or other foreign substance in the refrigerant circuit can cause an abnormal pressure rise or rupture, which may result in equipment damage and even injury.
- Do not change the setting of the protection devices. If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by Daikin are used, fire or explosion may occur.
- Do not use means to accelerate the defrosting process (if possible) or to clean, other than those recommended by the manufacturer.
- The appliance must be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater).
- Do not pierce or burn.
- Be aware that refrigerants may not contain an odor.
- Comply with national gas regulations.
- The indoor equipment and pipes shall be securely mounted and guarded such that accidental rupture of equipment cannot occur from such events as moving furniture or reconstruction activities.

⚠ CAUTION

- While following the instructions in this installation manual, install drain piping to ensure proper drainage and insulate the piping to prevent condensation. Improper drain piping may result in indoor water leakage and property damage.
- The refrigerant circuit temperature will be high, therefore the inter-unit wires must be kept away from copper pipes that are not thermally insulated.
- Do not touch the switch with wet fingers. Touching a switch with wet fingers can cause electric shock.
- Do not allow children to play on or around the unit to prevent injury.
- Wear adequate personal protective equipment (protective gloves, safety glasses,…) when installing, maintaining or servicing the system.
- The heat exchanger fins are sharp enough to cut. To avoid injury, wear gloves or cover the fins while working around them.

Safety Considerations

- Do not touch the refrigerant pipes during and immediately after operation as the refrigerant pipes may be hot or cold, depending on the condition of the refrigerant flowing through the refrigerant piping, compressor, and other refrigerant cycle parts. Your hands may suffer burns or frostbite if you touch the refrigerant pipes. To avoid injury, give the pipes time to return to normal temperature or, if you must touch them, be sure to wear proper gloves.
- Be careful when transporting the product.
- Do not turn off the power immediately after stopping operation. Always wait for at least 5 minutes before turning off the power. Otherwise, water leakage may occur.
- Do not use a charging cylinder. Using a charging cylinder may cause the refrigerant to deteriorate.
- Refrigerant R32 in the system must be kept clean, dry, and tight.

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

  (b) Tight -- R32 does not contain any chlorine, does not destroy the ozone layer, and does not reduce the earth's protection again harmful ultraviolet radiation. R32 can contribute to the greenhouse effect if it is released.
  Therefore take proper measures to check for the tightness of the refrigerant piping installation. Read the chapter *Refrigerant piping* and follow the procedures.
- The outdoor unit is for R32. See the catalog for indoor models that can be connected. Normal operation is not possible when connected to non-compatible indoor units.
- Remote controller (wireless kit) transmitting distance can be shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types). Install the indoor unit far away from fluorescent lamps as much as possible.
- Indoor units are for indoor installation only. Outdoor units can be installed either outdoors or indoors.
- Do not install the air conditioner or heat pump in the following locations:

  (a) Where a mineral oil mist or oil spray or vapor is produced, for example, in a kitchen.
  Plastic parts may deteriorate and fall off or result in water leakage.

  (b) Where corrosive gas, such as sulfurous acid gas, is produced.
  Corroding copper pipes or soldered parts may result in refrigerant leakage.

  (c) Near machinery emitting electromagnetic waves.
  Electromagnetic waves may disturb the operation of the control system and cause the unit to malfunction.

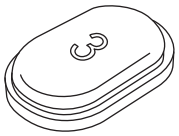
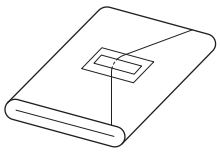
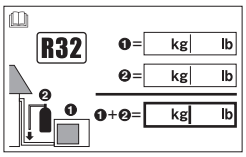
  (d) Where flammable gas may leak, where there is carbon fiber, or ignitable dust suspension in the air, or where volatile flammables such as thinner or gasoline are handled. Operating the unit in such conditions can cause a fire.
- Take adequate measures to prevent the outdoor unit from being used as a shelter by small animals. Small animals making contact with electrical parts can cause malfunctions, smoke, or fire. Instruct the user to keep the area around the unit clean.
- Servicing shall be performed only as recommended by the manufacturer and licensed or certified in their jurisdiction.

⚠ NOTE

- The outdoor unit should be positioned where the unit and power supply wires (breaker panel to outdoor unit) are at least 10ft (3m) away from any televisions or radios. (The unit may cause interference with the picture or sound.) Depending on the radio waves, a distance of 10ft (3m) may not be sufficient to eliminate the noise.
- Dismantling the unit, treatment of the refrigerant, oil and additional parts must be done in accordance with the relevant local, state, and national regulations.
- Only use tools for R32 or R410A, such as a gauge manifold, charge hose, gas leak detector, reverse flow check valve, refrigerant charge base, vacuum gauge, or refrigerant recovery equipment.
- If the conventional refrigerant and refrigerator oil are mixed in R32, the refrigerant may deteriorate.
- This air conditioner or heat pump is an appliance that should not be accessible to the general public.
- As maximum allowable pressure is 604psi (4.17MPa), the wall thickness of field-installed pipes should be selected in accordance with the relevant local, state, and national regulations.

RN009(R32)-U

Accessories

Ⓐ Installation manual	1	Ⓑ Drain socket 	1
Ⓒ Drain socket cap 	1	Ⓓ Drain plug 	9
Ⓔ Reducer assy  Actual component included varies by model.	1	Ⓗ Refrigerant charge label  Affix near the manufacturer's label.	1
Ⓕ Warranty	1		
Ⓖ General Safety Considerations	1		

Precautions for Selecting a Location

1) Choose a place solid enough to bear the weight and vibration of the unit, where the operating sound will not be amplified.
2) Choose a location where the air discharged from the unit or the operating sound will not cause a nuisance to the neighbors of the user.
3) Avoid locations, such as near bedrooms, where the operating sound may cause disturbance.
4) There must be sufficient space to carry the unit into and out of the site.
5) There must be sufficient space for air passage and no obstructions around the air inlet and the air outlet.
6) In coastal areas or other places with a salty atmosphere or one containing sulfate gas, corrosion may shorten the life of the air conditioner.
7) Since water will flow from the drain of the outdoor unit, do not place anything under the unit which must be kept away from moisture.
8) A location where flammable gas does not leak. Position at least 6-5/8ft (2m) from propane gas cylinders.

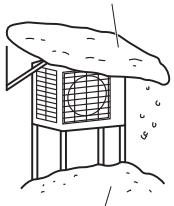
NOTE
Cannot be installed suspended from a ceiling or stacked.

⚠ CAUTION

When operating the air conditioner in a low outdoor ambient temperature, be sure to follow the instructions described below.

- To prevent exposure to wind, install the outdoor unit with its suction side facing the wall.
- Never install the outdoor unit at a site where the suction side may be exposed directly to wind.
- To prevent exposure to wind, it is recommended to install a baffle plate on the air discharge side of the outdoor unit.
- In heavy snow areas, select an installation site where the snow will not affect the unit.
- If there is a likelihood of snow accumulating on the outdoor unit, attach a snow protection hood.
- In high humidity areas or heavy snow areas, it is recommended to attach a drain pan heater (sold separately) to prevent ice build-up from the bottom frame.

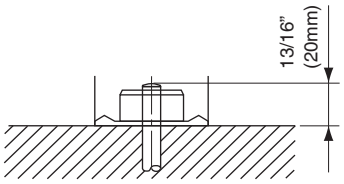
• Construct a large canopy.
• Construct a pedestal.



Install the unit high enough off the ground to prevent burying in snow.

Precautions on Installation

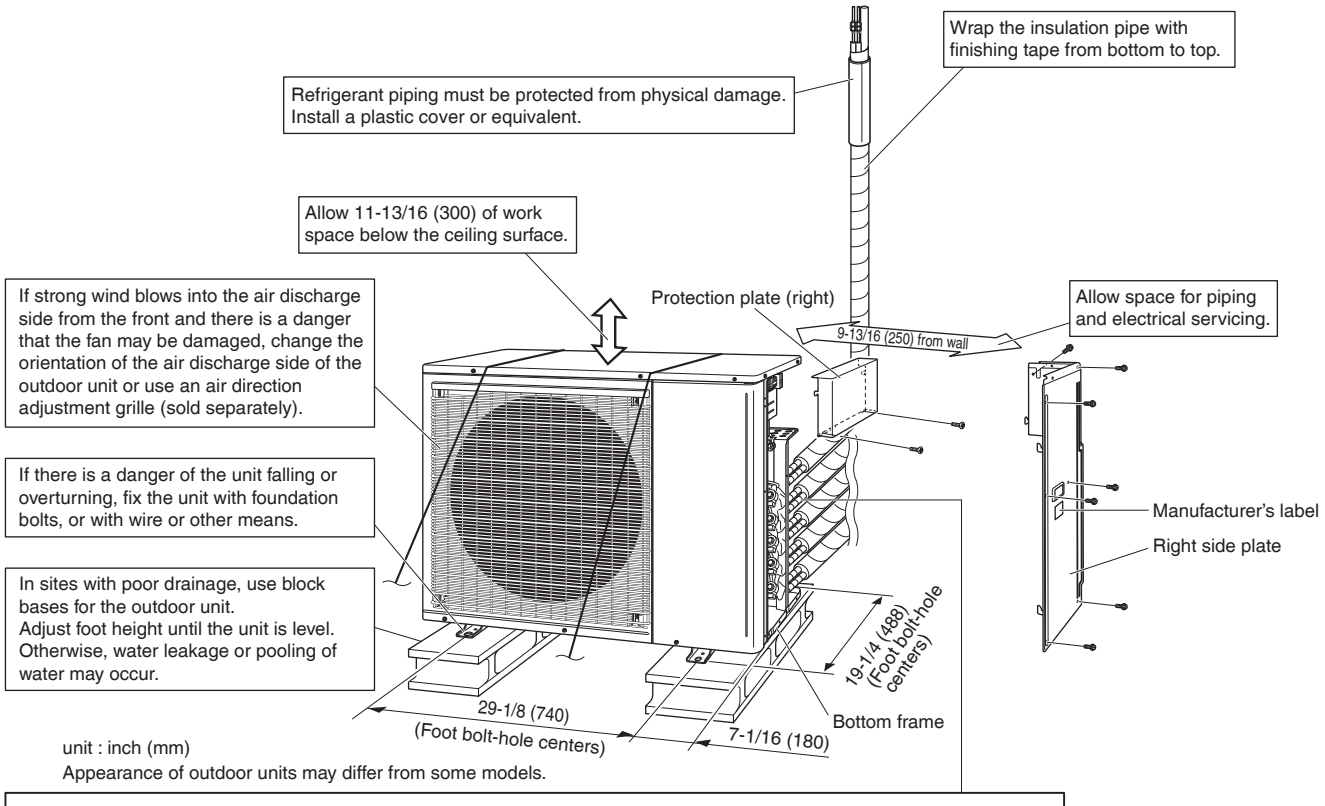
- Check the strength and level of the installation surface so that the unit does not cause any operating vibrations or noise after installation.
- Fix the unit in place securely using foundation bolts, as in the figure. (Prepare 4 sets of 1/2 inch (M12) foundation bolts, nuts and washers.)
- It is best to screw in the foundation bolts until their ends are 13/16 inch (20mm) from the foundation surface.



Outdoor Unit Installation Diagram

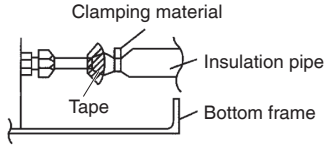
⚠ CAUTION

- Do not connect the embedded branch piping and the outdoor unit when only carrying out piping work without connecting the indoor unit in order to add another indoor unit later.
  Make sure no dirt or moisture gets into either side of the embedded branch piping.
  Refer to **"4. Refrigerant piping"** on page 10 for details.
- It is not possible to have only 1 indoor unit connected. **Be sure to connect at least 2 indoor units.**



unit : inch (mm)
Appearance of outdoor units may differ from some models.

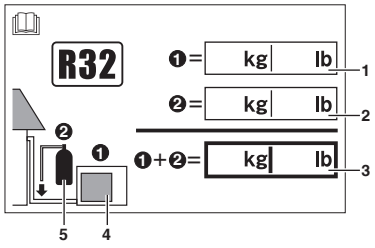
Also insulate the connection on the outdoor unit.



Use tape or clamping material on all connections to prevent air from getting in between the copper piping and the insulation pipe.
Be sure to do this if the outdoor unit is installed at a higher elevation than any of the indoor units connected to it.

Refrigerant charge label

Please fill in with indelible ink,
■❶ the factory refrigerant charge of the product,
■❷ the additional refrigerant amount charged in the field and
■❶ + ❷ the total refrigerant charge
on Ⓗ refrigerant charge label.
Affix Ⓗ refrigerant charge label near the manufacturer's label after filling it out.

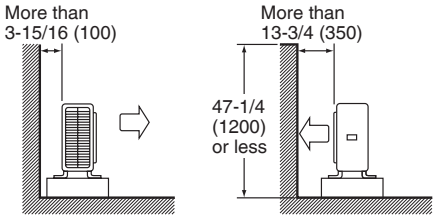


1 factory refrigerant charge of the product: see unit manufacturer's label
2 additional refrigerant amount charged in the field
3 total refrigerant charge
4 outdoor unit
5 refrigerant cylinder and manifold for charging

Installation Space Requirements

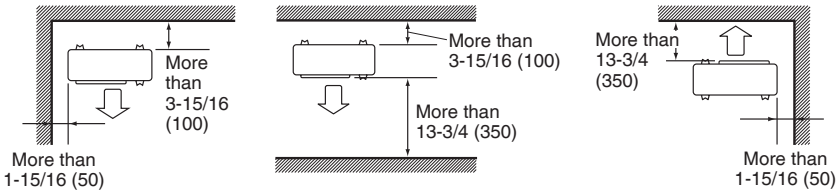
- Position the unit on a horizontal surface. Any tilt in the unit should be 3° or less to the horizontal.
- Where a wall or other obstacle is in the path of outdoor unit's intake or exhaust airflow, follow the installation space requirements below.
- For any of the below installation patterns, the wall height on the outlet side should be 47-1/4 inch (1200mm) or less.
- Secure as much installation space around the unit as the location allows, as more space will result in more efficient operation.

Wall facing one side



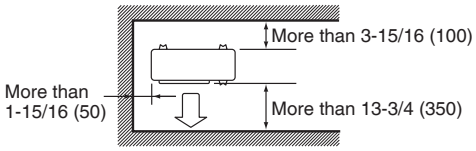
Side view

Walls facing two sides



Top view

Walls facing three sides



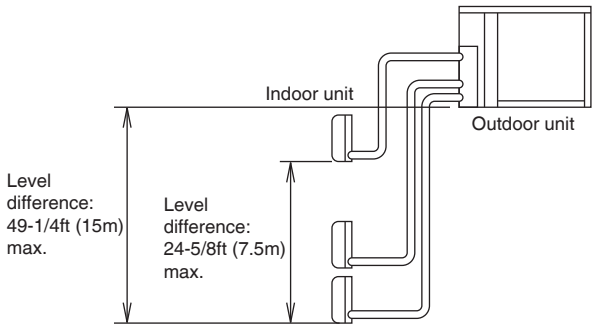
Top view unit: inch (mm)

When installed as in the figure on the left, it is recommended to either change the orientation of the outdoor unit outlet side or use the air direction adjustment grille (sold separately).

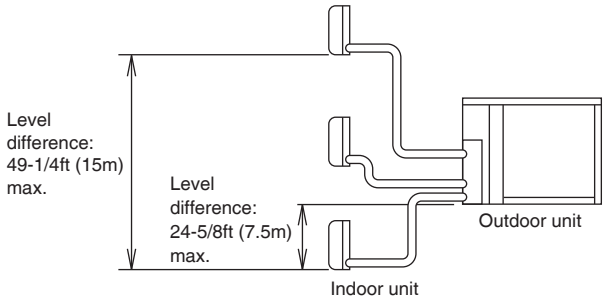
Selecting a Location for Installation of the Indoor Units

- The maximum allowable length of refrigerant piping, and the maximum allowable height difference between the outdoor and indoor units, are listed below.
- Refrigerant piping must be kept to a minimum.
  The suggested shortest pipe length per room is 10ft (3m), in order to avoid noise from the outdoor unit and vibration. (Mechanical noise and vibration may occur depending on how the unit is installed and the environment in which it is used.)
- **The minimum required floor area of the room where the indoor unit is installed varies depending on the installation height and refrigerant amount. For details, refer to the General Safety Considerations supplied with the indoor unit.**

Outdoor unit capacity class	3MXT*	4MXT*	5MXT*/5MXM*
Piping to each indoor unit	82ft (25m) max. 10ft (3m) min.	98ft (30m) max. 10ft (3m) min.	
Total length of piping between all units	230ft (70m) max.		262ft (80m) max.



If the outdoor unit is positioned higher than the indoor units.



If the outdoor unit is positioned lower than one or more indoor units.

Connections (connection port)

Install the indoor unit according to the table below, which shows the relationship between the class of indoor unit and the corresponding port.
The total indoor unit class that can be connected to this unit:

3MXT∗ – Up to 39000 Btu/h
4MXT∗ – Up to 48000 Btu/h
5MXT∗ – Up to 54000 Btu/h
5MXM∗ – Up to 58000 Btu/h

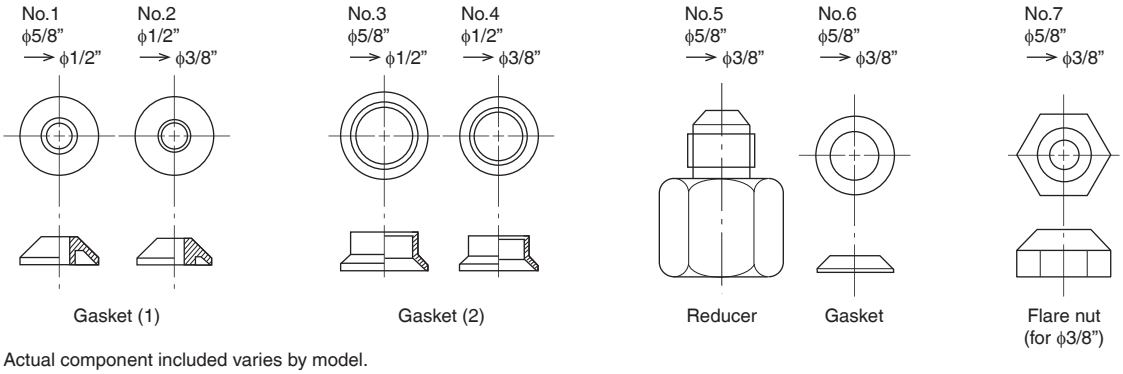
The line set piping size is determined by the size of the indoor unit fittings.
Ⓔ Reducer assy is used at the outdoor unit to accommodate the correct gas line pipe size.

Port	3MXT∗	4MXT∗	5MXT∗/5MXM∗
A	07 , 09 , 12	07 , 09 , 12	07 , 09 , 12
B	#(07), #(09), #(12), 15 , 18	#(07), #(09), #(12), 15 , 18	#(07), #(09), #(12), 15 , 18
C	#(07), #(09), #(12), 15 , 18	#(07), #(09), #(12), 15 , 18	#(07), #(09), #(12), 15 , 18
D	———	△(07), △(09), △(12), □(15), □(18), 24	△(07), △(09), △(12), □(15), □(18), 24
E	———	———	△(07), △(09), △(12), □(15), □(18), 24

( ) : Use Ⓔ reducer assy to connect pipes.
□ : Use No. 1 and 3.
: Use No. 2 and 4.
△ : Use No. 5, 6 and 7.

Refer to “**How to Use Reducer assy**” on page 8 for information on reducer numbers and their shapes.

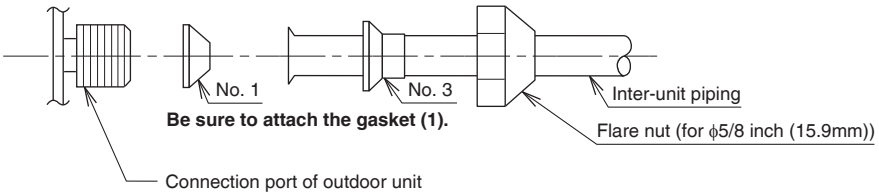
How to Use Reducer assy



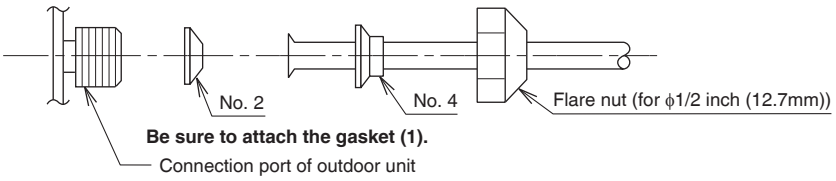
Actual component included varies by model.

• Use Ⓔ reducer assy as described below.

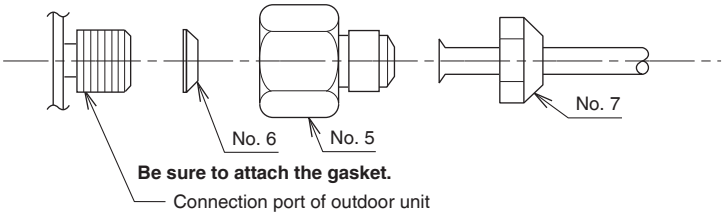
(1) Connecting a pipe of ϕ1/2 inch (12.7mm) to a gas pipe connection port for ϕ5/8 inch (15.9mm) :



(2) Connecting a pipe of ϕ3/8 inch (9.5mm) to a gas pipe connection port for ϕ1/2 inch (12.7mm) :



(3) Connecting a pipe of ϕ3/8 inch (9.5mm) to a gas pipe connection port for ϕ5/8 inch (15.9mm) :



- When using Ⓔ reducer assy shown above, be careful not to overtighten the nut, or the smaller pipe may become damaged. (Apply about 2/3 to 3/3 the normal torque.)
- Use an appropriate wrench to avoid damaging the connection thread by overtightening the flare nut.

Piping size	Flare nut tightening torque
O.D. ϕ3/8 inch (9.5mm)	24-1/8 – 29-3/8lbf • ft (32.7-39.9N • m)
O.D. ϕ1/2 inch (12.7mm)	36-1/2 – 44-1/2lbf • ft (49.5-60.3N • m)
O.D. ϕ5/8 inch (15.9mm)	45-5/8 – 55-5/8lbf • ft (61.8-75.4N • m)

Outdoor Unit Installation

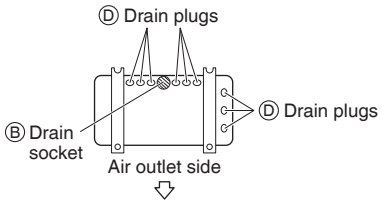
1. Installing the outdoor unit

- When installing the outdoor unit, refer to "**Precautions for Selecting a Location**" on page 4 and "**Outdoor Unit Installation Diagram**" on page 5.
- If drain work is necessary, follow the procedures below.

2. Drain work

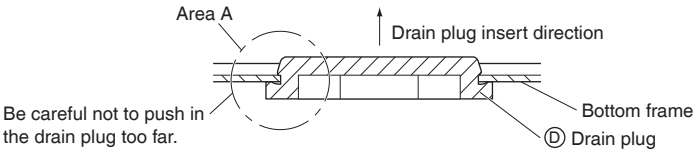
⚠CAUTION

- In cold areas, do not use a drain socket, drain plugs, a drain socket cap and a drain hose with the outdoor unit. (Drain water may freeze, impairing heating performance.)



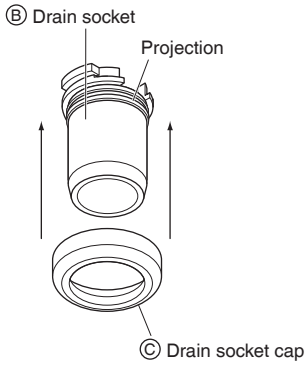
- If the drain port is covered by a mounting base or floor surface, place additional foot bases of at least 3-15/16 inch (100mm) in height under the outdoor unit's feet.

1) Insert the Ⓓ drain plug into the bottom frame until it is flush with the bottom frame around the entire circumference, as shown in area A.

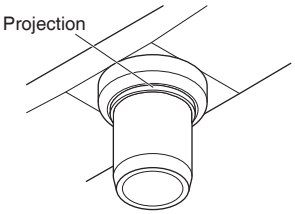


2) Insert Ⓒ drain socket cap onto Ⓑ drain socket beyond the projection around Ⓑ drain socket.
3) Insert Ⓑ drain socket into the matching drain hole.
After insertion, turn it about 40° clockwise.

NOTE
Check that Ⓒ drain socket cap is correctly engaged with the projection of Ⓑ drain socket. Otherwise, water leakage may result.



4) Connect the drain hose (field supplied; internal diameter of 1 inch (25mm)) to Ⓑ drain socket.
(Ensure there are no bends in the hose if it is too long or hangs down.)
5) Make sure the Ⓓ drain plugs and the Ⓑ drain socket of the outdoor unit are securely inserted and there is no leakage.



3. Flaring the pipe end

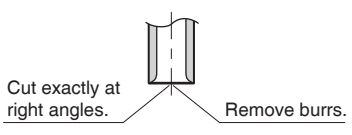
⚠WARNING

- Do not apply mineral oil to the flare.
- Prevent mineral oil from getting into the system as this would reduce the service life of the units.
- Never use piping which has been used for previous installations. Only use parts which are delivered with the unit.
- Never install a dryer to this R32 unit in order to guarantee its service life.
- The drying material may dissolve and damage the system.
- Improper flaring may result in refrigerant gas leakage.

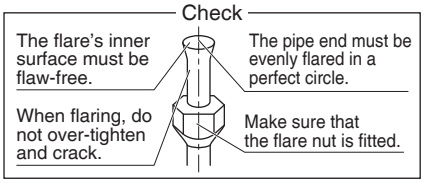
⚠CAUTION

Do not reuse joints which have been used once already.

1) Cut the pipe end with a pipe cutter.
2) Remove burrs with the cut surface facing downward so that the filings do not enter the pipe.
3) Put the flare nut on the pipe.
4) Flare the pipe.
5) Check that the flaring has been done correctly.

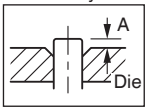


Check



Flaring

Set exactly at the position shown below.



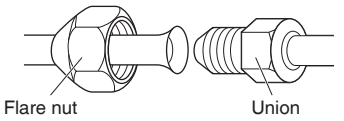
	Flare tool for R32 or 410A	Conventional flare tool	
	Clutch-type	Clutch-type (Rigid-type)	Wing-nut type (Imperial-type)
A	0-0.020 inch (0-0.5mm)	0.039-0.059 inch (1.0-1.5mm)	0.059-0.079 inch (1.5-2.0mm)

4. Refrigerant piping

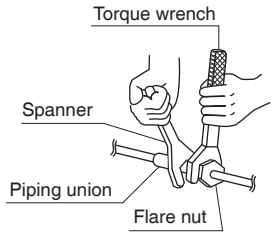
⚠CAUTION

- Use the flare nut fixed to the main unit. (This is to prevent the flare nut from cracking as a result of deterioration over time.)
- Use a torque wrench when tightening the flare nuts to prevent damage to the flare nuts and gas leakage.
- Excessive tightening of the flare nut can result in the flare nut cracking in the long term, leading to gas leakage.

- For refrigerant pipe connections, align the center of the flare and the union, tighten the flare nut 3 to 4 turns by hand, and then use a torque wrench and a spanner to firmly tighten to the specified torque.



Do not apply refrigeration oil, gas leak prevention agent, etc., to the outer surface of the flare or threads (flare nut, union).
(May result in cracking of the flare nut or damage to the threads)



Tightening torque

Piping connection

Flare nut			
Gas side			Liquid side
3/8 inch (9.5mm)	1/2 inch (12.7mm)	5/8 inch (15.9mm)	1/4 inch (6.4mm)
24-1/8 – 29-3/8lbf • ft (32.7-39.9N • m)	36-1/2 – 44-1/2lbf • ft (49.5-60.3N • m)	45-5/8 – 55-5/8lbf • ft (61.8-75.4N • m)	10-1/2 – 12-5/8lbf • ft (14.2-17.2N • m)

Valve cap

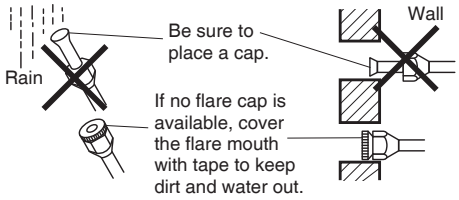
Width across flats	
3/4 inch (19mm)	7/8 inch (22mm)
12-5/8 – 15-3/8lbf • ft (17.1-20.9N • m)	16-1/4 – 19-7/8lbf • ft (22.1-26.9N • m)

Service port cap

7-7/8 – 10-7/8lbf • ft (10.7-14.7N • m)

Cautions on pipe handling

- Protect the open end of the pipe from dust and moisture.
- All pipe bends should be as gentle as possible. Use a pipe bender for bending.



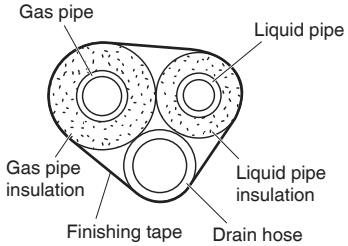
Selection of copper and heat insulation materials

When using commercial copper pipes and fittings, observe the following:

- Insulation material: Polyethylene foam
  Heat transfer rate: 0.041 to 0.052W/mK (0.024 to 0.030Btu/fth°F) (0.035 to 0.045kcal/mh°C)
  Be sure to use insulation that is designed for use with HVAC Systems.
- ACR Copper only.
- Be sure to insulate both the gas and liquid piping and observe the insulation dimensions as below.

	Piping size	Minimum bend radius	Piping thickness	Thermal insulation size	Thermal insulation thickness
Gas side	O.D. 3/8 inch (9.5mm)	1-3/16 inch (30mm) or more	0.031 inch (0.8mm) (C1220T-O)	I.D. 15/32-19/32 inch (12-15mm)	13/32 inch (10mm) Min.
	O.D. 1/2 inch (12.7mm)	1-9/16 inch (40mm) or more		I.D. 9/16-5/8 inch (14-16mm)	
	O.D. 5/8 inch (15.9mm)	1-15/16 inch (50mm) or more	0.039 inch (1.0mm) (C1220T-O)	I.D. 5/8-13/16 inch (16-20mm)	
Liquid side	O.D. 1/4 inch (6.4mm)	1-3/16 inch (30mm) or more	0.031 inch (0.8mm) (C1220T-O)	I.D. 5/16-13/32 inch (8-10mm)	

- Use separate thermal insulation pipes for gas and liquid refrigerant pipes.
- Using finishing tape, bundle and wrap the indoor unit piping and drain hose together so that the drain hose is below the other piping.



Outdoor Unit Installation

5. Pressure test and evacuating system

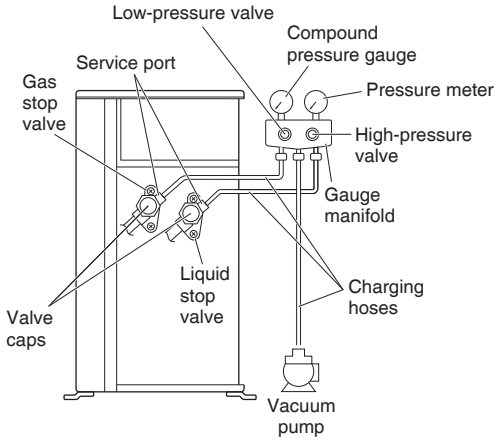
⚠ WARNING

- Make sure that air or any matter other than refrigerant (R32) does not get into the refrigeration cycle.
- If refrigerant gas leaks should occur, ventilate the room as soon and as much as possible.
- R32, as well as other refrigerants, should always be recovered and never be released directly into the environment.
- **Use tools for R32 or R410A (such as the gauge manifold, charging hose, or vacuum pump adapter).**

⚠ CAUTION

Do not open/close the stop valves when the outdoor temperature is –5°F (–21°C) or less, as this may result in refrigerant leakage.

- When piping work is complete, it is necessary to perform a pressure test and evacuate system with a vacuum pump.
- If using additional refrigerant, purge the air from the refrigerant pipes and indoor unit using a vacuum pump, then charge additional refrigerant.
- Use a hexagonal wrench (3/16 inch (4mm)) to operate the stop valve rods.
- All refrigerant pipe joints should be tightened with a torque wrench to the specified tightening torque.



1) Pressurize the liquid pipe and gas pipe from the service ports of each stop valve to 604psi (4.17MPa) (do not pressurize more than 604psi (4.17MPa)) for 1 hour minimum, 24 hours recommended. If there is a pressure drop, check for leaks, make repairs and perform the pressure test again.
2) Connect the gauge manifold's charging hoses to the service ports of each stop valve.
3) Fully open the low-pressure valve (Lo) and the high-pressure valve (Hi) on the gauge manifold.
4) Evacuate system using vacuum pump to below 500 microns for 1 hour minimum.
5) Close the low-pressure valve (Lo) and the high-pressure valve (Hi) on the gauge manifold and stop vacuum pump. (Maintain this condition for 4-5 minutes to make sure that the compound pressure gauge pointer does not swing back.)*1
6) Remove the valve caps from the liquid stop valve and gas stop valve.
7) To open the liquid stop valve, turn the rod of the valve 90° counter-clockwise using a hexagonal wrench. Close it after 5 seconds, and check for gas leakage. Using soapy water, check for gas leakage from the indoor unit's flare and outdoor unit's flare and valve rods. After the check is complete, wipe all soapy water off*2.
8) Disconnect the charging hoses from the service ports, then fully open the liquid and gas stop valves. (Do not attempt to turn the valve rods further than they can go.)
9) Tighten the valve caps and service port caps for the liquid and gas stop valves with a torque wrench to the specified torques. Refer to **"4. Refrigerant piping"** on page 10 for details.

*1 If the compound pressure gauge pointer swings back, the refrigerant pipes may contain water or there may be a loose pipe joint. Check all pipe joints and retighten nuts as needed, then repeat steps 3) through 5).

*2 **Under no circumstances shall potential sources of ignition be used in the searching for or detection of refrigerant leaks. A halide torch (or any other detector using a naked flame) shall not be used. Do not use substances containing chlorine and electronic leak detection for gas leak detection.**

6. Charging with refrigerant

⚠CAUTION

Even though the stop valve is fully closed, the refrigerant may slowly leak out; do not leave the flare nut removed for a long period of time.

- If the total length of piping for all rooms exceeds the figure listed below, additionally charge with 0.22oz/ft (20g/m) of refrigerant (R32) for each additional piping length.
  Be sure to add the proper amount of additional refrigerant.
  Failure to do so may result in reduced performance.

Outdoor unit capacity class	3MXT∗, 4MXT∗, 5MXT∗, 5MXM∗
Total length of piping for all rooms	131-1/4ft (40m)

Wiring

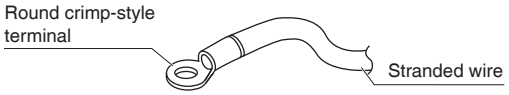
⚠ WARNING

- **RISK OF ELECTRIC SHOCK CAUSE INJURY OR DEATH.**
  System contains oversize protective earthing (grounding) terminal which shall be properly connected.
- Do not ground units to water pipes, gas pipes, telephone wires, or lightning rods as incomplete grounding can cause a severe shock hazard resulting in severe injury or death.
  Additionally, grounding to gas pipes could cause a gas leak and potential explosion causing severe injury or death.
- Do not use tapped wires, extension cords, or starburst connections, as they may cause overheating, electric shock, or fire.
- Do not use locally purchased electrical parts inside the product. (Do not branch the power for the drain pump, etc., from the terminal block.) Doing so may cause electric shock or fire.
- The circuit must be protected with safety devices in accordance with local and national codes, i.e. a circuit breaker.
- Use an all-pole disconnection type circuit breaker with at least 1/8 inch (3mm) between the contact point gaps.
- When carrying out wiring, take care not to pull at the conduit.
- Do not connect the power wire to the indoor unit. Doing so may cause electric shock or fire.
- Do not turn on the circuit breaker until all work is completed.

⚠ CAUTION

Precautions to be taken for wiring

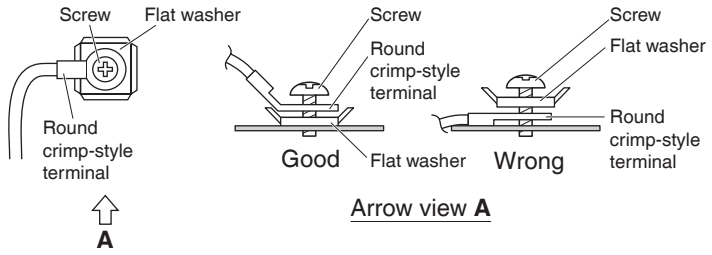
- Recommend stranded cable for interunit wiring. Local code always supersedes recommendation.
- For stranded wires, make sure to use the round crimp-style terminal.
  Place the round crimp-style terminals on the wires up to the covered part and secure in place.



Ground terminal installation

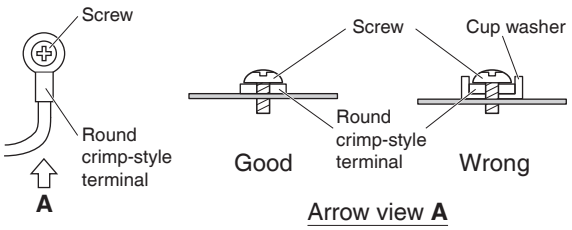
1) Use the following method when installing a round crimp-style terminal.

When connecting to ground for each room



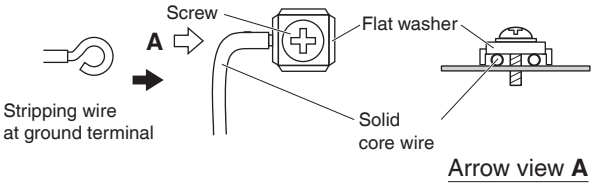
When connecting to ground for power supply

- Remove the cup washer.

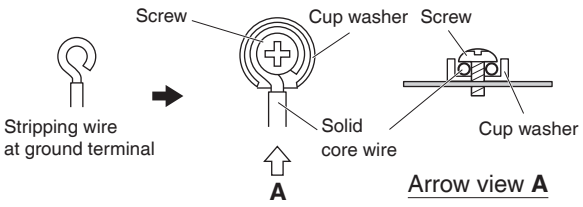


2) Use the following method when installing a solid core wire.
   Make sure to curl the end of the lead. Improper work may cause heat and fire.

When connecting to ground for each room

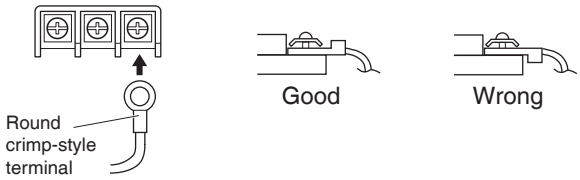


When connecting to ground for power supply

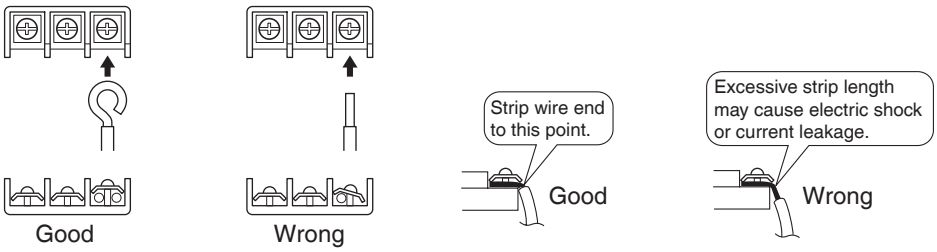


Terminal block installation

1) Use the following method when installing a round crimp-style terminal.



2) Use the following method when installing a solid core wire.
Make sure to curl the end of the lead. Improper work may cause heat and fire.



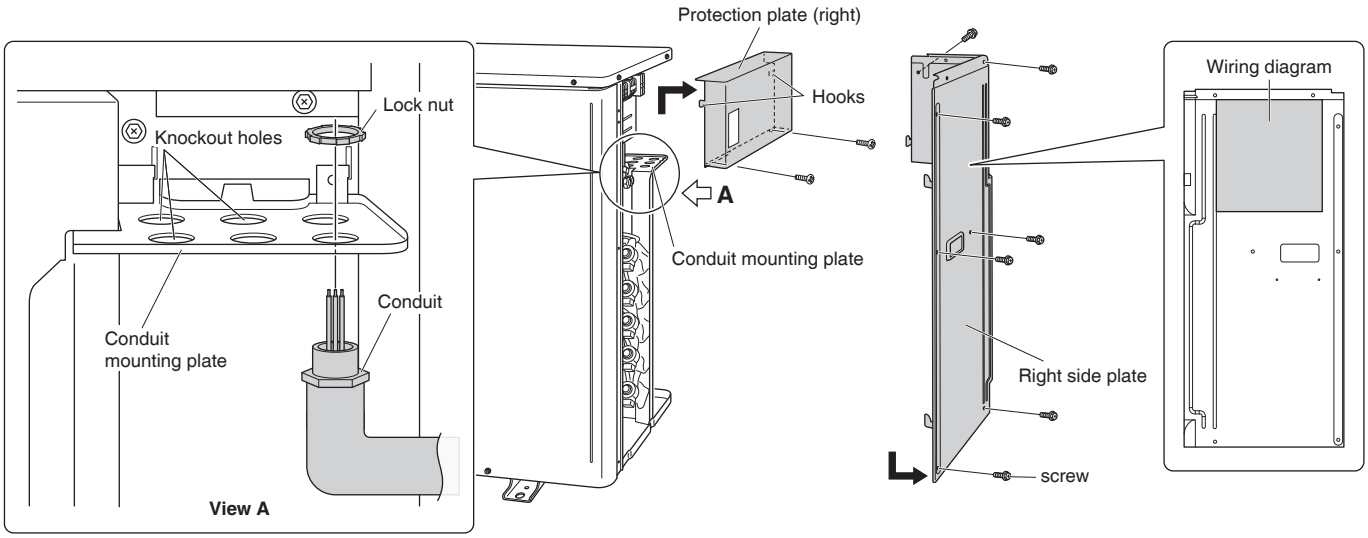
Stripping wire at terminal block

[Method of mounting conduit]

• When wiring, remove the right side plate and look at the wiring diagram on the back of the right side plate.

• When connecting indoor units for 3 rooms or more, open knockout holes without deforming the conduit mounting plate.

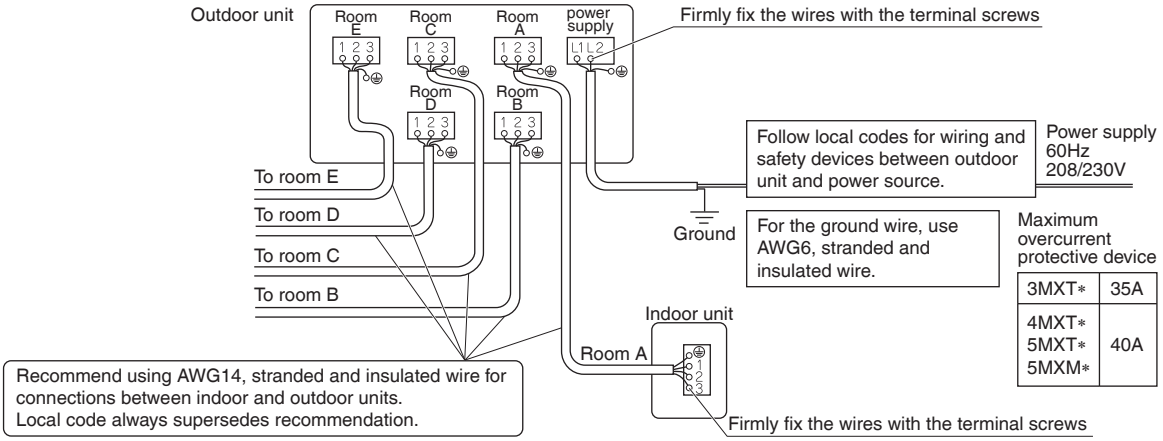
1) Remove the right side plate (7 screws).
2) Remove the protection plate (right) (2 screws).
3) Pass wires through the conduit and secure them with a lock nut.



Wiring

[Wiring procedure]

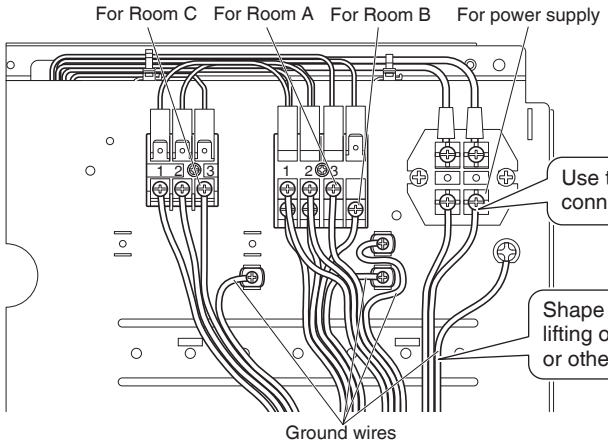
1) Strip the insulation from the wire (13/16 inch (20mm)).
2) Connect the inter-unit wires between the indoor and outdoor units **so that the terminal numbers match.** Tighten the terminal screws securely. It is recommended that a slot-head screwdriver be used to tighten the screws.
3) **Be sure to match the symbols for wiring and piping.**
4) Pull the wire lightly to make sure that it does not disconnect.
5) After completing the work, reattach the protection plate (right) and right side plate to their original positions.
   - Attach so that the protection plate (right) hooks (2 locations) are securely engaged.



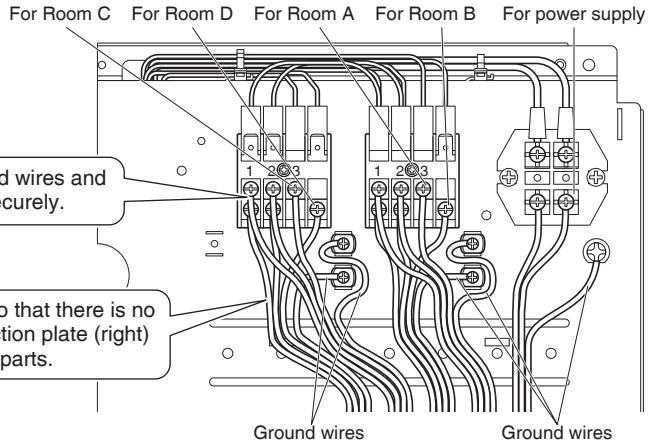
Note

Take care to ensure that all wiring between indoor unit and outdoor unit has a consistent connection.
Any splices can cause communication errors.

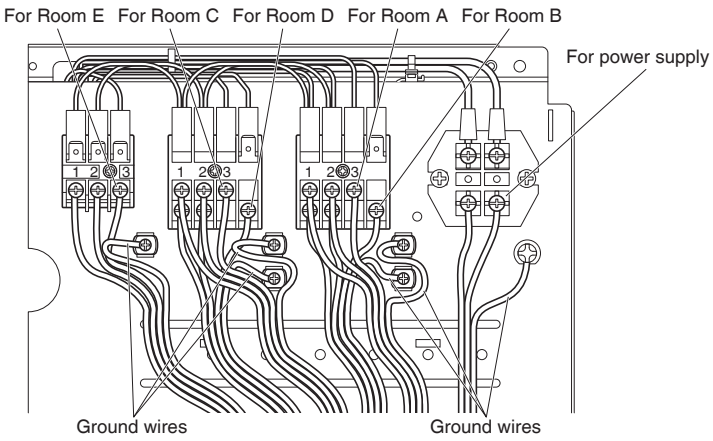
• 3MXT, 3MXTH models



• 4MXT, 4MXTH models



• 5MXT, 5MXTH, 5MXM models



Ground

This air conditioner must be grounded. For grounding, follow all local, and state electrical codes.

Priority Room Setting

- To use priority room setting, initial settings must be made when the unit is installed. Explain the priority room setting, as described below, to the user, and confirm whether or not the user wants to use priority room setting.
  Setting it in the guest and living rooms is convenient.

About the priority room setting function

The indoor unit for which priority room setting is applied takes priority in the following cases.

1) Operation mode priority

Even if other indoor units are in operation, the operation mode of the indoor unit with priority room setting will be given precedence. In some cases, other indoor units may not operate but enter standby mode.

2) Priority during powerful operation

If the indoor unit which is set for priority room setting is operating at powerful, the capabilities of other indoor units will be somewhat reduced. Power supply gives priority to the indoor unit which is set for priority room setting.

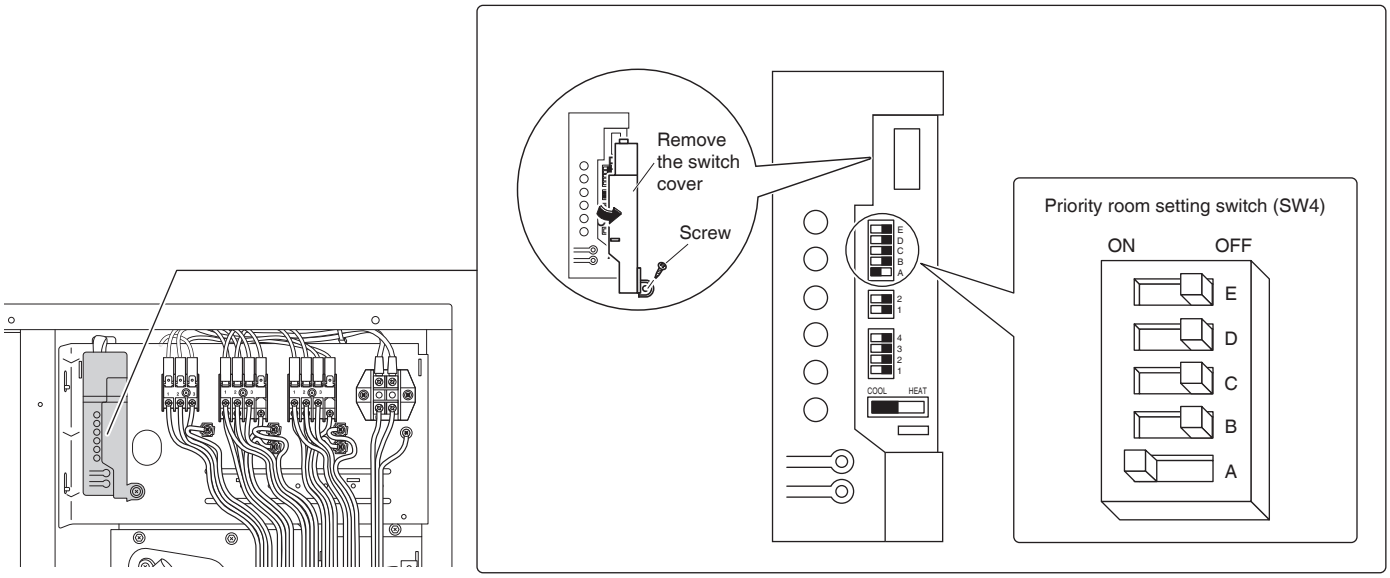
3) Quiet operation priority

Setting the indoor unit which is set for priority room setting to quiet operation will make the outdoor unit run quietly.

Setting procedure

Slide the priority room setting switch (SW4) to the on side for the switch that corresponds to the piping connected to the indoor unit to be set.
(In the figure below, it is room A.)
Once the settings are complete, switch the power on.

Be sure to set only one room



Night Quiet Mode setting

- If night quiet mode is to be used, initial settings must be made when the unit is installed. Explain night quiet mode, as described below, to the user, and confirm whether or not the user wants to use night quiet mode.

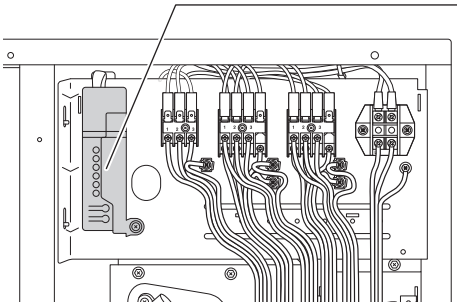
About night quiet mode

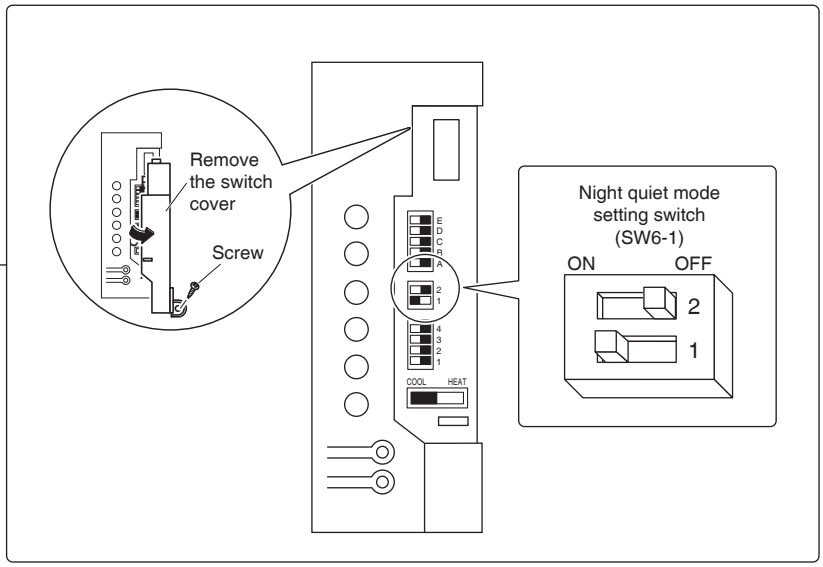
The night quiet mode function reduces operating noise of the outdoor unit at nighttime. This function is useful if the user is worried about the effects of the operating noise on the neighbors.

However, cooling capacity will be reduced when operating in night quiet mode.

Setting procedure

Turn the night quiet mode setting switch (SW6-1) to on.



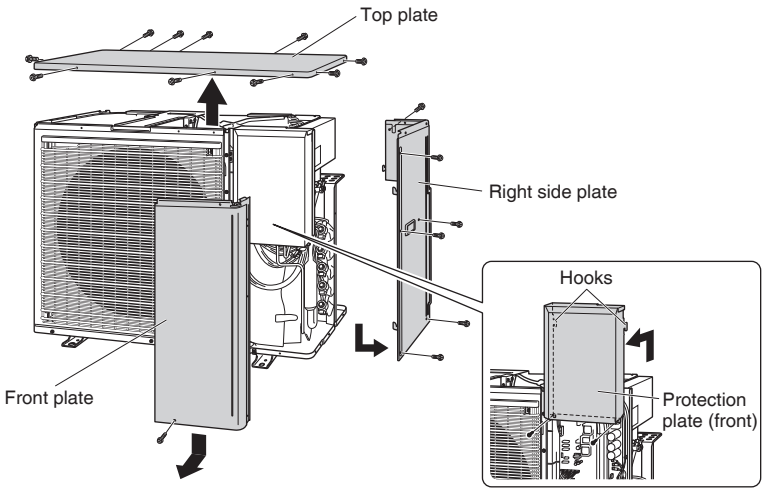


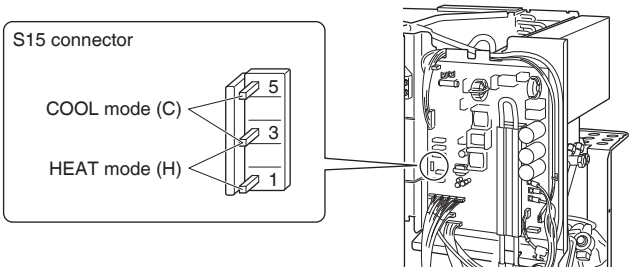
COOL/HEAT mode lock [S15]

1) Remove the top plate (10 screws).
2) Remove the right side plate (6 screws).
3) Remove the front plate (1 screw).
   - The front plate is heavy, so take care.
4) Remove the protection plate (front) (2 screws).
5) Use the S15 connector to set the unit to only cool or heat.
   Setting to only heat (H) : short-circuit pins 1 and 3 of the connector [S15]
   Setting to only cool (C) : short-circuit pins 3 and 5 of the connector [S15]
   The following specifications apply to the connector housing and pins.

JST products	Housing:	VHR-5N
	Pin:	SVH-21T-P1.1

   Note that forced operation is also possible in COOL/HEAT mode.
6) Reattach the protection plate (front), front plate, right side plate and top plate to their original positions.
   - Attach so that the protection plate (front) hooks (2 locations) are securely engaged.





Pump Down Operation

⚠ WARNING

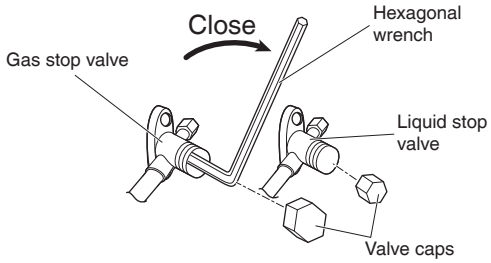
Do not remove the switch cover unless the power has been turned off. (Risk of electric shock)

⚠ CAUTION

Do not open/close the stop valves when the outdoor temperature is –5°F (–21°C) or less, as this may result in refrigerant leakage.

In order to protect the environment, be sure to pump down when relocating or disposing of the unit.

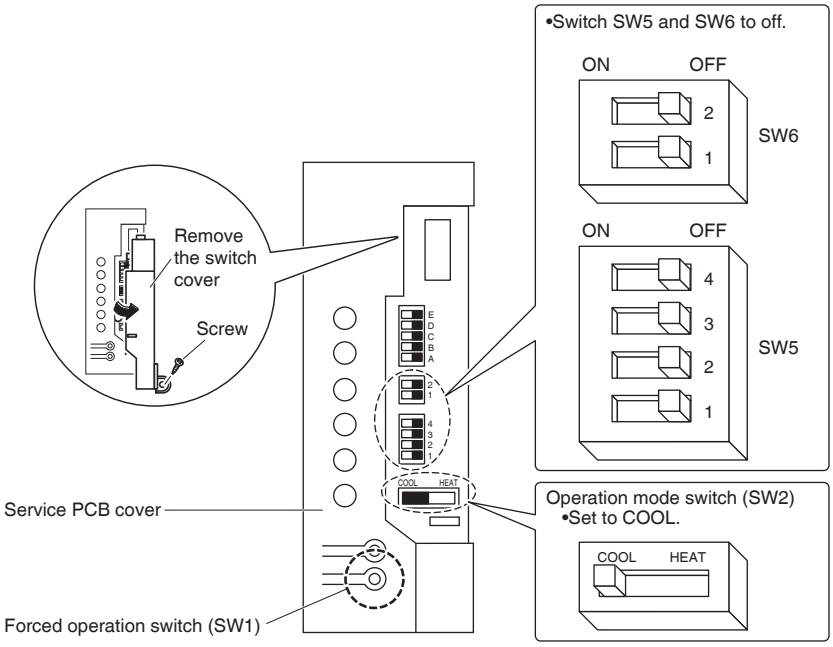
1) Remove the right side plate (7 screws).
2) Remove the valve caps from liquid stop valve and gas stop valve.
3) Begin forced cooling operation.
4) After 1 to 2 minutes, close the liquid stop valve with a hexagonal wrench.
5) After 3 to 4 minutes, close the gas stop valve and stop forced cooling operation.
6) Attach the valve caps once procedures are complete.
7) Attach the right side plate (7 screws).



Forced cooling operation

- When using this outdoor unit, no need to operate the indoor unit.

1) Turn off the power.
2) Remove the protection plate (right) (2 screws).
3) Remove the switch cover (1 screw).
4) Switch SW5 and SW6 to off.
5) Turn the operation mode switch (SW2) to COOL.
6) Screw the switch cover back on (1 screw).
7) Attach the protection plate (right) (2 screws).
8) Turn on the power.
9) Push the forced operation switch (SW1) above the service PCB cover. (The operation will start.)
   - Forced cooling operation will stop automatically after about 8 minutes. To stop the operation, push the forced operation switch (SW1) again.



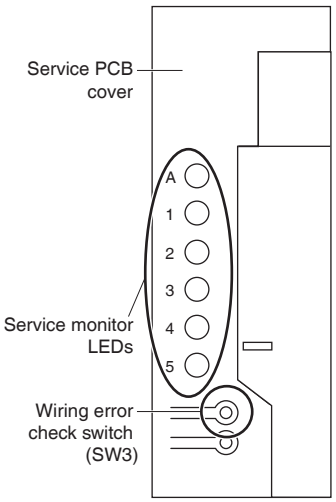
Trial Operation and Testing

- Before starting the trial operation, measure the voltage at the primary side of the circuit breaker.
- Check that all liquid and gas stop valves are fully open.
- Check that piping and wiring all match. The wiring error check can be conveniently used for underground wiring and other wiring that cannot be directly checked. However, if the outside air temperature is 41°F (5°C) or less, the wiring error check function will not operate.
- When trial operation is conducted directly after the circuit breaker is turned on, in some cases no air will be output for about 15 minutes in order to protect the air conditioner.

1. Wiring error check

This product is capable of automatic correction of wiring errors.

Press the wiring error check switch (SW3) on the service PCB cover. However, the wiring error check switch (SW3) will not function for 3 minutes after the safety breaker is turned on. About 15-25 minutes after the switch is pressed, the errors in the connection wiring will be corrected.

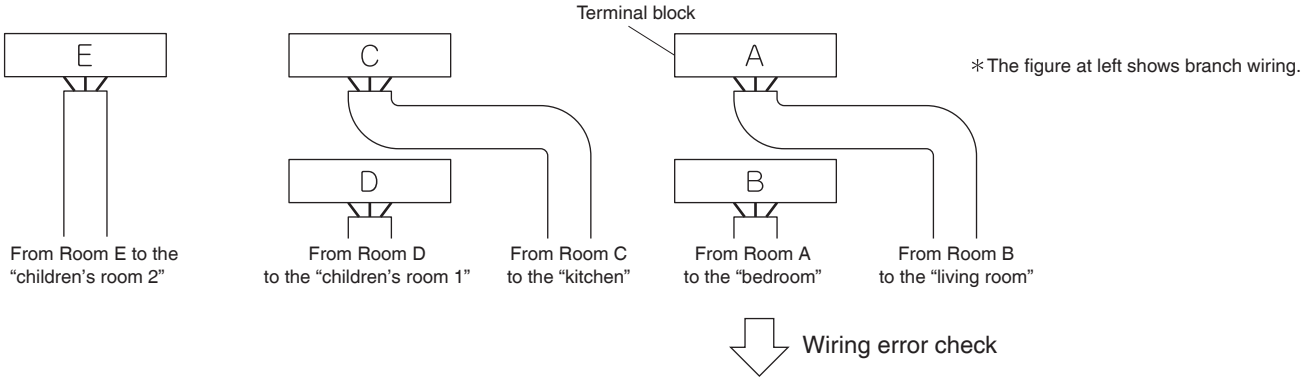


The service monitor LEDs indicate whether or not correction is possible, as shown in the table below. For details on how to read the LED display, refer to the wiring diagram on the back of the right side plate or the service manual.

If self-correction is not possible, check the indoor unit wiring and piping in the usual manner.

LED	1	2	3	4	5	Message
Status	All Flashing					Automatic correction impossible
	Flashing One after another					Automatic correction completed
	☼ (One or more of LEDs 1 to 5 are ON)					Abnormal stop [Note. 3]

Wiring error example



∗The figure at left shows branch wiring.

Wiring error check

LED lighting sequence after a wiring correction.

Order of LED flashing: 2 → 1 → 3 → 4 → 5 [Note. 1]

NOTE

1) For two rooms, LED 3, 4 and 5 are not displayed, and for three rooms, LED 4 and 5 is not displayed, and for four rooms, LED 5 is not displayed.
2) After wiring error check operation is completed, LED indication will continue until ordinary operation starts. This is normal.
3) Follow the product diagnosis procedures. (Details of product error diagnosis are listed on the reverse side of the right side plate.)

2. Trial operation and testing

- During the trial operation, first check the operation of each unit individually. After this, check the simultaneous operation of all indoor units. Check both COOL and HEAT operations.

2-1. Measure the supply voltage and make sure that it is within the specified range.

2-2. In COOL operation, select the lowest programmable temperature; in HEAT operation, select the highest programmable temperature.

- When operating the air conditioner in COOL operation in winter, or HEAT operation in summer, activate trial operation mode by following the instructions in the installation manual for the indoor unit.

2-3. Carry out the trial operation following the instructions in the operation manual to ensure that all functions and parts, such as the movement of the flap, are working properly.

- To protect the air conditioner, restart operation is disabled for 3 minutes after the system has been turned off.
- When trial operation is conducted in HEAT operation directly after the circuit breaker is turned on, in some cases no air will be output for about 3 to 20 minutes in order to protect the air conditioner.
- During COOL operation, frost may form on the gas stop valve or other parts. This is normal.

2-4. After running the unit for about 20 minutes, measure the temperatures at the indoor unit inlet and outlet.

- If the measurements are above the values shown in the table below, then they are normal.

	COOL operation	HEAT operation
Temperature difference between inlet and outlet	About 14°F (8°C)	About 36°F (20°C)

(When running in one room)

2-5. After trial operation is complete, set the temperature to a normal level (78°F to 82°F (26°C to 28°C) in COOL operation, 68°F to 75°F (20°C to 24°C) in HEAT operation).

- The air conditioner draws a small amount of power in its standby mode. If the system is not to be used for some time after installation, shut off the circuit breaker to eliminate unnecessary power consumption.
- If the circuit breaker trips to shut off the power to the air conditioner, the system will restore the original operation mode when the circuit breaker is opened again.

3. Test items

Test item	Symptom	Check
Indoor and outdoor units are installed securely.	Fall, vibration, noise	
No refrigerant gas leaks.	Incomplete cooling/heating function	
Refrigerant gas and liquid pipes and indoor drain hose extension are thermally insulated.	Water leakage	
Draining line is properly installed.	Water leakage	
System is properly grounded.	Electrical leakage	
Only specified wires are used for all wiring, and all wires are connected correctly.	No operation or burn damage	
Indoor or outdoor unit's air inlet or air outlet are unobstructed.	Incomplete cooling/heating function	
Stop valves are opened.	Incomplete cooling/heating function	
Pipes and wires are connected to the corresponding terminal blocks/connection ports for the connected unit.	Incomplete cooling/heating function	
The priority room setting is set for only 1 room.	The priority room setting will not function.	
Indoor unit properly receives remote control commands.	No operation	

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The two-dimensional code
is a manufacturing code.

3P795496-2C M25B190A (2603) HT