

DAIKIN ROOM AIR CONDITIONER

INSTALLATION MANUAL

R32 Split Series



Installation manual
Manuel d'installation
Manual de instalación

MODELS

CDMA07AVJU9
FDMA09AVJU9
FDMA12AVJU9
FDMA15AVJU9
FDMA18AVJU9
FDMA24AVJU9

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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

- 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 electrical wiring box cover can be securely fastened. Improper positioning of the electrical wiring box cover 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 terminal cover (panel). If the terminal cover/panel is 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.
- When mechanical connectors are reused indoors, sealing parts shall be renewed.
- When flared joints are reused indoors, the flared part shall be refabricated.

CAUTION

- 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.
- 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.
- Install drain piping to ensure proper drainage. Improper drain piping may result in water leakage and property damage.
- Insulate piping to prevent condensation.
- 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 against 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 indoor unit is for R32. See the catalog for outdoor models that can be connected. Normal operation is not possible when connected to non-compatible outdoor 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.

Safety Considerations

- 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.

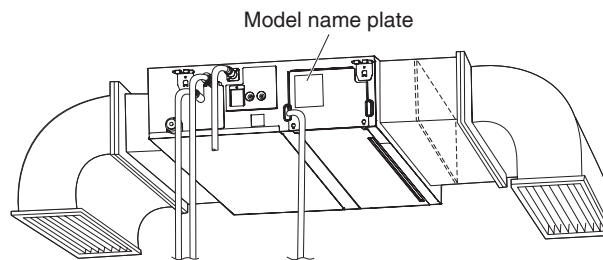
NOTE

- The indoor unit should be positioned where the unit and interunit wires (outdoor to indoor) are at least 3.3ft (1m) away from any televisions or radios. (The unit may cause interference with the picture or sound.) Depending on the radio waves, a distance of 3.3ft (1m) 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, 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.
- 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.

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Before Installation

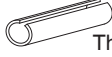
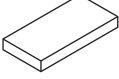
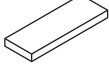
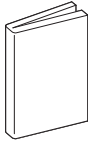
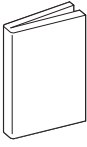
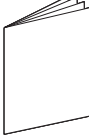
- Leave the unit inside its packaging until you reach the installation site. Where unpacking is unavoidable, use a sling of soft material or protective plates together with a rope when lifting, this to avoid damage or scratches to the unit. When unpacking the unit or when moving the unit after unpacking, be sure to lift the unit by holding on to the hanger bracket without exerting any pressure on other parts, especially on refrigerant piping, drain piping and other resin parts.
- Refer to the installation manual of the outdoor unit for items not described in this manual.
- Caution concerning refrigerant series R32:
The connectable outdoor units must be designed exclusively for R32.
- Check the General Safety Considerations and enter the values in the blanks on the model name plate.



Precautions

- Do not install or operate the unit in places mentioned below.
 - Places with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate.)
 - Where corrosive gas like sulphurous gas exists. (Copper tubing and brazed spots may corrode.)
 - Where volatile flammable gas like thinner or gasoline is used.
 - Where machines generating electromagnetic waves exist. (Control system may malfunction.)
 - Where the air contains high levels of salt such as near the ocean and where voltage fluctuates a lot (e.g. in factories). Also inside vehicles or vessels.
- Do not install accessories on the casing directly. Drilling holes in the casing may damage electrical wires and consequently cause fire.
- Take off static electricity from the body when carrying out wiring and the electrical wiring box cover is removed.
The electric parts may be damaged.

Accessories

(A) Clamp metal 	1	(B) Drain hose 	1	(C) Duct flange connection screw 	10*	(D) Fitting insulation (for liquid pipe)  Thin	1
(E) Fitting insulation (for gas pipe)  Thick	1	(F) Sealing pad (large) (Dark gray) 	1	(G) Sealing pad (medium) (Dark gray) 	2	(H) Clamp 	8
(J) Washer fixing plate 	4	(K) Wire sealing pad (small) (Gray) 	2	(L) Washer (for hanger bracket) 	8	(M) Conduit mounting plate 	1
(N) Operation manual 	1	(P) Installation manual 	1	(Q) Warranty 	1	(R) General Safety Considerations 	1

*The 15/18/24 class models have 18 screws.

Optional Accessories

A remote controller is required for the indoor unit.

Model name
BRC1NRV71

- The indoor unit can be switched to lower suction. (Refer to “6. In the case of changing the preset suction to underside suction, replace the chamber cover and the suction flange.” (page 7))
The side cover plate (KDBD63A160) is required in the case of wiring from the bottom for underside suction.
For installation work, refer to the instruction sheet provided with the side cover plate.

Choosing an Installation Site

R32 refrigerant is a mildly flammable refrigerant. Do not install indoor or outdoor units in areas where, in the event of a refrigerant leakage, refrigerant concentrations could exceed flammable concentrations.

Hold the unit by the 4 hanger brackets when opening the box and moving it, and do not exert pressure on to any other part, piping (refrigerant, drain, etc.), and air outlet flange.

If the temperature or humidity inside the ceiling might rise above 86°F (30°C) or RH 80%, respectively, add extra insulation to the unit.

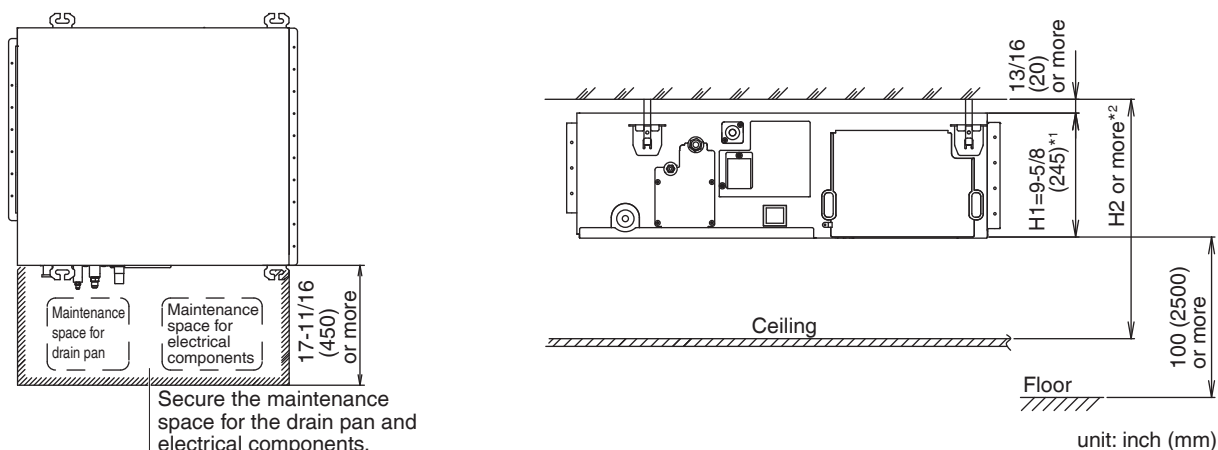
Use polyethylene foam as insulation and make sure it is at least 3/8 inch (10mm) thick and fits inside the ceiling opening.

- Before choosing the installation site, obtain user approval.

The indoor unit should be positioned in a place where:

- 1) both the air inlet and air outlet are unobstructed,
- 2) the unit is not exposed to direct sunlight,
- 3) the unit is away from the source of heat or steam,
- 4) there is no source of machine oil vapor (this may shorten the indoor unit service life),
- 5) cool/warm air is circulated throughout the room,
- 6) no laundry equipment is nearby,
- 7) drainage can be performed without any problem,
- 8) the weight of the indoor unit can be adequately supported,
- 9) the wall and the ceiling's lower surface are not significantly tilted,
- 10) room can be left for installation and service work,
- 11) there is no risk of flammable gas leaking,
- 12) the required length of indoor-outdoor piping would not exceed the specified maximum length (see the installation manual that came with the outdoor unit for details).

[Installation Space Requirements]



*1 Dimension H1 indicates the product height.

*2 Secure a downward slope of at least 1/100 specified in “8. Drain piping work” (page 9) and determine dimension H2.

<Failure example>

If there is an obstacle in the airflow path or proper installation space is not provided, the indoor unit will cause air volume reduction and take in air blown out of the indoor unit, thus resulting in performance degradation or turning the thermostat OFF frequently.

Use suspension bolts for installation. Check whether the ceiling is strong enough to support the weight of the unit or not. If there is a risk, reinforce the ceiling before installing the unit.

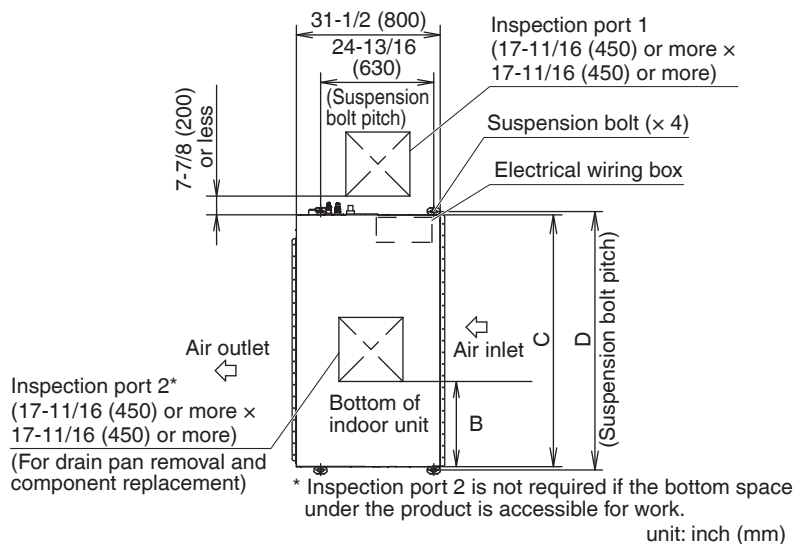
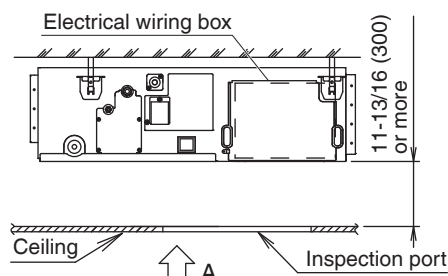
Indoor Unit Installation

1. Check the relation of location between the ceiling opening and the indoor unit suspension bolts. (unit: inch (mm))

Provide one of the following service spaces for the maintenance and inspection of the electrical wiring box and drain pump or for other services.

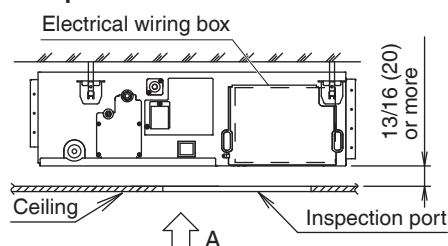
If a space of 300mm or more under the product can be secured

- Inspection ports 1 and 2 (17-11/16 inch (450mm) × 17-11/16 inch (450mm)) and a minimum space of 11-13/16 inch (300mm) at the bottom of the product.

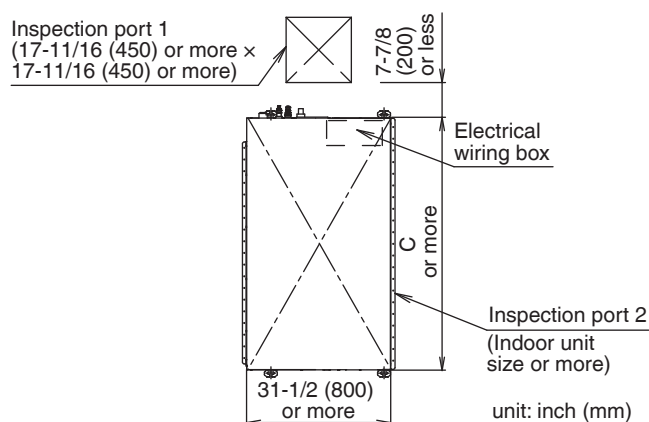


View A

If a space of 300mm or more under the product can not be secured

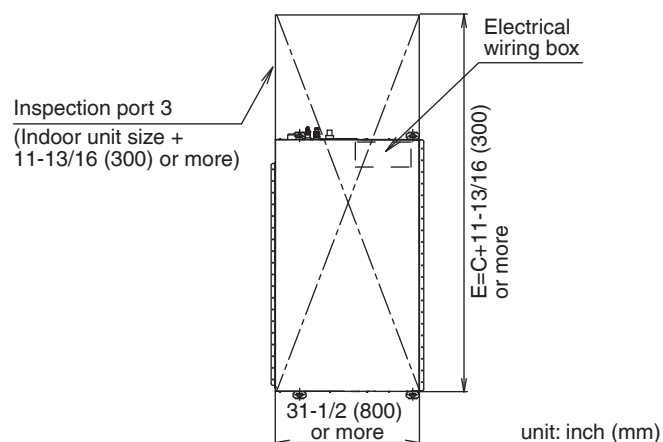


- 1) Inspection port 1 (17-11/16 inch (450mm) × 17-11/16 inch (450mm)) on the electrical wiring box side and inspection port 2 on the bottom of the product. (View A-1))



View A-1)

- 2) Inspection port 3 on the bottom of the product and on the bottom side of the electrical wiring box. (View A-2))



View A-2)

	B	C	D	E
07/09/12 class	(0)	27-9/16 (700)	29-1/16 (738)	39-3/8 (1000)
15/18/24 class	1-15/16 (50)	39-3/8 (1000)	40-7/8 (1038)	51-3/16 (1300)

unit: inch (mm)

Indoor Unit Installation

2. Mount canvas ducts, sound absorbing material and anti-vibration rubber.

- Mount canvas ducts to the air outlet and inlet so that the vibration of the indoor unit will not be transmitted to the ducts or ceiling.
Furthermore, attach sound absorbing material (thermal insulation material) to the duct inner walls and anti-vibration rubber to the suspension bolts (refer to “10. Duct work” (page 16)).

3. The indoor unit is set to standard external static pressure.

- If external static pressure is higher or lower than the standard set value, the remote controller may be used to make on-site setting change in the external static pressure.
Refer to “Field Settings” (page 19).

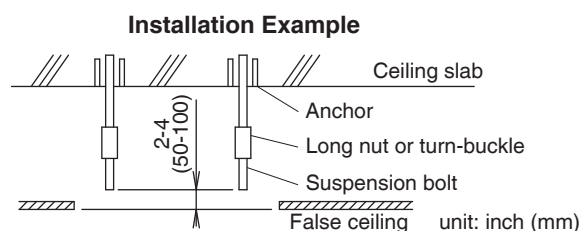
4. Open installation holes (in the case of installation onto the existing ceiling).

- Open the installation holes on the ceiling of the installation location, and work on the refrigerant piping, drain piping, remote controller wiring, and wiring between the indoor and outdoor units to the piping connection port and wiring connection port of the indoor unit (refer to each piping and wiring procedure items).
- Ceiling framework reinforcement may be required in order to keep the ceiling horizontal and prevent ceiling vibration after opening the ceiling holes. For details, consult your building and upholstery work contractors.

5. Installing the suspension bolts

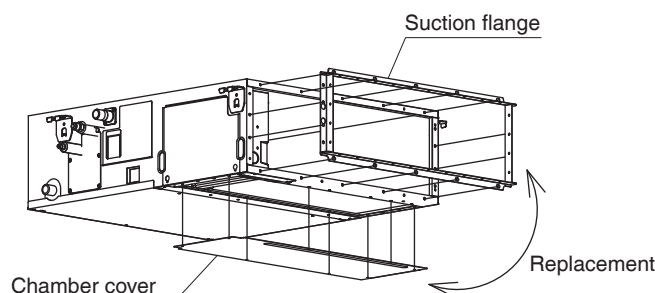
(Use either a M8-M10 size bolt or the equivalent)
Use a hole-in anchor for existing ceilings, and a sunken insert, sunken anchor or other field supplied parts for new ceilings to reinforce the ceiling to bear the weight of the unit.
Adjust clearance (2-4 inch (50-100mm)) from the ceiling before proceeding further.

- All the above parts are field supplied.



6. In the case of changing the preset suction to underside suction, replace the chamber cover and the suction flange.

1. Remove the suction flange and chamber cover.
2. Replace the suction flange and the chamber cover.



⚠ CAUTION

- Secure a sufficient maintenance space for the drain pan and electrical components before installing the indoor unit.
- Secure a sufficient maintenance space for the filter chamber, and peripheral components before installing the indoor unit.

7. Installing the indoor unit

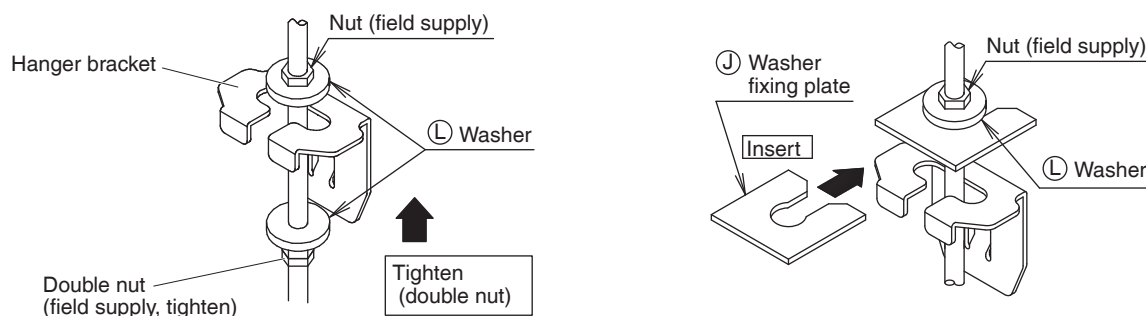
When installing optional accessories, read also the installation manual of the optional accessories. Depending on the field conditions, it may be easier to install optional accessories before the indoor unit is installed.

As for the parts to be used for installation work, be sure to use the provided accessories and specified parts designated by Daikin.

1) Install the indoor unit temporarily.

- Attach the hanger bracket to the suspension bolt. Be sure to fix it securely by using a nut and (L) washer from the upper and lower sides of the hanger bracket.
If the (J) washer fixing plate is used, the upper side (L) washer may be protected from falling off.

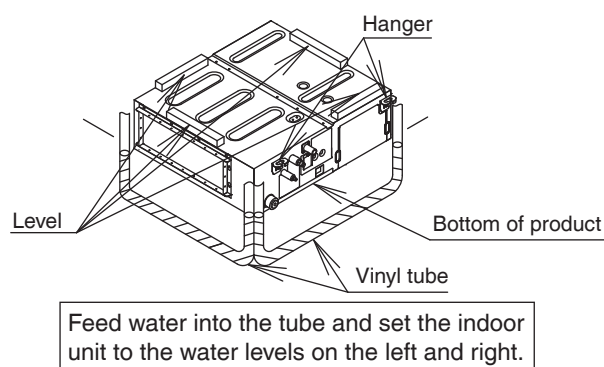
Securing the hanger bracket



- Keep the air outlet covered with a protective sheet to prevent weld spatter and other foreign materials from entering the indoor unit and damaging the resin drain pan.
(If holes or cracks are generated in the resin drain pan, water can leak.)

2) Adjust the height of the unit.

3) Check the unit is horizontally level.



4) Remove the (J) washer fixing plate used for preventing the (L) washer from dropping and tighten the upper side nut.

CAUTION

- **Install the indoor unit leveled.**
If the indoor unit is inclined and the drain piping side gets high, it may cause malfunction of float switch and result in water leakage.
- **Attach nuts on the upper and lower side of hanger.**
If there is no upper nut and the lower nut is over-tightened, the hanger and the top plate will deform and cause abnormal sound.
- **Do not insert materials other than that specified into the clearance between the hanger and the (L) washer for hanger bracket.**
Unless the washers are properly attached, the suspension bolts may come off from the hanger.

WARNING

The indoor unit must be securely installed on a place that can withstand the mass.
If the strength is insufficient, the indoor unit may fall down and cause injuries.

Indoor Unit Installation

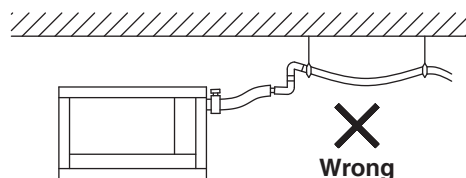
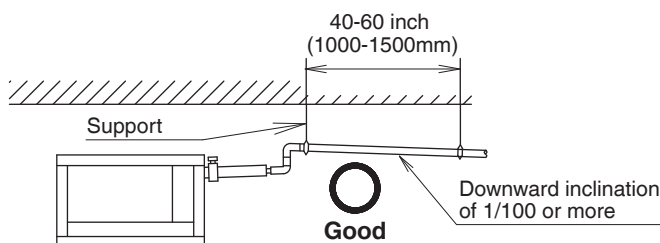
8. Drain piping work

⚠ CAUTION

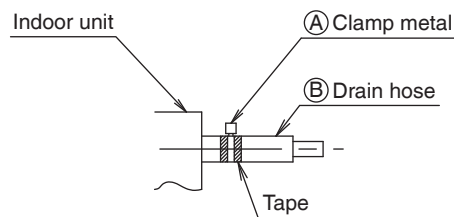
- Water pooling in the drainage piping can cause the drain to clog.
- Do not connect the drain piping directly to sewage pipes that smell of ammonia. The ammonia in the sewage might enter the indoor unit through the drain pipes and corrode the heat exchanger.
- Keep in mind that the drain pipe becomes blocked if water collects on it.
- Do not tighten the (A) clamp metal with the torque more than the specified value.
The (B) drain hose, the socket or the (A) clamp metal may be damaged.

1. Install of drain piping

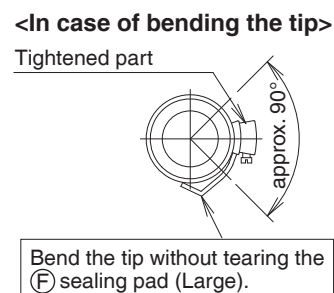
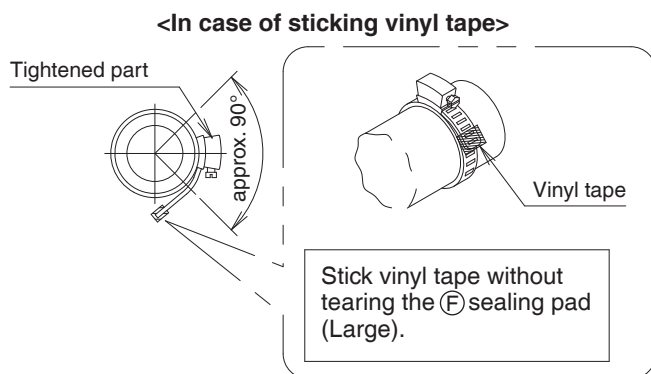
- Install the drain piping as shown in the figure and take measures against condensation. Improperly rigged piping could lead to leaks and eventually wet furniture and belongings.
- Keep piping as short as possible and slope it downwards at a gradient of at least 1/100 so that air may not remain trapped inside the pipe.
- Select the piping diameter equal to or larger than (except for riser) that of the connection piping (polyvinyl chloride piping, nominal diameter 1 inch (25mm), outside diameter 1-1/4 inch (32mm)).
- If the drain hose cannot be sufficiently set on a slope, refer to “Precautions for drain raising piping” (page 10).
- To keep the drain hose from sagging, space hanger bracket every 40-60 inch (1000-1500mm).



- Make sure to use the attached (B) drain hose and the (A) clamp metal.
Insert the (B) drain hose into the drain socket up to the point where the socket diameter becomes larger.
Put the (A) clamp metal to the taped hose end and tighten the (A) clamp metal with torque 0.89~1.11 lbf • ft (120~150 N•cm).

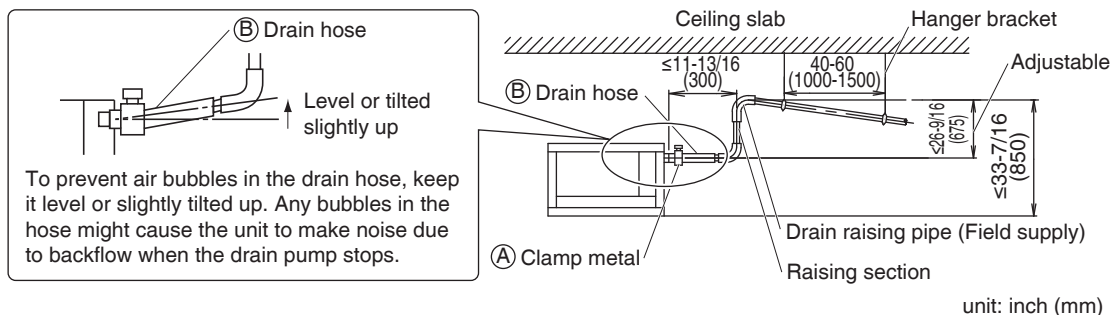


- Wrap the vinyl tape around the end of the (A) clamp metal so that the (F) sealing pad (Large) to be used at the next process may not be damaged with the clamp end or bend the tip of the (A) clamp metal inward as shown.

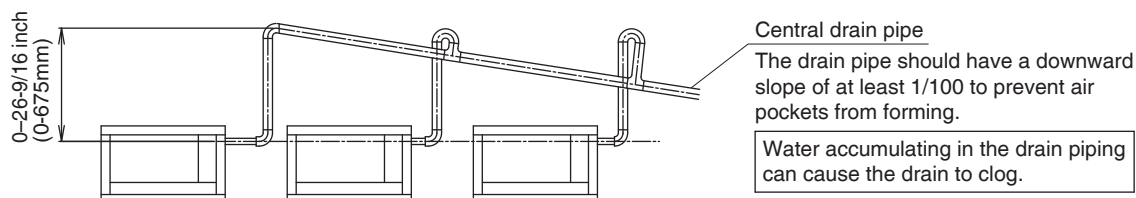


Precautions for drain raising piping

- The maximum height of the drain riser is 26-9/16 inch (675mm). Since the drain pump mounted on this indoor unit is a high head type, from the characteristic point of view, the higher the drain riser the lower the draining noise. Therefore, the drain riser of 11-13/16 inch (300mm) or higher is recommended.
- For upward drain piping, keep the horizontal piping distance of 11-13/16 inch (300mm) or less between the drain socket root to the drain riser.



- To ensure no excessive pressure is applied to the included (B) drain hose, do not bend or twist the hose when installing as it could cause leakage.
- If converging multiple drain pipes, install according to the procedure shown below.



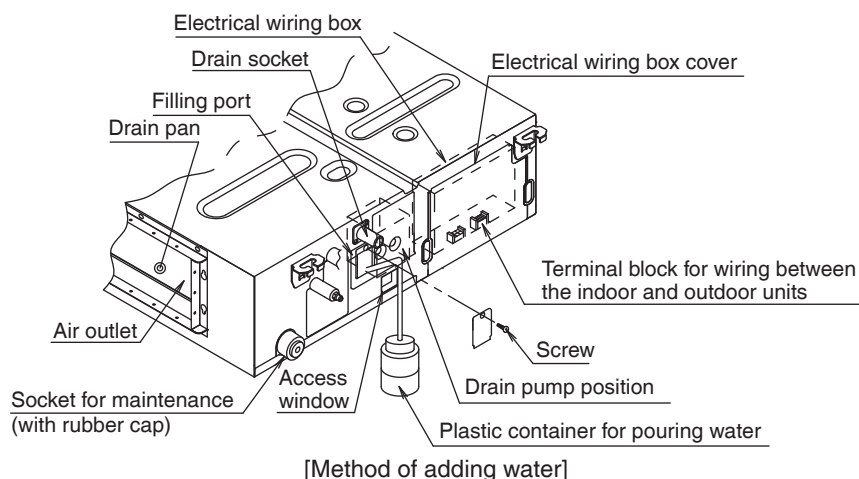
Select converging drain pipes with gauges is suitable for the operating capacity of the unit.

- Positioning the upward drain piping at an angle may cause float switch malfunction and lead to water leakage.
- While replacing with new indoor unit, use the attached new (B) drain hose and the (A) clamp metal. If an old drain hose or a clamp metal is used, it may cause water leakage.

2. After piping work is finished, check if drainage flows smoothly

When electric wiring work is finished

- Gradually pour 1/4 gal of water from the inspection port at the bottom of the drain socket on the left side of the drain socket into the drain pan giving caution to avoid splashing water on the electric components such as drain pump and confirm drainage by operating the indoor unit under cooling mode according to **Field settings**.



Indoor Unit Installation

When electric wiring work is not finished

- The electric wiring works (including grounding) must be carried out by a qualified electrician.
- If a qualified person is not present, after the electric wiring work is finished, check the drainage according to the method specified in **[When the electric wiring work is finished]**.
 1. Open the electrical wiring box cover and connect the ground wiring to the ground terminal.
 2. Make sure the electrical wiring box cover is closed before turning on the power supply.
 - Throughout the whole process, carry out the work giving caution to the wiring around the electrical wiring box so that the connectors may not come off.
 3. Gradually pour 1 litre of water from the air outlet on the left side of the drain socket into the drain pan giving caution to avoid splashing water on the electric components such as drain pump.
 4. When the power supply is turned on, the drain pump will operate. Drainage can be checked at the transparent part of the drain socket.

(The drain pump will automatically stop after 10 minutes.)

The drainage of water can be confirmed with water level change in the drain pan through the access window.

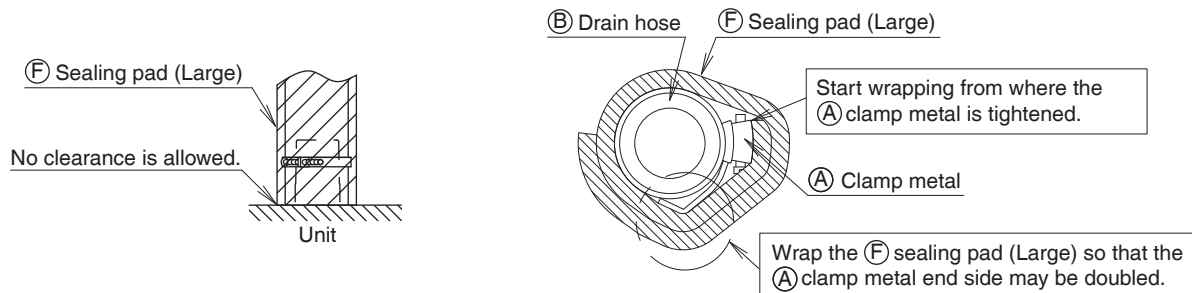
 - Do not connect the drain piping directly to the sewage that gives off ammonia odor.

The ammonia in the sewage may go through the drain piping and corrode the heat exchanger of the indoor unit.
 - Do not apply external force to the float switch. (It may result in malfunction)
 - Do not touch the drain pump.

Touching the drain pump may cause electric shock.
 5. Turn off the power supply after checking drainage, and remove the power supply wiring.
 6. Attach the electrical wiring box cover as before.

3. Sweating may occur and result in water leakage. Therefore, make sure to insulate the following 2 locations (drain piping that laid indoors and drain sockets).

- Use the provided (F) sealing pad (large), and perform the thermal insulation of the (A) clamp metal and (B) drain hose after checking the drainage of water.



9. Wiring

1. General instructions

- Make certain that all electric wiring work is carried out by qualified personnel according to the applicable legislation and this installation manual, using a separate dedicated circuit.
Insufficient capacity of the power supply circuit or improper electrical construction may lead to electric shock or a fire.
- Make sure to install a ground fault circuit interrupter.
Failure to do so may cause electric shock and a fire.
- Do not turn on the power supply (branch switch, branch overcurrent circuit breaker) until all the works are finished.
- Multiple number of indoor units are connected to one outdoor unit. Name each indoor unit as A-unit, B-unit and the like. When these indoor units are wired to the outdoor unit, always wire the indoor unit to the terminal indicated with the same symbol on the terminal block. If the wiring and the piping are connected to the different indoor units and operated, it will result in malfunction.
- Make sure to ground the air conditioner.
Grounding resistance should be according to applicable legislation.
- Do not connect the ground wiring to gas or water pipings, lightning conductor or telephone ground wiring.
 - Gas pipingIgnition or explosion may occur if the gas leaks.
 - Water piping.....Hard vinyl tubes are not effective grounds.
 - Lightning conductor or telephone ground wiring.....Electric potential may rise abnormally if struck by a lightning bolt.
- For electric wiring work, refer to also the "WIRING DIAGRAM" attached to the electrical wiring box cover.
- Carry out wiring between the outdoor units, indoor units and the remote controllers according to the wiring diagram.
- Carry out installation and wiring of the remote controller according to the "installation manual" attached to the remote controller.
- Do not touch the Printed Circuit Board assembly. It may cause malfunction.

⚠ WARNING

- 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.
- Do not connect the power wire to the indoor unit. Doing so may cause electric shock or fire.

⚠ CAUTION

- When clamping wiring, use the included clamping material to prevent outside pressure being exerted on the wiring connections and clamp firmly. When doing the wiring, make sure the wiring is neat and does not cause the electrical wiring box cover to stick up, then close the cover firmly.
- Outside the unit, separate the low voltage wiring (remote controller wiring) and high voltage wiring (wiring between units, ground, and other power wiring) at least 2 in. so that they do not pass through the same place together. Proximity may cause electrical interference, malfunctions, and breakage.

2. Wiring example

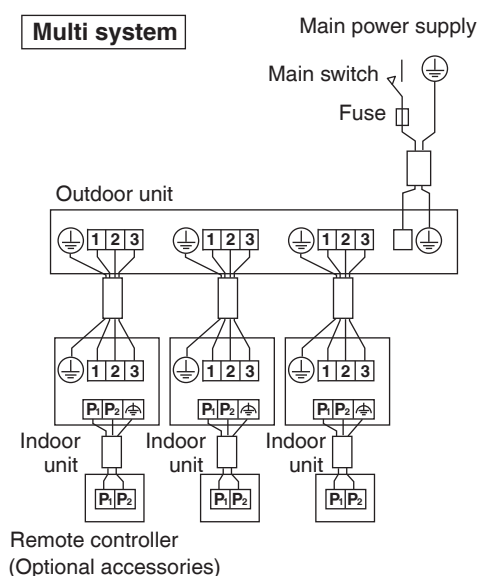
For the wiring of outdoor units, refer to the installation manual attached to the outdoor units.

Confirm the system type.

- **Multi system:** 2 through 5 (The number of connectable units will vary according to model) indoor units connect to 1 outdoor unit. The indoor unit is controlled by remote controller connected to each indoor unit.

NOTE

1. All transmission wiring except for the remote controller wires is polarized and must match the terminal symbol.
2. In case a shielding wire is to be used, connect a shielded portion with the  of a remote controller terminal block. (Also, connect the ground for the remote control to a grounded metal part.)



Indoor Unit Installation

3. Specification for field wire

	Wire	Size	Length
Wiring between units	Recommend stranded and shielded. Local code supersedes recommendation.	AWG 14	—
Remote controller wiring	Sheathed (2 wire)	AWG 18 - 16	Max. 1640ft (500m)*
Wiring to ground terminal	Recommend stranded and shielded. Local code supersedes recommendation.	—	—

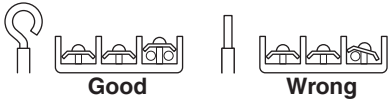
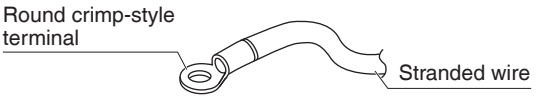
* This will be the total extended length in the system when doing group control.

4. Wiring connection method

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 for connection to the power supply terminal block. Place the round crimp-style terminals on the wires up to the covered part and secure in place.
- If solid core wire must be used, be sure to curl the end of the lead. Improper work may cause heat and fire.



Tightening torque for the terminal blocks

- Use the correct screwdriver for tightening the terminal screws. If the blade of screwdriver is too small, the head of the screw might be damaged, and the screw will not be properly tightened.
- If the terminal screws are tightened too hard, screws might be damaged.
- Refer to the table below for the tightening torque of the terminal screws.

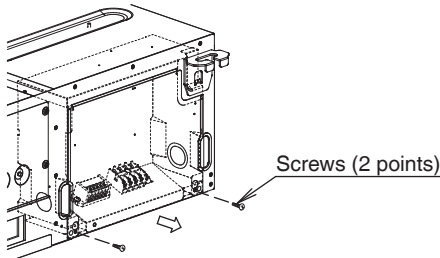
unit: lbf • ft (N • m)

	Tightening torque
Terminal block for remote controller (6P)	0.58 - 0.72 (0.79 - 0.98)
Terminal block for power supply (4P)	0.87 - 1.06 (1.18 - 1.44)

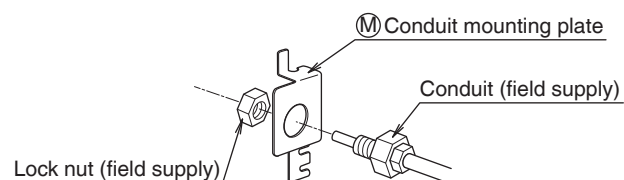
WARNING

- When wiring, form the wirings orderly so that the electrical wiring box cover can be securely fastened. If the electrical wiring box cover is not in place, the wirings may come out or be sandwiched by the box and the lid and cause electric shock or a fire.

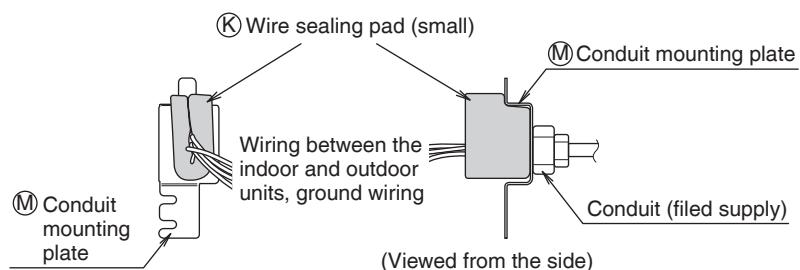
1) Remove the electrical wiring box cover.



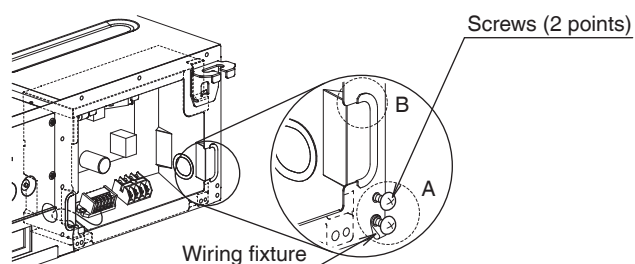
2) Attach the conduit to the (M) conduit mounting plate.



- Attach the (K) wire sealing pad (small) to the conduit, the wiring between the indoor and outdoor units, and the ground wiring.



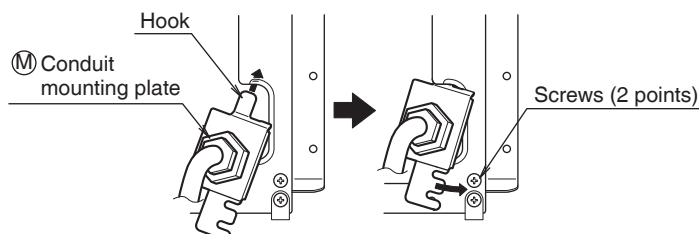
- Loosen the screws (2 points) in part A.



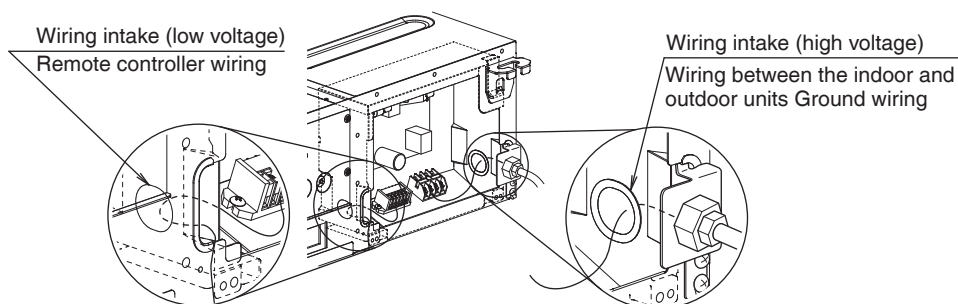
- Insert the hook part of the (M) conduit mounting plate into part B and secure the (M) conduit mounting plate with the screws loosened (2 points).

NOTE

Remove the wiring fixture if you have difficulty performing this step.

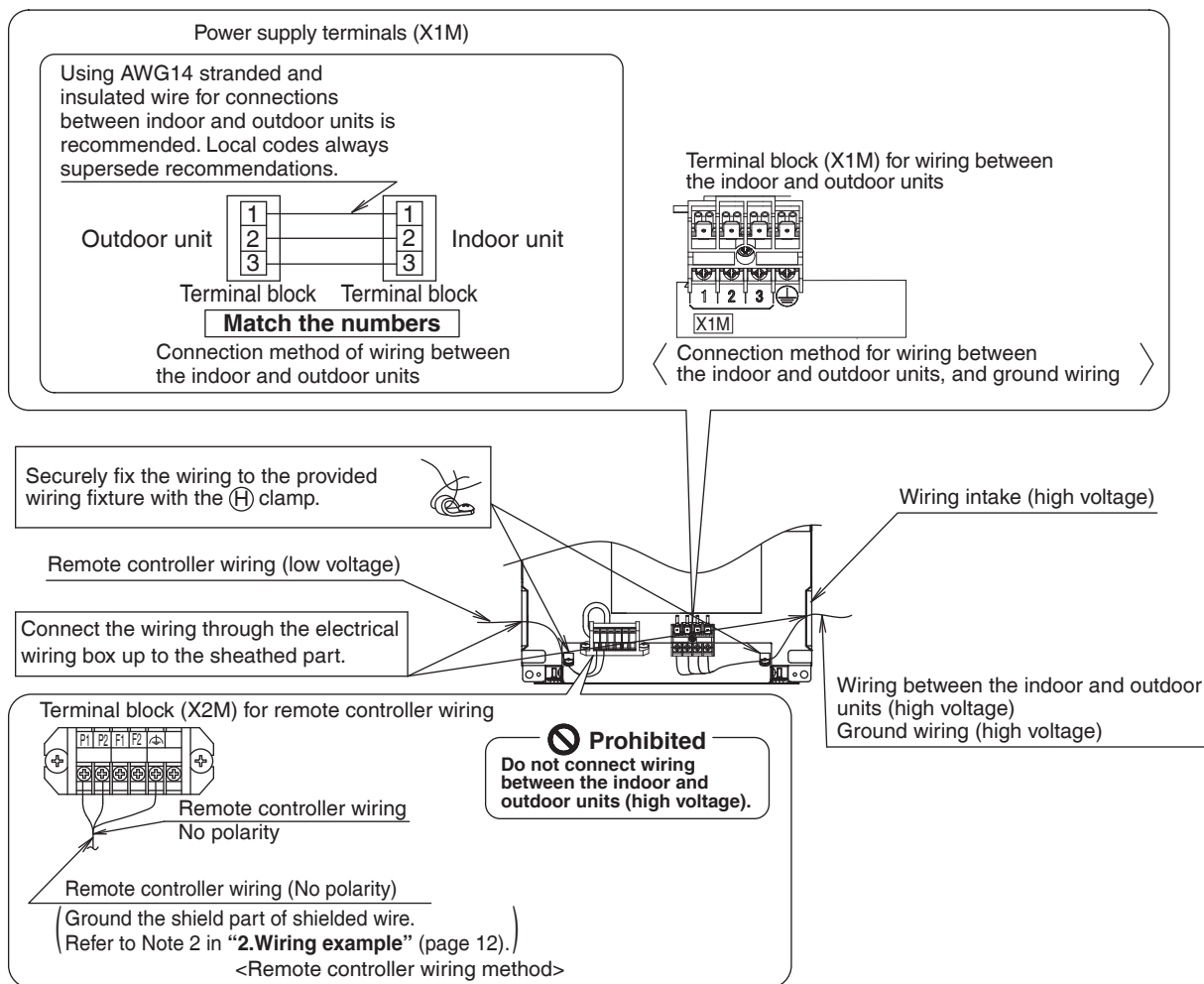


3) Connect the wiring into the electrical wiring box through the wiring intake beside the electrical wiring box.



Indoor Unit Installation

4) Follow the instructions below and perform wiring in the electrical wiring box.

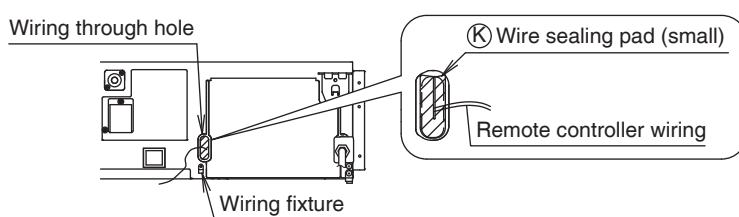


NOTE

Secure the wiring between the wiring intake and conduit with the (H) clamp so that the wiring will not become loose.

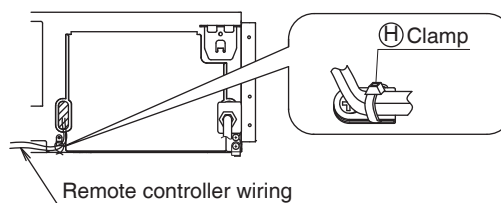
5) Mount the electrical wiring box cover and wrap the (K) wire sealing pad (small) so that the wiring through hole will be covered by the sealing pad.

- Seal the clearance around the wirings with putty or insulating material (field supply). (If insects and small animals get into the indoor unit, short-circuiting may occur inside the electrical wiring box.)



6) Securely fix each wiring with the provided (H) clamp material.

- See the installation manual supplied with the outdoor unit.



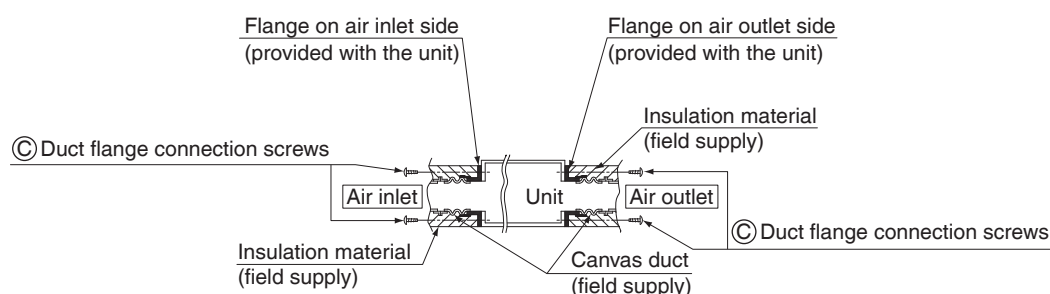
10. Duct work

Pay the utmost attention to the following items and conduct the duct work.

- Check that the duct is not in excess of the setting range of external static pressure for the unit. (Refer to the technical datasheet for the setting range.)
- Attach a canvas duct each to the air outlet and air inlet so that the vibration of the equipment will not be transmitted to the duct or ceiling.
Use a sound-absorbing material (insulation material) for the lining of the duct and apply vibration insulation rubber to the suspension bolts.
- At the time of duct welding, perform the curing of the duct so that the sputter will not come in contact with the drain pan for the filter.
- If the metal duct passes through a metal lath, wire lath, or plate of a wooden structure, separate the duct and wall electrically.
- Be sure to heat insulate the duct for the prevention of dew condensation. (Material: Glass wool or styrene foam; Thickness: 1 inch (25mm))
- Be sure to attach the field supply air filter to the air inlet of the unit or field supply inlet in the air passage on the air suction side. (Be sure to select an air filter with a duct collection efficiency of 50 weight percent.)
- Explain the operation and washing methods of the locally procured components (i.e., the air filter, air inlet grille, and air outlet grille) to the user.
- Locate the air outlet grille on the indoor side for the prevention of drafts in a position where indirect contact with people.
- The air conditioner incorporates a function to adjust the fan to rated speed automatically. (Field settings)
Therefore, do not use booster fans midway in the duct.

Connection method of ducts on air inlet and outlet sides.

- Connect the field supply duct in alignment with the inner side of the flange.
- Connect the flange and unit with the © duct flange connection screw.
- Wrap aluminium tape around the flange and duct joint in order to prevent air leakage.



CAUTION

Connect the flange and unit with the © duct flange connection screw regardless of whether the duct is connected to the air inlet side.

Refrigerant Piping Work

Refer also to the installation manual for the outdoor unit.


WARNING

- Do not apply mineral oil on flared part.
- 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.
- Incomplete flaring may result in refrigerant gas leakage.

Execute thermal insulation work completely on both sides of the gas and the liquid piping. Otherwise, a water leakage can result sometimes.

For gas piping, use insulation material of which heat resistant temperature is not less than 230°F (110°C). Also, in cases where the temperature and humidity of the refrigerant piping sections might exceed 86°F (30°C) or RH80%, reinforce the refrigerant insulation. (13/16 inch (20mm) or thicker) Condensation may form on the surface of the insulating material.

Before refrigerant piping work, check which type of refrigerant is used. Proper operation is not possible if the types of refrigerant are not the same.

1. Flaring the pipe end

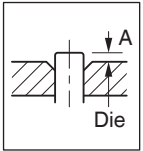
- 1) Cut the pipe end with a pipe cutter.
- 2) Remove burrs with the cut surface facing downward, so that the filings do not enter the pipe.



- 3) Put the flare nut on the pipe.
- 4) Flare the pipe.
- 5) Check that the flaring has been done correctly.

Flaring

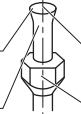
Set exactly at the position shown below.



	Flare tool for R32 or R410A	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)

Check

The flare's inner surface must be flaw-free.
When flaring, do not over-tighten and crack.

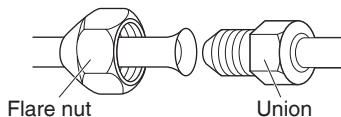


2. Refrigerant piping

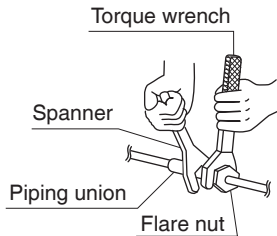

CAUTION

- 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.
- Do not have oil adhere to the screw fixing part of resin parts.
If oil adheres, it may weaken the strength of screwed part.

- 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.



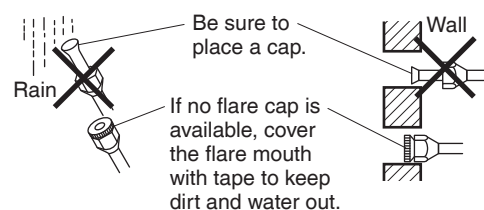
Do not apply refrigeration oil, gas leak prevention agent, etc., to the outer surface of the flare or threads (flare nut, union).
(May result in cracking of the flare nut or damage to the threads)



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

Cautions on piping handling

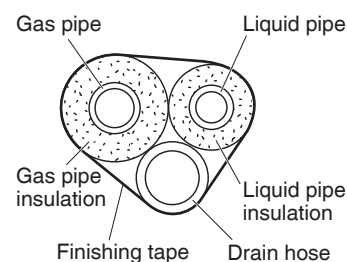
- Protect the open end of the pipe from dust and moisture.
- All pipe bends should be as gentle as possible. Use a pipe bender for bending.



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 pipe only.

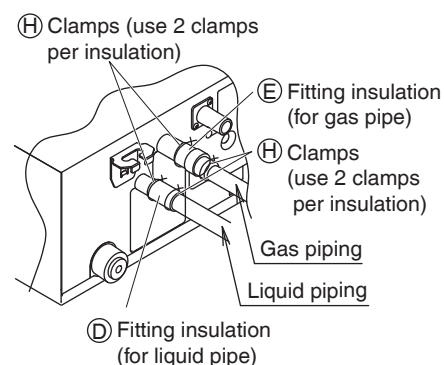
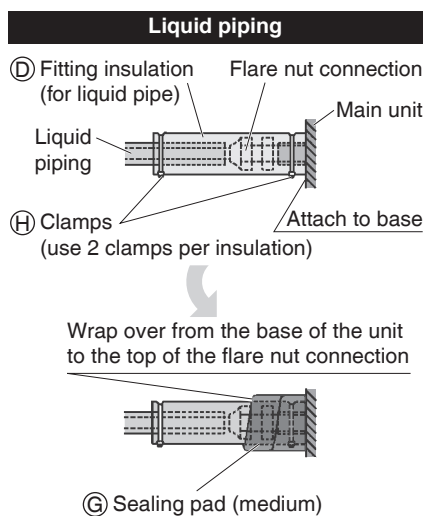
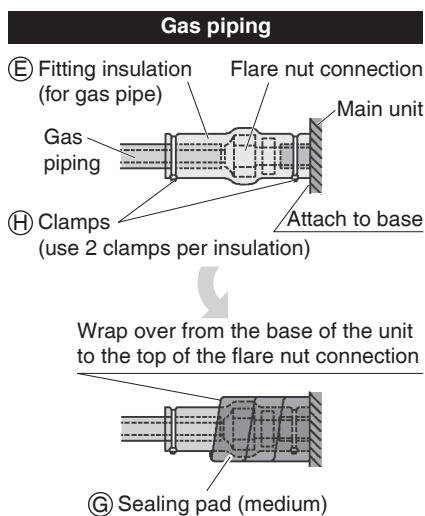


- Be sure to insulate both the gas and liquid piping and observe the insulation dimensions as below.

	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.
- Make absolutely sure to execute thermal insulation works on the pipe-connecting section, after checking for gas leakage, by thoroughly studying the following figures and using the included thermal insulating materials (D) fitting insulation and (E) fitting insulation. Fasten both ends with the (H) clamps.
- Make sure to bring the seam of (D) fitting insulation and (E) fitting insulation to the top.

Piping insulation procedure



CAUTION

Be sure to insulate any field piping all the way to the piping connection inside the unit. Any exposed piping may cause condensation or burns if touched.

Field Settings

CAUTION

Before carrying out field setting, check the items mentioned in “2. Test items” (page 22).

- Check if all the installation and piping works for the air conditioner are completed.
- Check that the outside panel and piping cover of the indoor and outdoor units are closed.

After turning on the power supply, carry out field setting from the remote controller according to the installation state.

- The settings shown by  in the following tables indicate those when shipped from the factory.
- Carry out setting at 3 places, “Mode No.”, “FIRST CODE No.” and “SECOND CODE No.”.
- The method of setting procedure and operation is shown in the installation manual attached to the remote controller.
- Ask the user to keep the manual attached to the remote controller together with the operation manual.
- Do not carry out settings other than those shown in the table.

NOTE

- Though setting of “Mode No.” is carried out as a group, if you intend to carry out individual setting by each indoor unit or confirmation after setting, carry out setting with the Mode No. shown in the parenthesis ().

1. Settings for external static pressure

Make settings in either method (a) or method (b).

(a) Make settings with Air volume automatic adjustment function.

“Air volume automatic adjustment” function: The air volume is adjusted to the rated air volume automatically.

CAUTION

- Be sure to check that the external static pressure is within the specification range before making settings. The external static pressure will not be automatically adjusted and air volume insufficiency or water leakage may result if the external static pressure is outside the range. (Refer to the technical document for the setting range of external static pressure.)

- 1) Check that the electrical wiring and duct work have been completed.
(If the closing damper is set midway, be sure to check that the damper is opened. Furthermore, check that the air passage on the suction side is provided with an air filter (field supply)).
- 2) If air conditioner has more than one air outlet and air inlet, be sure to make adjustments so that the air volume ratio of each air outlet and the corresponding air inlet will conform to the designed air volume ratio.
In that case, set the operating mode to “Fan”. (In the case of changing the air volume, press Fan Speed button on the remote controller and change the current selection to “High”, “Medium”, or “Low”.)
- 3) Make settings to adjust the air volume automatically.
After setting the operating mode to “Fan”, set the air conditioner to field setting mode with the operation of the air conditioner stopped. Select Mode No. [21] (11 in the case of batch settings), select FIRST CODE No. “7”, and set the SECOND CODE No. to “03”.
Return to the “Basic screen” and press On/Off button.
The operation lamp is lit, and the indoor unit will go into fan operation for air volume automatic adjustments (at which time, do not adjust the opening of the air outlet or inlet). The air volume adjustments will automatically terminate approximately 1 to 15 minutes after the indoor unit comes into operation, and the operation lamp will be OFF and the indoor unit will come to a stop.

Air volume adjustment

Setting content	Mode No.	FIRST CODE No.	SECOND CODE No.
OFF	11 (21)	7	01
Air volume adjustment completion			02
Air volume adjustment start			03

⚠ CAUTION

- If airflow pathway changes, such as duct and air outlet changes, are made after air volume adjustments, be sure to make "Air volume automatic adjustment" again.
- If airflow pathway changes, such as duct and air outlet changes, are made after "Test operation and Testing" (page 21) or air conditioner relocation, contact your dealer.

(b) Select external static pressure with the remote controller.

Check with Mode No. [21] per indoor unit that the SECOND CODE No. for the above "Air volume adjustment" is set to "01" (OFF). (The SECOND CODE No. is factory set to "01" (OFF).)

Change the SECOND CODE No. by referring to the table below according to the external static pressure of the duct to be connected.

External static pressure

For 07/09/12 class

Setting content	Mode No.	FIRST CODE NO.	SECOND CODE NO.
0.12 in. WG (30Pa)	13 (23)	6	03
0.16 in. WG (40Pa)			04
0.20 in. WG (50Pa)			05
0.24 in. WG (60Pa)			06
0.28 in. WG (70Pa)			07
0.32 in. WG (80Pa)			08
0.36 in. WG (90Pa)			09
0.40 in. WG (100Pa)			10
0.44 in. WG (110Pa)			11
0.48 in. WG (120Pa)			12
0.52 in. WG (130Pa)			13
0.56 in. WG (140Pa)			14
0.60 in. WG (150Pa)			15

For 15/18/24 class

Setting content	Mode No.	FIRST CODE NO.	SECOND CODE NO.
0.20 in. WG (50Pa)	13 (23)	6	05
0.24 in. WG (60Pa)			06
0.28 in. WG (70Pa)			07
0.32 in. WG (80Pa)			08
0.36 in. WG (90Pa)			09
0.40 in. WG (100Pa)			10
0.44 in. WG (110Pa)			11
0.48 in. WG (120Pa)			12
0.52 in. WG (130Pa)			13
0.56 in. WG (140Pa)			14
0.60 in. WG (150Pa)			15

2. Setting for options

- For settings for options, see the installation manual provided with the option.

3. Setting air filter sign

- Remote controllers are equipped with liquid crystal display air filter signs to display the time to clean air filters.
- Change the SECOND CODE NO. depending on the amount of dirt or dust in the room.

AIR FILTER CLEANING TIME INDICATOR lamp display interval

Setting content	Contamination	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Approx. 2500 hrs	Contamination-light	10 (20)	0	01
Approx. 1250 hrs	Contamination-heavy			02

AIR FILTER CLEANING TIME INDICATOR lamp display

Setting content	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Display ON	10 (20)	3	01
Display OFF*			02

* Use "Display OFF" setting when cleaning indication is not necessary such as the case of periodical cleaning being carried out.

Test operation and Testing

After finishing the construction of refrigerant piping, drain piping, and electric wiring, conduct test operation accordingly to protect the unit.

1. Test operation and testing

⚠ CAUTION

After test operation is completed, check the items mentioned “**Items to be checked at time of delivery**” (page 23).

If the interior finish work is not completed when the test operation is finished, for protection of the air conditioner, ask the user not operate the air conditioner until the interior finish work is completed.

If the air conditioner is operated, the inside of the indoor units may be polluted by substances generated from the coating and adhesives used for the interior finish work and cause water splash and leakage.

Test operation should be carried out in either COOL or HEAT operation.

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

**1-2. In COOL operation, select the lowest programmable temperature;
in HEAT operation, select the highest programmable temperature.**

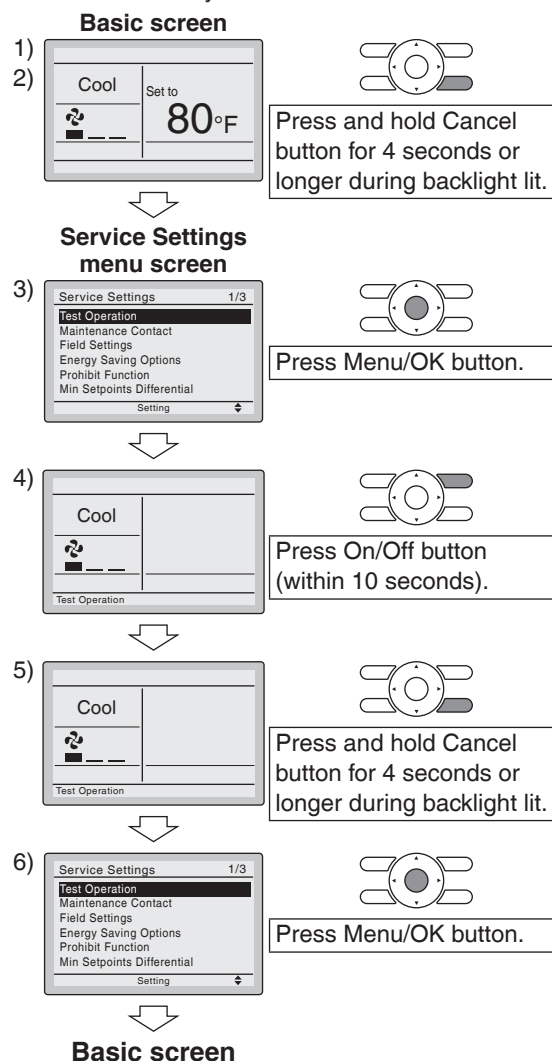
1-3. Carry out the test operation following the instructions in the operation manual to ensure that all functions and parts are working properly.

- To protect the air conditioner, restart operation is disabled for 3 minutes after the system has been turned off.

1-4. After test 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).

- When operating the air conditioner in COOL operation in winter, or HEAT operation in summer, set it to the test operation mode using the following method.

- 1) Set to COOL or HEAT operation using the remote controller.
- 2) Press and hold Cancel button for 4 seconds or longer. Service settings menu is displayed.
- 3) Select **Test Operation** in the service settings menu, and press Menu/OK button. Basic screen returns and “Test Operation” is displayed at the bottom.
- 4) Press On/Off button within 10 seconds, and the test operation starts.
Monitor the operation of the indoor unit for a minimum of 10 minutes. During test operation, the indoor unit will continue to cool/heat regardless of the temperature setpoint and room temperature.
 - In the case of above-mentioned procedures 3) and 4) in reverse order, test operation can start as well.
- 5) Press and hold Cancel button for 4 seconds or longer in the basic screen.
Service settings menu is displayed.
- 6) Select **Test Operation** in the service settings menu, and press Menu/OK button. Basic screen returns and normal operation is conducted.
 - Test operation will stop automatically after 15-30 minutes. To stop the operation, press On/Off button.



Precautions

Refer to “**3. How to diagnose for malfunction**” (page 24) if the unit does not operate properly.

2. Test items

Test items	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	
The power supply voltage corresponds to that shown on the name plate.	No operation or burn damage	
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	
Refrigerant piping length and additional refrigerant charge are noted down.	The refrigerant charge in the system is not clear	
Pipes and wires are connected to the corresponding connection ports / terminal blocks for the connected unit.	No cooling/heating	
Stop valves are opened.	Incomplete cooling/heating function	
The external static pressure is set correctly.	Incomplete cooling/heating function or water leakage	

Test operation and Testing

Items to be checked at time of delivery

Also review the “**Precautions**” (page 3)

Test items	Check
The electrical wiring box cover and air filter are attached.	
I explained about operations while showing the operation manual to the user.	
Field setting has been carried out. (if necessary)	
It has been confirmed that the cool air discharges during the COOL operation and the warm air discharges during the HEAT operation. The indoor unit does not make unpleasant sounds of air discharge.	
I explained the set fan speed to the user (if the fan speed was set at thermostat OFF).	
I handed the operation manual over to the user.	
I have checked that there is no generation of abnormal noise (i.e., noise resulting from contamination or missing parts).	
The printed circuit board switch is not on the emergency (EMG.) side. The switch is factory set to the normal (NORM.) side.	
I have checked the operation of the optional accessory and made field settings as needed (if an optional accessory is in use).	
I have explained failure examples of “ 3.How to diagnose for malfunction ” (page 24).	
I explained the power supply status (power supply ON/OFF) to the user.	

Points for explanation about operations

The items with ⚠ WARNING and ⚠ CAUTION marks in the operation manual are the items pertaining to possibilities for bodily injury and material damage in addition to the general usage of the product. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your user to read the operation manual.

Note to the installer

Be sure to instruct user how to properly operate the unit (especially cleaning the filter, operating different functions, and adjusting the temperature) by having them carry out operations while looking at the manual.

⚠ To the operator carrying out test operation

After test operation is completed, before delivering the air conditioner to the user, confirm that the electrical wiring box cover is closed.

In addition, explain the power supply status (power supply ON/OFF) to the user.

- If the test operation is completed with no malfunction code shown on the remote controller, the system is confirmed to be ready for activating safety measures when refrigerant is detected by the built-in refrigerant sensor.
- When the remote controller operation lamp blinks, it shows that something is abnormal.
Check the malfunction codes on the remote controller (refer to “**4. Malfunction code**” (page 24)).
Particularly, if the indication is one of those shown in the table, it may be an error in the electrical wiring or the power supply is disconnected. Therefore, recheck wiring.

Remote controller indication	Details
“U4” turns on	• The power supply to the outdoor unit is not connected. • The power supply wiring to the outdoor unit is not carried out. • The transmission wiring and the remote controller wiring and FORCED OFF wiring are connected wrongly. • The transmission wiring is disconnected.
No indication	• The power supply to the indoor unit is not connected. • The power supply wiring to the indoor unit is not carried out. • The remote controller wiring and the transmission wiring and FORCED OFF wiring are connected wrongly. • The remote controller wiring is disconnected.

3. How to diagnose for malfunction

- If the air conditioner does not operate normally after installing the air conditioner, a malfunction shown in the table below may happen.

Remote controller display	Description
No display	• Power outage, power voltage error or open-phase • Incorrect wiring (between indoor and outdoor units) • Indoor PCB assembly failure • Remote controller wiring not connected • Remote controller failure • Open fuse or tripped circuit breaker (outdoor unit)
"Checking the connection. Please stand by." *	• Indoor PCB assembly failure • Wrong wiring (between indoor and outdoor units)

* "Checking the connection. Please stand by" will be displayed for up to 90 seconds following the application of power to the indoor unit. This is normal and does not indicate a malfunction.

■ Diagnose with the display on the liquid crystal display remote controller.

When the operation stops due to a malfunction, operation lamp blinks, and the malfunction code is indicated on the liquid crystal display. In such a case, diagnose the fault contents by referring to **Error History** in the service settings menu.

In the case of group control, the unit No. is displayed so that the indoor unit with the trouble can be identified.

4. Malfunction code

- Depending on the type of indoor or outdoor unit, the malfunction code may or may not be displayed.

Malfunction code	Descriptions and measures	Remarks
A0	Refrigerant Leak Detection	
A1	Indoor Printed Circuit Board failure	
A3	Drain level abnormal	
A5	Freeze-up protection control/heating peak-cut control	
A6	Indoor fan motor overload, over current, lock	
	Indoor Printed Circuit Board connection failure	
A8	Indoor unit power supply voltage abnormal	
AJ	Capacity setting failure	Capacity setting adapter or capacity data error, or disconnection of the capacity setting adapter, failure to connect the adapter, or the capacity is not set to the data-retention IC.
C1	Transmission error between indoor Printed Circuit Board (Master) and indoor Printed Circuit Board (Slave)	
C4	Indoor heat exchanger liquid pipe temperature sensor malfunction	Abnormal stop is applied depending on the model or condition.
C5	Indoor heat exchanger condenser / evaporator temperature sensor malfunction	Abnormal stop is applied depending on the model or condition.
C9	Suction air thermistor malfunction	Abnormal stop is applied depending on the model or condition.
CH	Refrigerant Sensor disconnect or malfunction	
CJ	Remote controller air thermistor malfunction	Remote controller thermo does not function, but body thermo operation is enabled.
E1	Outdoor Printed Circuit Board failure (Outdoor unit)	
E3	High pressure switch (HPS) activated	
E5	OL (compressor overload) started	
E6	Compressor motor lock by over current (Outdoor unit)	

Test operation and Testing

Malfunction code	Descriptions and measures	Remarks
E7	Outdoor fan motor lock malfunction (Outdoor unit)	
	Outdoor fan instant overcurrent malfunction (Outdoor unit)	
E8	Input overcurrent (Outdoor unit)	
E9	Electronic expansion valve abnormality	
EA	Cooling/heating switch malfunction (Outdoor unit)	
F3	Discharge piping temperature malfunction (Outdoor unit)	
F6	High pressure control (in cooling) (Outdoor unit)	
F8	Operation halt due to compressor internal temperature abnormality	
H0	Sensor fault for inverter (Outdoor unit)	
H3	High pressure switch system abnormality	
H6	Operation halt due to faulty position detection sensor	
H7	Fan IPM temperature error	
H8	CT abnormality (Outdoor unit)	
H9	Outdoor air thermistor system malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
J3	Discharge piping thermistor system malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
J6	Outdoor heat exchanger distributor liquid piping thermistor malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
L3	Reactor thermistor malfunction (Outdoor unit)	
L4	Overheated heat-radiating fin (Outdoor unit)	Inverter cooling failure.
L5	Instantaneous overcurrent (Outdoor unit)	The compressor engines and turbines may be experiencing a ground fault or short circuit.
P4	Heat-radiating fin thermistor malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
U0	Suction piping temperature abnormal (Outdoor unit)	The refrigerant may be insufficient. Abnormal stop is applied depending on the model or condition.
U2	Power voltage malfunction (Outdoor unit)	The inverter open-phase or main circuit condenser may be malfunctioning. Abnormal stop is applied depending on the model or condition.
U4	Transmission error (between indoor and outdoor units)	Wiring error between indoor and outdoor unit. Or Indoor and outdoor Printed Circuit Board failure.
U5	Transmission error (between indoor and remote controller units)	Transmission between indoor unit and remote controller is not performed properly.
U7	Transmission error of the inverter module	
UA	Field setting error	System setting error of the simultaneous on/off multi-split type.
UE	Transmission error (between indoor unit and centralized remote controller)	
UC	Remote controller address setting error	

5. Pump down operation

Be sure to pump down when relocating or disposing of the unit.
For instructions on how to pump down, refer to the service manual.

MEMO

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The two-dimensional bar code
is a manufacturing code.

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