

DAIKIN



INSTALLATION MANUAL

Split System Air Conditioner

FVA71AMVEB
FVA100AMVEB
FVA125AMVEB
FVA140AMVEB
AVA125AMVE

CONTENTS

1. SAFETY PRECAUTIONS 1

2. BEFORE INSTALLATION 3

3. SELECTING INSTALLATION SITE 6

4. INDOOR UNIT INSTALLATION 7

5. REFRIGERANT PIPING WORK 9

6. DRAIN PIPING WORK 14

7. WHEN THE OPTIONAL REMOTE CONTROLLER (BRC1E model)
 IS USED AS A CONTROL PANEL 15

8. ELECTRIC WIRING WORK 19

9. HOW TO CONNECT WIRINGS AND WIRING EXAMPLE 21

10. INSTALLATION OF SUCTION GRILLE 26

11. FIELD SETTING 27

12. TEST OPERATION 28

13. OPERATION RANGE 33

This English text is the original instruction. Other languages are translations of the original instructions.

Read these instructions carefully before installation.
 Keep this manual in a handy place for future reference.

	This appliance is filled with R32.
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1. SAFETY PRECAUTIONS

Please read these “SAFETY PRECAUTIONS” carefully before installing air conditioning equipment and be sure to install it correctly.

Meaning of WARNING and CAUTION notices.
 Both are important notices for safety. Be sure to follow them.

 **WARNING** Failure to follow these instructions properly may result in personal injury or loss of life.

 **CAUTION** Failure to observe these instructions properly may result in property damage or personal injury, which may be serious depending on the circumstances.

After completing installation, conduct a test operation to confirm that the equipment operates without any problems. Then, explain to the customer how to operate the equipment and take care of it following the operation manual. Ask the customer to store the installation manual along with the operation manual for future reference.

This air conditioner comes under the term “appliances accessible to the general public”.

-  **WARNING** —————
- Ask your dealer or qualified personnel to carry out installation work.
 Do not attempt to install the air conditioner yourself. Improper installation may result in water leakage, electric shocks or fire.
 - Install the air conditioner in accordance with the instructions in this installation manual.
 Improper installation may result in water leakage, electric shocks or fire.

- When installing the unit in a small room, take measures so that the refrigerant may not exceed the limiting concentration in the event of refrigerant leakage.
Contact your dealer for further information. If the refrigerant leaks and exceeds the limiting concentration, it may lead to oxygen deficiency.
 - Make sure to provide for adequate measures in order to prevent that the outdoor unit be used as a shelter by small animals.
Small animals making contact with electrical parts can cause malfunctions, smoke or fire. Please instruct the customer to keep the area around the unit clean.
 - Be sure to use only the specified accessories and parts for installation work.
Failure to use the specified parts may result in the unit falling, water leakage, electric shocks or fire.
 - Install the air conditioner on a foundation strong enough to withstand the weight of the unit.
If a foundation does not have sufficient strength, the equipment may fall and cause injury.
 - Carry out the required installation work in consideration of strong winds, typhoons or earthquakes.
If the installation work is not properly carried out, the unit may fall down and cause accidents.
 - The electrical work must be carried out by the qualified electrician in accordance with the local laws and regulations and this installation manual. Make sure to provide a dedicated power supply circuit and never connect additional wiring to the existing circuit.
An insufficient power supply capacity or improper electrical work may lead to electric shocks or fire.
 - Be sure to earth the air conditioner.
Do not earth the unit to a utility pipe, lightning conductor or telephone earth lead.
Imperfect earthing may result in electric shocks or fire.
A high surge current from lightning or other sources may cause damage to the air conditioner.
 - Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks or fire.
 - Be sure to switch off the unit before touching any electrical parts.
Touching a live part may result in electric shock.
 - For wiring, use the specified wires and connect and fasten them firmly so that no external force from the wires may be applied to the terminal connections.
If the wires are not firmly connected and fastened, it may cause heating, fire or the like.
 - Wiring for power supply and between the indoor and outdoor units must be properly laid and formed, and the control box lid must be firmly fastened so that the wiring may not push up the structural parts such as the lid.
If the lid is improperly fastened, it may cause electric shock or fire.
 - If refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant comes into contact with fire.
 - After completing installation, check for refrigerant gas leakage.
Toxic gas may be produced if the refrigerant gas leaks into the room and comes into contact with a source of fire, such as a fan heater, stove or cooker.
 - Do not directly touch refrigerant that has leaked from refrigerant pipes or other areas, as there is a danger of frostbite.
 - Do not use flammable gasses (hairsprays, insecticides etc.) near the unit.
Do not use benzine or thinner to wipe the unit.
It could cause cracking, electric shocks or fire (only for R32 refrigerant).
 - Make sure installation, servicing, maintenance and repair comply with instruction from Daikin and with applicable legislation (for example national gas regulation) and are executed only by authorised persons.
 - When installing or relocating the air conditioner, be sure to bleed the refrigerant circuit to ensure it is free of air, and use only the specified refrigerant (R410A or R32- based on unit specification. The refrigerant must not be interchanged).
The presence of air or other foreign matter in the refrigerant circuit causes abnormal pressure rise, which may result in equipment damage and even injury.
 - If the supply cord is damaged, it must be replaced by the manufacturer, a service agent or similarly qualified persons in order to avoid a hazard.
-

⚠ CAUTION

- This appliance is intended to be used by expert or trained users in shops, in light industry and on farms, or for commercial and household use by lay persons.
- Sound pressure level is less than 70 dB(A).
- Carry out drain piping properly following this installation manual and insulate the pipe to prevent condensation. Improper drain piping may result in indoor water leakage and property damage.
- Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios to prevent picture interference and noise.
(Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)
- Install the indoor unit as far as possible from fluorescent lamps.
If a wireless kit is installed in a room where the electronic lighting type (inverter or rapid start types) fluorescent lamps exist, the transmitting distance of a remote controller may be shorter.
- Do not install the air conditioner in the following locations:
 1. Where there is a high concentration of mineral oil spray or vapour (e.g. a kitchen).
Plastic parts may deteriorate and cause parts to fall off or water to leak.
 2. Where corrosive gas, such as sulphurous acid gas, is produced.
Corrosion of copper pipes or brazed parts may occur and cause refrigerant leakage.
 3. Where there is a machine that generates electromagnetic wave and where voltage fluctuation often occurs such as a factory.
Control system may malfunction and as a result the unit may not properly operate.
 4. Where flammable gas may leak, where carbon fibre or ignitable dust is suspending in the air, or where volatile flammables such as paint thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.
- The air conditioner is not intended for use in a potentially explosive atmosphere.
- Do not install in sealed, highly airtight spaces such as soundproof chambers and room which was sealed up the door (only for R32 refrigerant).
- Do not install in places filled with smoke, gas, chemicals etc.
There is a possibility that the sensors inside the indoor unit could detect these, and display a refrigerant leak abnormality (only for R32 refrigerant).
- This unit is equipped with a refrigerant leak detector for safety. To be effective, the unit must be electrically powered at all times after installation, other than short service intervals (only for R32 refrigerant).

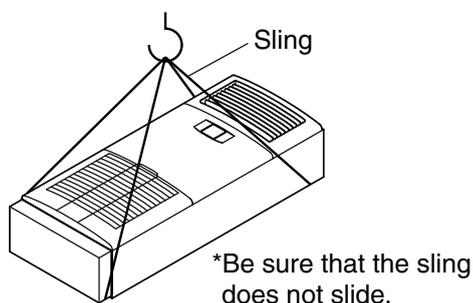
2. BEFORE INSTALLATION

Do not exert pressure on the resin parts when opening the unit or when moving it after opening.
Be sure to check in advance that the refrigerant to be used for installation is R32 or R410A. (If a wrong refrigerant is charged, the unit will not properly operate)

- For the installation of an outdoor unit, refer to the installation manual attached to the outdoor unit.
- Do not dispose of any parts necessary for installation until the installation is completed.
- Decide the route for carrying the unit to the installation site.
- When hanging the unit for lifting, use a sling of soft material (made of cloth, nylon, etc.) as shown below.

(Refer to Fig. 1)

(1) Horizontal hanging



(2) Vertical hanging

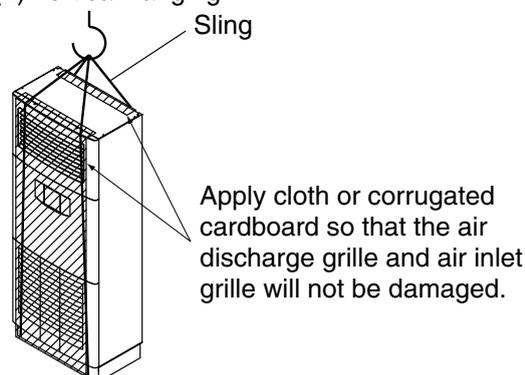


Fig. 1

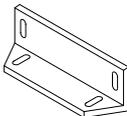
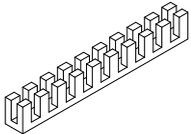
2-1 PRECAUTIONS

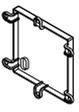
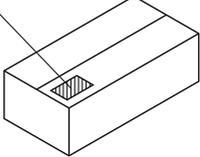
- When selecting installation site, refer to the paper pattern (part of packaging material).
- Do not use the unit in locations where the salt content in the air is high such as beachfront, or where the voltage fluctuates such as factories, or where the base vibrates such as automobiles or marine vessels.
- Before opening the control box lid and performing the wiring operation, remove the static electricity charged to your body. Otherwise, electrical parts may be damaged.

2-2 ACCESSORIES

Check the following accessories are included with the unit.

(Do not dispose of any parts necessary for installation until the installation is completed.)

Name	(1) Bracket for installation	(3) Hole protection rubber	(4) Bush	Insulation for fitting
Quantity	1 set *1)	2 pcs.	1 pc.	1 each
Shape	 (2) Screw (M4 × 10), 1 pc.			(5) For gas pipe  (6) For liquid pipe 

Name	(7) Cover	(8) Clamp	(9) Installation pattern	(10) Dew proof material
Quantity	1 pc. *2)	5 pcs.	1 pc.	1 pc.
Shape			Also used as a packaging material 	

Name	(11) Screws (M4 × 10)	(12) Screws (M5 × 12)	(13) Remote controller wiring	(Other)
Quantity	3 pcs. *2)	2 pcs.	1 pc. *2)	<ul style="list-style-type: none"> • Operation manual • Installation manual
Shape				<p>*1) The bracket for installation is screwed onto the main unit (top plate).</p> <p>*2) These parts are used when the remote controller is installed in the main unit.</p>

2-3 OPTIONAL ACCESSORIES

- The optional remote controller is required for this indoor unit.
- Select a remote controller from Table 1 according to customer request and install in an appropriate place. (For installation, follow the installation manual included with the remote controllers.)

Table 1

Remote controller	
Wired type	BRC1E53A7/BRC1E53B7/BRC1E53C7/BRC1D528

NOTE

- If the customer wishes to use a remote controller that is not listed above, select a suitable remote controller after consulting catalogs and technical guide.

FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED.

1. Items to be checked after completion of work

Items to be checked	If not properly done, what is likely to occur	Check
Are the indoor unit and outdoor unit fixed firmly?	The unit may drop, vibrate or make noise.	
Is the installation of the indoor unit and the outdoor unit completed?	The unit may malfunction or the components may burn out.	
Is the gas leakage checked with the leakage test pressure written in the installation manual supplied with the outdoor unit?	It may result in insufficient cooling or heating.	
Is the unit fully insulated? (Refrigerant piping, drain piping)	Condensate water may drip.	
Does drainage flow smoothly?	Condensate water may drip.	
Does the power supply voltage correspond to that shown on the name plate?	The unit may malfunction or the components may burn out.	
Are wiring and piping correct?	The unit may malfunction or the components may burn out.	
Is the unit safely grounded?	It may result in electric shock.	
Is wiring size according to specifications?	The unit may malfunction or the components may burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling or heating. (This can lead to malfunction or decreased performance due to decreased air volume.)	
Are refrigerant piping length and additional refrigerant charge noted down?	The refrigerant charge in the system is not clear.	

2. Items to be checked at time of delivery to customer.

* Also review the "1. SAFETY PRECAUTIONS"

Items to be checked	Check
Has the field setting done (as necessary)?	
Did you attach the control box lid, the air filter, and suction grille?	
Does the cold air (warm air) blow properly during the cooling (heating) operation?	
Did you explain about operations while showing the operation manual to your customer?	
Did you explain the cooling, heating, dry, and automatic cooling/heating operations described in the operation manual?	
Did you explain what the set airflow rate is when setting the airflow rate at thermostat off to the customer?	
Is the emergency switch (EMG.) of the printed circuit board turned ON? At delivery from the factory, it is set to normal (NORM).	
Is the suction thermistor installed at its original position (bell mouth) when the optional adapter installation box is installed?	
Did you hand the operation manual over to your customer? (Please hand over the installation manual as well.)	

Points for explanation about operations

Since the items with **⚠ WARNING** and **⚠ CAUTION** marks in the operation manual, if not observed, may cause injuries and/or material damages. Therefore, in addition to the general usage, it is necessary to explain them to the customer and also to ask the customers to thoroughly read them. Accordingly, it is necessary that you make a full explanation about the described contents and also ask your customers to read the operation manual.

2-4 NOTE TO THE INSTALLER

Be sure to instruct customers how to properly operate (especially cleaning filters, operating different functions, and adjusting the temperature) by having them carry out operations by themselves while reading the manual literally.

3. SELECTING INSTALLATION SITE

Do not exert pressure on the resin parts when opening the unit or when moving it after opening.

(1) Select an installation site where the following conditions are fulfilled and that meets with your customer's approval.

- Where optimum air distribution can be ensured.
- Where the floor is strong enough to withstand the weight and vibration of the indoor unit.
- Make sure the floor is level. (Vibration and abnormal noise may be generated.)
- Where nothing blocks the air inlet and outlet, and where sufficient clearance for maintenance and service can be ensured. **(Refer to Fig.2)** (If not ensured, the capacity may drop due to short circuit.)
- Where condensate can be properly drained.
- Where piping between indoor and outdoor units is possible within the allowable limit. (Refer to the installation manual for the outdoor unit.)
- Where there is no risk of flammable gas leakage.

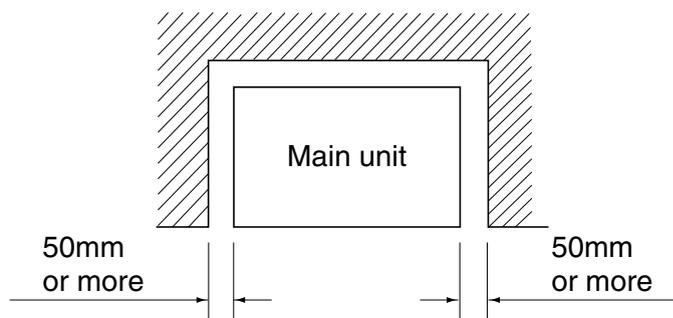


Fig. 2

(2) Install the indoor and outdoor units, power cord and connecting wires at least 1 meter away from televisions or radios to prevent picture interference and noise.

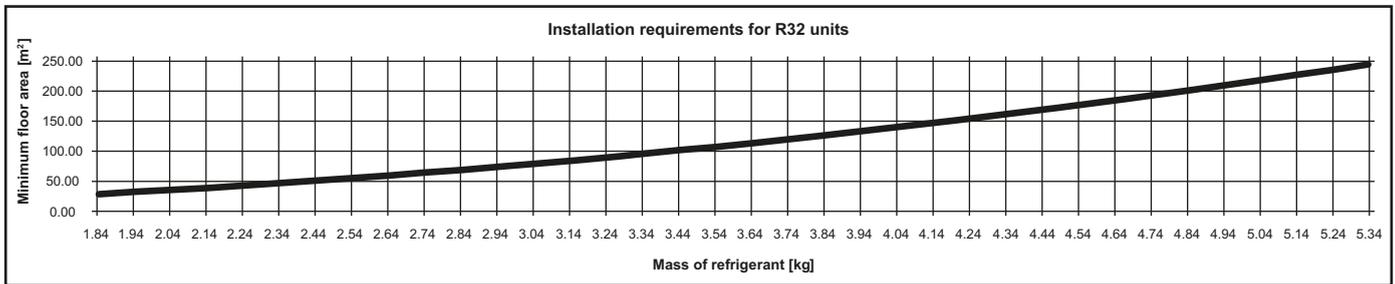
(Depending on the incoming signal strength, a distance of 1 meter may not be sufficient to eliminate noise.)

(3) Investigate whether the installation location (such as the floor and wall) can withstand the weight of the unit and, if necessary, reinforce the location with such as beams before installation. To avoid vibration and abnormal noise, reinforce the location before installation.

(4) Pipework shall be protected from physical damage and shall not be installed in unventilated space, if the space is smaller than the minimum size as defined in the table below (only for R32 refrigerant).

(5) Floor area where the indoor unit will be installed shall be higher than minimum required floor area mentioned in table below (only for R32 refrigerant).

Minimum floor area for indoor unit.		Minimum floor area for indoor unit.		
m_c [kg]	A_{min} [m ²]	m_c [kg]	A_{min} [m ²]	
0.70	No requirements.	3.04	78.65	
0.76		3.14	83.91	
0.86		3.24	89.34	
0.96		3.34	94.94	
1.06		3.44	100.71	
1.16		3.54	106.65	
1.26		3.64	112.76	
1.36		3.74	119.05	
1.46		3.84	125.50	
1.56		3.94	132.12	
1.66		4.04	138.91	
1.76		4.14	145.87	
1.84		28.81	4.24	153.00
1.94		32.03	4.34	160.31
2.04		35.42	4.44	167.78
2.14	38.98	4.54	175.42	
2.24	42.70	4.64	183.23	
2.34	46.60	4.74	191.22	
2.44	50.67	4.84	199.37	
2.54	54.91	4.94	207.69	
2.64	59.32	5.04	216.19	
2.74	63.90	5.14	224.85	
2.84	68.64	5.24	233.69	
2.94	73.56	5.34	242.69	



4. INDOOR UNIT INSTALLATION

⚠ WARNING

- Only use accessories, optional equipment and spare parts made or approved by DAIKIN.
- Installation shall be done by an installer, the choice of materials and installation shall comply with the applicable legislation.
In Europe, the EN378 is the applicable standard that shall be used.

⟨Fixing procedure⟩

- Since the indoor unit is vertically tall, take measures to prevent the unit from falling down according to the following method.

1. Raise the grille fixture.

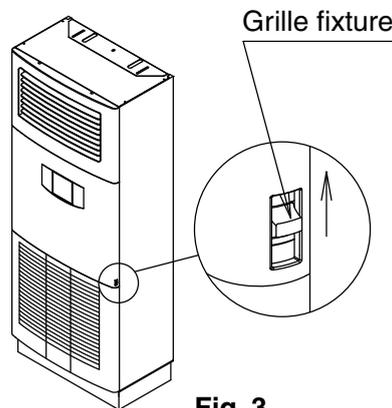


Fig. 3

2. Detach the suction grille.

Remove the screws (R & L, total 2) locking the grille stopper. Then, (1) tilt the grille forward, and (2) lift upward.

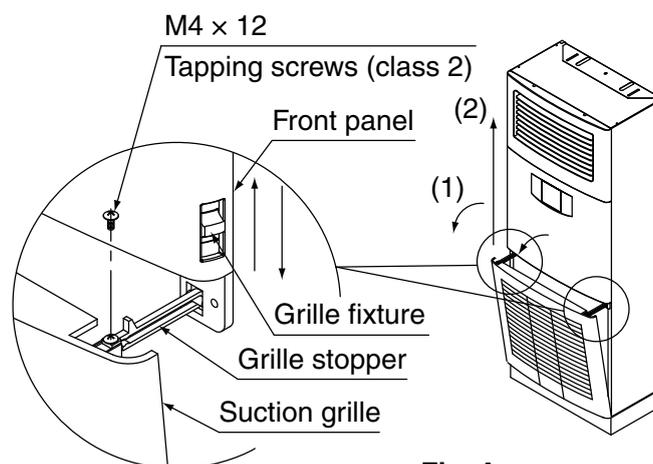
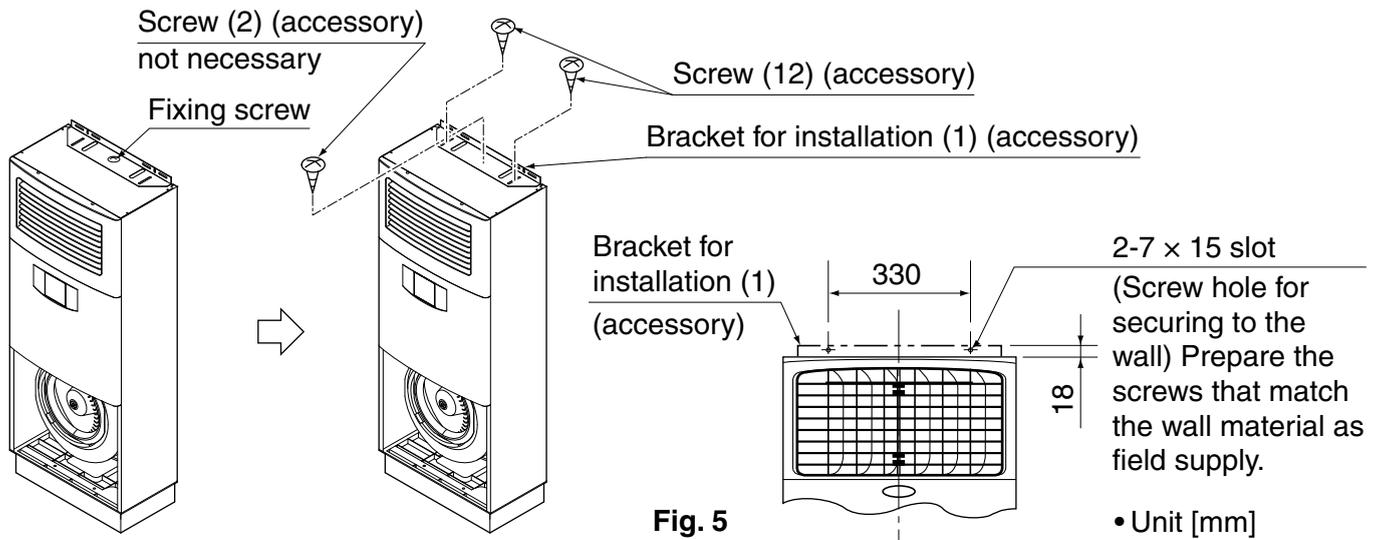


Fig. 4

3. For normal installation.

Remove the screw (2) fixing the bracket for installation (1) to the top panel. Change the mounting direction of the bracket as shown in the figure below and fix it to the top panel with the attached screws (12). Then, fix the bracket to the wall with the appropriate screws (field supply).

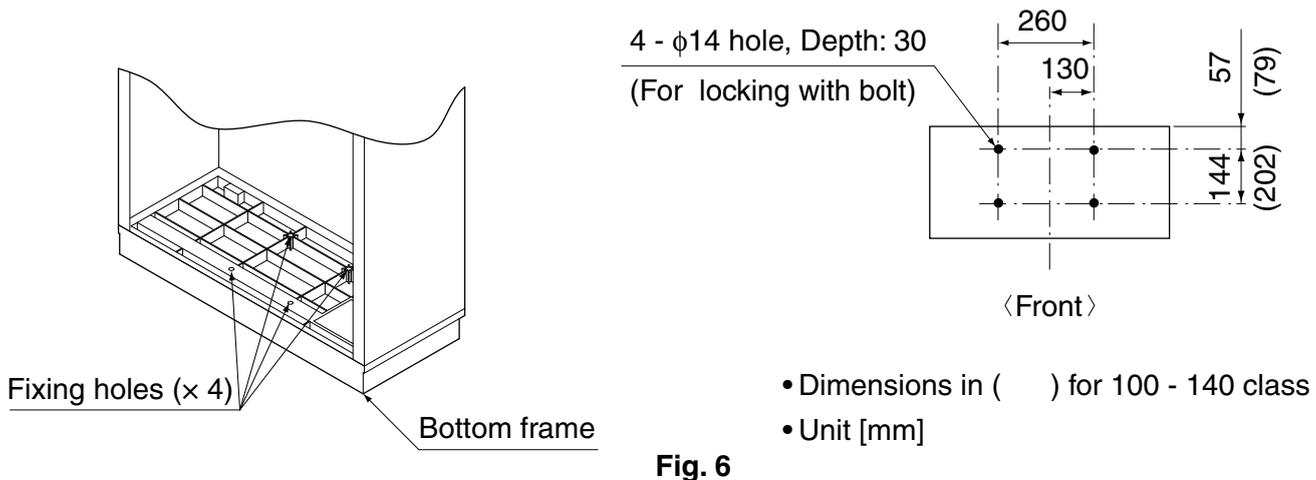
- Screws (2) are not used.



4. When installing the unit to a place where strength to earthquake is required.

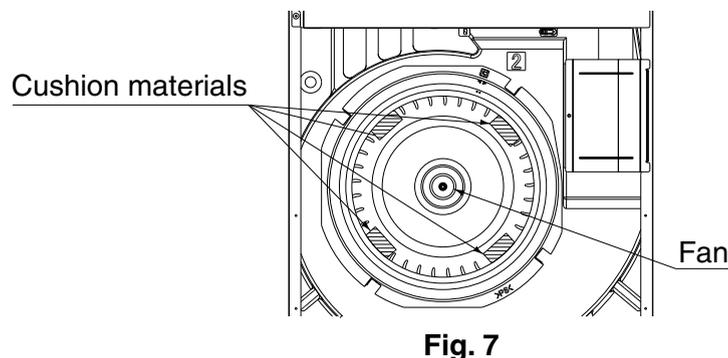
In addition to the fixing method shown left, fix the bottom frame to the foundation with the anchor bolts (field supply). Four holes for anchor bolts are prepared on the bottom plate.

- Use the locations indicated on the installation pattern (9) (part of packing material).



5. Remove the cushion materials of the fan.

It may cause malfunction when operating while installed the cushion materials of the fan. (4 places)



◀How to attach dew proof material (only when connected with the RZQSG71L and RZASG71)▶

- To make the work easy, set the upper 5 horizontal flaps upward and the lower 3 flaps downward. Then, attach the provided dew proof material (10) to the third horizontal flap from the bottom as shown in Fig.8. If the material is not attached to the correct place, dew condensation water may drip.

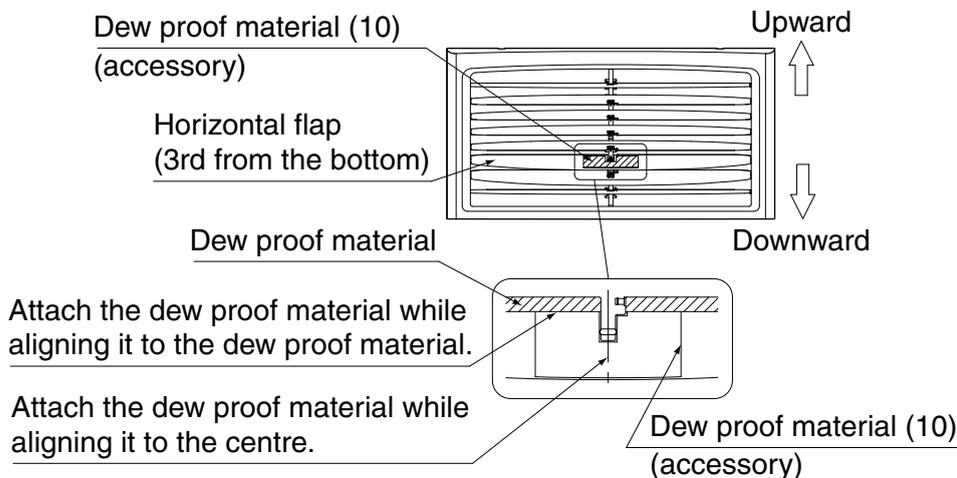


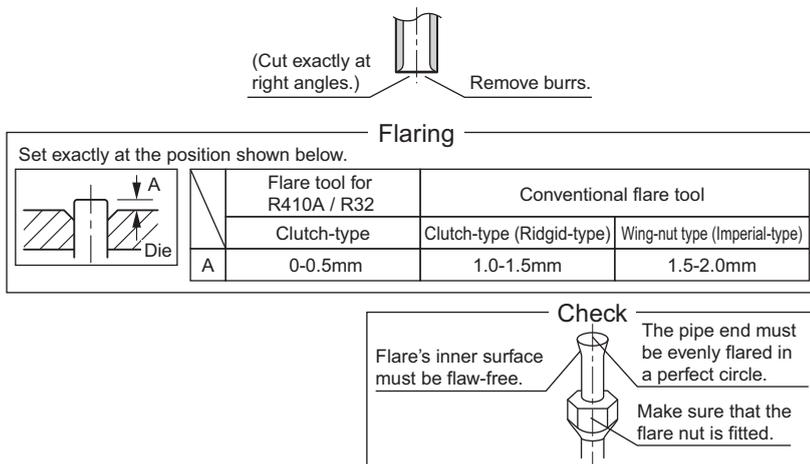
Fig. 8

5. REFRIGERANT PIPING WORK

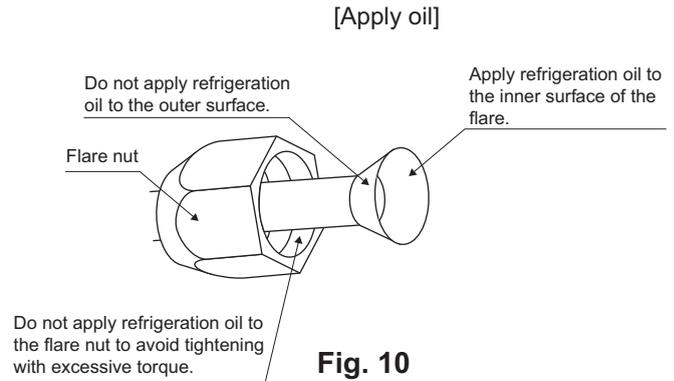
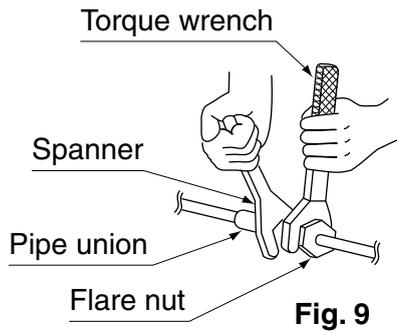
◀For refrigerant piping of outdoor units, see the installation manual attached to the outdoor unit.▶
 ▶Make sure to carry out thermal insulation in both gas and liquid piping. Incomplete insulation may result in water leakage. Thermal resistance of the insulation for gas piping must be 120°C or higher. In a high humidity environment, strengthen the refrigerant piping insulation. If insulation is insufficient, condensation may form on the insulation surface.▶

—  CAUTION —

- For flare connection use pipe cutter and flaring tools for R32/R410A.
- Protect or enclose the refrigerant tubing to avoid mechanical damage.
- Apply ester oil or ether oil to the inside of the flare section before connecting.
- To prevent dust, moisture or other foreign matters from getting into the tube, either pinch the tube end or cover the end with tape.
- Do not allow anything other than the designated refrigerant to get mixed into the refrigerant circuit, such as air, etc. If any refrigerant gas leaks while working on the unit, ventilate the room thoroughly right away.



- The outdoor unit is charged with refrigerant.
- The refrigerant piping can be taken out from the following side of the unit.
Left side, Right side, Back side, Bottom side
You must decide from which side you intend to take out the refrigerant piping.
- Be sure to use both a spanner and a torque wrench together as shown in the drawing, when connecting or disconnecting pipes to/from the unit. **(Refer to Fig. 9)**
* Using a tool other than a spanner can damage the head of the flare nut, and gas leakage can occur due to tightening failure.
- When connecting the flare nut, apply ester oil or ether oil to the inside of flared section, and turn the nut spin 3-4 times by hand before screwing in. **(Refer to Fig. 10)**



CAUTION
Be careful not to damage the flare section.

Flare nut tightening torque				
Gas side				Liquid side
20, 25, 35 class	50, 60 class	71 R410A class	71 R32 class	1/4 inch
3/8 inch	1/2 inch	1/2 inch	5/8 inch	
32.7-39.9N · m (330-407kgf · cm)	49.5-60.3N · m (505-615kgf · cm)	49.5-60.3N · m (505-615kgf · cm)	61.8-75.4N · m (630-770 kgf · cm)	14.2-17.2N · m (144-175kgf · cm)



Caution on piping handling

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

CAUTION
Overtightening may damage the flare and cause a refrigerant leakage.

When you do not have a torque wrench, use Table 2 as a rule of thumb.

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases.

From that point, further tighten and turn the flare nut the angle shown below. **(Refer to Table 2)**

After the work is finished, make sure to check that there is no leak.

Unless you tighten as instructed, (if it is loosely tightened), it may lead to the refrigerant leakage (slow leak) and cause malfunction of the device (such as insufficient cooling or heating).

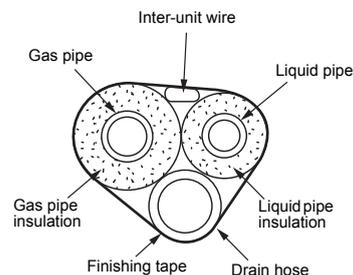
Table 2

Pipe size	Further tightening angle	Recommended arm length of tool
Ø9.5 (3/8")	60 to 90 degrees	Approx. 200mm
Ø15.9 (5/8")	30 to 60 degrees	Approx. 300mm

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 (0.035 to 0.045kcal/mh°C)
Refrigerant gas pipe's surface temperature reaches 110°C max.
Choose heat insulation materials that will withstand this temperature.



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

Gas side	Liquid side
O.D. 15.9mm	O.D. 9.5mm
Minimum bend radius - 30mm or more	
Thickness 0.8mm (C1220T-O)	Thickness 0.5mm

Gas pipe thermal insulation	Liquid pipe thermal insulation
O.D. 15.9mm	I.D. 10-14mm
I.D. 17-21mm	
Thickness≥13mm	Thickness≥10mm

- Use separate thermal insulation for gas and liquid refrigerant pipes.

1. How to carry out refrigerant piping.

- Detach the pipe retainer. (Refer to Fig. 12)

〈In case of left or right piping〉

- Open the knock out holes on the right (left) side panel. (Refer to Fig. 11)
- Carry out piping (refrigerant and drain) and wiring (connecting outdoor and indoor units) through the holes on the side panel.
(See dimensions shown in Fig. 15 for forming refrigerant piping.)

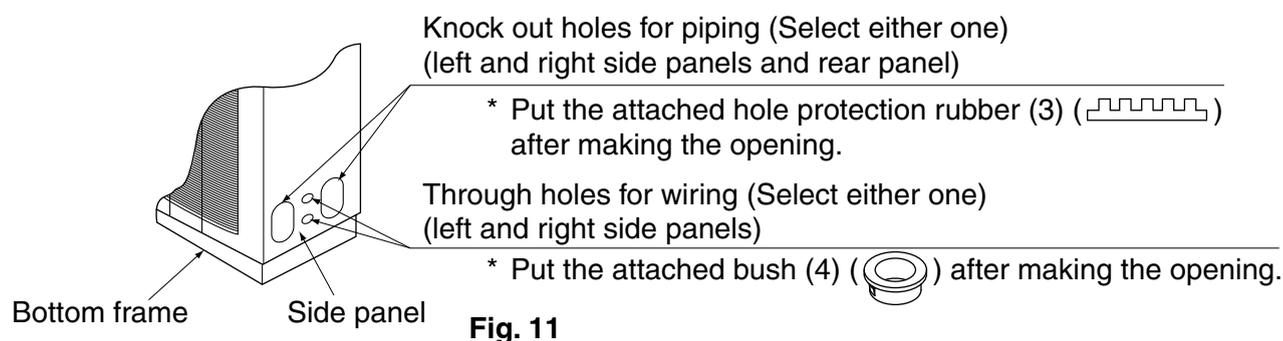


Fig. 11

〈In case of rear piping〉

- Open the knock out holes on the rear panel. (Refer to Fig. 14)
- Carry out piping (refrigerant and drain) and wiring (connecting outdoor and indoor units) through the holes on the rear panel.
(See dimensions shown in Fig. 15 for forming refrigerant piping.)

⚠ CAUTION

In case of rear side piping, be careful not to damage fan motor lead wire.

When opening the knock out hole, be careful not to damage fan motor lead wire with the steel plate cut off. (Refer to Fig. 16).

〈In case of downward piping〉

- Cut holes in the indicated area of the bottom frame. (Refer to Fig. 14)
- Carry out piping (refrigerant and drain) and wiring (connecting outdoor and indoor units) through the holes on the bottom frame.



CAUTION

Be careful not to damage fan housing when piping.

Fan housing is made of foamed polystyrene.

Be careful not to damage the fan housing with pipe edge when installing indoor unit.

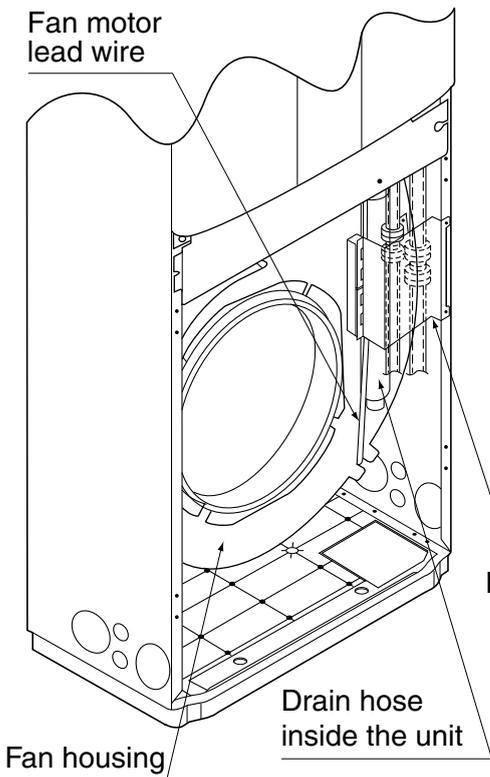


Fig. 12

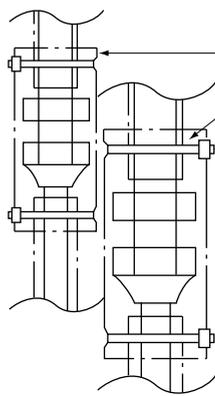


Fig. 13

Pipe retainer

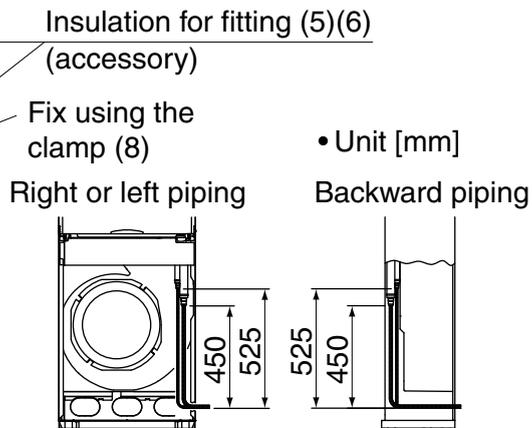


Fig. 15

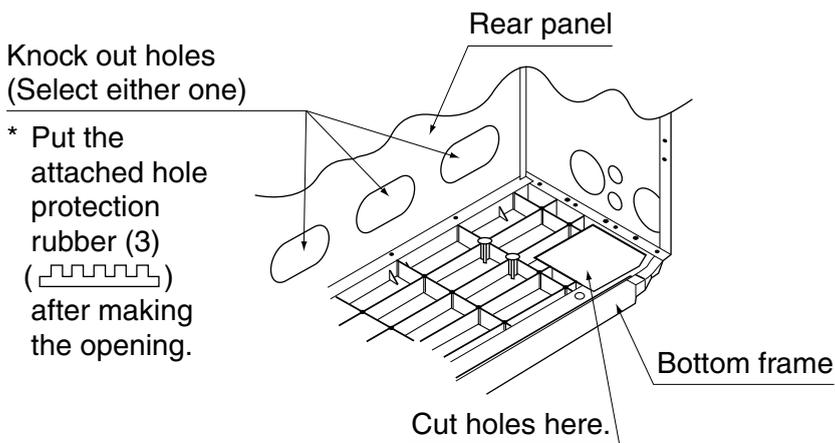


Fig. 14

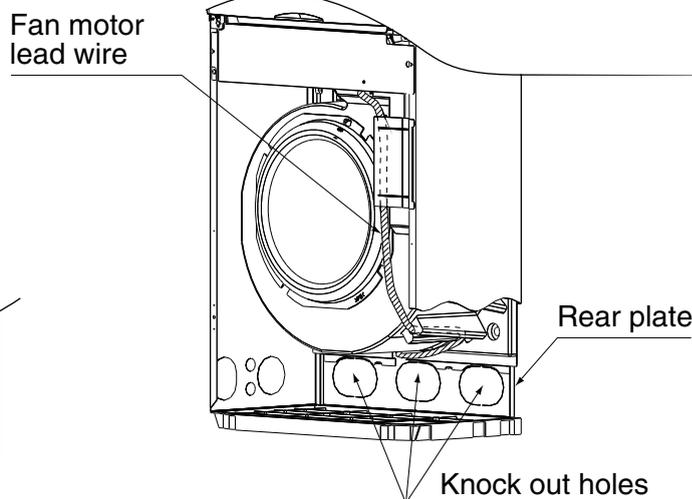


Fig. 16

- After the refrigerant piping and electrical wiring work is completed, hold the refrigerant piping, the indoor unit drain hose, the wiring connecting the indoor and outdoor units and the earth wire with the piping retainer plate (**Refer to Fig. 12**). During this work the refrigerant piping entering into the indoor unit may come in contact with the suction grille. Therefore, make sure not to extend the refrigerant piping from the piping retainer plate.
(For electrical wiring work, see “8. ELECTRIC WIRING WORK”.)
- After leakage check of piping connection is finished, carry out thermal insulation. (**Refer to Fig. 13**)
- Carry out thermal insulation of both liquid and gas pipes with the attached insulation for fitting (5) and (6). (Tighten both ends of the insulation for fitting (5) and (6) with the clamp (8).)

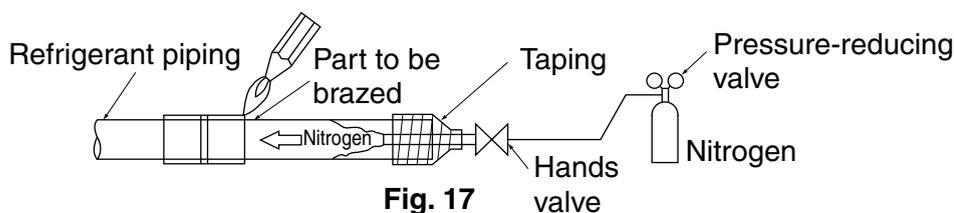
CAUTION

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, and also electrical shock or fire if the wiring is touched.

CAUTION

CAUTION TO BE TAKEN WHEN BRAZING REFRIGERANT PIPING

- Do not braise inside the unit.
Since the bottom plate and the fan housing are made of resin. They may melt or cause fire by spatter.
 - Braise the refrigerant piping only after having nitrogen flow through the pipe and substituting nitrogen for air (**Refer to Fig. 17**). Once this is completed, connect the indoor unit with flares (**Refer to Fig. 13**).
1. When brazing after having nitrogen flow through the pipe and substituting nitrogen for air, it is appropriate to set the nitrogen pressure to about 0.02MPa with a pressure reducing valve. (**Refer to Fig. 17**)
 2. Do not use flux when brazing refrigerant piping. Use the phosphor copper brazing filler metal (BCuP-2: JIS Z 3264/B-Cu93P-710/795: ISO 3677) that does not require flux.
(Chlorine based flux is extremely harmful to refrigerant piping systems. It will corrode the refrigerant piping and if it contains fluorine it will deteriorate the refrigerating oil.)
 3. When performing the leakage test for the indoor unit and inter-unit piping after the indoor unit is installed, be sure to refer to the installation manual for the indoor unit or technical guide for the leakage test pressure and the refrigerant piping installation.
 4. Shortage of refrigerant due to air purge or forgetting the additional refrigerant charge may cause malfunction of the unit (does not sufficiently cool or heat).
For installation of refrigerant piping, be sure to refer to the installation manual for the outdoor unit or the technical guide.
-



CAUTION

- Do not use anything oxidation inhibitor or the like when brazing. (Residues may cause clogging of pipes or damage to parts.)
-

6. DRAIN PIPING WORK

1. Rig the drain piping.

Carry out drain piping to ensure proper drainage. Also, observe the following to prevent leaks.

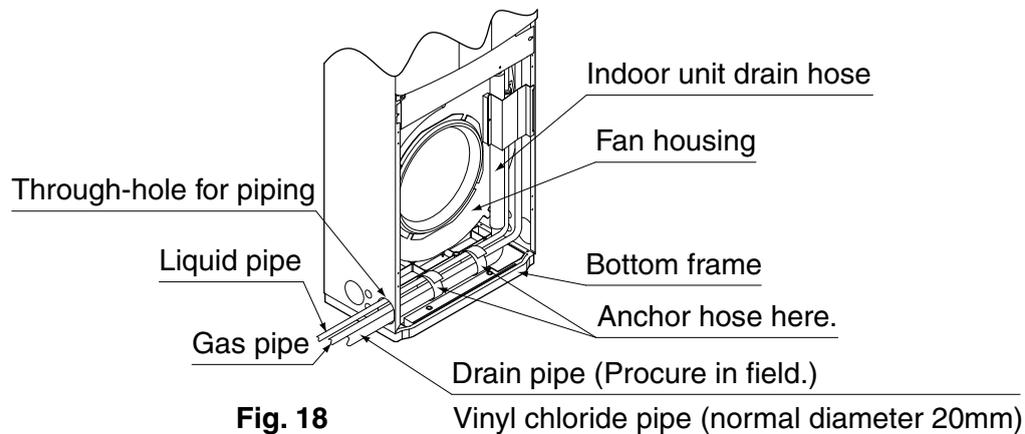


Fig. 18

Vinyl chloride pipe (normal diameter 20mm)

⚠ CAUTION

- To avoid force on the drain hose of the indoor unit, make sure to fix the drain pipe such as to bundle it to the refrigerant pipe as shown in Fig. 18. This is to prevent the drain pipe from coming off and/or avoid bad insulation. The drain pipe must be sloped downward with a gradient of 1/100 from the drain pipe connection in the unit.
- The drain pipe may be clogged if water accumulates in the drain pipe.
- Condensation on the pipe may occur and cause water leakage. Therefore, make sure to insulate the pipe at the following two places.
 - (1) All piping in the room and inside the unit.
 - (2) At the connection between the indoor unit drain hose and the field drain piping.

2. After the piping work is finished, check that drainage flows smoothly and the water does not leak from connections.

- Carefully pour approximately 1 liter of water through the air discharge outlet so that it falls directly onto the heat exchanger at an angle without splashing. (Refer to Fig. 19)
 - * If water is poured too fast or if water pressure is too high, the water will pass through the heat exchanger and drip on the fan motor below it.
 - * If water gets on the inner front wall, it will leak onto the floor.

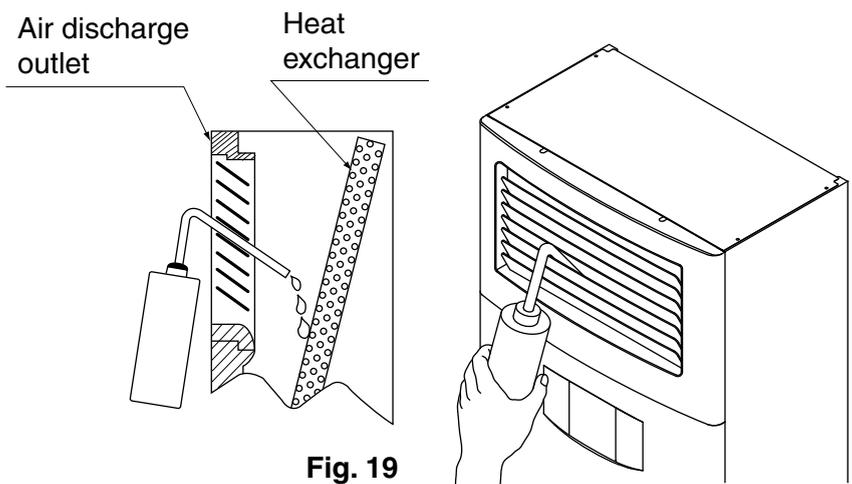


Fig. 19

⚠ CAUTION

- In order to prevent the pets from getting inside the unit, seal the pipe penetration hole with putty or heat insulating material (field supply).
- Drain piping connections
 - 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.

7. WHEN THE OPTIONAL REMOTE CONTROLLER (BRC1E model) IS USED AS A CONTROL PANEL

(Remote controllers except the optional BRC1E cannot be incorporated into the main unit.)

- The optional remote controller (BRC1E) can be incorporated into this unit and used as a control panel.

1. Open the remote controller, and connect the remote controller wiring (accessory). For wiring procedures, refer to the “remote controller installation manual”. (There is no polarity for the remote controller wiring.)

1) Remove the upper case.

Insert a flathead screwdriver into the concaved portion of the lower case (at 2 positions), and then remove the upper case.

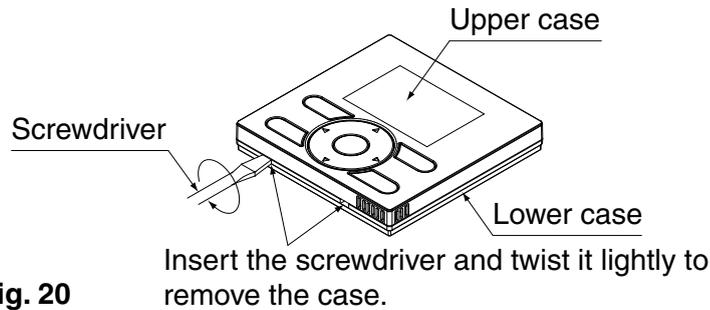


Fig. 20

⚠ CAUTION

- The printed circuit board of the remote controller is attached to the upper case. Be careful not to scratch the board with the screwdriver.
- Be careful not to adhere any dust or liquid to the printed circuit board of the removed upper case.

2) Cut off the shaded part of the lower case, and then fix the case to the cover (7) using screws (11).

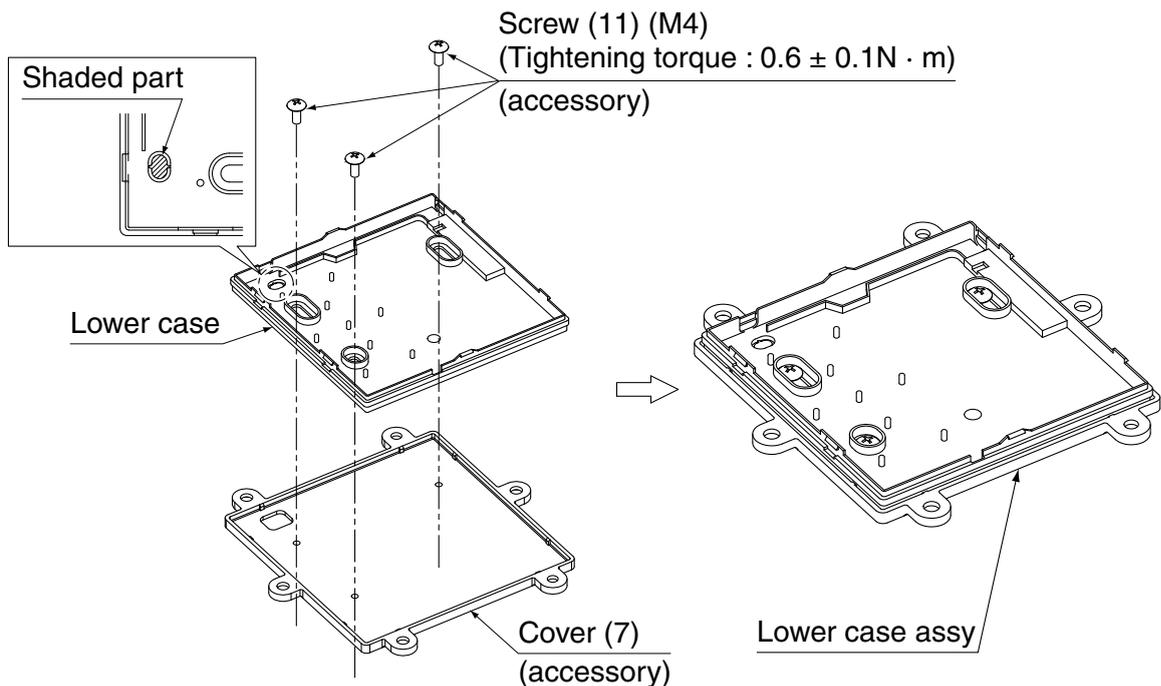
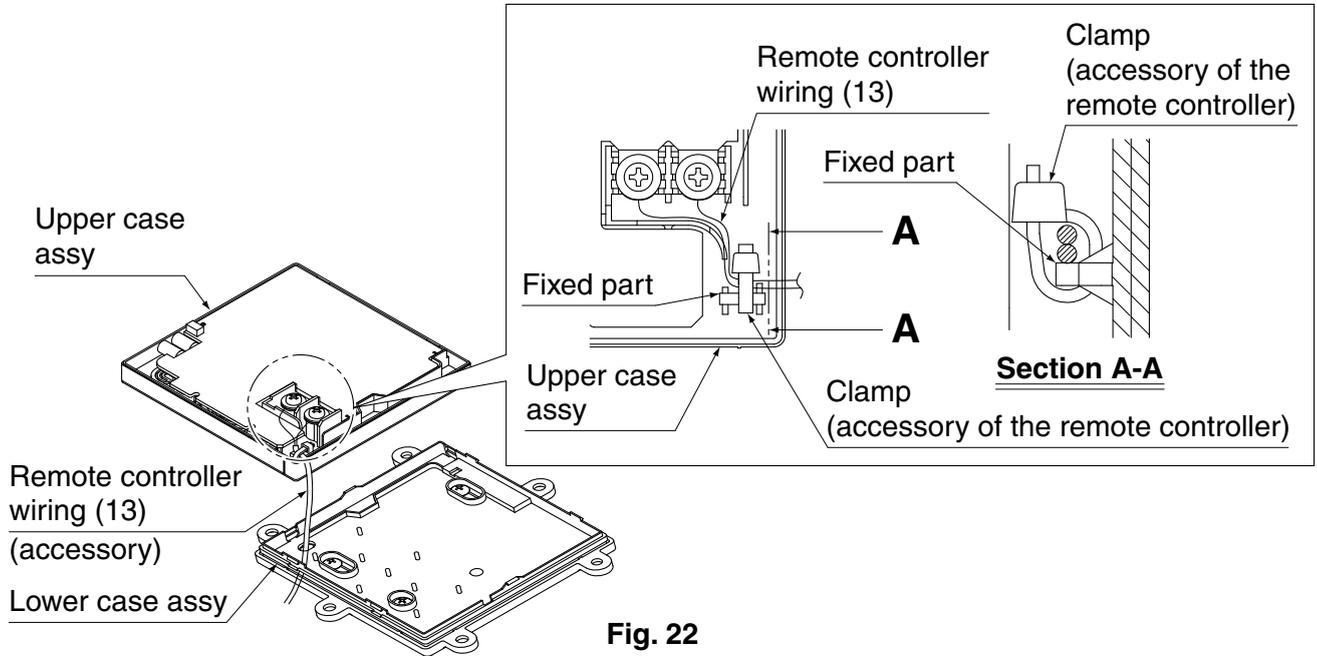


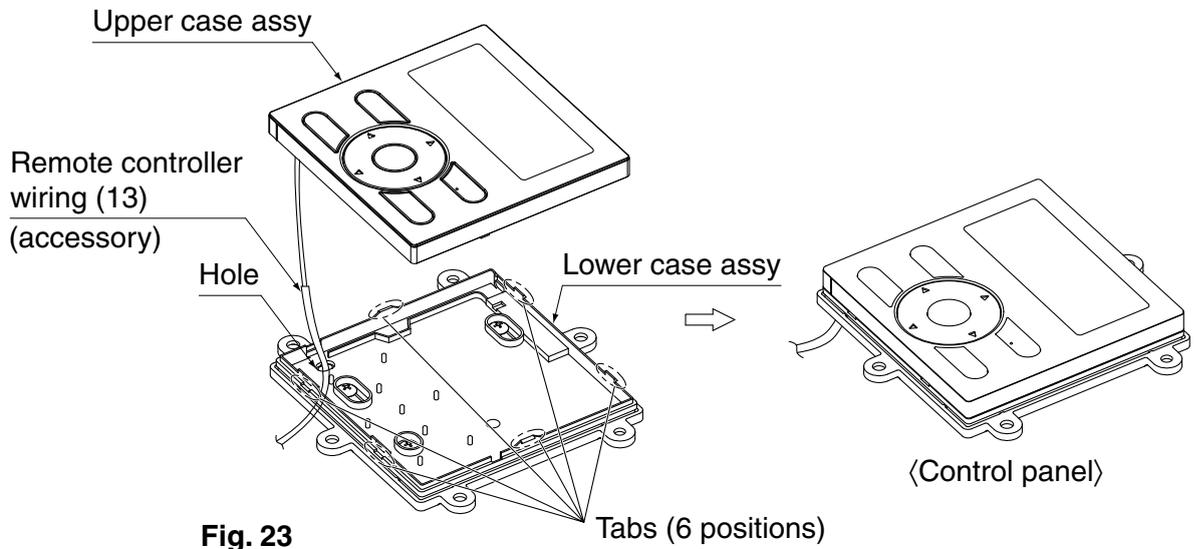
Fig. 21

3) Connect the remote controller wiring (accessory (13)).



4) Fit and install the upper case in the lower case while aligning the tabs (6 positions) with the lower case.

- Be careful so that the wiring may not be caught.
- Remove the protection sheet attached to the upper case.



2. Remove the front panel, and then remove the back plate attached to the back side.

- When removing the front panel, to avoid dropping the panel, tightly hold the front panel while removing it.

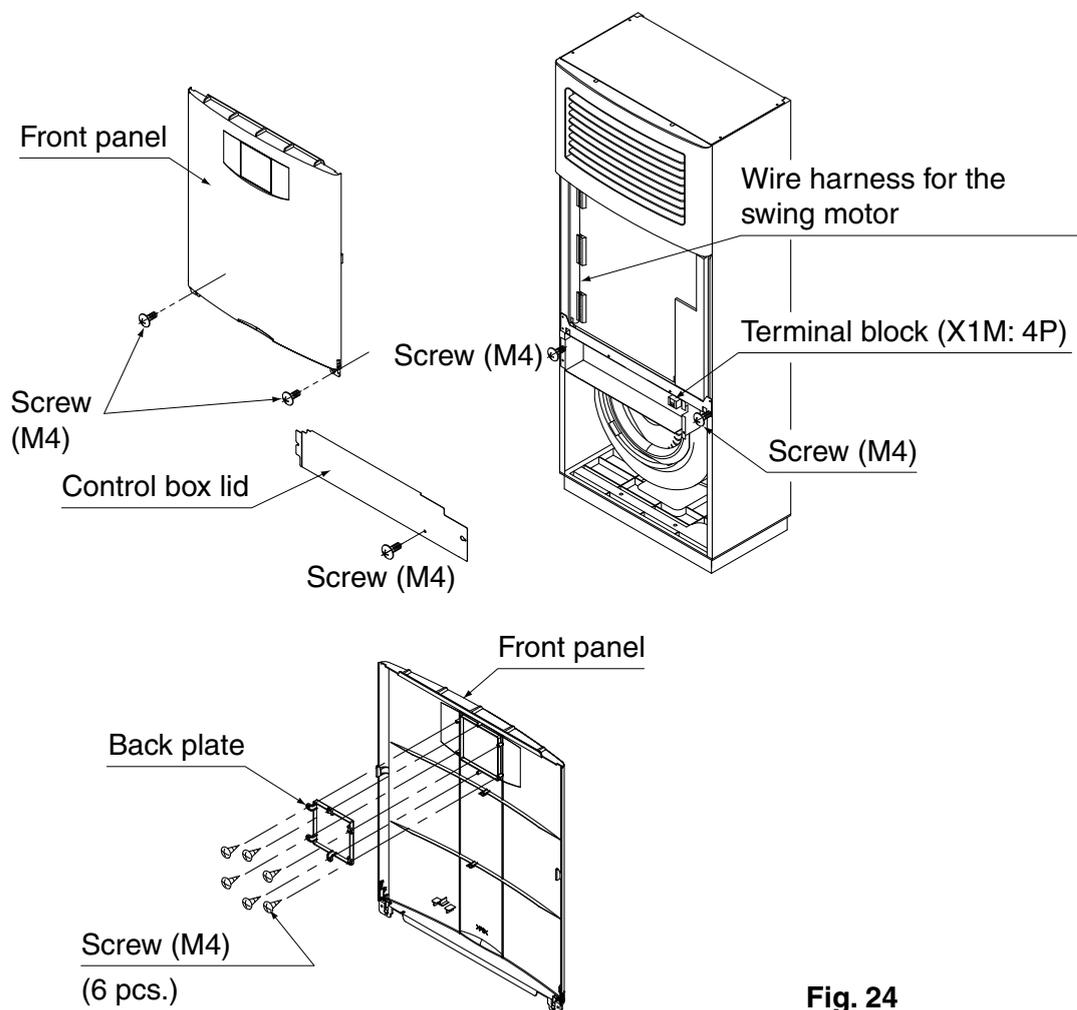


Fig. 24

NOTE 

- If the grille fixture comes off while removing the front panel, attach the grille fixture as shown below.
 1. Install the grille fixture while aligning its notch with the rib of the front panel.
 2. Lower the grille fixture.

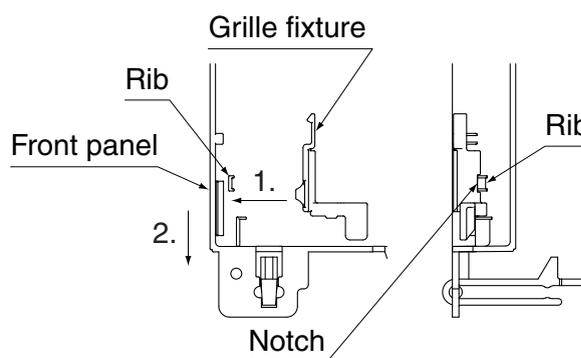


Fig. 25

3. Fix the control panel on the back side of the front panel.

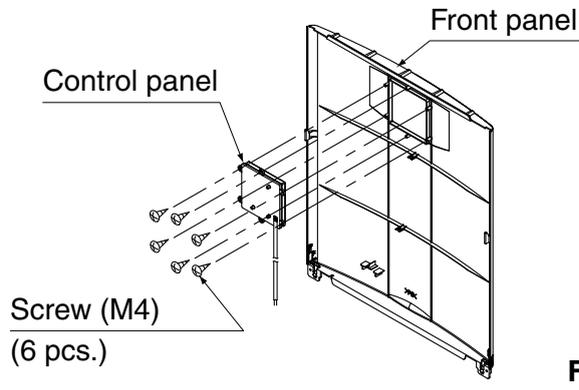


Fig. 26

4. Clip the remote controller wiring into the guide and notch. (Refer to Fig. 27)

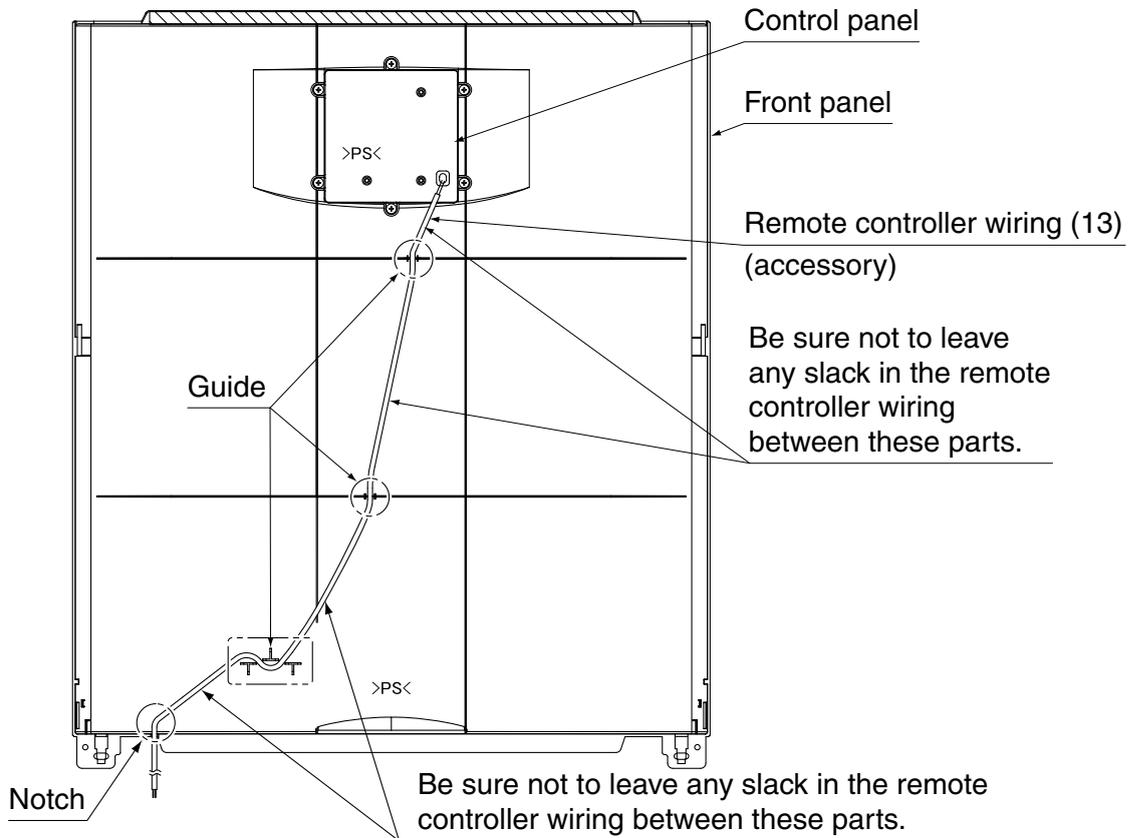


Fig. 27

5. Return the front panel to its original installation position.

6. Remove the control box lid, and then connect the remote controller wiring to terminals P1 and P2 (no polarity) of the terminal block (X1M).

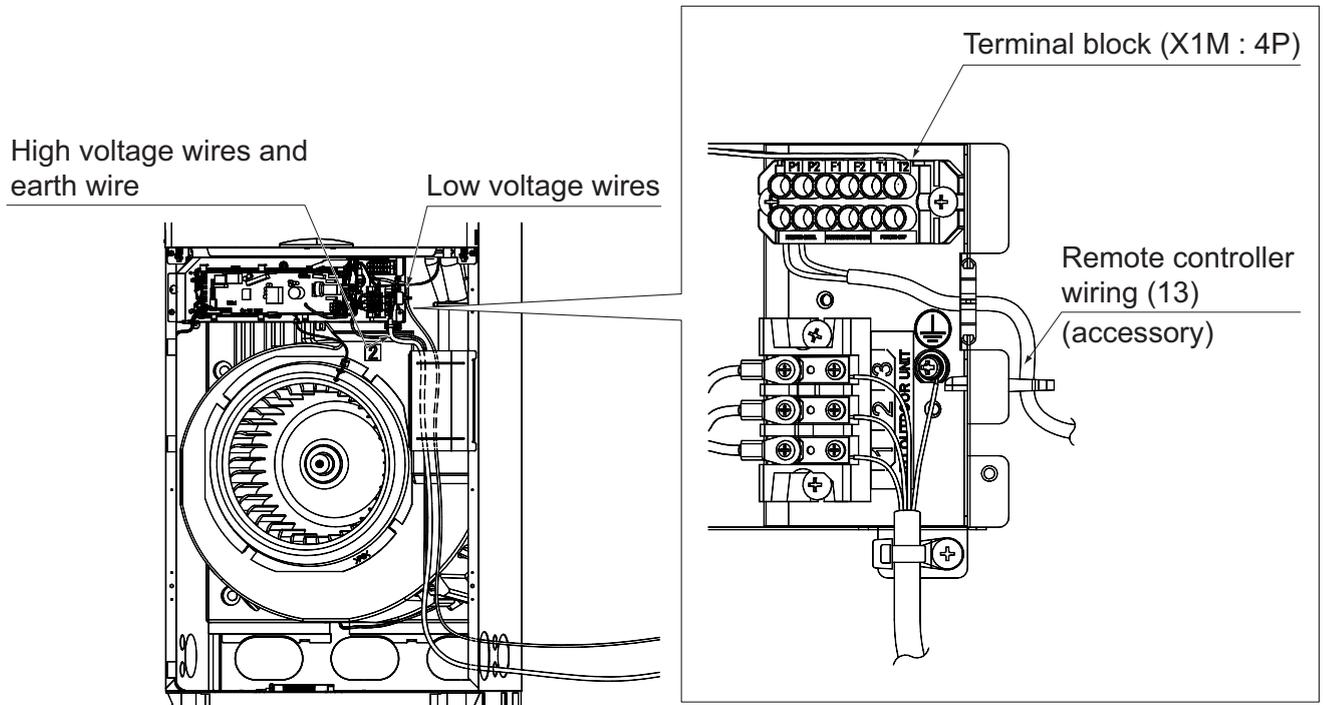


Fig. 28

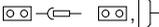
8. ELECTRIC WIRING WORK

8-1 GENERAL INSTRUCTIONS

- Electric wiring work must be conducted by an electrician authorized by power companies (Only a licensed electrician is permitted to conduct electric work and earth connections.)
- All wiring must be performed by an authorized electrician.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.
- Be sure to install an earth leakage circuit breaker in the outdoor unit.
(Install the earth leakage circuit breaker to avoid electric shocks and fire.)
- The specified voltage for the wiring between the indoor and outdoor units and between the indoor units is 220-240V.
- Do not turn on the power supply (of the indoor unit) until all the installation work is completed.
- Be sure to earth the air conditioner.
- Refer to the installation manual attached to the outdoor unit for the size of power supply electric wire connected to the outdoor unit, the capacity of the circuit breaker and switch, and wiring instructions.
- Do not connect the earth wire to gas pipes, plumbing pipes, lightning rods, or telephone earth wires.
 - Gas pipes: might cause explosions or fire if gas leaks.
 - Plumbing: no earth effect if hard vinyl piping is used.
 - Telephone earth wires or lightning rods: might cause abnormally high electric potential in the earth during lightning storms.
- For electric wiring work, refer also to "WIRING DIAGRAM" attached to the back side of the control box lid.
- Never connect the power supply wire to the terminal block for remote controller wire, or otherwise the entire system may be damaged.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- Do not touch the printed circuit board assy during the wiring work. Otherwise, it may cause damage.
- Use an all-pole disconnection type breaker with at least 3mm between the contact point gaps.

Unified Wiring Diagram Legend

For applied parts and numbering refer to the wiring diagram sticker supplied on the unit. Part numbering is realized by Arabic numbers in ascending order for each part and is represented in the overview below by symbol ^{***} in the part code.

	: CIRCUIT BREAKER		: PROTECTIVE EARTH
	: CONNECTION		: PROTECTIVE EARTH (SCREW)
	: CONNECTOR		: RECTIFIER
	: EARTH		: RELAY CONNECTOR
	: FIELD WIRING		: SHORT CIRCUIT CONNECTOR
	: FUSE		: TERMINAL
	: INDOOR UNIT		: TERMINAL STRIP
	: OUTDOOR UNIT		: WIRE CLAMP
BLK : BLACK	GRN : GREEN	PNK : PINK	WHT : WHITE
BLU : BLUE	GRY : GREY	PRP, PPL : PURPLE	YLW : YELLOW
BRN : BROWN	ORG : ORANGE	RED : RED	
A*P : PRINTED CIRCUIT BOARD	PS : SWITCHING POWER SUPPLY		
BS* : PUSH BUTTON ON / OFF, OPERATION SWITCH	PTC* : THERMISTOR PTC		
BZ, H*O : BUZZER	Q* : INSULATED GATE BIPOLAR TRANSISTOR (IGBT)		
C* : CAPACITOR	Q*DI : EARTH LEAK CIRCUIT BREAKER		
AC*, CN*, E*, HA*, HE, HL*, HN*, HR*, MR*_A, MR*_B, S*, U, V, W, X*A, K*R_*	Q*L : OVERLOAD PROTECTOR		
D*, V*D : DIODE	Q*M : THERMO SWITCH		
DB* : DIODE BRIDGE	R* : RESISTOR		
DS* : DIP SWITCH	R*T : THERMISTOR		
E*H : HEATER	RC : RECEIVER		
F*U, FU* (FOR CHARACTERISTICS REFER TO PCB INSIDE YOUR UNIT)	S*C : LIMIT SWITCH		
FG* : CONNECTOR (FRAME GROUND)	S*L : FLOAT SWITCH		
H* : HARNESS	S*NPH : PRESSURE SENSOR (HIGH)		
H*P, LED*, V*L : PILOT LAMP, LIGHT EMITTING DIODE	S*NPL : PRESSURE SENSOR (LOW)		
HAP : LIGHT EMITTING DIODE (SERVICE MONITOR GREEN)	S*PH, HPS* : PRESSURE SWITCH (HIGH)		
HIGH VOLTAGE : HIGH VOLTAGE	S*PL : PRESSURE SWITCH (LOW)		
IES : INTELLIGENT EYE SENSOR	S*T : THERMOSTAT		
IPM* : INTELLIGENT POWER MODULE	S*W, SW* : OPERATION SWITCH		
K*R, KCR, KFR, KHuR, K*M	SA*, F1S : SURGE ARRESTOR		
L : LIVE	SR*, WLU : SIGNAL RECEIVER		
L* : COIL	SS* : SELECTOR SWITCH		
L*R : REACTOR	SHEET METAL : TERMINAL STRIP FIXED PLATE		
M* : STEPPER MOTOR	T*R : TRANSFORMER		
M*C : COMPRESSOR MOTOR	TC, TRC : TRANSMITTER		
M*F : FAN MOTOR	V*, R*V : VARISTOR		
M*P : DRAIN PUMP MOTOR	V*R : DIODE BRIDGE		
M*S : SWING MOTOR	WRC : WIRELESS REMOTE CONTROLLER		
MR*, MRCW*, MRM*, MRN*	X* : TERMINAL		
N : NEUTRAL	X*M : TERMINAL STRIP (BLOCK)		
n = *, N = *	Y*E : ELECTRONIC EXPANSION VALVE COIL		
PAM : PULSE-AMPLITUDE MODULATION	Y*R, Y*S : REVERSING SOLENOID VALVE COIL		
PCB* : PRINTED CIRCUIT BOARD	Z*C : FERRITE CORE		
PM* : POWER MODULE	ZF, Z*F : NOISE FILTER		

8-2 SPECIFICATIONS FOR FIELD WIRE

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

Remote controller and transmission wiring are field supplied. **(Refer to Table 3)**

Wiring specifications are shown on the condition that the wiring has a voltage drop of 2%.

Table 3

	Wire	Size (mm ²)	Length
Wiring the units	H05RN-U4G (NOTE 1)	2.5	—
Remote controller cord	Vinyl cord with sheath or cable (2 wire) (NOTE 2)	0.75 - 1.25	Max. 500m *

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

NOTE

1. It shows the case when conduit pipes are used. When the conduit pipes are not used, use H07RN-F.
2. Sheathed vinyl cord or cable (insulation thickness: 1mm or more)

9. HOW TO CONNECT WIRINGS AND WIRING EXAMPLE

9-1 HOW TO CONNECT WIRINGS

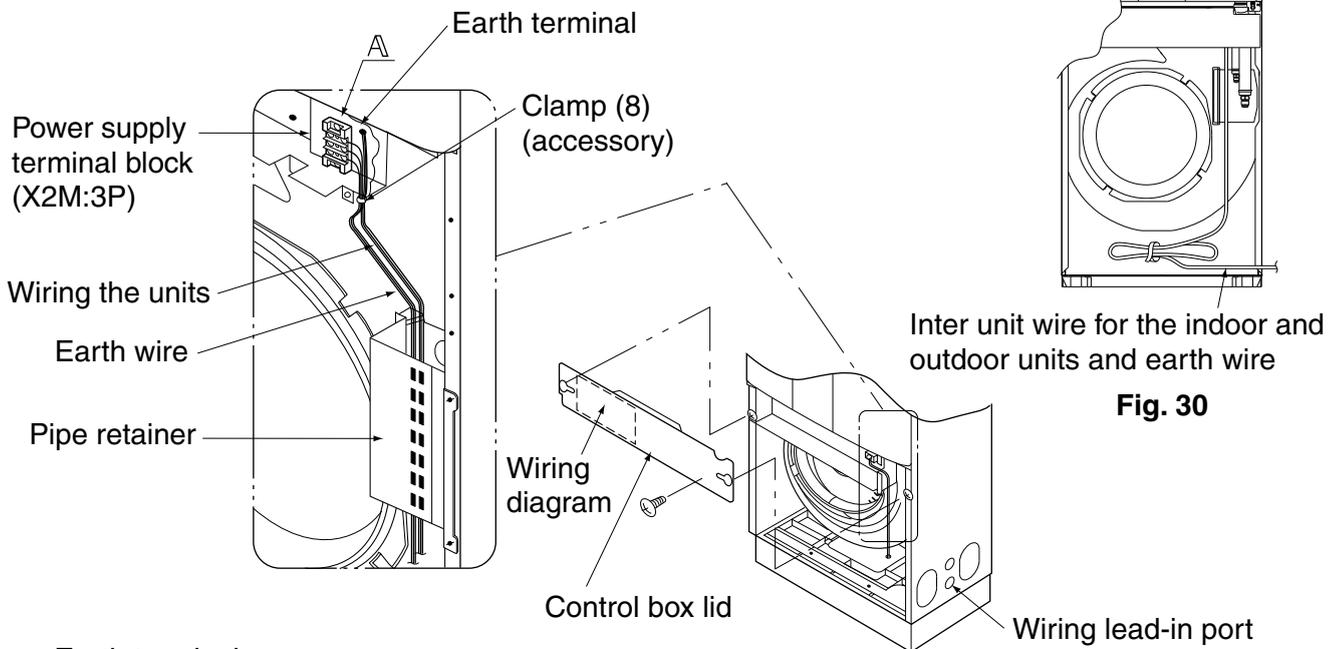


Fig. 30

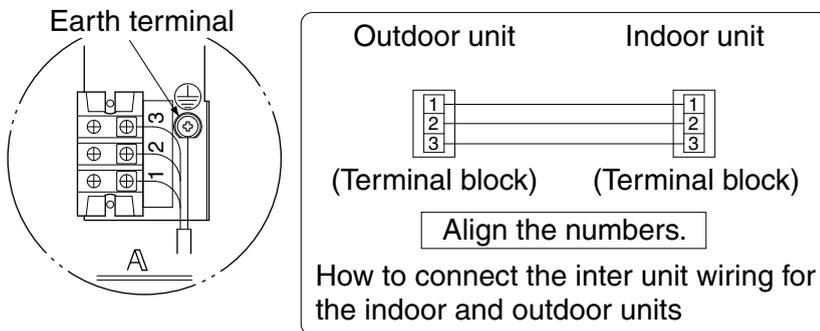


Fig. 29

- Do not perform solder finishing.

◀Connecting methods of wiring between indoor and outdoor units, earth wiring, and remote controller wiring▶

- Detach the control box lid and pipe retainer as shown in the **Fig. 29** and connect the wires of matching numbers to the terminal block (X2M: 3P) on the right side of the unit. Connect the earth wire to the earth terminal. In doing this, draw the wiring into the unit through the hole for wiring, and fix it together with the earth wire using the clamp (8).
- Connect the remote controller wiring (field supply) to the terminals P1 and P2 (no polarity) of the terminal block (X1M: 4P), and guide the wiring to the outside of the unit using the route shown in the **Fig. 31**.
 - Pass the remote controller wiring inside the piping retainer plate.
 - Route the low voltage wires (remote controller wiring) 50mm or more away from the high voltage wires (interconnecting wires between the indoor and outdoor units) and earth wire so that they may not pass through the same place. (**Refer to Fig. 31**)

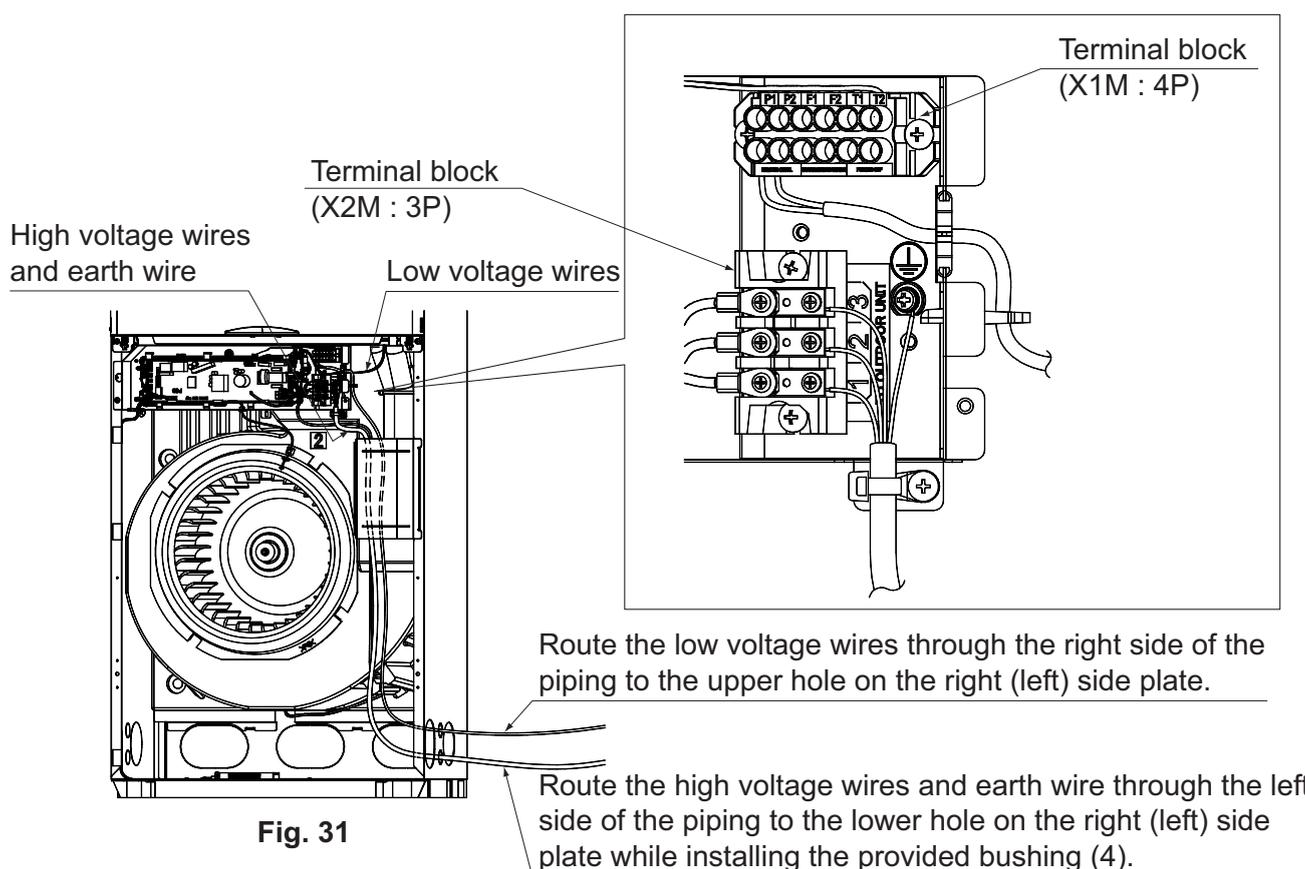


Fig. 31

- During the wiring work, lay the electric wiring neatly so that the wires may not push the control box lid up. Also, fix the lid without sandwiching the wires between the box and the lid. (Sandwiching electric wires and/or having the lid float up may result in electric shock or fire.)
- Pass the interconnecting wires and the earth wires inside of the pipe pressing plate. Wires connecting the units and the earth wire to the pipe retainer. Keep the extra wires neatly at a location shown in the **Fig. 30**. The wires may come in contact with other parts such as the fan, and the indoor unit may be damaged.
- In order to prevent small creatures getting into the unit, seal the wiring outlet with putty or heat insulating material (field supply) leaving no clearance. (If small creatures, such as insects, get into the unit, the creatures may cause short circuiting in the control box.)

⚠ CAUTION

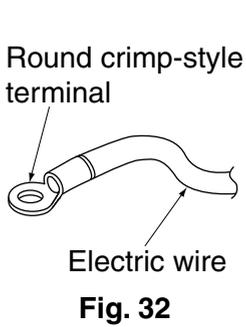
Use a round crimp-style terminal for connection to the power supply terminal block. (**Refer to Fig. 32**)
In case it cannot be used due to unavoidable reasons, be sure to observe the following instructions.

- Do not connect wires of different gauge to the same power supply terminal. (Looseness in the connection may cause overheating.) (**Refer to Fig. 33**)
- In wiring, make certain that prescribed wires are used. Also, fix the wires so that external force may not be applied to the terminals.
- Use an appropriate screwdriver to tighten the terminal screws. Small screwdrivers damage the head of the screws and they cannot tighten the screws appropriately.

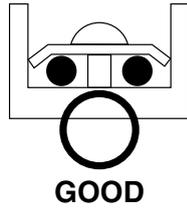
- If the terminal screws are tightened too hard, screws might be damaged.
- The tightening torque of each terminal screw is shown in the Table 4.
- When a stranded wire is used, do not perform solder finishing.

Table 4

Tightening torque (N·m)	
Terminal block for remote controller wiring	0.79~0.97
Terminal block for wiring between units	1.18~1.44
Earth terminal	1.18~1.44



Connect wires of the same gauge to both side. (GOOD)



Do not connect wires of the same gauge to one side. (WRONG)



Do not connect wires of different gauges. (WRONG)

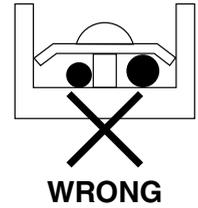


Fig. 33

9-2 WIRING EXAMPLE

⚠ CAUTION

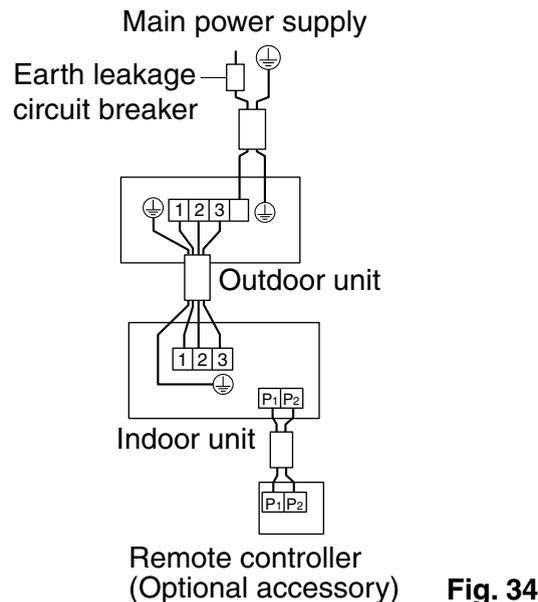
Be sure to install an earth leakage breaker to the outdoor unit.
This is to avoid electric shocks or fire.

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

Confirm the system type.

- **Pair type:** 1 remote controller controls 1 indoor unit (standard system). (Refer to Fig. 34)
- **Group control:** 1 remote controller controls up to 16 indoor units (All indoor units operate according to the remote controller). (Refer to Fig. 35)
- **2 remote controllers control:** 2 remote controllers control 1 indoor unit. (Refer to Fig. 37)

Pair type



Group control

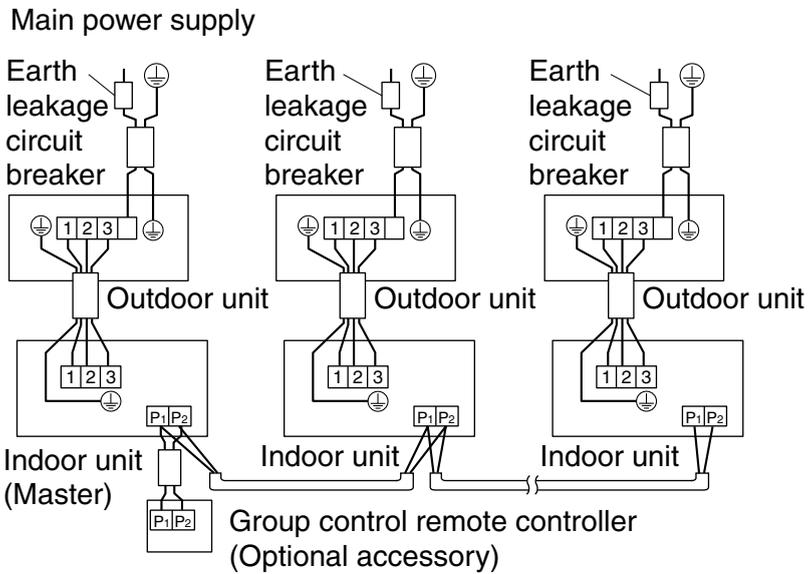


Fig. 35

When implementing group control

- When using as a pair unit, you may carry out simultaneous start/stop (group) control up to 16 units with the remote controller. (Refer to Fig. 36)
- In this case, all the indoor units in the group will operate in accordance with the group control remote controller.
- The body thermo is effective only for the indoor unit to which the remote controller is connected.

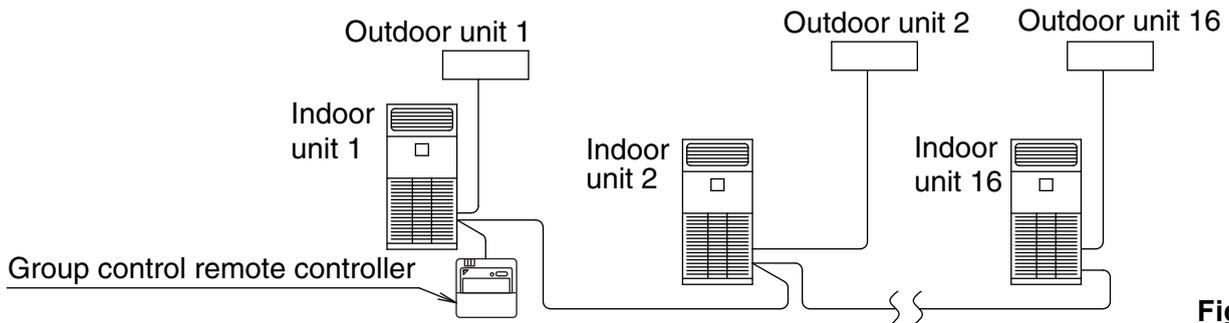


Fig. 36

Wiring Method

- (1) Remove the control box lid. (Refer to “9. HOW TO CONNECT WIRINGS AND WIRING EXAMPLE”.)
- (2) Lay crossover between the terminals (P1, P2) inside the control box for the remote controller. (There is no polarity.) (Refer to Fig. 35 and Table 3)

2 remote controllers control

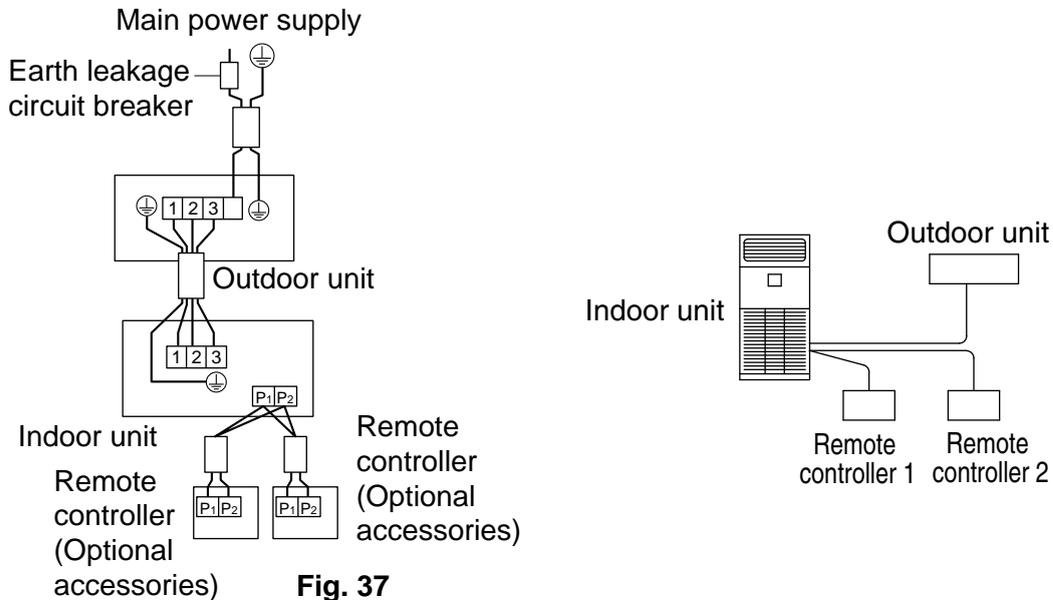


Fig. 37

Two remote controllers control (Controlling 1 indoor unit by 2 remote controllers)

- When using 2 remote controllers, one must be set to “MAIN” and the other to “SUB”.

MAIN/SUB CHANGEOVER

- If BRC1E type remote controller is used, see the manual attached to the remote controller.

If the remote controller is a wired one, change the switch setting as follows:

- (1) Insert a flat screwdriver into the clearance between the upper case and the concave of the lower case and, remove the upper case. (2 places) (Printed circuit board is attached to the upper part of the remote controller.) (Refer to Fig. 38)
- (2) Turn the main/sub changeover switch on one of the two remote controller printed circuit boards to “S”. (Leave the switch of the other remote controller set to “M”.) (Refer to Fig. 39)

Fig. 38

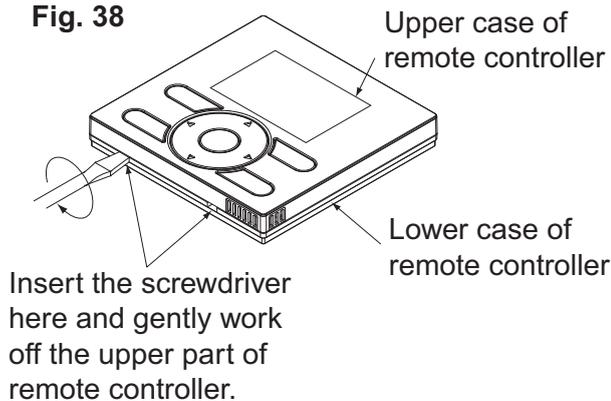
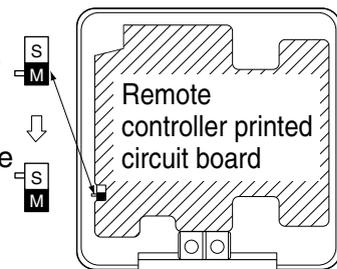


Fig. 39

(Factory setting)

(Only one remote controller needs to be changed if factory settings have remained untouched.)



Wiring Method

- (3) Remove the control box lid (Refer to “9. HOW TO CONNECT WIRINGS AND WIRING EXAMPLE”.)
- (4) Add wiring between the remote controller 2 (slave) and the terminal (P1, P2) of the terminal block (X1M) for the remote controller in the control box. (There is no polarity.) (Refer to Fig. 37 and Table 3)

NOTE

1. All transmission wiring except for the remote controller wires is polarized and must match the terminal symbol.
2. For group control remote controller, choose the remote controller that suits the indoor unit which has the most functions (as attached swing flap).

10. INSTALLATION OF SUCTION GRILLE

1. Hook the suction grille on the groove on the unit's bottom frame in the order of (1)→(2). (Refer to Fig. 40)

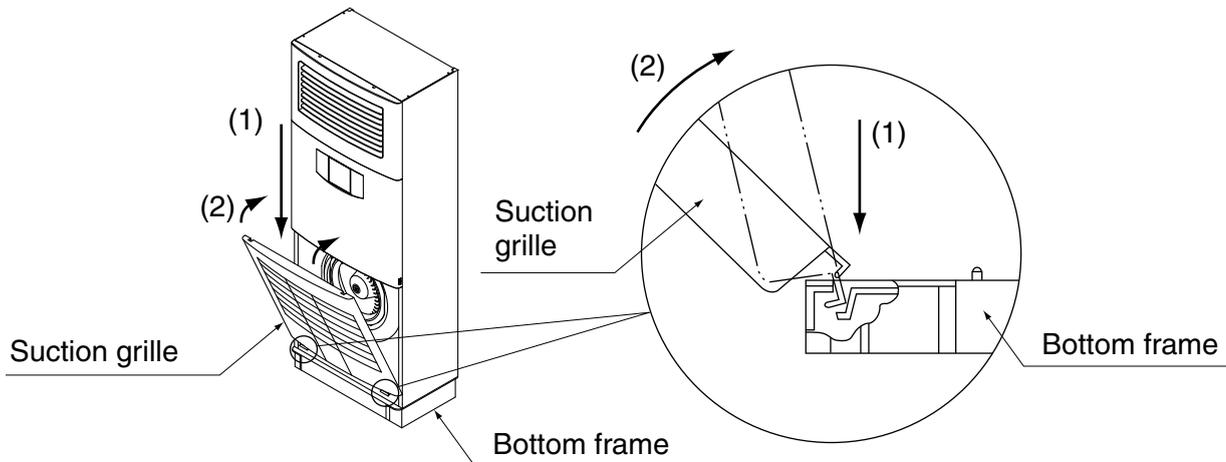


Fig. 40

2. Fit the grille stopper (front panel) into the groove on the suction grille and lock the grille down in its original place by screw. (Refer to Fig. 41)

* Be careful not to overtighten screws.

3. Check that the grille fixture is raised, and then close the suction grille. After closing the grille, lower the grille fixture. (Refer to Fig. 41)

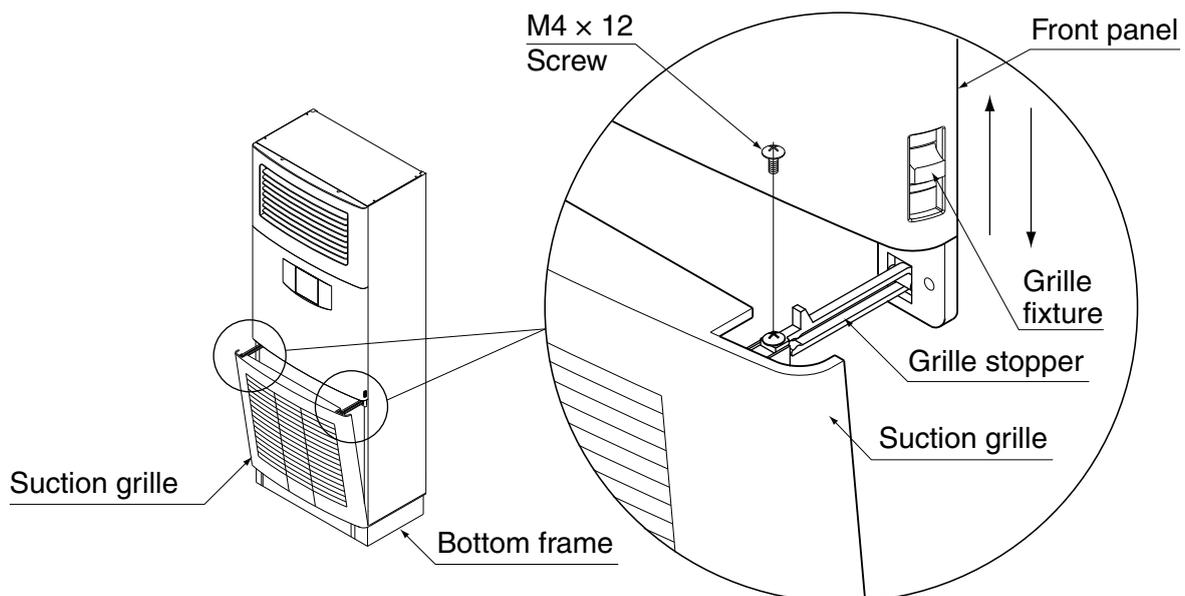


Fig. 41

11. FIELD SETTING

◁Complete all the “Items to be checked after completion of work” (page 5).▷

- Make sure that the installation and wiring work for the indoor and outdoor units is all completed.
- Make sure that the following items are all closed: the control box lid of the indoor unit and the outer board and piping cover of the outdoor unit.
<Field setting must be made from the remote controller and in accordance with installation conditions.>
- Setting can be made by changing the “Mode No.,” “FIRST CODE NO.” and “SECOND CODE NO.”.
- For setting procedures and instructions, see the manual provided with the remote controller.
- The “Mode No.” is normally set collectively for a group. In order to set each indoor unit individually and perform checks after the settings, specify the Mode No. in parenthesis.
- Do not perform settings that are not listed in the table.

11-1 SETTING AIR FILTER SIGN

- The filter sign that notifies you of the necessity for air filter cleaning is displayed on the LCD display of the remote controller.
- Change the SECOND CODE NO. below depending on the amount of dirt or dust in the room.
(As the factory setting, the FIRST CODE NO. 1 is set to the SECOND CODE NO. “01” for the long time, and the FIRST CODE NO. 0 is set to the SECOND CODE NO. “01”, air filter contamination - light.) **(Refer to Table 5)**
Explain to the customer that filters need to be cleaned periodically to prevent clogging, and the time that is set.
- The periodical cleaning time for the filter can be shortened depending on the usage environment.

Table 5

Setting		Mode No.	FIRST CODE NO.	SECOND CODE NO.		
				01	02	04
Cleaning time		10 (20)	1	For long time	—	For short time
Air Filter contamination: light/heavy	For long time		0	Approx. 2,500 hours	Approx. 1,250 hours	—
	For short time			Approx. 200 hours	Approx. 100 hours	—

□ are the settings when shipped from the factory.

11-2 AIRFLOW SETTINGS WHEN THERMOSTAT IS OFF

- Set the flow rate according to the requirement of the environment after consultation with the customer.
(Refer to Table 6)
- When the airflow is changed, explain the airflow rate setting to the customer.

Table 6

Setting		Mode No.	FIRST CODE NO.	SECOND CODE NO.
Fan operation when thermostat is OFF (Cooling/Heating)	Normal	11 (21)	2	01
	Stop			02
Airflow rate when cooling thermostat is OFF	LL airflow rate	12 (22)	6	01
	Setting airflow rate			02
Airflow rate when heating thermostat is OFF	LL airflow rate	12 (22)	3	01
	Setting airflow rate			02

11-3 SETTING AIRFLOW RATE INCREASE MODE (71 · 100 class)

- The set airflow rate (HH, H, and L) can be increased depending on the installation condition or customer's request. In such a case, switch the SECOND CODE NO. as shown in Table 7.

Table 7

Setting	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Standard	13 (23)	0	01
Slightly increase			02
Increase			03

12. TEST OPERATION

<Complete all the "1. Items to be checked after completion of work" on page 4. Please also refer to the installation manual of the outdoor unit.>

< Precaution before test operation >

- Be sure to fully open the stop valves of outdoor unit.
- Keep crank case heater energized for 6 hours or more.
- Be sure to perform the cooling operation during the test operation.
- Make sure to remove the cushion materials of fun. (Refer to page 8)

The settings of the BRC1E model remote controller should be switched while referring to the manual supplied with the remote controller.

The settings of the other remote controller should be switched in accordance with the following procedure.

- Make sure that the installation work for the indoor and outdoor units is all completed.
- Make sure that the following items are all closed: the control box lid of the indoor unit and the outer board and piping cover of the outdoor unit.
- After completing the refrigerant piping, drain piping, and electrical wiring, clean the interior of the indoor unit and front panel. Next, perform test operation in accordance with the installation manual supplied with the outdoor unit in order to protect the unit. (It is recommended that the test operation is performed in the presence of qualified electrical technician or engineer.)
- If interior work is still unfinished when test operation finishes, explain to the customer that the air conditioner must not be operated until interior work is completed in order to protect the indoor units. (If the unit is operated under this condition, paint, glue, and other materials used during the interior finishing work will contaminate the indoor unit. This may cause water splashes or leakage.)
- If a malfunction occurs and the unit cannot operate, refer to "12-1 HOW TO DIAGNOSE FOR PROBLEMS".
- After completing the test operation, press the INSPECTION/TEST OPERATION button once to put the unit into inspection mode, and make sure the malfunction code is "00" (=normal). If the code reads anything other than "00", refer to "12-1 HOW TO DIAGNOSE FOR PROBLEMS".
- After trial operation, when the fan of indoor unit is spinning and the operation light is flashing, there is a risk of refrigerant leakage, so please ventilate the room, and contact your dealer (only for R32 refrigerant).
- Press the INSPECTION/TEST OPERATION button four times to return to normal operation mode.

[Mode switching]

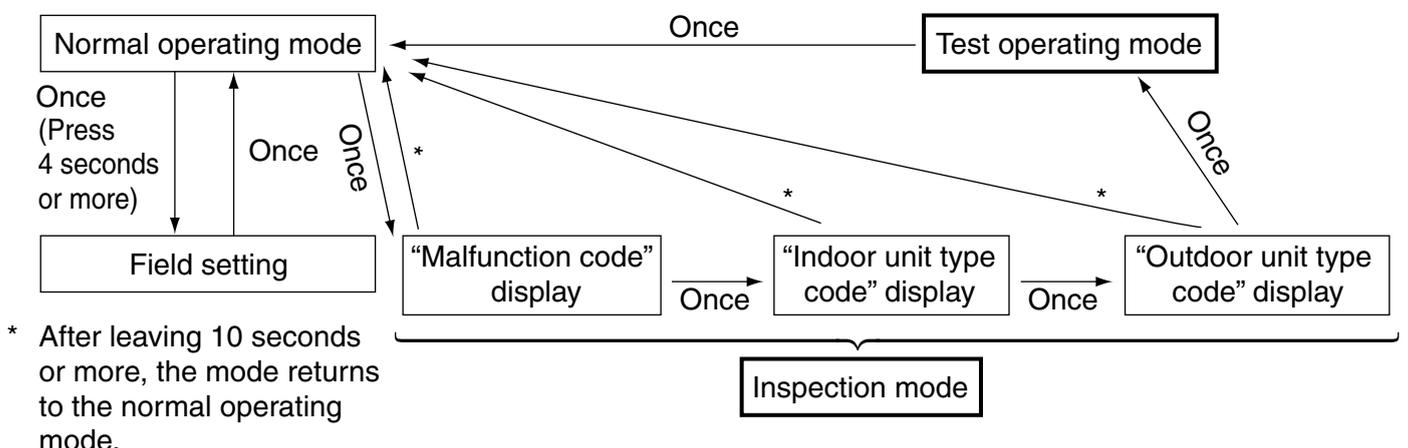


Fig. 42

12-1 HOW TO DIAGNOSE FOR PROBLEMS

With the power on. Troubles can be monitored on the remote controller.

The fault diagnosis for the BRC1E model remote controller should be performed while referring to the installation manual supplied with the remote controller. For the other remote controllers, perform the fault diagnosis using the following procedure.

■ Trouble shooting with the remote controller liquid crystal display.

1 With the remote controller. (NOTE 1)

When the operation stops due to trouble, the operation lamp flashes, and the liquid crystal display indicates “” and the malfunction code. Diagnosis can be carried out using the malfunction code list according to the indicated malfunction code.

In addition, when in group control it indicates the unit No., so the malfunction detected unit No. will be clarified for resetting the malfunction, see (NOTE 2).

NOTE

1. When the INSPECTION/OPERATION button on the remote controller is pressed, the “” indication starts flashing.
2. When the ON/OFF button is kept pressed for 5 seconds or longer during the inspection mode, the above trouble history indication disappears. In this case, after the malfunction code indication flashes twice, the indication of code becomes “00” (normal) and unit NO. becomes “0”. Then, the display automatically changes from the inspection mode to the normal mode.

12-2 MALFUNCTION CODE

- For places where the malfunction code is left blank, the “” indication is not displayed. Though the system continues operating, be sure to inspect the system and make repairs as necessary.
- 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	Fault diagnosis by remote controller show the code A0 on the display of remote controller.	Is it making beeping sound? If it is making sound: There is a risk of refrigerant leakage. Please ventilate the room and contact your dealer. If it is not making sound: There is no refrigerant leakage, or it is still doing detection. Please wait a few minutes. Sometimes, the refrigerant sensor detects by mistake substances other than refrigerant, such as insecticides or hairsprays (only for R32 refrigerant).
A1	Indoor printed circuit board failure	
A3	Drain level abnormal	
A6	Indoor fan motor overload, over current, lock	
	Indoor printed circuit board connection failure	
AF	Humidifier system malfunction	
AH	Air purifier (dust collection, deodorization) unit malfunction	Only the air purifier (dust collection, deodorization) unit does not function. Abnormal stop is applied depending on the model or condition.
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 (main) and indoor printed circuit board (sub)	
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 thermistor 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.
CC	Humidity sensor abnormal	
CE	Intelligent eye / floor temperature sensor malfunction	
CJ	Remote controller air thermistor malfunction	Remote controller thermo does not function, but body thermo operation is enabled.
E0	Action of safety device (Outdoor unit)	
E1	Outdoor printed circuit board failure (Outdoor unit)	
E3	High pressure malfunction (Outdoor unit)	
E4	Low pressure malfunction (Outdoor unit)	
E5	Compressor motor lock malfunction (Outdoor unit)	
E6	Compressor motor lock by over current (Outdoor unit)	
E7	Outdoor fan motor lock malfunction (Outdoor unit)	
	Outdoor fan instant overcurrent malfunction (Outdoor unit)	
E9	Electric expansion valve malfunction (Outdoor unit)	
EA	Cooling/Heating switch malfunction (Outdoor unit)	
F3	Discharge piping temperature malfunction (Outdoor unit)	
H3	High pressure switch failure (Outdoor unit)	
H4	Low pressure switch failure (Outdoor unit)	
H7	Outdoor fan motor position signal malfunction (Outdoor unit)	
H9	Outdoor air thermistor system malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
CH	Fault diagnosis by remote controller show the code CH on the display of remote controller.	Is it making beeping sound? If it is making sound: There is a risk of follows. Please contact your dealer (R32 refrigerant only). Malfunction of refrigerant leakage sensor. Cable of refrigerant leakage sensor is broken. Cable connection of refrigerant leakage sensor is not complete. Malfunction of main printed-circuit board.
J1	Pressure sensor system malfunction (batch) (Outdoor unit)	

J2	Current sensor system malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
J3	Discharge pipe thermistor system malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
J5	Suction pipe thermistor system malfunction (Outdoor unit)	
J6	Outdoor heat exchanger distributor liquid pipe thermistor malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
J7	Outdoor heat exchanger condenser / evaporator thermistor malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
J8	Liquid pipe thermistor system malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
J9	Gas piping thermistor malfunction (cooling) (Outdoor unit)	
JA	Discharge pipe pressure sensor system malfunction (Outdoor unit)	
JC	Suction pipe pressure sensor system malfunction (Outdoor unit)	
L1	Inverter system malfunction (Outdoor unit)	
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.
L8	Electric thermal (Outdoor unit)	The compressor engines and turbines may be overloaded and disconnected.
L9	Stall prevention (Outdoor unit)	The compressor may be locked.
LC	Transmission malfunction between inverter and outdoor control unit (Outdoor unit)	
P1	Open-phase (Outdoor unit)	
P3	DCL sensor system malfunction (Outdoor unit)	
P4	Heat-radiating fin thermistor malfunction (Outdoor unit)	Abnormal stop is applied depending on the model or condition.
P6	DC output current sensor system malfunction (Outdoor unit)	
PJ	Capacity setting failure (Outdoor unit)	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.
U0	Suction pipe temperature abnormal (Outdoor unit)	The refrigerant may be insufficient. Abnormal stop is applied depending on the model or condition.
U1	Reverse phase (Outdoor unit)	Reverse two phase of L1, L2 and L3 leads.
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 UF	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.
U8	Transmission error between main and sub remote controllers (sub remote controller malfunction)	
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	
UJ	Accessory equipment transmission error	Abnormal stop is applied depending on the model or condition.

⚠ CAUTION

- Refer to “Items to be checked at time of delivery to customer.” (page 5) upon completion of the test operation and make sure that all the items are checked.
- If the customer’s interior work is not finished on completion of the test operation, tell the customer not to operate the air conditioner.
Substances generated from paints and adhesives used for the interior work may contaminate the product if the unit is operated.

⚠ To test operation Contractors

When delivering the product to the customer after the test operation is completed, check that the control box lid, the air filter and the suction grille are mounted. In addition, explain to the customer regarding the state (ON/OFF) of the power supply breaker.

13. OPERATION RANGE

If the temperature or the humidity is beyond the following conditions, safety devices may work and the air conditioner may not operate, or sometimes, water may drop from the indoor unit.

For combination with R410A outdoor unit, refer to the following table:

Outdoor units		Cooling	Heating
RZQG71~140	Outdoor temperature	-15~50°C DB	-19~21°C DB -20~15.5°C WB
	Indoor temperature	18~37°C DB 12~28°C WB	10~27°C DB
RZQSG71~140	Outdoor temperature	-15~46°C DB	-14~21°C DB -15~15.5°C WB
	Indoor temperature	20~37°C DB 14~28°C WB	10~27°C DB
RZQ200~250	Outdoor temperature	-5~46°C DB	-14~21°C DB -15~15°C WB
	Indoor temperature	20~37°C DB 14~28°C WB	10~27°C DB
AZQS125 (AVA125 model only)	Outdoor temperature	-5~46°C DB	-15~15.5°C WB
	Indoor temperature	14~28°C WB	10~27°C DB
Indoor humidity ≤80% ^(a)			

For combination with R32 outdoor unit, refer to the following table:

Outdoor units		Cooling	Heating
RZAG71~140	Outdoor temperature	-20~52°C DB	-19.5~21°C DB -20~15.5°C WB
	Indoor temperature	18~37°C DB 12~28°C WB	10~27°C DB
RZASG71~140	Outdoor temperature	-15~46°C DB	-14~21°C DB -15~15.5°C WB
	Indoor temperature	20~37°C DB 14~28°C WB	10~27°C DB
AZAS125 (AVA125 model only)	Outdoor temperature	-5~46°C DB	-15~15°C WB
	Indoor temperature	14~28°C WB	10~27°C DB
Indoor humidity ≤80% ^(a)			

^(a) To avoid condensation and water dripping out of the unit. If the temperature or the humidity is beyond these conditions, safety devices may be put in action and the air conditioner may not operate.

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