
SPLIT SYSTEM**Air Conditioners**

English

MODELS**(Ceiling suspended Cassette type)****FUY71FJV1
FUY100FJV1
FUY125FJV1****FUYP71BV1
FUYP100BV1
FUYP125BV1**

READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION.
KEEP THIS MANUAL IN A HANDY PLACE FOR FUTURE REFERENCE.



FUY71FJV1 FUYP71BV1
 FUY100FJV1 FUYP100BV1
 FUY125FJV1 FUYP125BV1

SPLIT SYSTEM Air Conditioner

Installation manual

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1. SAFETY CONSIDERATIONS

Please read these “SAFETY CONSIDERATIONS” carefully before installing air conditioning equipment and be sure to install it correctly. After completing the installation, make sure that the unit operates properly during the start-up operation. Please instruct the customer on how to operate the unit and keep it maintained. Also, inform customers that they should store this installation manual along with the operation manual for future reference.

This air conditioner comes under the term “appliances not accessible to the general public”.

Meaning of warning and caution symbols.

⚠ WARNING Failure to observe a warning may result in death.

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

⚠ WARNING

Ask your dealer or qualified personnel to carry out installation work. Do not try to install the machine yourself.

Improper installation may result in water leakage, electric shocks or fire.

Perform installation work in accordance with this installation manual.

Improper installation may result in water leakage, electric shocks or fire.

Be sure to use only the specified accessories and parts for installation work.

Failure to use the specified parts may result in water leakage, electric shocks, fire or the unit falling.

Install the air conditioner on a foundation strong enough to withstand the weight of the unit.

A foundation of insufficient strength may result in the equipment falling and causing injuries.

Carry out the specified installation work after taking into account strong winds, typhoons or earthquakes.

Improper installation work may result in the equipment falling and causing accidents.

Make sure that a separate power supply circuit is provided for this unit and that all electrical work is carried out by qualified personnel according to local laws and regulations and this installation manual.

An insufficient power supply capacity or improper electrical construction may lead to electric shocks or fire.

Make sure that all wiring is secured, the specified wires and used, and no external forces act on the terminal connections or wires.

Improper connections or installation may result in fire.

- When wiring the power supply and connecting the wiring between the indoor and outdoor units, position the wires so that the switch box cover can be securely fastened.
Improper positioning of the switch box cover may result in electric shocks, fire or the terminals overheating.
 - If the refrigerant gas leaks during installation, ventilate the area immediately.
Toxic gas may be produced if the refrigerant gas comes into contact with fire.
 - After completing the installation work, check that the refrigerant gas does not leak.
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.
 - Before touching electrical parts, turn off the unit.
-

CAUTION

- Ground the air conditioner.
Do not connect the ground wire to gas or water pipes, lightning conductor or a telephone ground wire.
Incomplete grounding may result in electric shocks.
 - Be sure to install an earth leakage breaker.
Failure to install an earth leakage breaker may result in electric shocks.
 - While following the instructions in this installation manual, install drain piping in order to ensure proper drainage and insulate piping in order to prevent condensation.
Improper drain piping may result in water leakage and property damage.
 - Remote controller (wireless kit) transmitting distance can result shorter than expected in rooms with electronic fluorescent lamps (inverter or rapid start types).
Install the indoor unit as far away from fluorescent lamps as possible.
 - Do not install the air conditioner in the following locations:
 - (a) where a mineral oil mist or an 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 result in a malfunction of the equipment.
 - (d) where flammable gases may leak, where there are carbon fiber or ignitable dust suspensions in the air, or where volatile flammables such as thinner or gasoline are handled.
Operating the unit in such conditions may result in fire.
-

2. BEFORE INSTALLATION

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

- When moving the unit while removing it from the box, be sure to lift it by holding on to the four lifting lugs without exerting any pressure on other parts, especially swing flap, the refrigerant piping, drain piping, and other resin parts.
- Decide upon a line of transport.
- Leave the unit inside its packaging while moving, until reaching the installation site. Use a sling of soft material, where unpacking is unavoidable or protective plates together with a rope when lifting, to avoid damage or scratches to the unit.
- Refer to the installation manual of the outdoor unit for items not described in this manual.
- Installation should only be carried out after checking in advance the type of refrigerant to be used. (Using the wrong refrigerant will prevent the unit from functioning properly.)
- Do not dispose of any parts necessary for installation until the installation is complete.





1. PRECAUTIONS


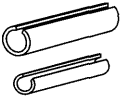

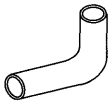
- Be sure to read this manual before installing the indoor unit.
- When selecting installation site, refer to the paper pattern.
- This unit is suitable for installation in a household, commercial and light industrial environment.
- Do not install or operate the unit in rooms mentioned below.

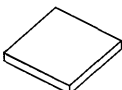
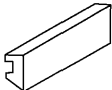


- Laden with mineral oil, or filled with oil vapor or spray like in kitchens. (Plastic parts may deteriorate.)
- Where corrosive gas like sulfurous gas exists. (Copper tubing and brazed spots may corrode.)
- Where volatile flammable gas like thinner or gasoline is used.
- Where machines can generate electromagnetic waves. (Control system may malfunction.)
- Where the air contains high levels of salt such as that near the ocean and where voltage fluctuates greatly such as that in factories. Also in vehicles or vessels.


2. ACCESSORIES

Check the following accessories are included with the unit.

Name	1) Drain hose	2) Clamp	3) Washer for hanging bracket	4) Clamp
Quantity	1 pc.	1 pc.	8 pcs.	6 pcs.
Shape				

Name	5) Washers fixing plate	Insulation for fitting	8) Sealing pad	9) Elbow
Quantity	4 pcs.	1 each	1 pc.	1 pc.
Shape		6) For gas pipe  7) For liquid pipe		

Name	10) Paper pattern for installation	11) Blocking pad	12) Retainer for blocking pad	13) Retainer for blocking pad
Quantity	1 pc.	2 pcs.	2 pcs.	2 pcs.
Shape	Also used as packing material 			

Name	14) Center retainer for blocking pad	(Other) • Operation manual • Installation manual
Quantity	2 pcs.	
Shape		

3. OPTIONAL ACCESSORIES

- The remote controllers are required for this indoor unit.
(However, the remote controller is not required for the slave unit of a simultaneous operation system.)
These are two types of remote controllers: wired and wireless. 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		Model
Wired type		BRC1C517,BRC1C61 BRC1B517,BRC1B61
Wireless type	Heat pump type	BRC7C528W
	Cooling only type	BRC7C529W

NOTE 

- If you wish to use a remote controller that is not listed in Table 1, select a suitable remote controller after consulting catalogs and technical materials.

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
Is the indoor unit fixed firmly?	The unit may drop, vibrate or make noise.	
Is the gas leak test finished?	It may result in insufficient cooling.	
Is the unit fully insulated?	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 burn out.	
Are wiring and piping correct?	The unit may malfunction or the components burn out.	
Is the unit safely grounded?	Dangerous at electric leakage.	
Is wiring size according to specifications?	The unit may malfunction or the components burn out.	
Is something blocking the air outlet or inlet of either the indoor or outdoor units?	It may result in insufficient cooling.	
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

*Also review the "SAFETY CONSIDERATIONS"

Items to be checked	Check
Did you explain about operations while showing the instruction manual to your customer?	
Did you hand the instruction manual over to your customer?	

Points for explanation about operations

The items with **▲ WARNING** and **▲ CAUTION** marks in the instruction 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 customers to read the instruction manual.

4. NOTE TO THE INSTALLER

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

3. SELECTING INSTALLATION SITE AND AIR FLOW DIRECTION

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

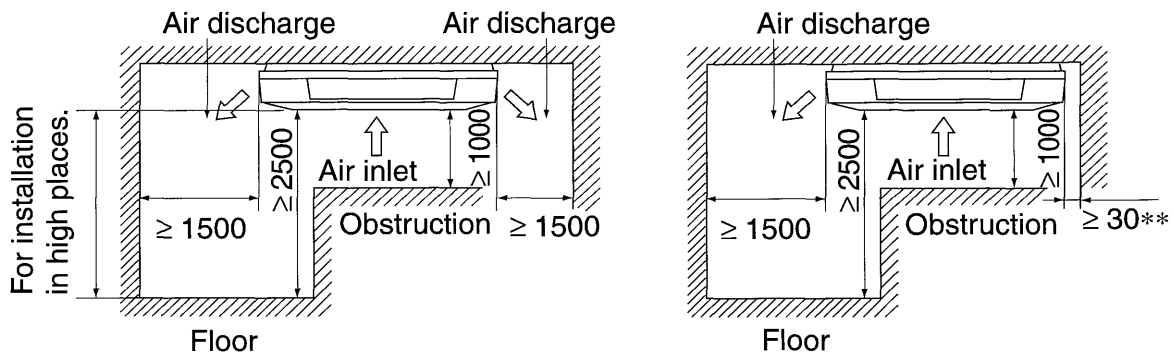
- In the upper space (including the back of the ceiling) of the indoor unit where there is no possible dripping of water from the refrigerant pipe, drain pipe, water pipe, etc.
- Where optimum air distribution can be ensured.
- Where nothing blocks air passage.
- Where condensate can be properly drained.
- Where the ceiling is strong enough to bear the indoor unit weight.
- Where the false ceiling is not noticeably on an incline.
- Where sufficient clearance for maintenance and service can be ensured.
- Where there is no risk of flammable gas leakage.
- Where piping between indoor and outdoor units is possible within the allowable limit.
(Refer to the installation manual for the outdoor unit.)

[CAUTION]

Only use the included parts or parts which match the specifications when installing the unit.

- Install the indoor unit no less than 2.5 m above the floor. Where unavoidably lower, take what measures are necessary to keep hands out of the air outlet.

Space required for installation



** Space is required to attach/detach corner covers.

2. Air flow direction

Select the air flow direction that best suits the unit's location. 2-way and 3-way air flow must be set from the remote controller. For details, see FIELD SETTING.

NOTE

- Restrictions are placed on piping direction, therefore select flow direction from the below patterns.

[Air flow patterns] (Refer to Fig. 1)

(Illustrations seen from ceiling)

A, B, C and D indicate drain pans.

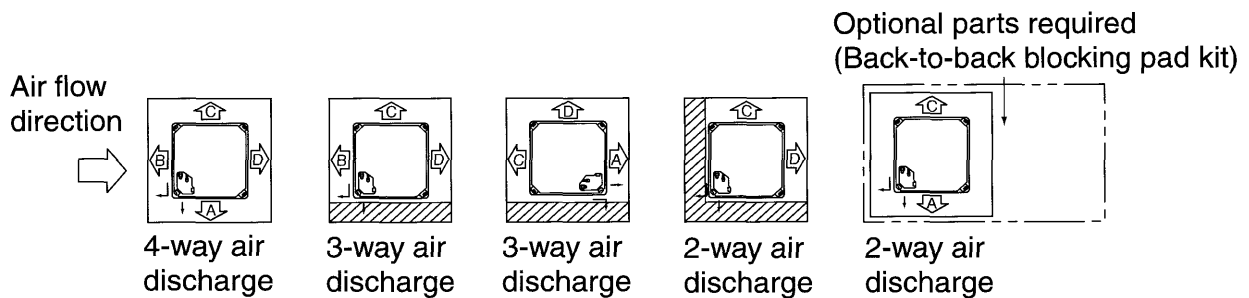


Fig. 1

Refrigerant pipe direction

- To the rear (Straight pipe)
- ↪ To the right (Elbow required)

Upward running refrigerant pipes are possible in all patterns.

3. 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. (Installation pitch is marked on the paper pattern for installation. Refer to it to check for points requiring reinforcing.)

4. PREPARATIONS BEFORE INSTALLATION

1. FOR 4-WAY AIR DISCHARGE

1. Relation of holes for indoor unit, suspension bolt position, piping and wiring. (Refer to Fig. 2)

(Illustrations seen from ceiling)

- * Dimensions in () for 100 and 125 models
- *** Suspension bolt pitch

2. Make holes for suspension bolts, refrigerant and drain piping, and wiring. (Refer to Fig. 3)

- Refer to the paper patten for the locations.
- Select the location for each of holes and open the holes in the ceiling.

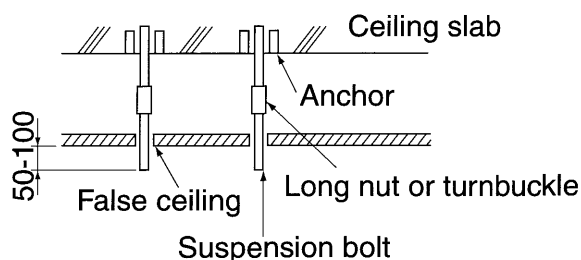
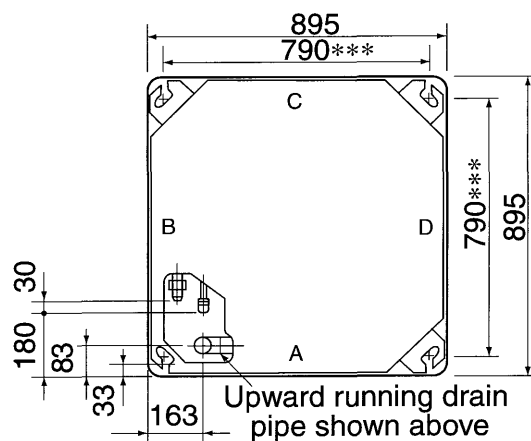


Fig. 3

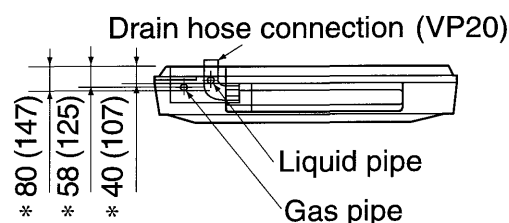


Fig. 2

NOTE

- All the above parts are field supplied.

(Use either a M8-M10 size bolt)

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 from the false ceiling before proceeding further.

3. Detach the air intake grille and corner covers from the indoor unit.

- Detach the air intake grille. (Refer to Fig. 4 and 5)
- Slide the locking knobs (× 2) on the air intake grille inward (direction of arrows) and lift upwards.

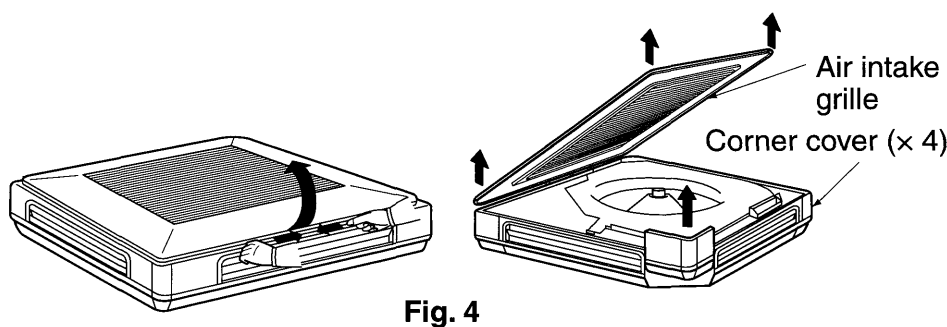


Fig. 4

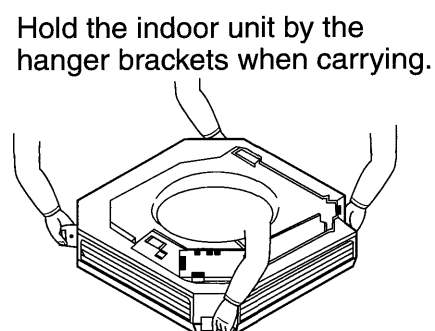


Fig. 5

- Open the air intake grille to a 45° angle and detach from the unit.
- Detach the corner covers.

[TO CHANGE AIR FLOW RATE]

- When shipped from the factory, the shutters on air discharge outlets C and D are closed so that air flow rate is the same in all four directions.
 - Air flow rate can be changed by sliding the shutter.
- (Refer to Fig. 6 and 7)

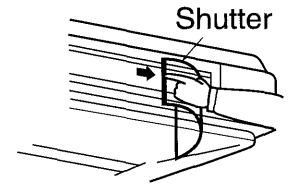


Fig. 6

NOTE

- Illustration seen from ceiling

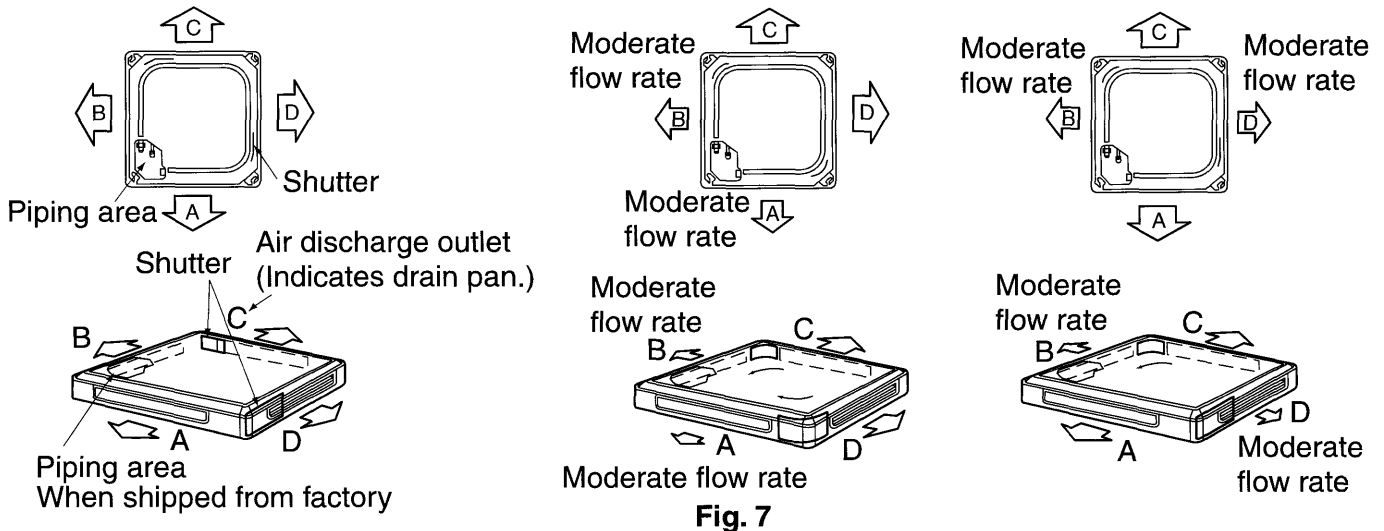


Fig. 7

CAUTION

Be careful not to touch the heat exchanger fins.

[CEILING HEIGHT]

The indoor unit may be installed on ceilings up to 3.5 m in height. However, it becomes necessary to make field settings by remote controller when installing the unit at a height over 2.7 m. Refer to the section entitled "FIELD SETTING" and the decoration panel installation manual. Install this unit where the height of bottom panel is more than 2.5m so that user cannot easily touch.

2. FOR 2-WAY OR 3-WAY AIR DISCHARGE

2-way and 3-way air discharge must be set from the remote controller. For details, see FIELD SETTING.

1. Relation of holes for indoor unit, suspension bolt position, piping and wiring. (Refer to Fig. 8)

NOTE

- Illustrations seen from ceiling
- * Dimension in () for 100 and 125 models
- *** Suspension bolt pitch

2. Make holes for suspension bolts, refrigerant and drain piping, and wiring. (Refer to Fig. 9)

- Refer to paper pattern for the locations.
- Select the location for each of holes and open the holes in the ceiling.

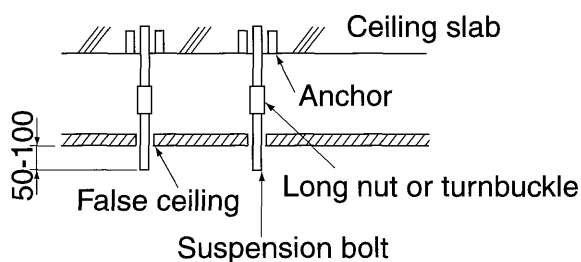


Fig. 9

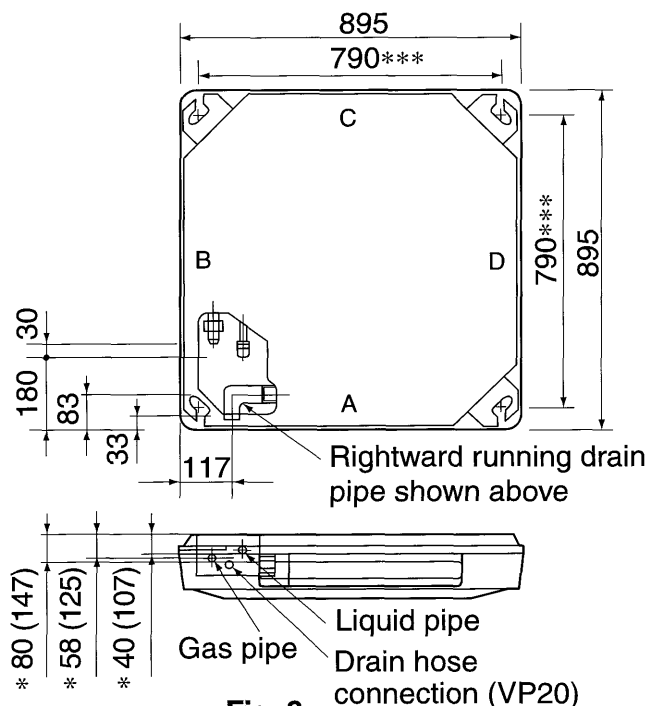


Fig. 8

NOTE

- To change air flow rate, select a pattern from “TO CHANGE AIR FLOW RATE” and determine the location of pipes.
- All the above parts are field supplied.

(Use either a M8-M10 size bolt.)

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 from the false ceiling before proceeding further.

3. Detach the air intake grille and corner covers from the indoor unit.

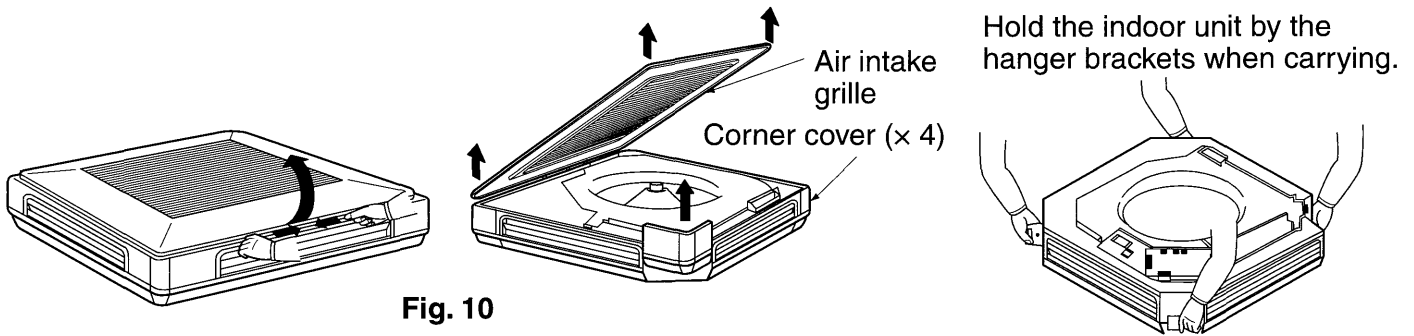


Fig. 10

- Detach the air intake grille. (Refer to Fig. 10)
- Slide the locking knobs (× 2) on the air intake grille inward (direction of arrows) and lift upwards.
- Open the air intake grille to a 45° angle and detach from the unit.
- Detach the corner covers.

[THE WAY TO BLOCK AIR DISCHARGE OUTLETS]

For 2-way air discharge, outlets A and B must be blocked.

For 3-way air discharge, outlets A or B must be blocked.

1. Detach the top decorative plate from the outlets to be blocked. (Refer to Fig. 11)
2. Detach the flap from the outlets, too.
3. Attach the retainers to the blocking pad. (Refer to Fig. 12)

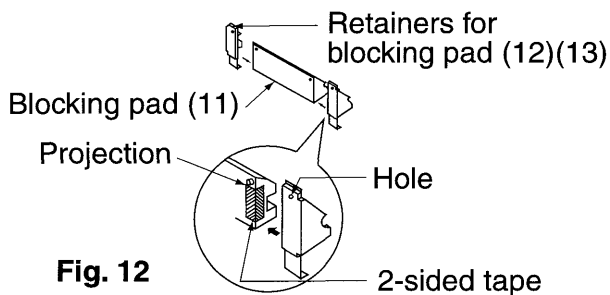


Fig. 12

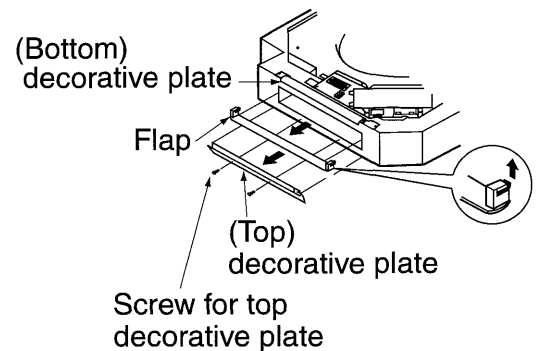


Fig. 11

Align the projections on the pads with the holes on the retainers, and tape parts together with 2-sided tape.

4. After installing the blocking pads, attach the center blocking pad retainer and the top decorative panel. (Refer to Fig. 13)

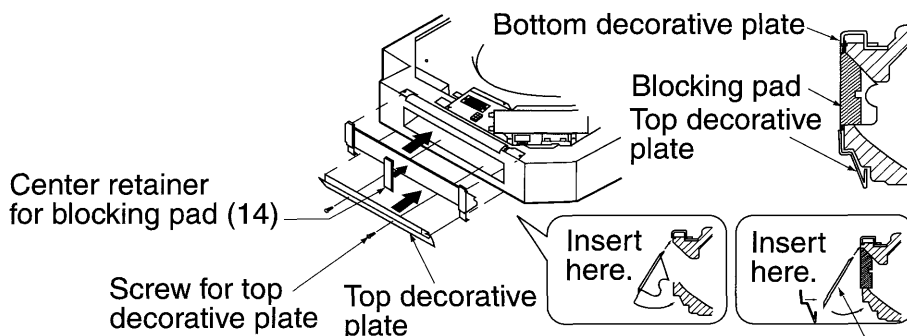


Fig. 13

Center retainer for blocking pad (14)

CAUTION

Unless blocking pads are installed as indicated, air will leak and consequently cause dewing.

[TO CHANGE AIR FLOW RATE]

- When shipped from the factory, the shutters on air discharge outlets C and D are closed so that air flow rate is the same in all four directions.
- Air flow rate can be changed by sliding the shutter. (Refer to Fig. 14)

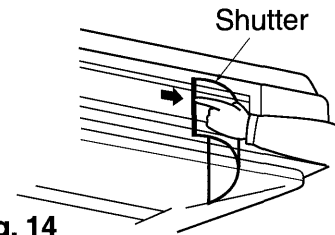


Fig. 14

CAUTION

Be careful not to touch the heat exchanger fins.

2-way air discharge (Refer to Fig. 15)

NOTE

- Illustrations seen from ceiling

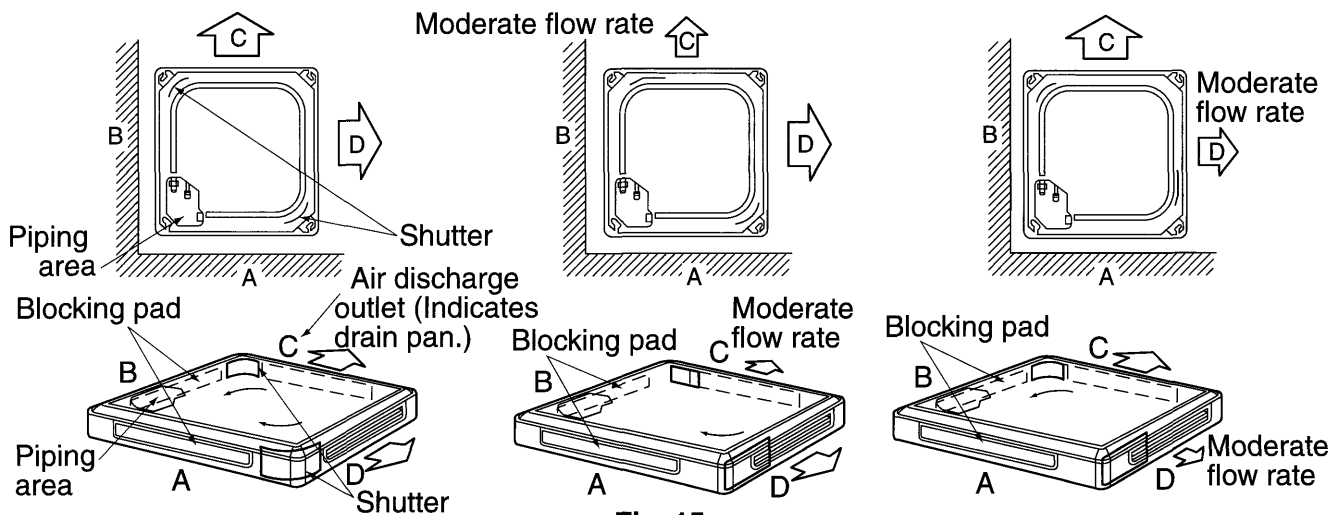


Fig. 15

3-way air discharge (Refer to Fig. 16)

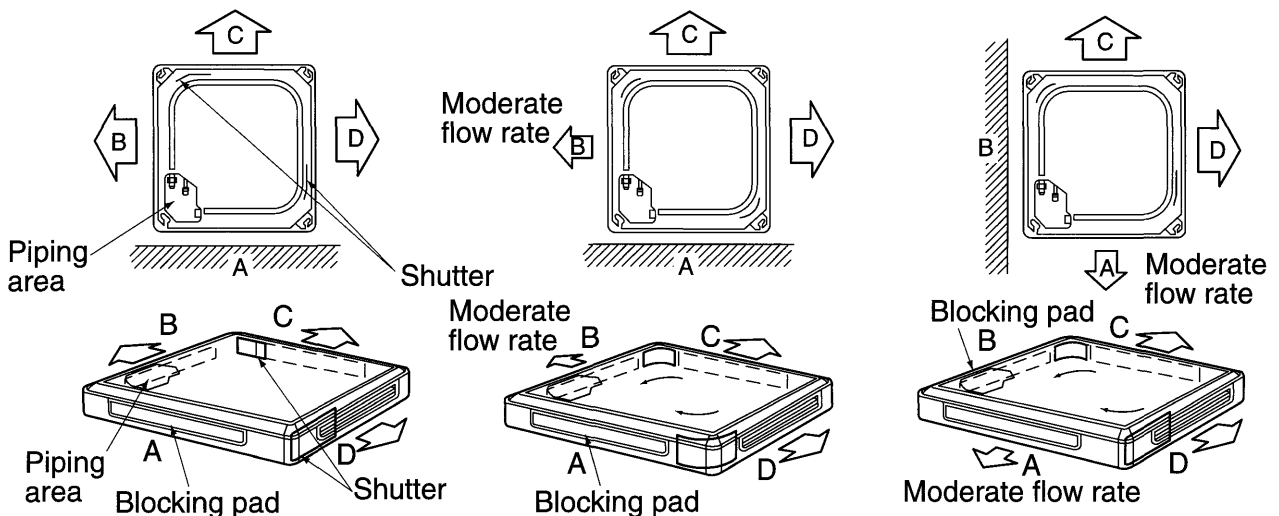


Fig. 16

[CEILING HEIGHT]

The indoor unit may be installed on ceilings up to 3.5 m in height. However, it becomes necessary to make field settings by remote controller when installing the unit at a height over 2.7 m. Refer to the section entitled "FIELD SETTING" and the decoration panel installation manual. Install this unit where the height of bottom panel is more than 2.5m so that user cannot easily touch.

5. INDOOR UNIT INSTALLATION

Installing optional accessories before installing the indoor unit is easier.

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

1. Fit the top nuts and washers over the suspension bolts (× 4).

- Use the washer fixing plate (5) to keep the washer from falling out of place. Hang the unit from the hangers on side A, and then fit the bottom washers and nuts over the suspension bolts on that side. (Refer to Fig. 17)

2. Install the indoor unit. (Refer to Fig. 18)

- Lock the unit to the hangers on side A.
- Hook the unit onto the other 2 hangers and lock with bottom washers and nuts.

3. Check whether the unit is horizontally level from sides C and D both. (Refer to Fig. 19)

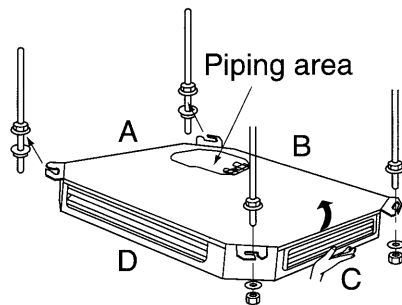
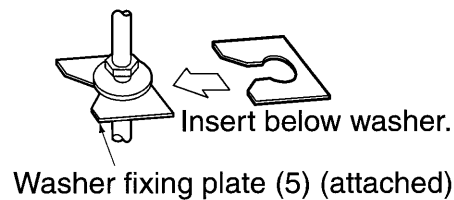


Fig. 17



Securing the washer

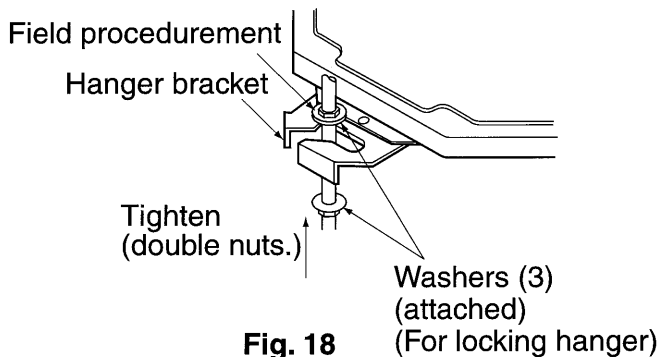


Fig. 18

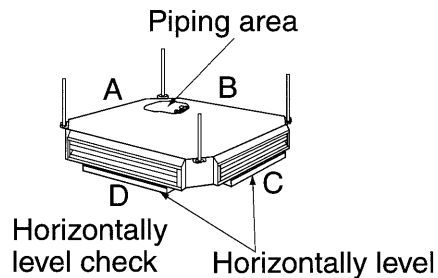


Fig. 19

CAUTION

- Do not hold the swing flap when mounting, as this may break it.
- The indoor unit is equipped with a built-in drain pump and float switch. At each of the unit's 4 corners, verify that it is level by using a water level or a waterfilled vinyl tube. (If the unit is tilted against condensate flow, the float switch may malfunction and cause water to drip.)

4. Remove the washer fixing plate (5) used for preventing the washer from falling and tighten the upper nut.

6. REFRIGERANT PIPING WORK

- See the installation manual for the outdoor unit for details on how to connect the refrigerant piping.
- Be sure to insulate both the gas piping as well as the liquid piping.
 - Not doing so may cause leaks. (Use insulation material which can fully resist the 120°C temperature that the gas piping can sometimes reach when using a heat pump.)
 - If the temperature and humidity of the branch piping could possibly exceed 30°C or RH80%, reinforce the refrigerant insulation (20mm or thicker). Condensation may form on the surface of the insulation.
- Installation should only be carried out after checking in advance the type of refrigerant to be used. (Using the wrong refrigerant will prevent the unit from functioning properly.)

CAUTION

- Do not allow air or other substances other than the designated refrigerant to get mixed into the freezing cycle.
Ventilate the room if refrigerant gas leaks.
- Be sure to use the flare nuts included with the main unit.
- Follow the instructions to the right when using the new R407C refrigerant.
 - Do not use pipe cutters and flare tools which have been used with refrigerant other than R407C.
 - When connecting the flares, coat the flare section with ether oil or ester oil.
 - In order to prevent dirt, liquid, or dust from entering the piping, cure the piping with a pinch or taping.

1. Refrigerant pipes can be run in 3 directions (Refer to Fig. 20)

- Use copper alloy seamless pipes (ISO 1337).
- The outdoor unit is charged with refrigerant.
- Be sure to use both a spanner and torque wrench together, when connecting or disconnecting pipes to/ from the unit.

(Refer to Fig. 21)

- Refer to the Table 2 for flare dimensions and tightening torque.

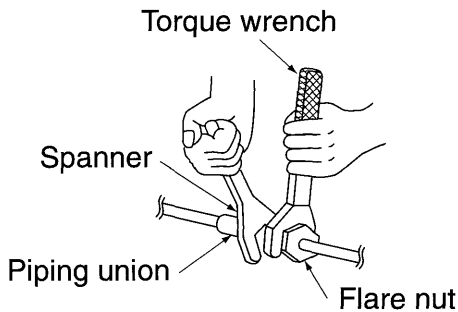
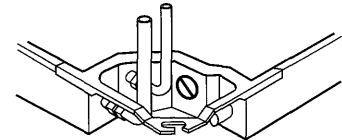
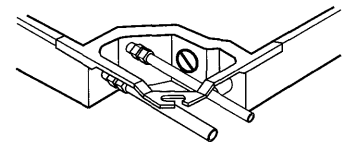


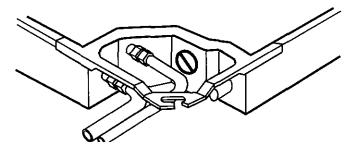
Fig. 21



Upward running pipes



Rear running pipes



Right running pipes

Fig. 20

CAUTION

Over-tightening the flare nut may break it and/or cause the refrigerant to leak.

- When connecting the flare nut, apply ester oil or ether oil to the flare section (both inside and outside), and spin 3-4 times before screwing in. (Refer to Fig. 22)

Coat here with ester or etheroil.

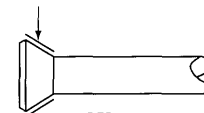


Fig. 22

Table 2

Pipe size	Tightening torque	Flare dimensions A (mm)	Flare shape
φ 9.5	3270 - 3990N·cm (333 - 407 kgf·cm)	12.0 - 12.4	
φ 15.9	6180 - 7540N·cm (630 - 770 kgf·cm)	18.6 - 19.0	
φ 19.1	9720 - 11860N·cm (990 - 1210 kgf·cm)	22.9 - 23.3	

For reference

If a torque wrench is not available, use the following method as a rule of thumb.

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

When you keep on tightening the flare nut with a spanner, there is a point where the tightening torque suddenly increases. From that position, further tighten the flare nut the angle shown below:

Table 3

Pipe size	Further tightening angle	Recommended arm length of tool
φ9.5 (3/8")	60 to 90 degrees	Approx. 200mm
φ15.9 (5/8")	30 to 60 degrees	Approx. 300mm
φ19.1 (3/4")	20 to 35 degrees	Approx. 450mm

- Make absolutely sure to execute heat insulation works on the pipe-connecting section after checking gas leakage by thoroughly studying the following figure and using the attached heat insulating materials for couplings (6) and (7). (Fasten both ends with the clamps (4).) **(Refer to Fig. 23)**

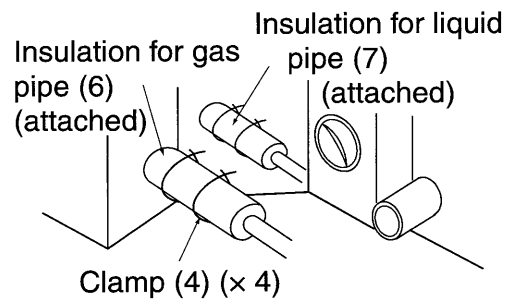


Fig. 23

2. For upward and rightward running pipes

- Upward and rightward running pipes are easily rigged with the optional connecting elbow kit.
 - For upward running pipes, detach the pipe hole cover.
 - Once pipes are rigged, cut the pipe hole cover to size and reattach. Use scissors for cutting.
- (Refer to Fig. 24)**
(Always reattach the pipe hole cover to prevent small animals and insects from infiltrating the indoor unit.)
- When doing this, block any gaps between the piping penetration lid and the pipes using putty to prevent dust from entering the indoor unit.

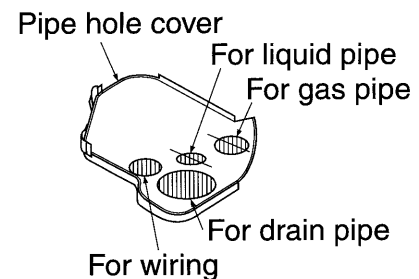


Fig. 24

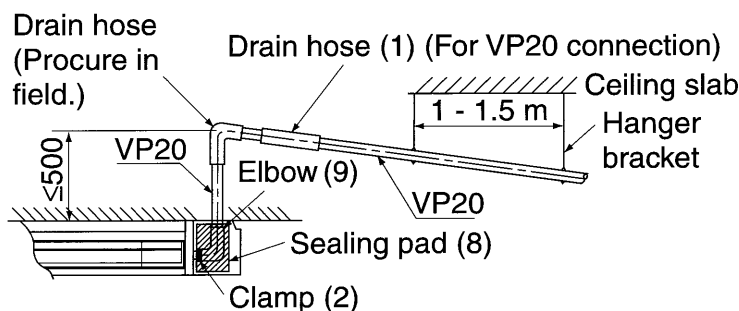
7. DRAIN PIPING WORK

1. Rig drain piping (Refer to Fig. 25)

As for drain work, perform piping in such a manner that water can be drained properly.

As for drain piping, the connection can be made from three different directions.

- Employ a pipe with either the same diameter or with the diameter larger (excluding the raising section) than that of the connecting pipe (PVC pipe, nominal diameter 20 mm, outside diameter 26 mm).
- Keep the drain pipe short and sloping downwards at a gradient of at least 1/100 to prevent air pockets from forming. **(Refer to Fig. 26)**



Notes on upward running drain hose

Fig. 25

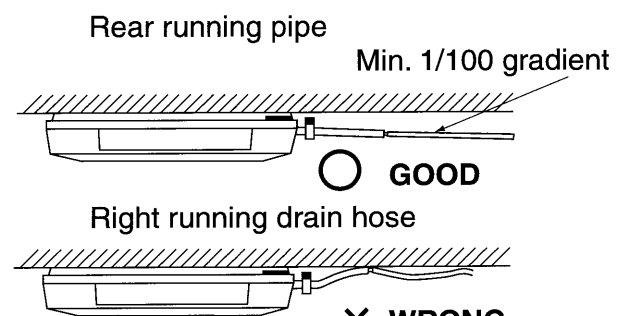


Fig. 26

- To keep the drain hose from sagging, space hanging wires every 1 to 1.5 m. **(Refer to Fig. 25)**
- Use only the included drain hose (1), (for rightward running drain hose) or elbow (9) (for upward running drain hose) and clamp (2).
- Fit the drain hose or elbow over the drain pipe up to the neck and fasten tight with the clamp.
- Insulate the clamp and drain hose or elbow with the included sealing pad (8). **(Refer to Fig.27)**
- Make sure that heat insulation work is executed on the following 2 spots to prevent any possible water leakage due to dew condensation.
 - Indoor drain pipe
 - Drain socket

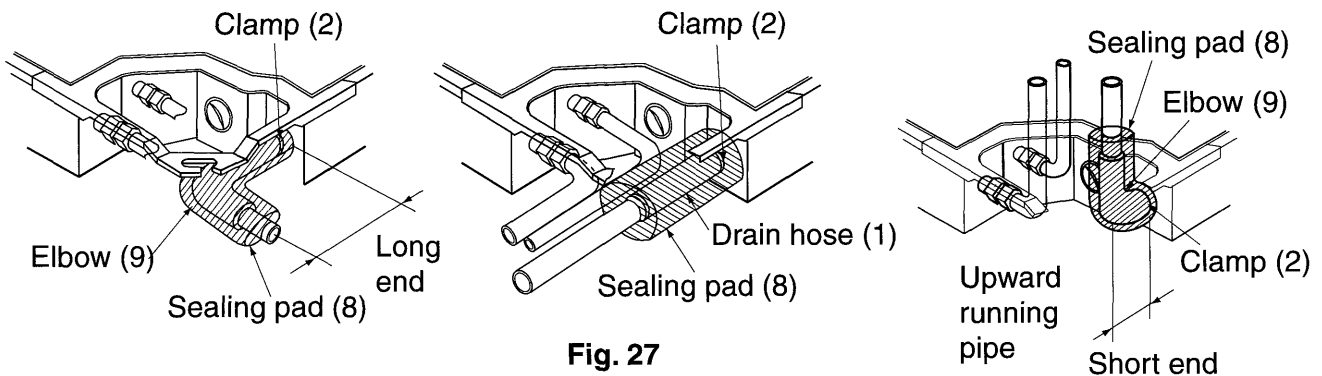
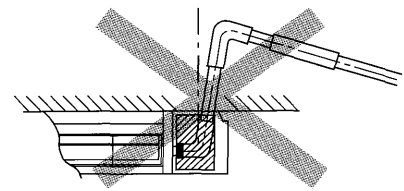


Fig. 27

PRECAUTIONS FOR UPWARD DRAIN RAISING PIPING

- Install the drain raising pipes at a height of less than 500 mm.
- Install the drain raising pipes at a right angle to the indoor unit. **(Refer to Fig. 28)**



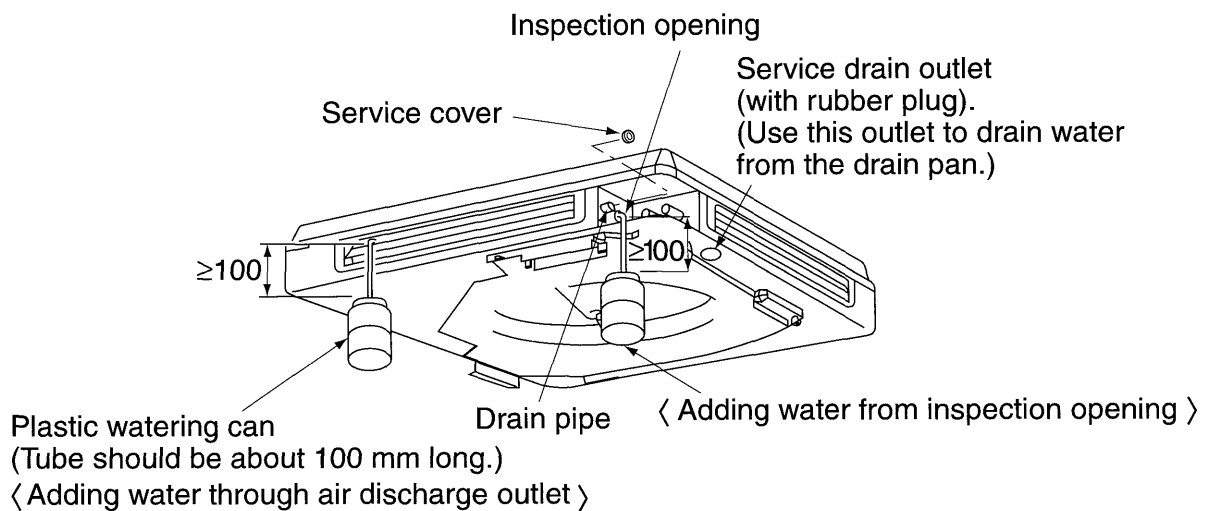
WRONG
Fig. 28

CAUTION

If the upward running drain hose leans at a slant, the float switch will malfunction and water will leak.

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

- Open the water inlet lid, add approximately 1000 cc of water slowly and check drainage flow. **(Refer to Fig. 29)**



Method of adding water

Fig. 29

[Caution]

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.

WHEN ELECTRIC WIRING WORK IS FINISHED

- Check drainage flow during Cooling operation, explained under “TEST OPERATION”.

WHEN ELECTRIC WIRING WORK IS NOT FINISHED

- Remove the control box lid and change the emergency switch above the PC board assembly of the indoor unit from “NORM.” to “EMERG.”. Connect the single-phase power supply to connections No. 1 and No. 3 on the power supply (50Hz 220-240V) terminal board and confirm drain operation. Be sure to change the switch before turning on the power. **(Refer to Fig. 30)**
- Be aware that the fan will turn during the operation.
- After confirming drainage, turn off the power and be sure to change the emergency switch back to “NORM.”.

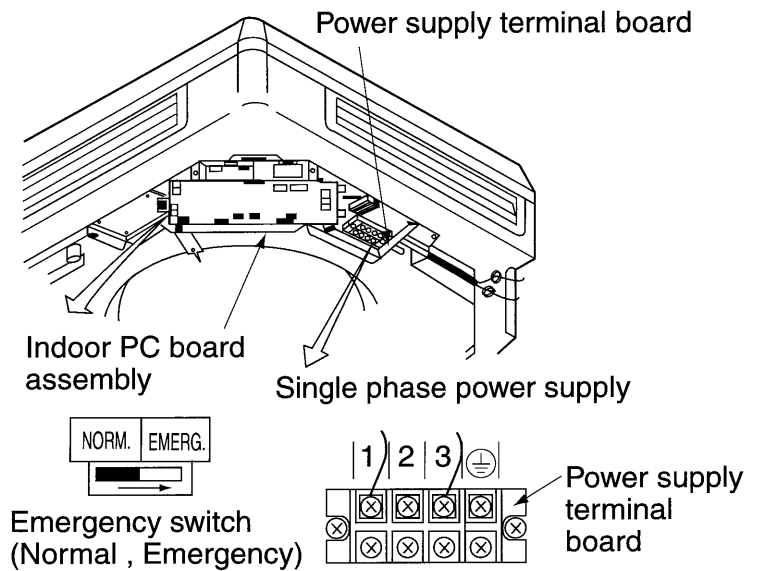


Fig. 30

8. ELECTRIC WIRING WORK

- All field supplied parts and materials and electric works must conform to local codes.
- Use copper wire only.
- For electric wiring work, refer also to “WIRING DIAGRAM” attached to the unit body.
- For remote controller wiring details, refer to the installation manual attached to the remote controller.
- 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.
- 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.
- Be sure to ground the air conditioner
- Do not connect the ground wire to gas pipes, plumbing pipes, lightning rods, or telephone ground wires.
 - Gas pipes: might cause explosions or fire if gas leaks.
 - Plumbing: no grounding effect if hard vinyl piping is used.
 - Telephone ground wires or lightning rods: might cause abnormally high electric potential in the ground during lightning storms.

• Specifications for field wire

The remote control cord should be procured locally. Refer to the Table 4 when preparing one.

Table 4

	Wire	Size (mm ²)	Length
Wiring the units	H05VV - U4G (NOTE 1)	2.5	-
Remote controller cord	Vinyl cord with sheath or cable (2 wire) (NOTE 2)	0.75 - 1.25	Max. 500 m

NOTE

- 1. Shows only in case of protected pipes. Use H07RN-F in case of no protection.
- 2. Insulated thickness : 1mm or more

(Methods of wiring units and connecting remote controller cords) (Refer to Fig. 31)

- Wiring the units connections
Remove the switch box cover, and align the phases with those of the power terminal block inside to connect. Securely fix the wires with the included clamp material A, then fix them with the clamp material C likewise.
- Remote controller cords connections
(not necessary for slave unit of simultaneous operation system)
Connect to the remote controller terminal block. (no polarity)
Securely fix the remote controller cord with the included clamp material B, then fix it with the clamp material D likewise.

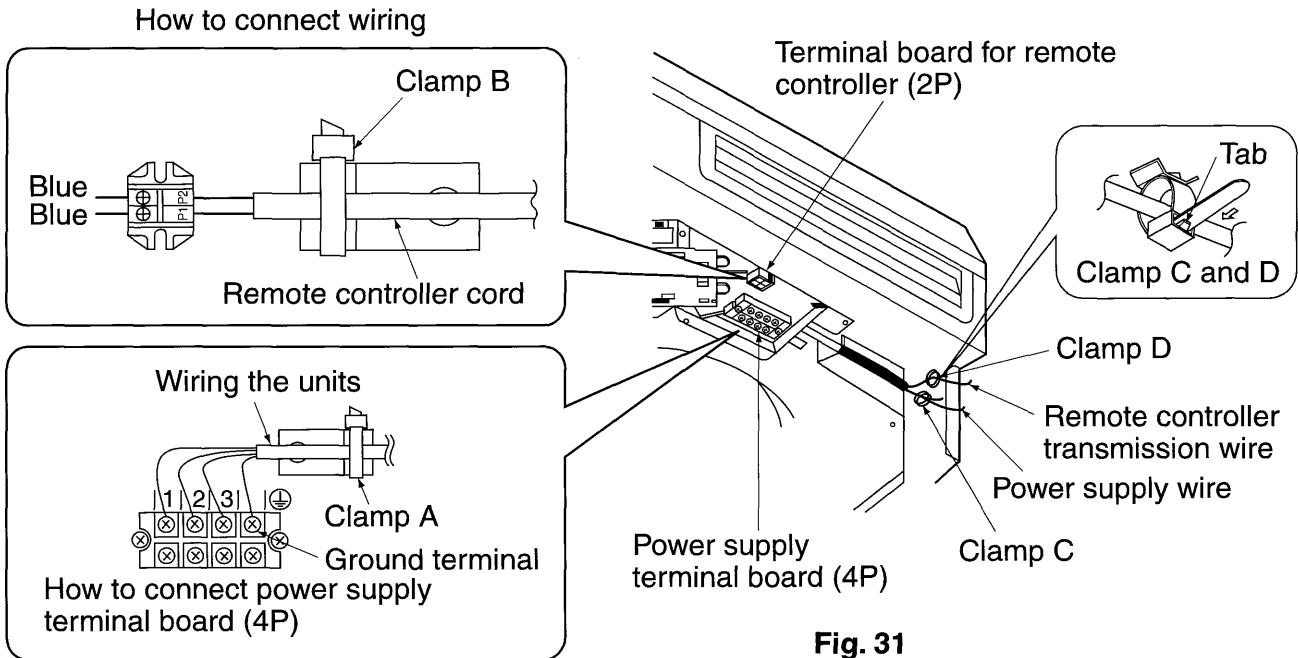


Fig. 31

[PRECAUTIONS]

- Do not clamp remote controller cords together with wiring the units. Doing so may cause malfunction.
- Remote controller cords and wiring the units should be located at least 50 mm from other electric wires. Not following this guideline may result in malfunction due to electrical noise.

CAUTION

- Observe the notes when wiring to the power supply terminal board.
(Use a round crimp-style terminal for connection to the power supply terminal board. 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.)
 - When connecting wires of the same gauge, connect them according to Fig. 32.
- In wiring, make certain that prescribed wires are used, carry out complete connections, and fix the wires so that outside forces are not applied to the terminals.

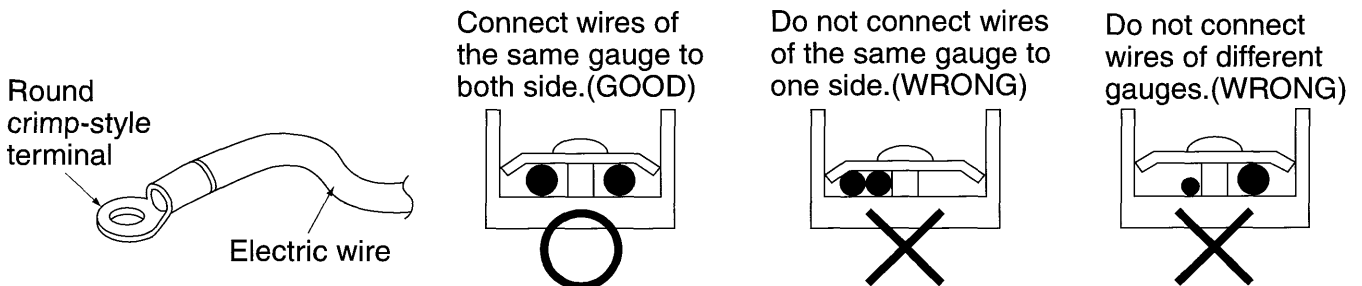


Fig. 32

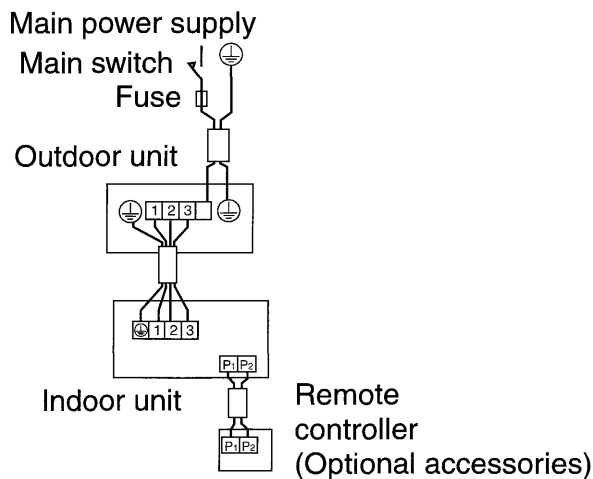
9. WIRING EXAMPLE

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

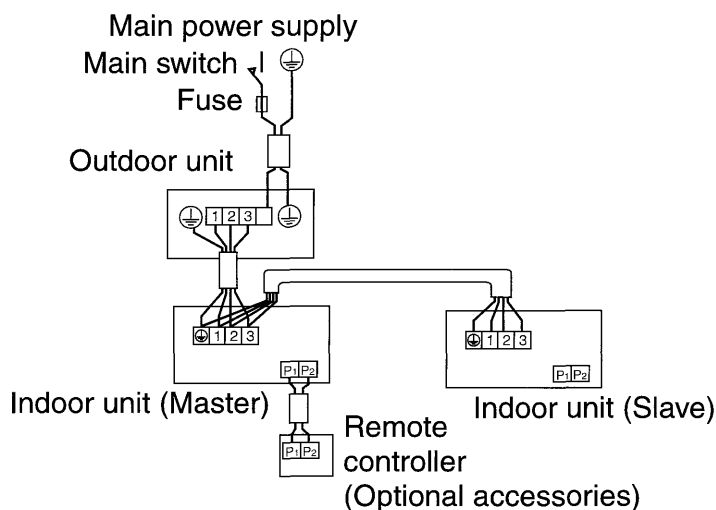
Confirm the system type.

- **Pair type:** 1 remote controller controls 1 indoor unit (standard system).
- **Simultaneous operation system:** 1 remote controller controls 2 indoor units (2 indoor units operate equally.)
- **Group control:** 1 remote controller controls up to 16 indoor units (All indoor units operate according to the remote controller).
- **2 remote controller control:** 2 remote controller control 1 indoor unit.

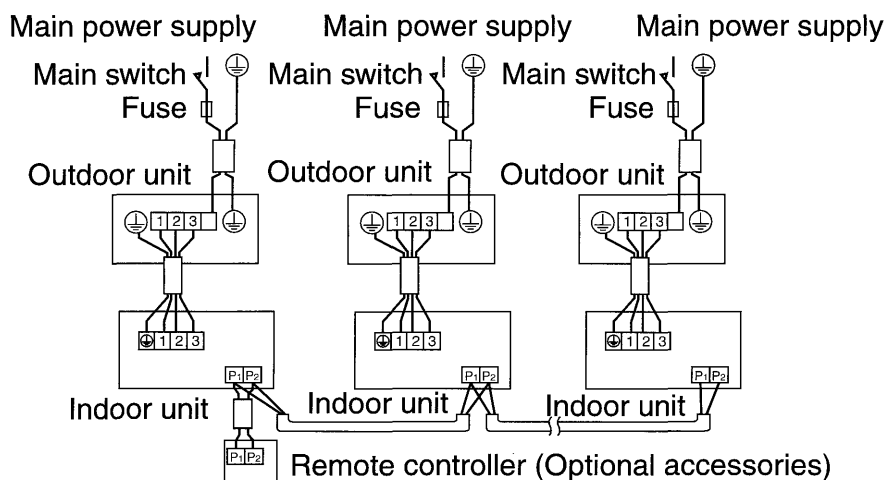
Pair type



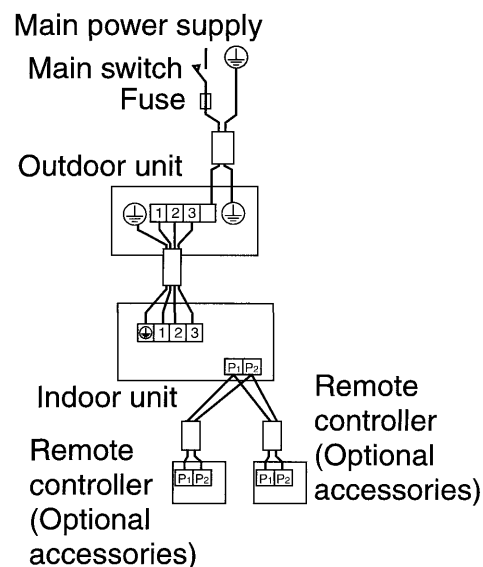
Simultaneous operation system



Group control



2 remote controller control



NOTE

1. All transmission wiring except for the remote controller wires is polarized and must match the terminal symbol.
2. When BRC1B517 is connected, use shield wire in transmission wiring. Ground the shield of the shield wire, at the grounding screw of the remote controller cord grounding terminal inside the control box.
3. In case of group control, perform the remote controller wiring to the master unit when connecting to the simultaneous operation system. (wiring to the slave unit is unnecessary)
4. For group control remote controller, choose the remote controller that suits the indoor unit which has the most functions (as attached swing flap).
5. For simultaneous operation system, connect the remote controller cord to the master unit.

10. FIELD SETTING

Field settings must be made from the remote controller and in accordance with installation conditions.

- Settings can be made by changing the “Mode No.”, “FIRST CODE NO.” and “SECOND CODE NO.”.
- For setting procedures and instructions, see “Field settings” provided with the remote controller.

1. Setting ceiling height

- Select the SECOND CODE NO. that corresponds to the ceiling height. Refer to Table 5 and 6. (SECOND CODE NO. is factory set to “01” for a ceiling height of less than 2.7m .)

Table 5

Ceiling height (m)			Setting
4-way air discharge	3-way air discharge	2-way air discharge	
Less than 2.7 m	Less than 3 m	Less than 3.5 m	N
More than 2.7 m; 3 m or less	More than 3 m; 3.5 m or less	More than 3.5 m; 3.8 m or less	H
More than 3 m; 3.5 m or less	More than 3.5 m; 3.8 m or less	—————	S

Table 6

setting	Mode No.	FIRST CODE NO.	SECOND CODE NO.
N	13 (23)	0	01
H			02
S			03

2. Settings for options

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

3. Setting air discharge direction

- For changing air discharge direction to 2-way or 3-way air discharge, change the SECOND CODE NO. as shown Table 7. (SECOND CODE NO. is factory set to “01” for a air discharge direction of 4-way air discharge.)

Table 7

Setting	Mode No.	FIRST CODE NO.	SECOND CODE NO.
4-way air discharge	13 (23)	1	01
3-way air discharge			02
2-wayair discharge			03

4. 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. according to Table 8 depending on the amount of dirt or dust in the room. (SECOND CODE NO. is factory set to “01” for filter contamination-light)

Table 8

Setting	Spacing time of display air filter sign (long life type)	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Air filter contamination-light	Approx. 2500 hrs	10 (20)	0	01
Air filter contamination-heavy	Approx. 1250 hrs			02

5. Setting indoor unit number of simultaneous operation system

- When using in simultaneous operation system mode, change the SECOND CODE NO. as shown in Table 9.
(SECOND CODE NO. is factory set to "01" for Pair system.)

Table 9

Setting	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Pair system (1 unit)	11 (21)	0	01
Simultaneous operation system (2-unit)			02
Simultaneous operation system (3-unit)			03

- When using in simultaneous operation system mode, refer to "**Simultaneous Operation System Individual Setting**" section to set master and slave units separately.

⟨When using wireless remote controllers⟩

- When using wireless remote controllers, wireless remote controller address setting is necessary. Refer to the installation manual attached to the wireless remote controller for setting instructions.

6. Simultaneous operation system individual setting

It is easier if the optional remote controller is used when setting the slave unit.

- Perform the following procedures when setting the master and slave unit separately.

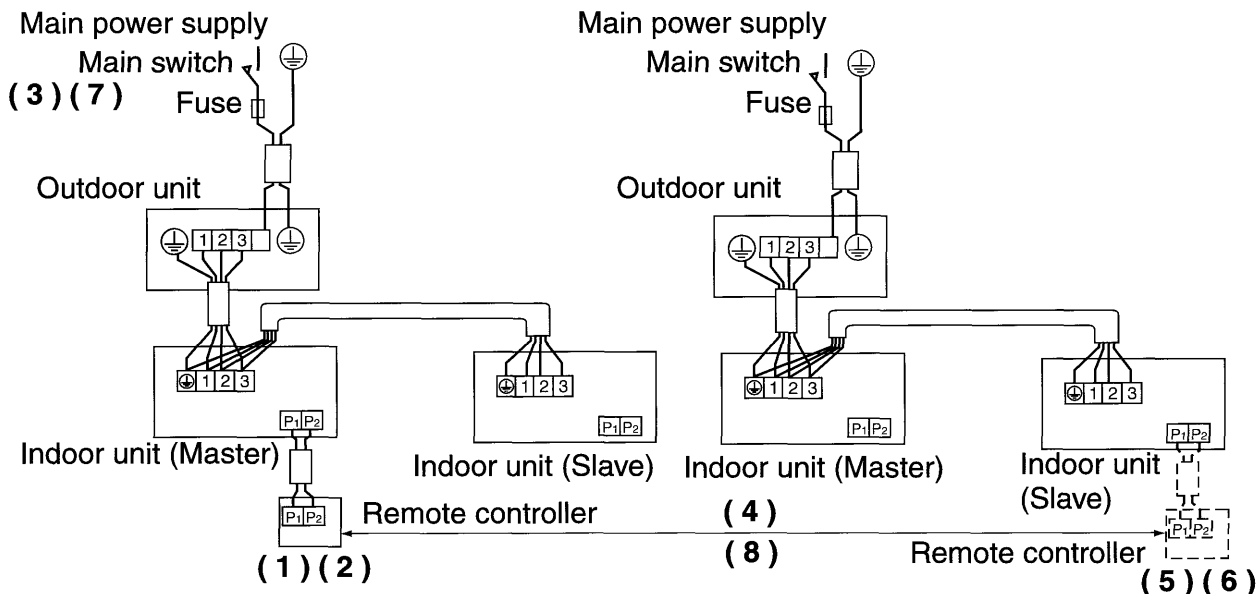
Procedure

- (1) Change the SECOND CODE NO. to "02", individual setting, so that the slave unit can be individually set. (Refer to Table 10)
(SECOND CODE NO. is factory set to "01", unified setting.)

Table 10

Setting	Mode No.	FIRST CODE NO.	SECOND CODE NO.
Unified setting	11 (21)	1	01
Individual setting			02

- (2) Perform field setting for the master unit.
- (3) Turn off the main power supply switch after (2).
- (4) Detach remote controller from the master unit and connect it to the slave unit.
- (5) Turn on the main power supply switch again, and as in (1), change the SECOND CODE NO. to "02", individual setting.
- (6) Perform field setting for the slave unit.
- (7) Turn off the main power supply switch after (6).
- (8) If there is more than one slave unit, repeat steps 4 to 7.
- (9) Detach the remote controller from the slave unit after the setting, and reattach to the master unit. This is the end of the setting procedure.
* You do not need to rewire the remote controller from the master unit if the optional remote controller for slave unit is used.
(However, remove the wires attached to the remote controller terminal board of the master unit.)



7. CONTROL BY 2 REMOTE CONTROLLERS (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

1. Insert a wedge-head screwdriver into the recess between the upper and lower parts of remote controller and, working from the 2 positions, remove carefully the upper part.

(Refer to Fig. 33)

(The remote controller PC board is attached to the upper part of the remote controller.)

2. Turn the MAIN/SUB changeover switch on one of the two remote controller PC board to “S”.
- (Leave the switch of the other remote controller set to “M”.) (Refer to Fig. 34)

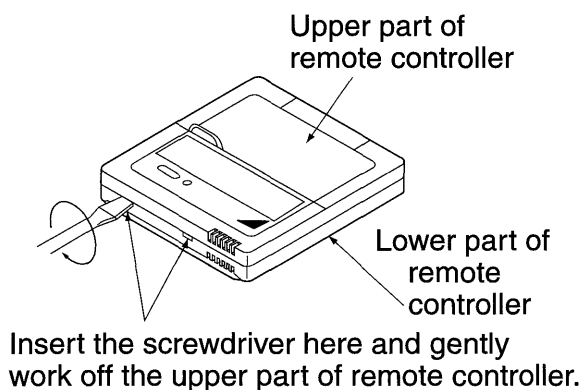


Fig. 33

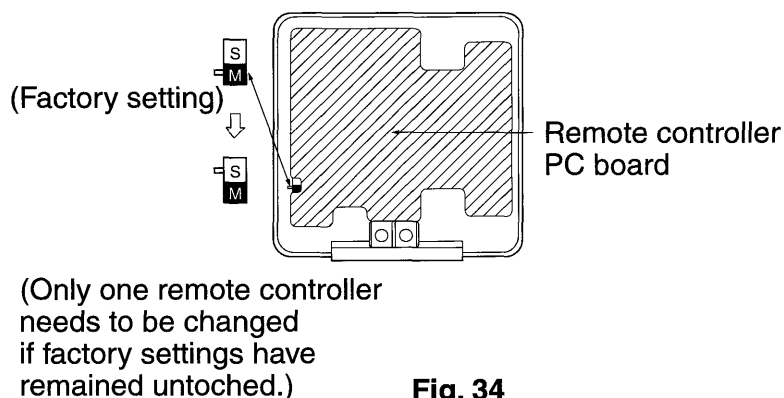


Fig. 34

11. INSTALLATION OF CORNER COVER AND AIR INTAKE GRILLE

- Attach the corner covers to the unit and lock in place by screw. (The screws are taped to the corner covers.)
 - For upward or rightward running pipes, cut the corner covers as shown at Fig. 35 before attaching them.
- (Refer to Fig. 35)

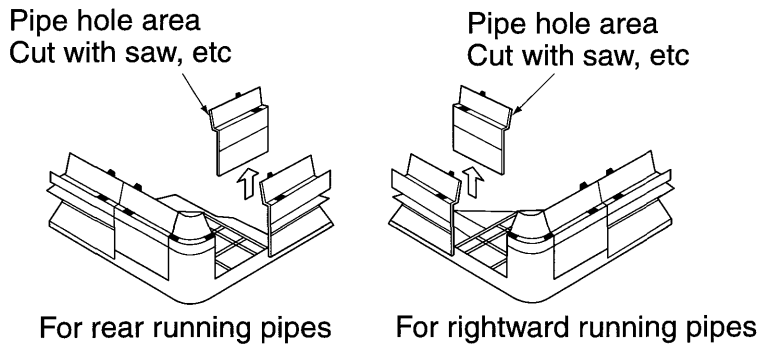


Fig. 35

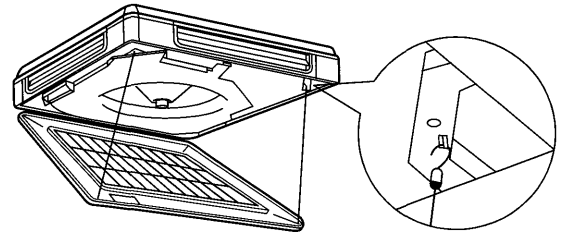


Fig. 36

- Attach the air intake grille.
- Hook the strings to the unit to prevent the grille from dropping. (Refer to Fig. 36)

12. TEST OPERATION

Refer to the section of “FOR THE FOLLOWING ITEMS, TAKE SPECIAL CARE DURING CONSTRUCTION AND CHECK AFTER INSTALLATION IS FINISHED” .

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

1. HOW TO TEST OPERATION

- 1 Open the gas side stop valve.
- 2 Open the liquid side stop valve.
- 3 Electrify crank case heater for 6 hours (Not required in case of a unit exclusively designed for cooling only).
- 4 Set to cooling operation with the remote controller and start operation by pushing ON/OFF button (⏻).
- 5 Press INSPECTION/TEST OPERATION button (👁️/TEST) 4 times (2 times for wireless remote controller) and operate at Test Operation mode for 3 minutes.
- 6 Push AIR FLOW DIRECTION ADJUST button (👉/👈) to make sure the unit is in operation.
- 7 Press INSPECTION/TEST OPERATION button (👁️/TEST) and operate normally.
- 8 Confirm function of unit according to the operation manual.

PRECAUTIONS

- Refer to the diagnoses below if the unit does not operate properly.
- Conduct test operation after installing AIR INTAKE GRILLE if the wireless remote controller is used.
- After completing the test run, press the INSPECTION/TEST OPERATION button once to put the unit in inspection mode, and make sure the malfunction code is “00” (=normal).
If the code reads anything other than “00”, refer to the malfunction diagnoses below.

2. HOW TO DIAGNOSE FOR PROBLEMS

With the power on. Troubles can be monitored on the remote controller or the LED's on the PC board of the indoor unit.

■ Trouble shooting with the display on the liquid crystal display remote controller.


- 1 With the wired remote controller. (NOTE 1)

When the operation stops due to trouble, operation lamp flashed, and “👁️” and the error code are indicated on the liquid crystal display. In such a case, diagnose the fault contents by referring to the table on the Error code list. In case of group control, the unit No. is displayed so that the indoor unit no with the trouble can be recognized. (NOTE 2)

- 2 With the wireless remote controller.

(Refer also to the operation manual attached to the wireless remote controller)

When the operation stops due to trouble, the display on the indoor unit flashes. In such a case, diagnose the fault contents with the table on the Error code list looking for the error code which can be found by following procedures. (NOTE 2)

- (1) Press the INSPECTION /TEST OPERATION button, “” is displayed and “0” flashes.
- (2) Press the PROGRAMMING TIME button and find the unit No. which stopped due to trouble.
 Number of beeps 3 short beeps.....Perform all the following operations
 1 short beep.....Perform (3) and (6)
 1 long beep.....No trouble
- (3) Press the OPERATION MODE SELECTOR button and upper figure of the error code flashes.
- (4) Continue pressing the PROGRAMMING TIME button unit it makes 2 short beeps and find the upper code.
- (5) Press the OPERATION MODE SELECTOR button and lower figure of the error code flashes.
- (6) Continue pressing the PROGRAMMING TIME button unit it makes a long beep and find the lower code.
 - A long beep indicate the error code.

■ Trouble shooting with the LEDs on the PC board (Refer to Table 11)

The following checking can be made with the service monitor LEDs (green). (Normal when flashing)












-  : LED on
  : LED off
  : LED flashing
 — : Not used for trouble shooting


Table 11

Microcomputer normal monitor	Transmission normal monitor	Details	
		FUY-FJV1	FUYP-BV1
		Indoor unit is normal → Diagnose the outdoor unit	
		Malfunction of indoor unit PC board assembly or miswiring between indoor and outdoor units	Miswiring between the indoor and outdoor units
		If the outdoor unit HAP(H1P) does not light, diagnose the outdoor unit. If it is flashes, it is due to either miswiring or malfunction of the indoor unit PC board assembly. (NOTE 4)	If the outdoor unit HAP(H1P) does not light, diagnose the outdoor unit. If it is flashed, it is due to either miswiring or malfunction of the indoor or outdoor unit PC board assembly. (NOTE 4)
	—	Malfunction of the indoor unit PC board (NOTE 5)	
		Abnormal power supply, malfunction of PC board assembly or disconnection between the indoor and outdoor units (NOTE 5)	

NOTE 

1. In case wired remote controller. Press the INSPECTION /TEST OPERATION button on remote controller, “” starts flashing.
2. Keep down the ON/OFF button for 5 seconds or longer in the inspection mode and the above trouble history disappears, after the trouble code goes on and off twice, followed by the code “00”(normal). The display changes from the inspection mode to the normal mode.
3. Depending on the model or the conditions, it may carry out an emergency shut-down.
4. If the HBP(H2P) is off, the branch wiring between each of the indoor and outdoor units may either be incorrectly connected or broken. Before taking any of the diagnostic steps listed above, check the branch wiring.
 If the HBP(H2P) is off on an inverter, there is a possibility that the fuse on the outdoor unit's PC board is burnt out.
5. Cut off the power and wait for 5 seconds or longer. Turn on the power again and see if the LED is in the same state again.

3. Malfunction code

- For places where the error 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.

Code	Malfunction/Remarks
A1	Indoor unit's PC board faulty
A3	Drain water level abnormal
A6	Indoor fan motor overloaded, overcurrent or locked
A7	Swing flap motor locked
	Only the air flow direction can not be controlled.
AF	Humidifier faulty
AH	Air cleaner faulty
	Only the air cleaner does not function.
AJ	Type set improper
	Capacity data is wrongly proset. Or there is nothing programmed in the data hold IC.
C4	Sensor for heat exchanger lamp is fault
C9	Sensor for suction air lamp is fault
CJ	Sensor for remote controller is fault
	The remote controller thermistor does not function, but the system thermo run is possible.
E0	Action of safety device (outdoor unit)
E1	Outdoor unit's PC board faulty (outdoor unit)
E3	High pressure abnormal (outdoor unit)
E4	Low pressure abnormal (outdoor unit)
E5	Compressor motor lock malfunction (outdoor unit)
E7	Outdoor fan motor lock malfunction
	Outdoor fan instantaneous overcurrent malfunction (outdoor unit)
E9	Electronic expansion valve faulty (outdoor unit)
F3	Discharge pipe temperature abnormal (outdoor unit)
H3	High pressure switch faulty (outdoor unit)
H4	Low pressure switch faulty (outdoor unit)
H7	Outdoor motor position signal malfunction (outdoor unit)
H9	Outdoor air thermistor faulty (outdoor unit)
	(NOTE 3)
J3	Discharge pipe thermistor faulty (outdoor unit)
	(NOTE 3)
J5	Suction pipe thermistor faulty (outdoor unit)
J6	Heat exchanger thermistor faulty (outdoor unit)
	(NOTE 3)
L4	Overheated heat-radiating fin (outdoor unit)
	Inverter cooling defect.
L5	Instantaneous overcurrent (outdoor unit)
	Possible earth fault or short circuit in the compressor motor.
L8	Electric thermal (outdoor unit)
	Possible electrical overload in the compressor or cut line in the compressor motor.
L9	Stall prevention (outdoor unit)
	Compressor possibly locked.

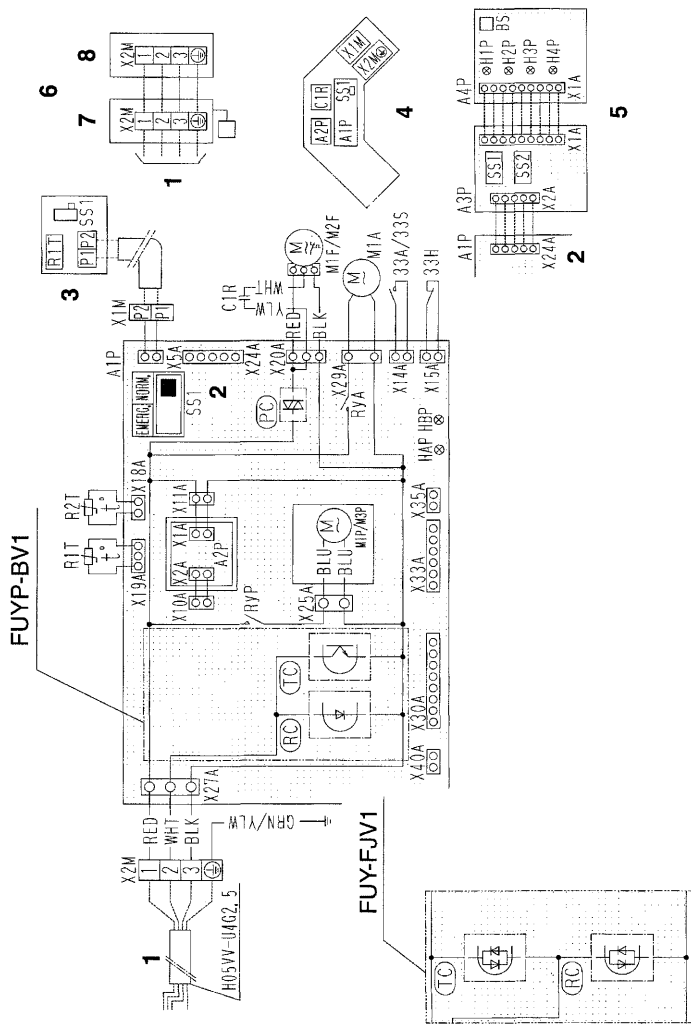
LC	Transmission malfunction between the outdoor control units' inverters (outdoor unit)
P1	Open-phase (outdoor unit)
P3	PC board temperature sensor malfunction (outdoor unit)
P4	Heat-radiating fin temperature sensor malfunction (outdoor unit)
PJ	Type set improper (outdoor unit)
	Capacity data is wrongly proset. Or there is nothing programmed in the data hold IC.
U0	Suction pipe temperature abnormal
U1	Reverse phase
	Reverse two of the L1,L2 and L3 leads.
U2	Power source voltage malfunction (outdoor unit)
	Includes the defect in K1M.
U4 UF	Transmission error (indoor unit – outdoor unit)
	Wrong wiring between indoor and outdoor units or malfunction of the PC board mounted on the indoor and the outdoor units. If UF is shown, the wiring between the indoor and outdoor units is not properly wired. Therefore, immediately disconnect the power supply and correct the wiring. (The compressor and the fan mounted on the outdoor unit may start operation independent of the remote controller operation.)
U5	Transmission error (indoor unit – remote controller)
	Transmission is improper between the indoor unit and the remote controller.
U8	Malfunction in transmission between main and sub remote controls. (Malfunction in sub remote control.)
UA	Miss setting for multi system
	Setting is wrong for selector switch of multi-system. (see switch SS2 on the main unit's PC board)
UC	Central control address overlapping

13. WIRING DIAGRAM

(Refer to Fig. 37)

1	TO OUTDOOR UNIT	2	NOTE) 4
3	WIRED REMOTE CONTROLLER	4	SWITCH BOX
5	RECEIVER/DISPLAY UNIT	6	IN CASE OF SIMULTANEOUS OPERATION SYSTEM
7	INDOOR UNIT (MASTER)	8	INDOOR UNIT (SLAVE)

WIRING DIAGRAM



1-RED	2-WHITE	3-BLACK	
33A	LIMIT SWITCH (SWING FLAP)		RECEIVER/DISPLAY UNIT (ATTACHED TO WIRELESS REMOTE CONTROLLER)
33S	FLOAT SWITCH		
33H	PRINTED CIRCUIT BOARD	A3P	PRINTED CIRCUIT BOARD
A1P	PRINTED CIRCUIT BOARD	A4P	PRINTED CIRCUIT BOARD
A2P	(TRANSFORMER 230V/16V)	BS	PUSH BUTTON (ON/OFF)
C1R	CAPACITOR (M1F/M2F)	H1P	LIGHT EMITTING DIODE (ON-RED)
HAP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	H2P	LIGHT EMITTING DIODE (TIMER-GREEN)
HBP	LIGHT EMITTING DIODE (SERVICE MONITOR-GREEN)	H3P	LIGHT EMITTING DIODE (FILTER SIGN-RED)
M1A	MOTOR (INDOOR FAN)	H4P	LIGHT EMITTING DIODE (DEFROST-ORANGE)
M1F	MOTOR (DRAIN PUMP)	SS1	SELECTOR SWITCH (MAIN/SUB)
M2F	MOTOR (DRAIN PUMP)	SS2	SELECTOR SWITCH (WIRELESS ADDRESS SET)
M1P	MOTOR (DRAIN PUMP)		CONNECTOR FOR OPTIONAL PARTS
M3P	MOTOR (DRAIN PUMP)	X30A	CONNECTOR (INTERFACE ADAPTOR FOR SKY AIR SERIES)
Q1F	THERMO SWITCH (M1F/M2F EMBEDDED)	X35A	CONNECTOR (GROUP CONTROL ADAPTOR)
R1T	THERMISTOR (AIR)	X40A (FUYF TYPE ONLY)	CONNECTOR (ON/OFF INPUT FROM OUTSIDE)
R2T	THERMISTOR (COIL)		
RyA	MAGNETIC RELAY (M1A)		
RyP	MAGNETIC RELAY (M1P/M3P)		
SS1	SELECTOR SWITCH (EMERGENCY)		
X1M	TERMINAL STRIP		
X2M	TERMINAL STRIP		
PC	PHASE CONTROL CIRCUIT		
RC	SIGNAL RECEIVER		
TC	SIGNAL TRANSMISSION CIRCUIT		
	WIRED REMOTE CONTROLLER		
R1T	THERMISTOR (AIR)		
SS1	SELECTOR SWITCH (MAIN/SUB)		

- NOTES)
- □ □ □ : TERMINAL
 - ○ : CONNECTOR
 - - - - : FIELD WIRING
 - IN CASE USING CENTRAL REMOTE CONTROLLER, CONNECT IT TO THE UNIT IN ACCORDANCE WITH THE ATTACHED INSTALLATION MANUAL.
 - X24A IS CONNECTED WHEN THE WIRELESS REMOTE CONTROLLER KIT IS BEING USED.
 - REMOTE CONTROLLER MODEL VARIES ACCORDING TO THE COMBINATION SYSTEM, CONFIRM ENGINEERING MATERIALS AND CATALOGS, ETC. BEFORE CONNECTING.
 - SYMBOLS SHOW AS FOLLOWS:
 RED: RED BLK: BLACK WHI: WHITE YLW: YELLOW GRN: GREEN BLU: BLUE
 CONFIRM THE METHOD OF SETTING THE SELECTOR SWITCH(SS1, SS2) BY INSTALLATION MANUAL AND ENGINEERING MATERIALS, ETC.

Fig. 37

