

SPLIT TYPE AIR CONDITIONER Cassette Type INSTALLATION INSTRUCTION SHEET (PART NO. 9369341014)

For authorized service personnel only.

- WARNING** This mark indicates procedures which, if improperly performed, might lead to the death or serious injury of the user.
- CAUTION** This mark indicates procedures which, if improperly performed, might possibly result in personal harm to the user, or damage to property.

- WARNING**
 - For the air conditioner to operate satisfactorily, install it as explained in this installation instruction sheet.
 - Connect the indoor unit and outdoor unit with the room air conditioner piping and cords available from our standard parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.
 - Installation work must be performed in accordance with national wiring standards by authorized personnel only.
 - If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces a toxic gas.
 - Do not turn on the power until all installation work is complete.
- Be careful not to scratch the air conditioner when handling it.
- After installation, explain correct operation to the customer, using the operating manual.
- Let the customer keep this installation instruction sheet because it is used when the air conditioner is serviced or moved.
- The maximum length of the piping is shown in Table 1. If the units are further apart than this, correct operation cannot be guaranteed.

STANDARD PARTS

Check the contents of the standard parts list carefully. Use them as required.

INDOOR UNIT ACCESSORIES

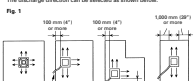
Name and Shape	Qty	Application
Remote control unit	1	Use for air conditioner operation
Battery (pair/light)	1	For remote control unit
Remote control unit holder	1	For mounting the remote control unit
Special nut A (large flange)	4	For installing indoor unit
Special nut B (small flange)	4	For installing indoor unit
Coupler heat insulator	2	For indoor side pipe joint
Template	1	For ceiling hole cutting
Sealing cover (12 x 12)	3	For remote control unit indoor installation
Blower cover (insulation)	2	For discharged air
Grille frame	2	For installing intake grille

OUTDOOR UNIT ACCESSORIES

Refrigerant control valve	1	For opening the refrigerant valve on the outdoor unit
Drain pipe	1	For outdoor unit drain
Drain cap	2	For outdoor unit drain

SELECTING THE MOUNTING POSITION

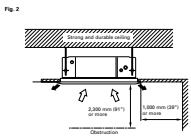
Remember to install the indoor unit in a location which is not exposed to direct sunlight or rain. The discharge duct can be selected as shown below.



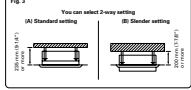
- Since 2-way outlet is shown before causes performance problems, do not set it.

INDOOR UNIT

- Install the indoor unit on a place having a sufficient strength so that it withstands against the weight of the indoor unit.
- The side and ceiling parts should not be disturbed. The air should be able to flow all over the room.
- Leave the space required to service the air conditioner (Fig. 2). The ceiling net height is shown in Fig. 2.
- A place from where the air can be distributed evenly throughout the room is best.
- A place from where drainage can be extracted outdoors easily.
- Install the unit where noise and vibration are not amplified.



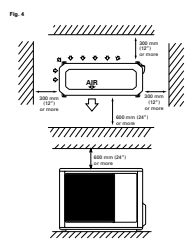
This mechanism enables the cassette body to move 30 mm down and install it in the space of 200 mm. No special marks and options are needed.



OUTDOOR UNIT

- WARNING** Install the unit where it will not be hit by more than 2°.
- When installing the outdoor unit where it may be exposed to strong wind, fasten it securely.

- If possible, do not install the unit where it will be exposed to direct sunlight. If necessary, install a shield that does not interfere with the airflow.
- Install the outdoor unit in a place where it will be free from being dirty or getting wet by rain as much as possible.
- Install the unit when connection to the indoor unit is easy.
- During heating operation, drain water flows from the outdoor unit. Therefore, install the outdoor unit in a place where the drain water flow will not be obstructed.
- Do not place animals and plants in the path of the warm air.
- Take the air conditioner weight into account and select a place where noise and vibration are small.
- Select a place so that the warm air and noise from the air conditioner are discharged smoothly.
- Provide the space shown in Fig. 3 so that the air flow is not blocked. Also, for efficient operation, leave open three of the four directions (top, rear, and both sides).
- Do not set the unit directly on the ground because it will cause trouble.
- Set the unit on a strong stand, such as one made of concrete blocks to minimize shock and vibration.



CONNECTION PIPE REQUIREMENT

Standard	Small	Large	Maximum length	Maximum height between indoor and outdoor
Standard	9.2 mm (3/8")	13.6 mm (1/2")	25 m (82 ft)	15 m (50 ft)

- Use 6.7 mm to 1.2 mm thick pipe.
- Use pipe with water resistant heat insulation.
- Use pipe that can withstand a pressure of 3.0 MPa.

ELECTRICAL REQUIREMENT

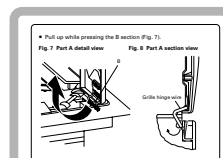
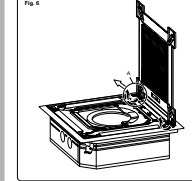
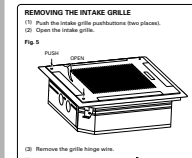
Electric wire size and fuse/circuit breaker capacity	Small	Large
Power cord	4.0	4.0
Power lead	3.0	3.0
Connection terminal	2.2	2.2
Control terminal	1.0	1.0
Fuse/Circuit breaker capacity (A)	10	10

- Always use HZRN2P or equivalent to the connection cord.
- Install the disconnect device with a contact gap of at least 3 mm nearby the units (both indoor unit and outdoor unit).

INSTALLATION PROCEDURE

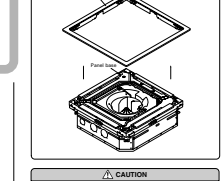
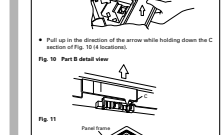
1. INDOOR UNIT INSTALLATION

- WARNING** Install the air conditioner in a location which can withstand a load of at least five times the weight of the main unit and which will not amplify noise or vibration. If the installation location is not strong enough, the indoor unit may fall and cause injury.
- If the job is done with the panel frame only, there is a risk that the unit will come loose. Please take care.



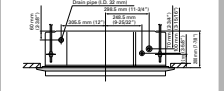
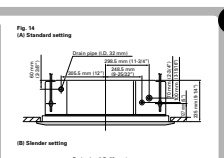
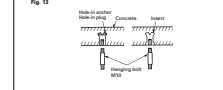
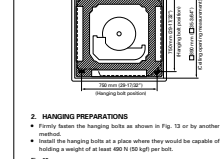
REMOVING THE PANEL FRAME

- Put up the corner sections (A) of the panel frame as shown in Fig. 9 (A) location.



INSTALLING THE PANEL FRAME

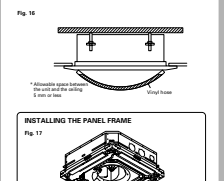
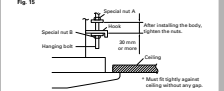
- Firmly fasten the hanging bolts as shown in Fig. 13 or by another method.
- Install the hanging bolts in a place where they would be capable of holding a weight of at least 600 N (136 lbf) per bolt.



3. BODY INSTALLATION

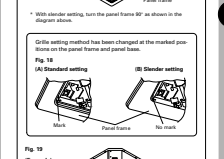
- Install special nut A, then special nut B onto the hanging bolt (Fig. 15).
- Place the body and connect the handle onto the hanging bolt between the special nuts (Fig. 15).
- Tighten special nut B to adjust the height of the body (Fig. 15).
- Leveling.
- Using a pencil, or vinyl hose filled with water, fine adjust so that the body is level.

PERFORM FLUE TIGHTENING BY TIGHTENING THE DOUBLE NUT FIRMLY



INSTALLING THE PANEL FRAME

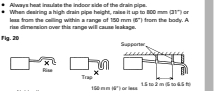
- Push the intake grille pushbuttons (these pieces).
- Open the intake grille.



2. INSTALLING DRAIN PIPE

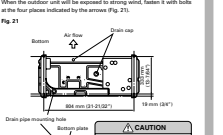
- CAUTION** Install the drain pipe in accordance with the instructions in the installation instruction sheet and keep the area warm enough to prevent condensation. Problems with the piping may lead to water leaks.

- Install the drain pipe with downward gradient (1/50 to 1/100) and so there are no traps in the pipe.
- Use general hard polyvinyl chloride pipe (PVC) (outside diameter 20 mm (3/4") and connect it with adhesive (polyvinyl chloride) in the joints to be airtight.
- When the pipe is long, install supports.
- Do not perform air conditioning.
- Always fasten inside the indoor side of the drain pipe.
- When securing a high ceiling pipe height, make it to 600 mm (24") or less from the ceiling within a range of 150 mm (6") from the body. A net dimension over this range will cause leakage.



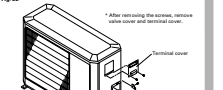
3. OUTDOOR UNIT INSTALLATION

- OUTDOOR UNIT PROCESSING
 - When the outdoor unit will be exposed to strong wind, fasten it with bolts at the four places indicated by the arrow (Fig. 21).



2. OUTDOOR UNIT CONNECTION CORD AND PIPE CONNECTION PREPARATIONS

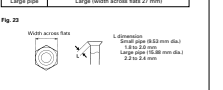
- Remove outdoor unit valve cover and terminal cover.



CONNECTING THE PIPING

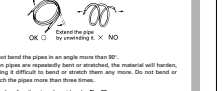
- FLARE PROCESSING
 - Cut the connection pipe with pipe cutters so that the pipe is not deformed.
 - Hold the pipe downward so that the cuttings cannot enter the pipe and remove the burrs.
 - Remove the flare nut from the indoor unit pipe and outdoor unit and install as shown in Table 2 and insert the flare nut onto the pipe, and flare with a Flaring tool.
 - Check if the flared part (1") (Fig. 23) is spread uniformly and that there are no cracks.

Pipe	Flare nut
Small pipe	Small (width across flats: 22 mm)
Large pipe	Large (width across flats: 27 mm)



2. BENDING PIPES

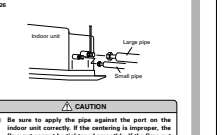
- Do not bend the pipe by your hands. Be careful not to collapse them.



- Do not bend the pipe in an angle more than 90°.
- When pipe are repeatedly bent or crushed, the material will harden, making it difficult to bend or stretch them any more. Do not bend or stretch the pipe more than three times.
- When bending the pipe, do not bend the pipe in the same place. The pipe will be collapsed in this case, cut the heat insulating pipe with a sharp cutter as shown in Fig. 25, and bend it after exposing the pipe. After bending the pipe as you want, be sure to put the heat insulating pipe back on the pipe, and secure it with tape.

3. CONNECTION PIPES

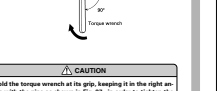
- Indoor unit side



- Be sure to apply the pipe against the part on the indoor unit correctly. If the connection is improper, the flare nut cannot be tightened correctly. If the flare nut is forced to turn, the threads will be damaged.
- Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection pipe.

4. CONNECTING THE PIPING

- When the flare nut is tightened properly by your hand, hold the body side consisting with a separate spacer, then tighten with a torque wrench (Fig. 27).

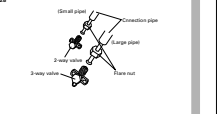


Pipe	Tightening torque
Small pipe	20.4 to 24.2 N·m (15 to 180 kgf·cm)
Large pipe	23.5 to 26.4 N·m (180 to 200 kgf·cm)

- Be sure to connect the large pipe after connecting the small pipe completely.

OUTDOOR UNIT SIDE

- Tighten the flare nut of the connection pipe at the outdoor unit valve connector. The tightening method is the same as that at the indoor side.



5

VACUUM PROCESS

- VACUUM**
 - Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve by the service hoses.
 - Vacuum the indoor unit and the connecting pipes until the pressure in them lowers to below 1.5 mmHg.
 - Disconnect the service hoses and fit the cap to the charging valve (Tightening torque : 6.87 to 8.83 N·m (70 to 90 kgf·cm)).
 - Remove the blank caps, and fully open the spindles of the 2-way and 3-way valves with a hexagon wrench (Torque : 2-way valve: 6.87 to 8.83 N·m (70 to 90 kgf·cm), 3-way valve: 9.81 to 11.77 N·m (100 to 120 kgf·cm)).
 - Tighten the blank caps of the 2-way valve and 3-way valve to the specified torque (19.62 to 24.53 N·m (200 to 250 kgf·cm)).

Fig. 29

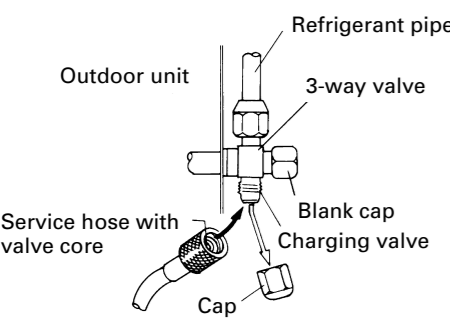
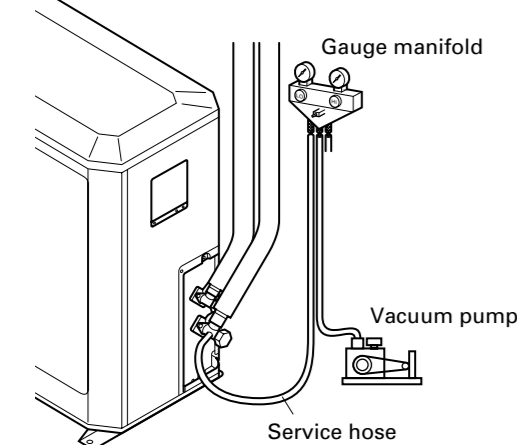


Fig. 30



2. ADDITIONAL CHARGE

Refrigerant suitable for a piping length of 5 m is charged in the outdoor unit at the factory.
When the piping is longer than 5 m, additional charging is necessary. For the additional amount, see the table below.

Table 5

Pipe length	5 m (16 ft)	10 m (33 ft)	15 m (49 ft)	20 m (66 ft)	25 m (82 ft)
Heat & Cool (Reverse cycle)	None	250 g (8.8 oz)	500 g (17.6 oz)	750 g (26.5 oz)	1,000 g (35.3 oz)
Cooling model	None	60 g (2.1 oz)	120 g (4.2 oz)	180 g (6.4 oz)	240 g (8.5 oz)

Between 5 m and 25 m, when using a connection pipe other than that in the table, charge additional refrigerant with 50 g (1.8 oz)/1 m (3.3 ft) (Reverse cycle model), 12 g (0.4 oz)/1 m (3.3 ft) (Cooling model) as the criteria.

CAUTION

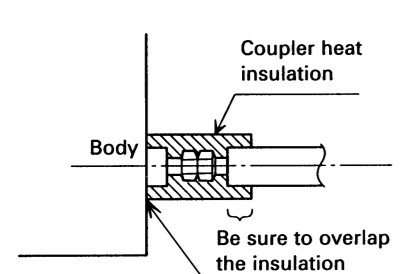
- When charging the refrigerant, always use a measuring cylinder.
- Add refrigerant from the charging valve after the completion of the work.

6

INSTALLING THE COUPLER HEAT INSULATION

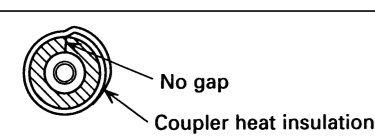
After checking for gas leaks, insulate by wrapping insulation around the two parts (large and small) of the indoor unit coupling, using the coupler heat insulation.
After installing the coupler heat insulation, wrap both ends with vinyl tape so that there is no gap.

Fig. 31



CAUTION

Must fit tightly against body without any gap.



7

ELECTRICAL WIRING

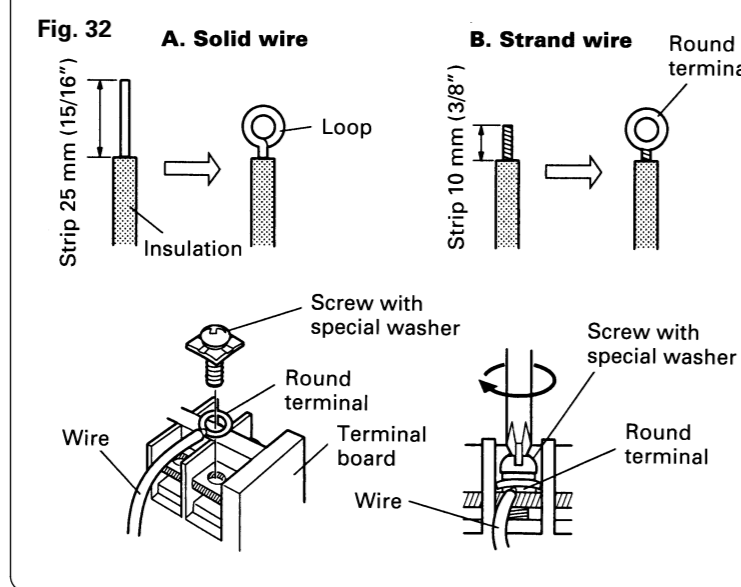
HOW TO CONNECT WIRING TO THE TERMINALS

A. For solid core wiring (or F-cable)

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 25 mm (1 5/16") of expose the solid wire.
- Using a screwdriver, remove the terminal screw(s) on the terminal board.
- Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
- Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.

B. For strand wiring

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 10 mm (3/8") of expose the strand wiring.
- Using a screwdriver, remove the terminal screw(s) on the terminal board.
- Using a round terminal fastener or pliers, securely clamp a round terminal to each of the stripped wire end.
- Position the round terminal wire, and replace and tighten the terminal screw using a screwdriver.



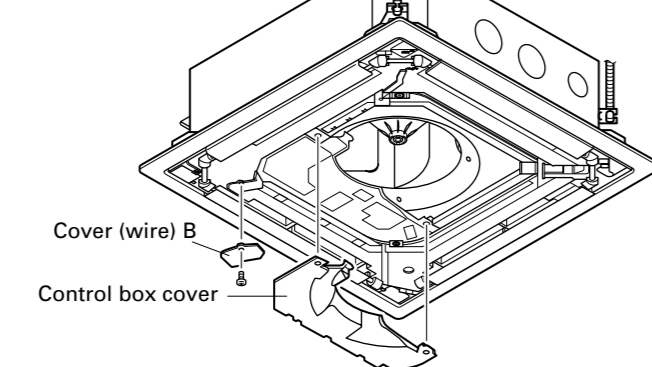
1. INDOOR UNIT SIDE

WARNING

- Before starting work, check that power is not being supplied to the indoor unit.
- Match the terminal board numbers and connection cord colors with those of the outdoor unit. **Erroneous wiring may cause burning of the electric parts.**
- Connect the connection cord firmly to the terminal board. **Imperfect installation may cause a fire.**
- Always fasten the outside covering of the connection cord with the cord clamp. **If the insulator is chafed, electric leakage may occur.**
- Always connect the ground wire.

- Remove the control box cover and cover (wire) B and install the connection cord.

Fig. 33



- After wiring is complete, clamp the connection cord with the cord clamp.
- Install the control box cover and cover (wire) B.

Fig. 34

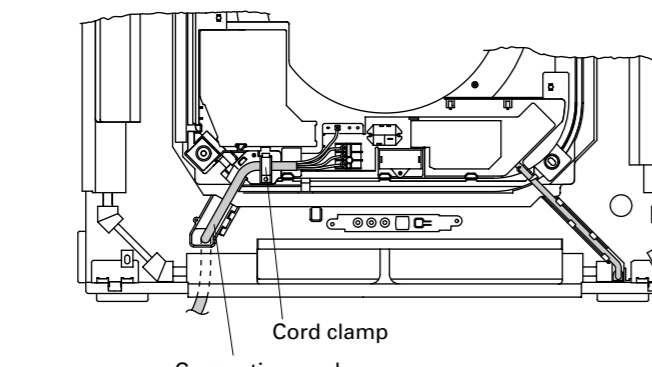
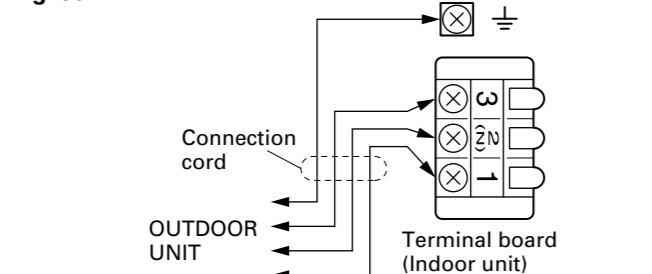


Fig. 35

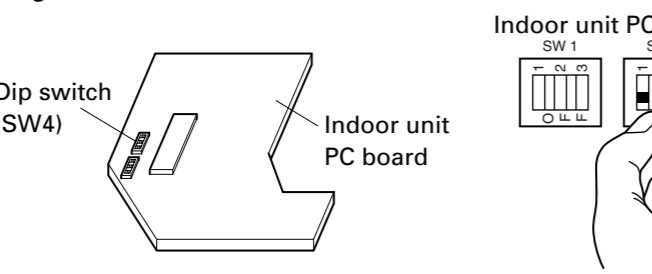


Ceiling height setting

Set the DIP switch for the ceiling height according to the table below.

Ceiling height (m)		DIP-SW4		
		1	2	3
2.5 - 3.0	Normal	—	OFF	OFF
3.0 - 3.5	High ceiling 1	—	ON	OFF
More than 3.5	High ceiling 2	—	OFF	ON
Less than 2.5	Low ceiling	—	ON	ON

Fig. 36



CAUTION

- If the setting for a low ceiling is selected, the capacity of the air conditioner decreases slightly.
- Do not set any switches other than those specified in this sheet or the remote controller installation instruction sheet. **The air conditioner may not operate correctly if any switches other than those specified are changed.**

2. OUTDOOR UNIT SIDE

WARNING

- Before starting work, check that power is not being supplied to the outdoor unit.
- Match the terminal board numbers and connection cord colors with those of the indoor unit side. **Erroneous wiring may cause burning of the electric parts.**
- Connect the connection cords and the power supply cord firmly to the terminal board. **Imperfect installation may cause a fire.**
- Always fasten the outside covering of the connection cord and the power supply cord with cord clamps. **If the insulator is chafed, electric leakage may occur.**
- Always connect the ground wire.

- Remove outdoor unit terminal cover and connect the power supply cord and the outdoor unit connection cord wired at the indoor unit.
- Fasten the power supply cord and connection cord with cord clamp as shown in (Fig. 37).

Fig. 37

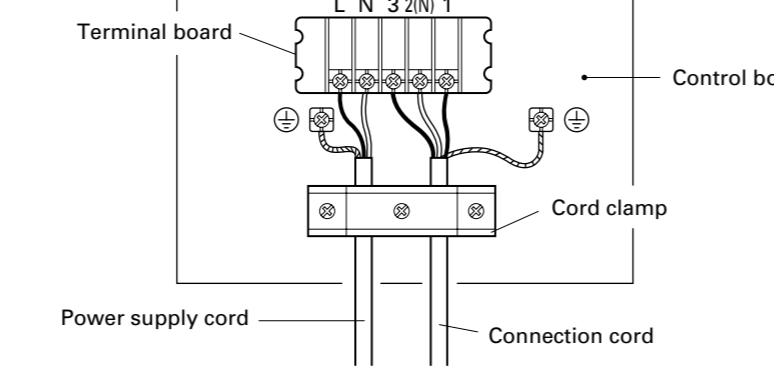
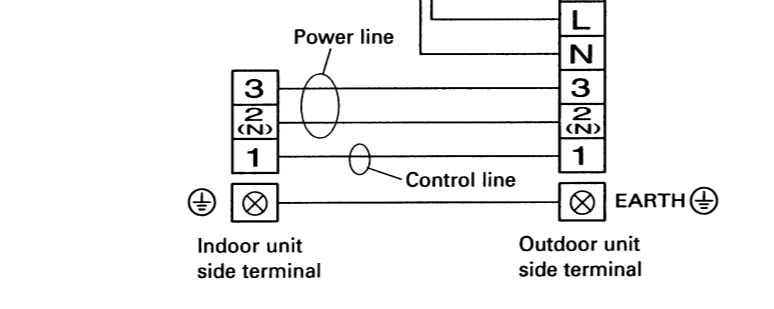
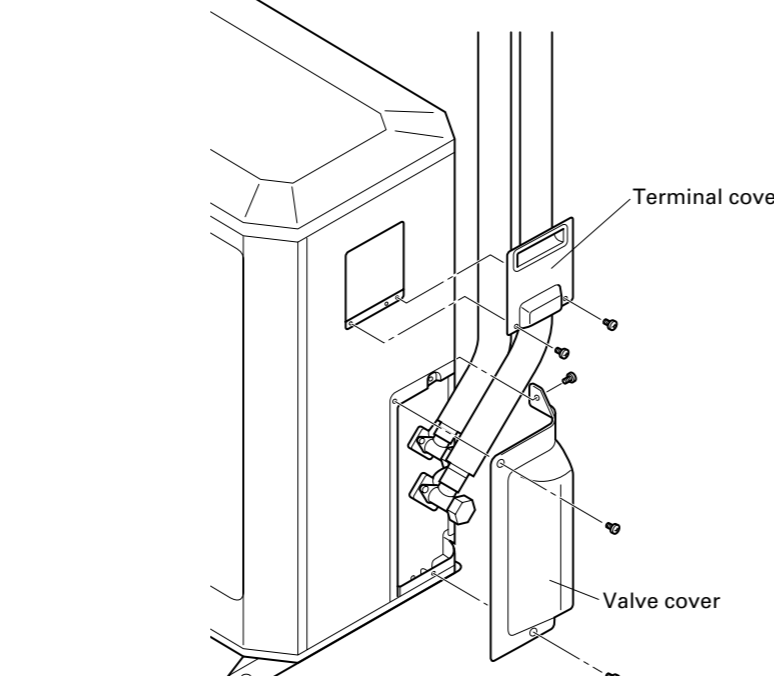


Fig. 38



- Install the terminal cover and valve cover.

Fig. 38



8

GRILLE INSTALLATION

BLOWER COVER INSULATION

Install the blower cover insulation only when the outlet direction is not specified.
Two blower cover insulations are packed with the indoor unit. Install the blower cover insulation at the diffuser position shown in Fig. 39. At this time, use the piping position as the criteria.

Fig. 39

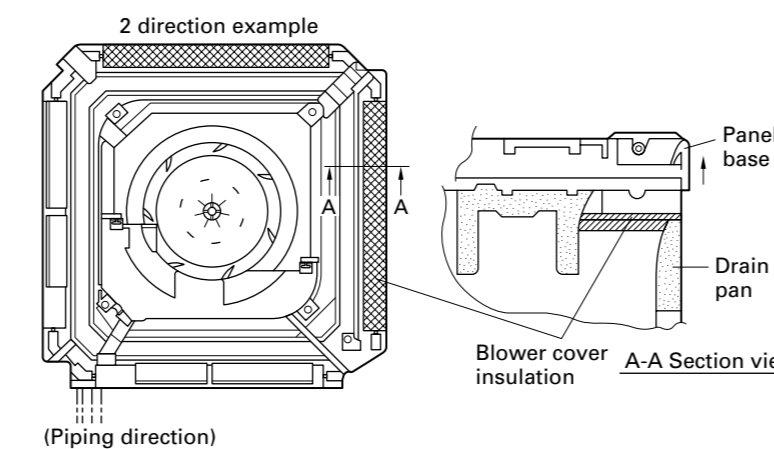
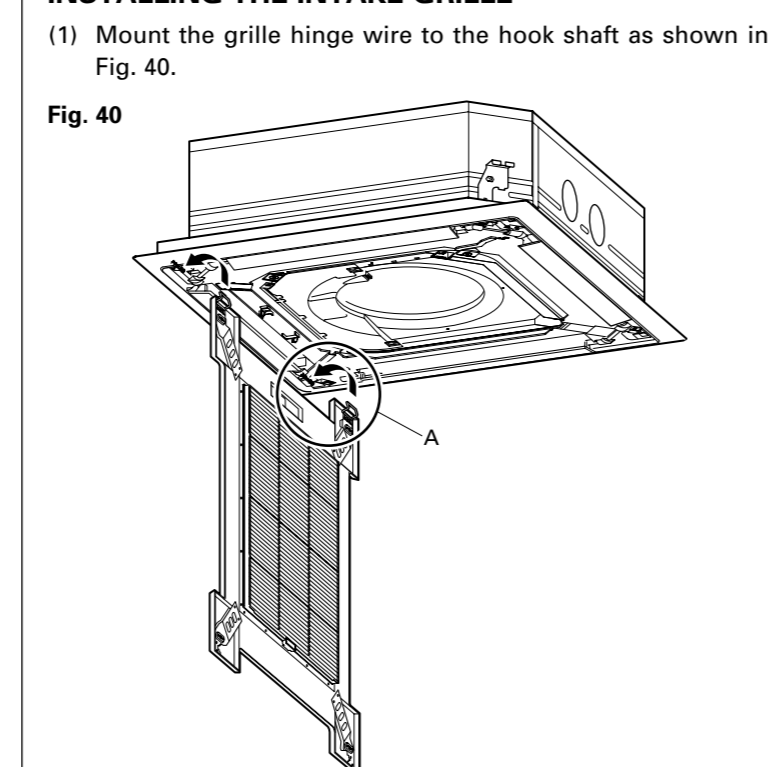


Fig. 40



9

POWER

WARNING

- The rated voltage of this product is 220-240 V 50 Hz.
- Before turning on verify that the voltage is within the 198 to 264 V range.
- Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.
- Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner. (Install in accordance with standard.)
- Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.
- Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.

CAUTION

When the voltage is low and the air conditioner is difficult to start, contact the power company the voltage raised.

10

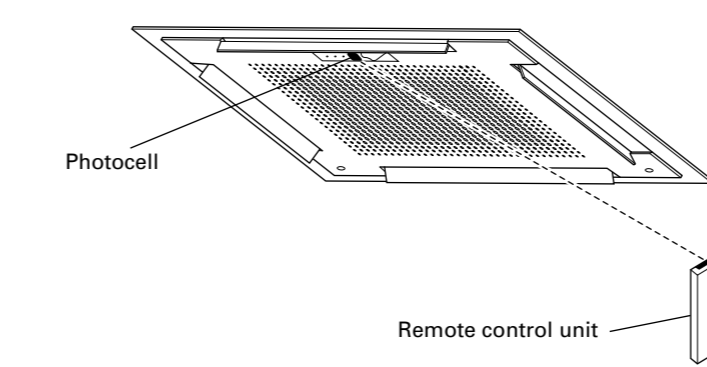
REMOTE CONTROL UNIT INSTALLATION

CAUTION

- Check that the indoor unit correctly receives the signal from the remote control unit, then install the remote control unit holder.
- Select the remote control unit holder selection site by paying careful attention to the following: **Avoid places in direct sunlight. Select a place that will not be affected by the heat from a stove, etc.**

- Install the remote control unit so that the front is facing the photocell. (Fig. 47)

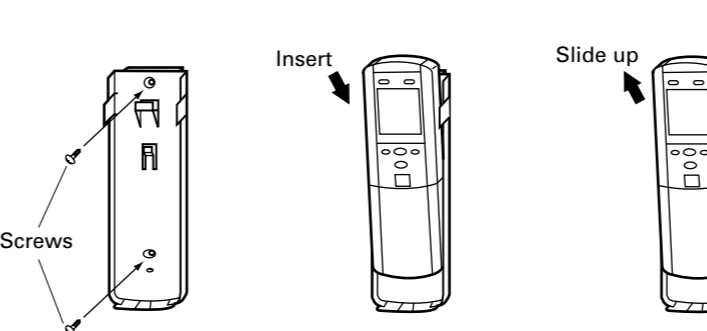
Fig. 47



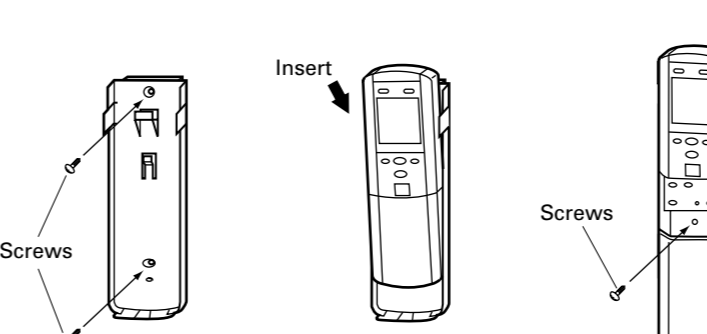
- Install the remote control unit with a distance of 7 m between the remote control unit and the grille photocell as the criteria. However, when installing the remote control unit, check that it operates positively.
- Install the remote control unit holder to a wall, pillar, etc. with the tapping screw (Fig. 48).

Fig. 48

For use as Handy Type



For use as Wall Fixing Type



Remote control unit code switching.

Fig. 49

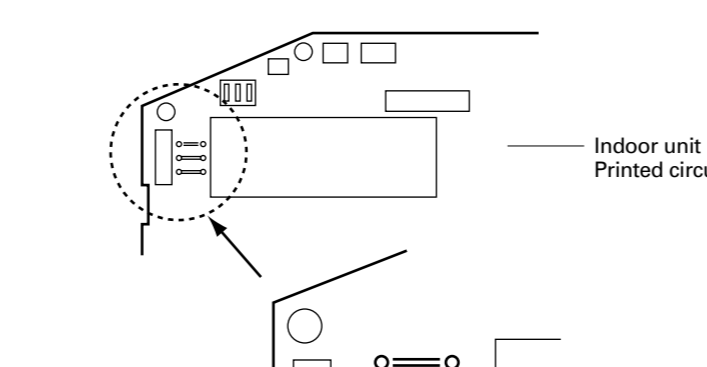
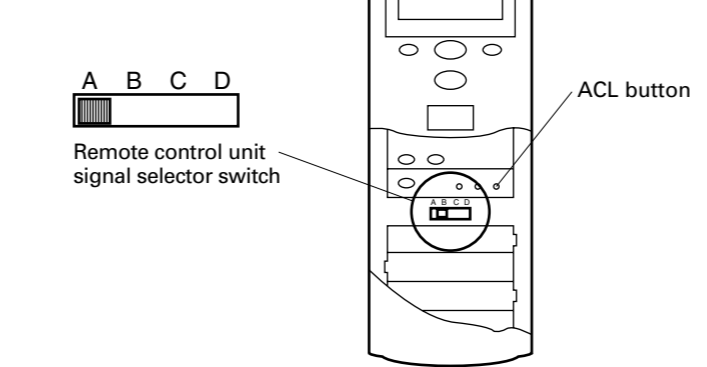
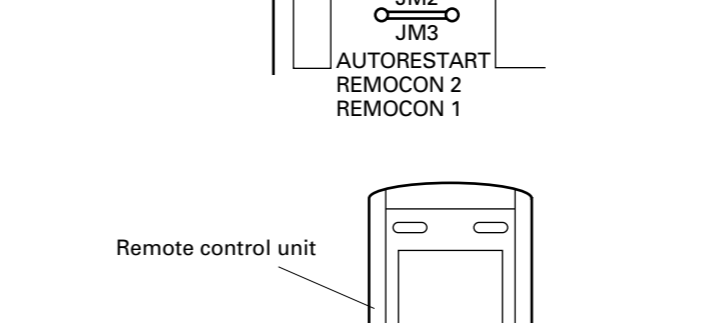


Fig. 49



Confirm the remote control unit signal selector switch selection and printed circuit board setting.
If these are not confirmed, the remote control unit cannot be operated for the air conditioner.

Table 7

Jumper wire	Remote control unit signal selector switch
JM 2	JM 3
Connect	Connect
Disconnect	Disconnect
Disconnect	Connect
Disconnect	Disconnect

After setting the remote control unit signal selector switch, press the ACL button.

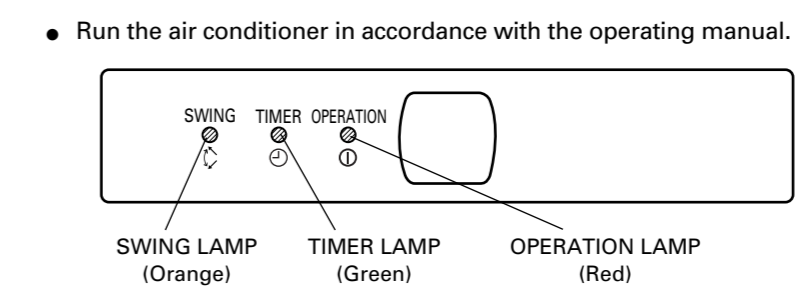
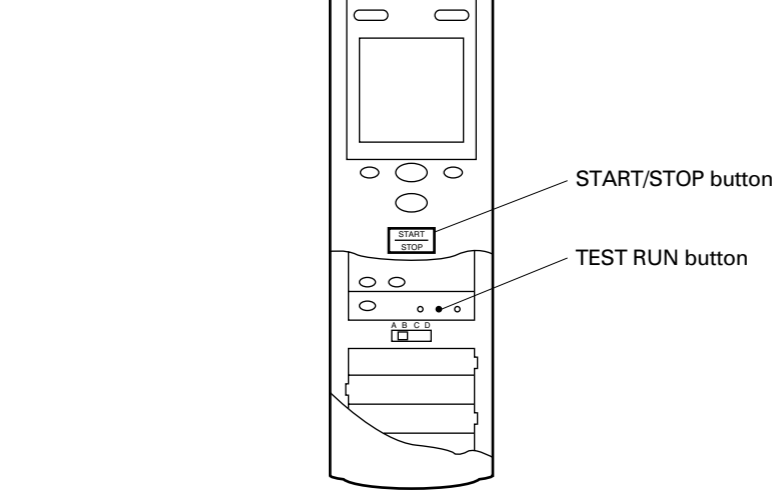
11

TEST RUNNING

1. INDOOR UNIT

- Press the remote control unit test run button while the air conditioner is running.
- At the end of test running, press the remote control unit start-stop button. (Fig. 50)

Fig. 50



Operation can be checked by lighting and flashing of the grille display section OPERATION and TIMER lamps. Perform judgment in accordance with the following.

- Test running

When the air conditioner is run by pressing the remote control unit test run button, the OPERATION and TIMER lamps flash slowly at the same time.

- Error

The OPERATION, TIMER and SWING lamps operate as follows (Table 8) according to the error contents.

Table 8

Error contents	OPERATION lamp (RED)	TIMER lamp (GREEN)	SWING lamp (ORANGE)
Indoor EEPROM abnormal	○	○	×
Outdoor EEPROM abnormal	○	○	○
Indoor room temperature sensor open	(2 times) ●	○	×
Indoor room temperature sensor shortcircuited	(2 times) ●	○	○
Indoor heat exchanger temperature sensor open	(3 times) ●	○	×
Indoor heat exchanger temperature sensor shortcircuited	(3 times) ●	○	○
Floater switch operated	(4 times) ●	○	×
Indoor signal abnormal	(5 times) ●	○	○
Outdoor signal abnormal	(5 times) ●	○	○
Indoor fan abnormal	(6 times) ●	○	×
Outdoor power source connection abnormal	○	(2 times) ●	×
Outdoor heat exchanger temperature sensor open	○	(3 times) ●	×
Outdoor heat exchanger temperature sensor shortcircuited	○	(3 times) ●	○
Outdoor temperature sensor open	○	(4 times) ●	×
Outdoor temperature sensor shortcircuited	○	(4 times) ●	○
Outdoor discharge pipe temperature sensor open	○	(5 times) ●	×
Outdoor discharge pipe temperature sensor shortcircuited	○	(5 times) ●	○
Outdoor high pressure abnormal	○	(6 times) ●	×
Outdoor discharge pipe temperature abnormal	○	(7 times) ●	×

○ : 0.1s ON/0.1s OFF (flash) × : OFF
● : 0.5s ON/0.5s OFF (flash)

2. OUTDOOR UNIT

When the outdoor temperature drops, the outdoor unit's fans may switch to low speed.

ERROR : HEAT & COOL MODEL (REVERSE CYCLE) ONLY

The LED lamps operate as follows (Table 9) according to the error contents.

Table 9

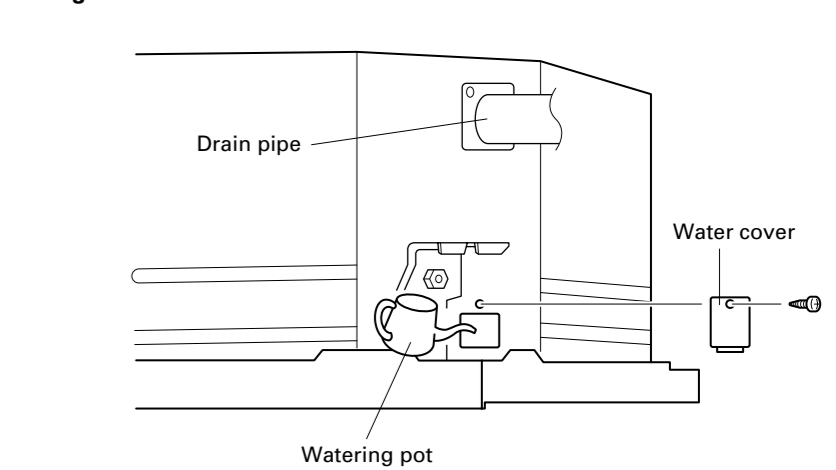
Error display	Error contents
ON OFF	Lighting continued Discharge pipe temperature abnormal
ON → 0.5 sec. OFF → 5 sec.	Single quick flashes repeated Outdoor heat exchanger temperature sensor abnormal
ON → 0.5 sec. OFF → 5 sec.	Two quick flashes repeated Outdoor temperature sensor abnormal
ON → 0.5 sec. OFF → 5 sec.	Three quick flashes repeated Discharge pipe temperature sensor abnormal
LED No. 1 Lamp ON OFF	Lighting continue High pressure abnormal

When the fault is cleared, the LED lamp goes off. However, for discharge pipe temperature abnormal and high pressure abnormal, the LED lamp lights continuously for 24 hours, as long as the power is not turned off.

3. CHECKING DRAINAGE

To check the drain, remove the water cover and fill with 2 to 3 l of water as shown in Fig. 51. The drain pump operates when operating in the cooling mode.

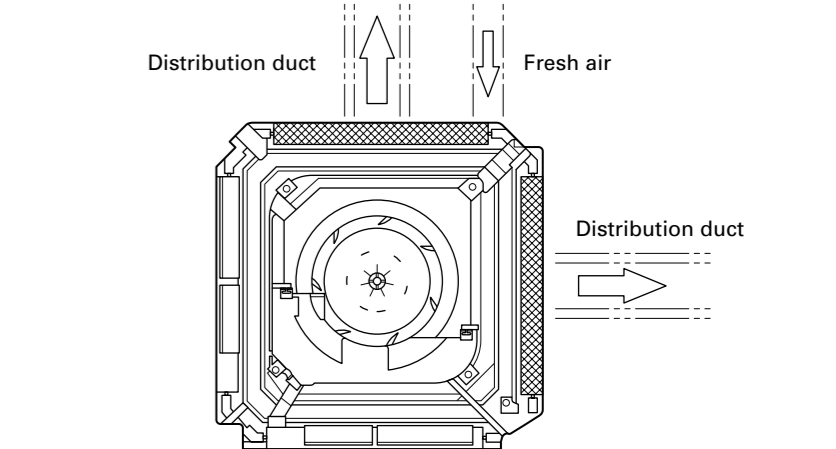
Fig. 51



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OPENING THE DUCT CONNECTION HOLE

Fig. 52



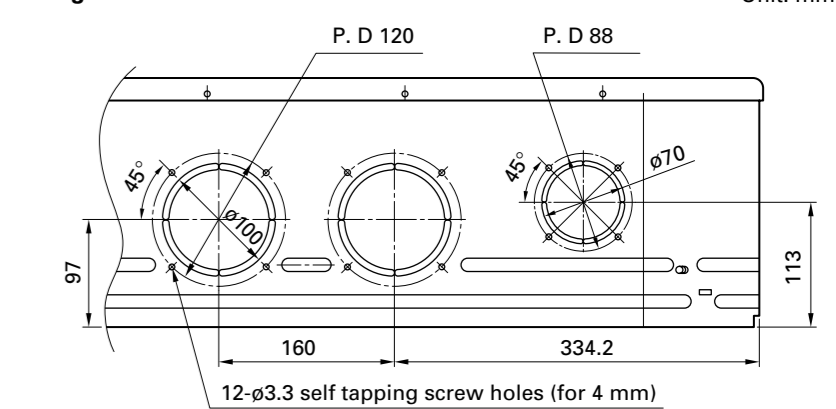
CAUTION

- When performing hole opening work, be careful not to damage the drain pan.
- When connecting the distribution duct, to make the air flow easily, block the outlet port with the blower cover insulation as shown by the hatched lines in Fig. 52. For the blocking direction, refer to Fig. 39.

1. DIMENSION

Screw position and connection hole which are fresh air duct and distribution duct.

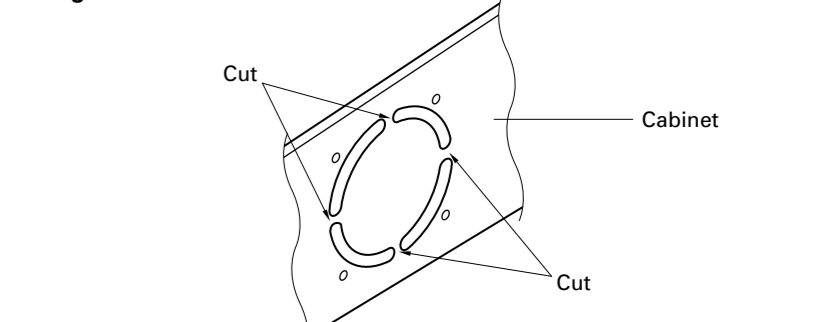
Fig. 53



2. DISTRIBUTION DUCT AND FRESH AIR DUCT HOLE PROCESSING

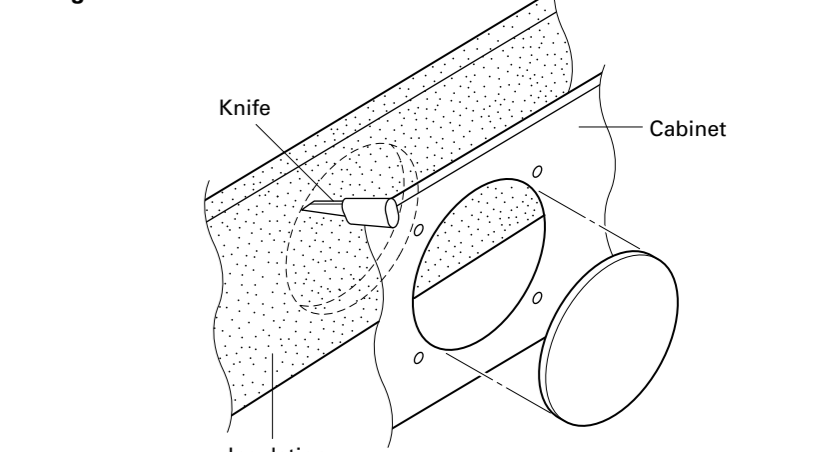
Use the distribution duct hole and fresh air duct hole by removing the insulation material as shown below.

Fig. 54



- Cut off the part (Cabinet) indicated by the arrow in the Fig. 54 with nippers, needle nose pliers, etc.

Fig. 55



- Open the holes and cut the insulation with a knife.
- Be careful not to damage the internal parts.
- Be careful not to cut yourself on the cutout in the metal plate.
- Please remove the insulation (inner box) left over after cutting.
- Connect the distribution duct.
- When mounting the duct, block the gap so that there is no cold air leakage.
- Insulate the duct and cut connection.

CAUTION

The air conditioner cannot take in fresh air by itself. When connecting a fresh air duct, always use a duct fan.