SPLIT TYPE AIR CONDITIONER

Ceiling Suspension Type

INSTALLATION MANUAL

(PART NO. 9361156012-02)

For authorized service personnel only.

⚠ WARNING
(1) For the air conditioner to operate satisfactorily, install it as outlined in this installation manual.
(2) Installation work must be performed in accordance with national wiring standards by authorized personnel only.
(3) 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 manual because it is used when the air conditioner is serviced or moved.**

SELECTING THE MOUNTING POSITION

⚠ WARNING
Install at a place that can withstand the weight of the indoor and outdoor units and install positively so that the units will not topple or fall.

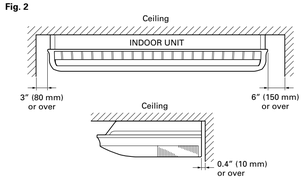
⚠ CAUTION
(1) Do not install where there is the danger of combustible gas leakage.
(2) Do not install the unit near a source of heat, steam, or flammable gas.
(3) If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

Decide the mounting position with the customer as follows:

1. INDOOR UNIT

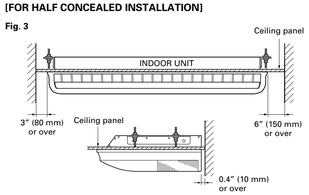
(1) Install the indoor unit level on a strong wall which is not subject to vibration.
(2) The inlet and outlet ports should not be obstructed : the air should be able to blow all over the room.
(3) Do not install the unit where it will be exposed to direct sunlight.
(4) Install the unit where connection to the outdoor unit is easy.
(5) Install the unit where the drain pipe can be easily installed.
(6) Take servicing, etc. into consideration and leave the spaces shown in (Fig. 2 or 3). Also install the unit where the filter can be removed.

Fig. 2



[FOR HALF CONCEALED INSTALLATION]

Fig. 3



2. OUTDOOR UNIT

⚠ WARNING
(1) Install the unit where it will not be tilted by more than 5°.
(2) When installing the outdoor unit where it may exposed to strong wind, fasten it securely.

(1) If possible, do not install the unit where it will exposed to direct sunlight. (If necessary, install a blind that does not interfere with the air flow.)
(2) Install the outdoor unit in a place where it will be free from being dirty or getting wet by rain as much as possible.
(3) Install the unit when connection to the indoor unit is easy.
(4) 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. (Heat & Cool model (Reverse cycle) only)
(5) Do not place animals and plants in the path of the warm air.
(6) Take the air conditioner weight into account and select a place where noise and vibration are small.
(7) Select a place so that the warm air and noise from the air conditioner do not disturb neighbors.
(8) Provide the space shown in Fig. 4 so that the air flow is not blocked. Also for efficient operation, leave open three of the four directions front, rear, and both sides.

Fig. 4

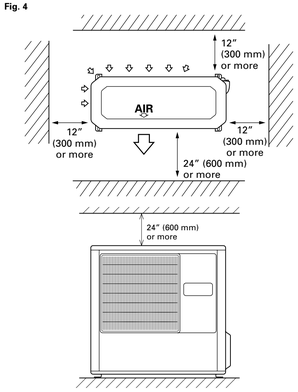
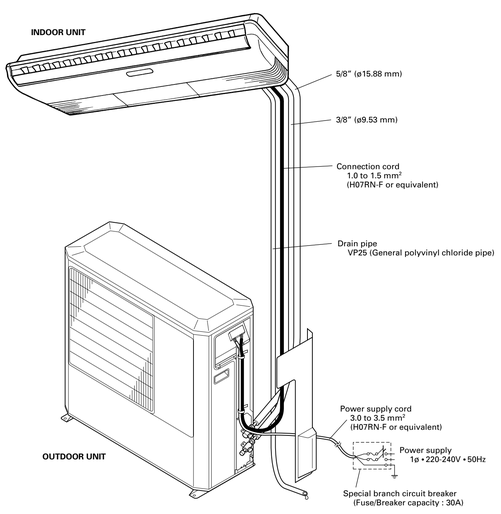


Fig. 1



STANDARD PARTS

The following installation parts are furnished. Use them as required.

INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application
Remote control unit	1	Use for air conditioner operation
Battery (penlight)	4	For remote control unit
Remote control unit holder	1	For mounting the remote control unit
Tapping screw (ø3 x 12)	3	For remote control unit holder installation
Drain hose insulation	1	Adhesive type 70 × 230
VT wire	1	For fixing the drain hose L 280 mm
Coupler heat insulator (large)	2	For indoor side pipe joint (large pipe)
Coupler heat insulator (small)	1	For indoor side pipe joint (small pipe)
Nylon fastener	Large 4 Small 4	For fixing the coupler heat insulator
Special nut A (large flange)	4	For installing indoor unit
Special nut B (small flange)	4	For installing indoor unit
Installation template	1	For positioning the indoor unit
Auxiliary pipe assembly	1	For connecting the piping

OUTDOOR UNIT ACCESSORIES

Hexagon wrench	1	For opening the refrigerant valve on the outdoor unit
Cable clip	2	For power cord binding
Tapping screw (painted)	1	For fixing the valve cover
Drain pipe	1	For outdoor unit drain piping work [Heat & Cool (Reverse cycle) model only]
Drain cap	2	

CONNECTION PIPE REQUIREMENT

Table 1

Diameter	Large	5/8"(ø15.88 mm)
	Small	3/8"(ø9.53 mm)

- Use 0.7 mm to 1.2 mm thick pipe.
- Use pipe with water-resistant heat insulation.

ELECTRICAL REQUIREMENT

- Electric wire size and fuse/breaker capacity:

Table 2

Power supply cord (mm²)	MAX	3.5
	MIN	3.0
Connection cord (mm²)	MAX	1.5
	MIN	1.0
Fuse/Breaker capacity (A)		30

- Always use H07RN-F or equivalent as the 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

Install the air conditioner as follows:

1 PREPARING INDOOR UNIT INSTALLATION

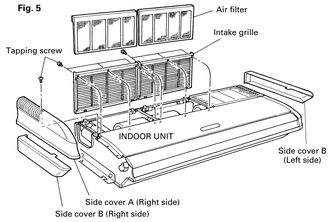
REMOVE THE INTAKE GRILLE AND SIDE COVER.

(1) Remove the two Air filters (Fig.5).
(2) Remove the two Intake grilles (Fig.5).
- For ④ Left rear drain and ⑤ Left drain: Remove air filters and intake grilles at three places. (Refer to "❷ INDOOR UNIT INSTALLATION".)

(3) Remove the Side cover A (Right side) and Side cover B (Right and Left side).
- For ⑤ Left drain : Remove both the Side cover A (Right and Left side). (Refer to "❷ INDOOR UNIT INSTALLATION".)

(4) This air conditioner can be set up to intake fresh air. For information about how to install for fresh-air intake, refer to "❻ FRESH-AIR INTAKE".

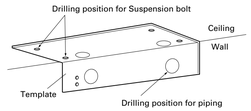
Fig. 5



2 INDOOR UNIT INSTALLATION

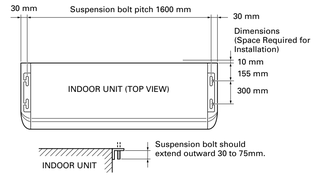
You can use the accessory template to help you install the indoor unit. The template helps you determine the appropriate locations for suspension bolts and pipe openings (drain pipe and connection cord).

Fig. 6



1. LOCATION OF CEILING SUSPENSION BOLTS

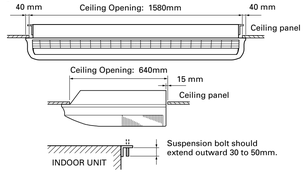
Fig. 7



[For Half-Concealed Installation]

- Suspension-bolt pitch should be as shown in Fig. 7.

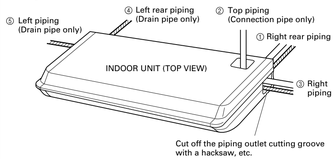
Fig. 8



2. SELECT PIPING DIRECTION.

Select connection piping and drain piping directions (Fig.9).

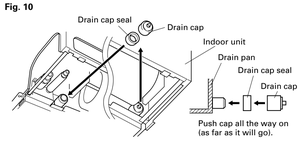
Fig. 9



[For ④ Left rear piping, ⑤ Left piping]

- Transfer the Drain cap and Drain cap seal.

Fig. 10

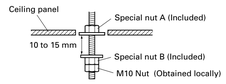


3. DRILLING THE HOLES AND ATTACHING THE SUSPENSION BOLTS

(1) Drill ø25mm holes at the suspension-bolt locations.
(2) Install the bolts, then temporarily attach Special nuts A and B and a normal M10 nut to each bolt. (The two special nuts are provided with the unit. The M10 nut must be obtained locally.) Refer to Fig. 11.

Bolt Strength	980 to 1470 N (100 to 150 kgf)

Fig. 11

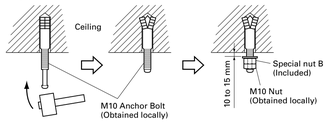


[If using anchor bolts]

(1) Drill holes for anchor bolts at the locations at which you will set the suspension bolts. Note that anchor bolts are M10 bolts (to be obtained locally).
(2) Install the anchor bolts, then temporarily attach special nut "B" (included) and a locally-procured M10 nut to each of the bolts. (See Fig. 12.)

Anchor-Bolt Strength	980 to 1470 N (100 to 150 kgf)

Fig. 12



4. INSTALLING THE INDOOR UNIT

(1) Lift unit so that suspension bolts pass through the suspension fittings at the sides (four places), and slide the unit back. (See Fig. 14.)

Fig. 13

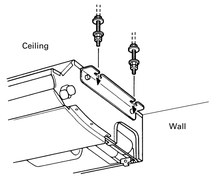
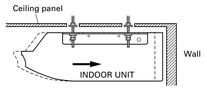


Fig. 14

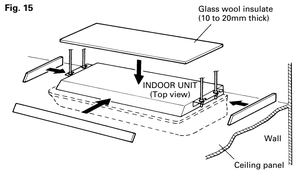


(2) Fasten the indoor unit into place by tightening-up the special "B" bolts and the M10 nuts. Make sure that unit is secure and will not shift back and forth.

[For Half-Concealed Installation]

When installing the indoor unit in a semi-concealed orientation, make sure to reinforce the insulation of the unit on all sides. Drops of water may fall from the unit if it is not thoroughly insulated.

Fig. 15



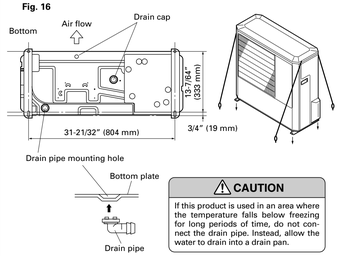
⚠ CAUTION
In order to check the drainage, be sure to use a level during installation of the indoor unit. If the installation site of the indoor unit is not level, water leakage may occur.

3 OUTDOOR UNIT INSTALLATION

1. OUTDOOR UNIT PROCESSING

When the outdor unit will be exposed to strong wind, fasten it with bolts at the places indicated by the arrows. (Fig. 16)

Fig. 16

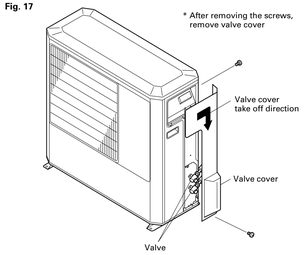


⚠ CAUTION
If this product is used in an area where the temperature falls below freezing for long periods of time, do not connect the drain pipe. Instead, allow the water to drain into a drain pan.

2. OUTDOOR UNIT CONNECTION CORD AND PIPE CONNECTION PREPARATIONS

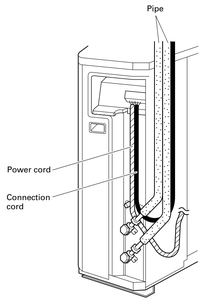
(1) Remove outdoor unit valve cover.

Fig. 17



(2) Connect the piping, connection cord and power cord.

Fig. 18



⚠ WARNING
(1) Install the unit where it will not be tilted by more than 5°.
(2) When installing the outdoor unit where it may exposed to strong wind, fasten it securely.

- Set the unit on a strong stand, such as one mode of concrete blocks to minimize shock and vibration.
- Do not set the unit directly on the ground because it will cause trouble.

4 CONNECTING THE PIPING

⚠ CAUTION
The maximum lengths of this product are shown in table 3. If the units are further apart than this, correct operation can not be guaranteed.

1. LIMITATION OF REFRIGERANT PIPING LENGTH

Table 3

Max length (L)	Cooling model	99 ft (30 m)
	Heat & Cool model (Reverse cycle)	82 ft (25 m)
Max height difference (H)		49 ft (15 m)

2. FLARE PROCESSING

(1) Cut the connection pipe with pipe cutters so that the pipe is not deformed.
(2) Holding the pipe downward so that cuttings cannot enter the pipe, remove the burrs.
(3) Remove the flare nut from the indoor unit pipe and outdoor unit and assemble as shown in (Table 4) and insert the flare nut onto the pipe, and flare with a flaring tool.
(4) Check if the flared part "L" (Fig. 19) is spread uniformly and that there are no cracks.

Table 4

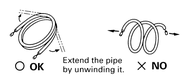
Pipe	Flare nut
Small pipe	Small (width across flats 22 mm)
Large pipe	Large (width across flats 24 mm)

Fig. 19

3. BENDING PIPES

The pipes are shaped by your hands. Be careful not to collapse them.

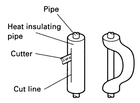
Fig. 20



Do not bend the pipes in an angle less than 90°.
When the pipes are bent and stretched repeatedly, the material will be hardened, causing the pipes no longer be sent or stretched. Be sure to limit number of bending and stretchings to three times.

When bending the pipe, do not bend it as is. The pipe will be collapsed. In this case, cut the heat insulating pipe with a sharp cutter as shown in Fig. 21, 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.

Fig. 21

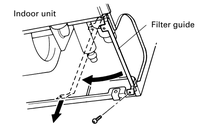


4. CONNECTION PIPES

[Indoor unit side]

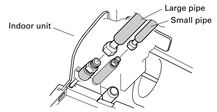
(1) Remove the filter guide (Fig. 22).

Fig. 22



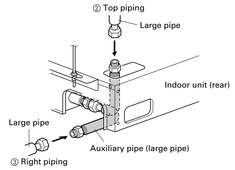
(2) Attach the connection pipe. (Fig. 23)

Fig. 23



- For ② Top piping and ③ Right piping connections, use the Auxiliary pipe (large pipe) provided.

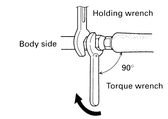
Fig. 24



⚠ CAUTION
Be sure to apply the pipe against the port on the indoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.

When the flare nut is tightened properly by your hand, hold the boby side coupling with a separate spanner, then tighten with a torque wrench. (Fig. 25)

Fig. 25



⚠ CAUTION
Hold the torque wrench at its grip, keeping it in the right angle with the pipe as shown in Fig. 25, in order to tighten the flare nut correctly.

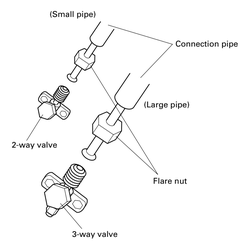
Table 5 : Flare nut tightening torque

	Tightening torque
Small pipe (9.53 mm dia.)	310 to 350 kgf•cm (30.4 to 34.3 N•m)
Large pipe (15.88 mm dia.)	750 to 800 kgf•cm (73.5 to 78.4 N•m)

[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 as at the indoor side.

Fig. 26



- Continued on back -

5 AIR PURGE

1. AIR PURGE

(1) Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve by the service hoses.
(2) Vacuum the indoor unit and the connecting pipes until the pressure in them lowers to below 1.5 mmHg.
(3) Disconnect the service hoses and fit the cap to the charging valve (Tightening torque : 70 to 90 kgf • cm).
(4) 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: 70 to 90 kgf • cm, 3-way valve: 100 to 120 kgf • cm).
(5) Tighten the blank caps of the 2-way valve and 3-way valve to the specified torque (200 to 250 kgf • cm).

Fig. 27

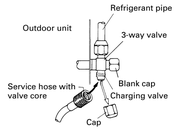
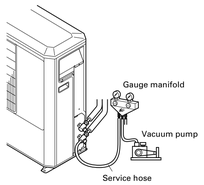


Fig. 28



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 6

Pipe length		16 ft (5 m)	33 ft (10 m)	49 ft (15 m)	66 ft (20 m)	82 ft (25 m)	99 ft (30 m)
Additional refrigerant	Heat & Cool (Reverse cycle)	None	7.1 oz (200 g)	14.1 oz (400 g)	21.2 oz (600 g)	28.2 oz (800 g)	——
	Cooling model	None	3.0 oz (85 g)	6.0 oz (170 g)	9.0 oz (255 g)	12.0 oz (340 g)	15.0 oz (425 g)

Between 5 m and 30 m, when using a connection pipe other than that in the table, charge additional refrigerant with 1.8 oz (40 g) / 3.3 ft (1 m) (Reverse cycle model), 0.6 oz (17 g) / 3.3 ft (1 m) (Cooling model) as the criteria.

⚠ CAUTION

(1) When moving and installing the air conditioner, do not mix gas other than the specified refrigerant (R22) inside the refrigerant cycle.
(2) When adding refrigerant, add the refrigerant from the charging valve at the completion of work.
(3) If the units are further apart than the maximum pipe length, correct operation can not be guaranteed.

6 GAS LEAKAGE INSPECTION

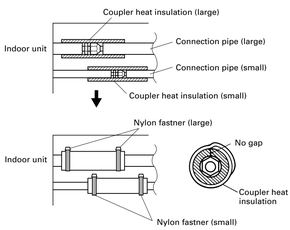
⚠ CAUTION

After connecting the piping, check the joints for gas leakage with gas leak detector.

7 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.
Secure both ends of the heat insulation material using nylon fasteners.

Fig. 29

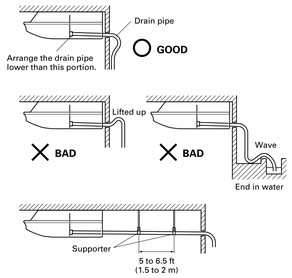


- When using an auxiliary pipe, make sure that the fastener used is insulated in the same way.

8 DRAIN PIPING

- Install the drain pipe with downward gradient (1/50 to 1/100) and so there are no rises or traps in the pipe.
- Use general hard polyvinyl chloride pipe (VP25) [outside diameter 38 mm].
- During installation of the drain pipe, be careful to avoid applying pressure to the drain port of the indoor unit.
- When the pipe is long, install supporters (Fig. 30).
- Do not perform air bleeding.
- Always heat insulate (8mm or over thick) the indoor side of the drain pipe.

Fig. 30



(1) Install insulation for the drain pipe. (See Figs. 31 and 32.)
Cut the included insulation material to an appropriate size and adhere it to the pipe.

Fig. 31

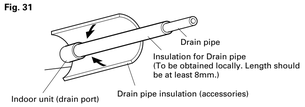
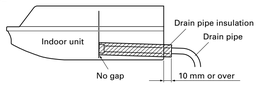
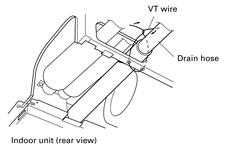


Fig. 32



(2) If "① Right rear piping": fasten the drain pipe with VT wire so that the pipe slopes correctly within the indoor unit. (Fig. 33)

Fig. 33



9 ELECTRICAL WIRING

HOW TO CONNECT WIRING TO THE TERMINALS

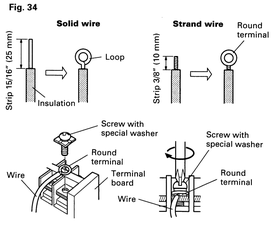
A. For solid core wiring (or F-cable)

(1) Cut the wire and with a wire cutter or wire-cutting pliers, then strip the insulation to about 15/16" (25 mm) of expose the solid wire.
(2) Using a screwdriver, remove the terminal screw(s) on the terminal board.
(3) Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
(4) 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

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

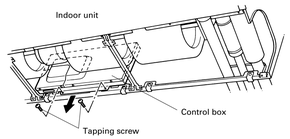
Fig. 34



1. INDOOR UNIT SIDE

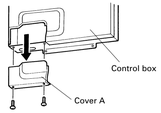
(1) Remove the two tapping screws and pull the control box downward. (Fig. 35)

Fig. 35



(2) Remove the Cover A and install the Connection cord (Fig. 36 and 37)
(3) After wiring is complete, clamp the Connection cord with the Cord clamp (Fig. 37)
(4) Reattach Cover A. Then fasten the control box back into its original position using the two tapping screws.
(5) Attach the connection cord and cable clips. Make sure that they are positioned so that they will not interfere with opening and closing of the intake grille or with removal and installation of the air filters. (Fig. 37)

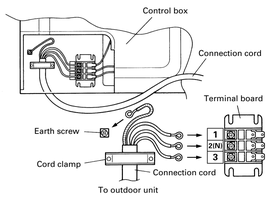
Fig. 36

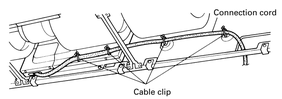


⚠ WARNING

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

Fig. 37





2. OUTDOOR UNIT SIDE

⚠ WARNING

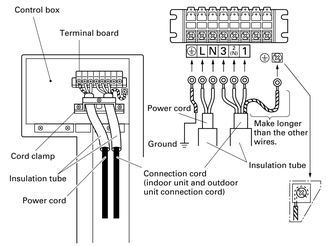
(1) Before starting work, check that power is not being supplied to the outdoor unit.
(2) Match the terminal board numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.
(3) Connect the connection cord firmly to the terminal board.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

⚠ CAUTION

(1) Use 1.0 mm² to 1.5 mm² H07RN-F or equivalent as the connection cord.
(2) Select power cable matched to the fuse capacity. (Install in accordance with standard.)
(3) Use VW-1, 12 mm diameter, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

(1) Remove outdoor unit valve cover and connect the power cord and the outdoor unit connection cord wired at the indoor unit.
(2) Fasten the sheath with a cord clamp.
(3) Fasten the power cord and connection cord with cable clip and binders as shown in (Fig. 40)

Fig. 38



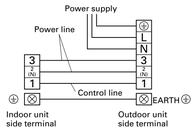
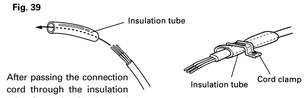


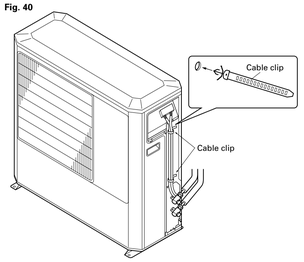
Fig. 39



After passing the connection cord through the insulation tube, fasten it with the cord clamp

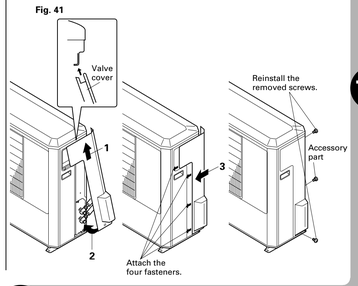
- Use VW-1, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

Fig. 40



(4) Install the valve cover.

Fig. 41



10 POWER

⚠ WARNING

(1) The rated voltage of this product is 220-240V AC 50Hz.
(2) Before turning on verify that the voltage is within the 198V to 264V range.
(3) Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.
(4) Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner. (Fuse/Breaker capacity : 30 A)
(5) The special branch circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3mm between the contacts of each pole.
(6) Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.
(7) Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.

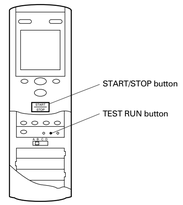
⚠ CAUTION

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

11 TEST RUNNING

- Perform test operation and check items 1 and 2 below.
- For the operation method, refer to the operating manual.
- The outdoor unit may not run, depending on the room temperature. In this case, press the TEST RUN button while the air conditioner is running.
(With the transmit section of the remote control unit facing the body, press the TEST RUN button with the tip of a ball point pen.)

Fig. 42



- To end test operation, press the remote control unit START/STOP button.
(When the air conditioner is run by pressing the remote control unit TEST RUN button, the OPERATION and TIMER lamps will simultaneously flash slowly.)

1. INDOOR UNIT

(1) Is operation of each button on the remote control unit normal?
(2) Does each lamp light normally?
(3) Do not air flow direction flap and louvers operate normally?
(4) Is the drain normal?

2. OUTDOOR UNIT

(1) Is there any abnormal noise and vibration during operation?
(2) Will noise, wind, or drain water from the unit disturb the neighbors?
(3) Is there any gas leakage?

12 FINISHING

(1) Install the filter guide.
(2) Install the intake grills.
(3) Install side covers A and B (if the unit is installed in a half-concealed orientation, only install side cover A).
(4) Install the air filters.

13 CUSTOMER GUIDANCE

Explain the following to the customer in accordance with the operating manual:

(1) Starting and stopping method, operation switching, temperature adjustment, timer, air flow adjustment, and other remote control unit operations.
(2) Air filter removal and cleaning.
(3) Give the operating and installation manuals to the customer.

14 REMOTE CONTROL UNIT INSTALLATION

⚠ CAUTION

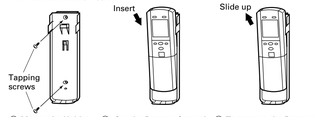
(1) Check that the indoor unit correctly receives the signal from the remote control unit, then install the remote control unit holder.
(2) Select the remote control unit holder selection site by paying careful attention to the following:
Avoid places in direct sunlight.
Select a place that will not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

1. REMOTE CONTROL UNIT HOLDER INSTALLATION

- Install the remote control unit holder to a wall or pillar with the tapping screws.

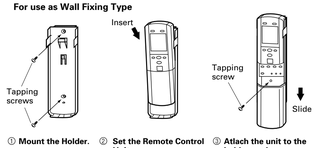
Fig. 43

For use as Handy Type



① Mount the Holder. ② Set the Remote Control Unit. ③ To remove the Remote Control Unit (when use at hand.)

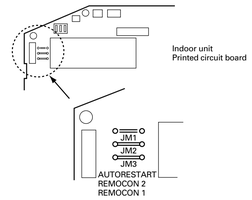
For use as Wall Fixing Type

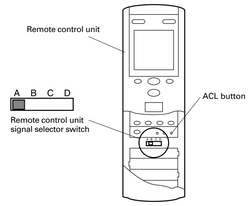


① Mount the Holder. ② Set the Remote Control Unit. ③ Atlach the unit to the holder as shown.

2. REMOTE CONTROL UNIT CODE SWITCHING

Fig. 44





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

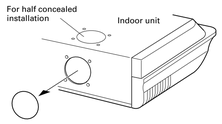
Jumper wire		Remote control unit signal selector switch
JM 2	JM 3	
Connect	Connect	A (Primary setting)
Connect	Disconnect	B
Disconnect	Connect	C
Disconnect	Disconnect	D

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

15 FRESH-AIR INTAKE

(1) Open up the knockout hole for the fresh-air intake, as shown in Fig. 45. (If using half-concealed installation, open up the top knockout hole instead.)

Fig. 45

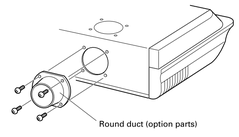


⚠ CAUTION

(1) When removing the cabinet (iron plate), be careful not to damage the indoor unit internal parts and surrounding area (outer case).
(2) When processing the cabinet (iron plate), be careful not to injure yourself with burrs, etc.

(2) Fasten the round flange (optional) to the fresh-air intake, as shown in Fig. 46. (If using half-concealed installation, attach to the top.)

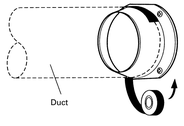
Fig. 46



[After completing "❷ INDOOR UNIT INSTALLATION"…]

(3) Connect the duct to the round flange.
(4) Seal with a band and vinyl tape, etc. so that air does not leak from the connection.

Fig. 47

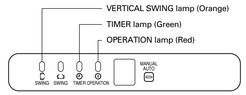


16 A ERROR DISPLAY

1. INDOOR UNIT

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

Fig. 48



- Test running

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

- Error

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

Table 8

Error display			Error contents
OPERATION lamp	TIMER lamp	VERTICAL SWING lamp	
Blinks	Blinks	Goes off	Model information abnormal (permanent type)
Pulses 4 times	Blinks	Goes off	Drain abnormal (permanent type)
Pulses 6 times	Blinks	Goes off	Indoor fan abnormal
Pulses 2 times	Blinks	Goes off	Room air temperature thermistor open circuit
		Blinks	Room air temperature thermistor short circuit
Pulses 3 times	Blinks	Goes off	Piping thermistor open circuit
		Blinks	Piping thermistor short circuit
Pulses 5 times	Blinks	Goes off	Serial communications abnormal
Blinks	Pulses 2 times	Goes off	Reverse phase wire connection abnormal
Blinks	Pulses 3 times	Goes off	Outdoor heat exchange thermistor open circuit
		Blinks	Outdoor heat exchange thermistor short circuit
Blinks	Pulses 6 times	Goes off	High pressure abnormal
Blinks	Pulses 5 times	Goes off	Outdoor discharge thermistor open circuit
		Blinks	Outdoor discharge thermistor short circuit
Blinks	Pulses 7 times	Goes off	Discharge temperature abnormal
Blinks	Pulses 4 times	Goes off	Outdoor air temperature thermistor open circuit
		Blinks	Outdoor air temperature thermistor short circuit

2. OUTDOOR UNIT

- Error

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

Table 9

	Error display	Error contents
LED No. 1 Lamp	ON / OFF — Lighting continue	Discharge pipe temperature abnormal
	ON / OFF — 0.5 sec, 5 sec — Puls 1 time repeated	Outdoor heat exchanger temperature sensor abnormal
	ON / OFF — 0.5 sec, 0.5 sec, 5 sec — Pulses 2 times repeated	Outdoor temperature sensor abnormal
	ON / OFF — 0.5 sec, 0.5 sec, 5 sec — Pulses 3 times repeated	Discharge pipe temperature sensor abnormal
LED No. 2 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.