

SPLIT TYPE ROOM AIR CONDITIONER Cassette Type INSTALLATION INSTRUCTION SHEET

(PART NO. 935992042)
For authorized service personnel only.

- WARNING**
- For the room air conditioner to operate satisfactorily, install it as outlined 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 or authorized personnel only.
 - Do not turn on the power until all installation work is completed.
 - 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 useful 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

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

INDOOR UNIT ACCESSORIES

Name and Shape	Qty	Application
Coupler	2	For indoor unit pipe joint heat insulation
Special nut A (large flange)	4	For installing indoor unit
Special nut B (small flange)	4	For installing indoor unit
Template	1	For cutting hole cutting
Remote control unit	1	Use for air conditioner operation
Remote control unit holder	1	For mounting the remote control unit
Battery (powerlight)	2	For remote control unit
Remote control unit holder	1	For mounting the remote control unit
Tapping cover (S&C)	2	For remote control unit holder insulation

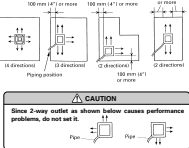
GRILLE ACCESSORIES

Grille	4	For mounting grille
Washer	4	For mounting grille
Blower cover insulation	2	For discharged air

SELECTING THE MOUNTING POSITION

Especially, the installation place is very important for the light type air conditioner because it is very difficult to move from place after the heat insulation.

Decide the mounting position together with the customer as follows. The discharge direction can be selected as shown below.



CONNECTION PIPE REQUIREMENT

Table 1

Thickness	Minimum length	Maximum length between indoor and outdoor
Small (1.6 mm)	12.2 mm (1/2 in)	22 m (72 ft)
Large (2.0 mm)	15.2 mm (1/2 in)	28 m (92 ft)

- Use 0.7 mm to 1.2 mm thick pipe.
- Use pipe with outer diameter heat insulation.
- Use pipe that can withstand a pressure of 3,046 kPa.

ELECTRICAL PIPE REQUIREMENT

Table 2

FORMER CODE	SCHEMATIC SYMBOL	WIRE SIZE (mm ²)	WIRE SIZE (AWG)
MAX		3.0	2.0
MIN		1.5	2.0
MAX		3.0	2.0
MIN		1.5	2.5
Flow capacity (A)		15	20

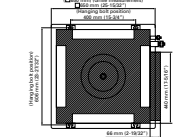
Always use HDTN-F or equivalent as the connection cord.

Install the circuit breaker nearby the units, drain indoor unit and outdoor unit.

INSTALLATION PROCEDURE

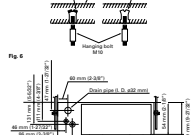
1. INDOOR UNIT INSTALLATION

Position the ceiling and hanging bolts as shown in Fig. 4.



2. Hanging preparations

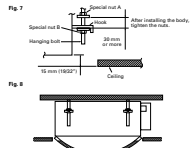
Fix the hanging bolts as shown in Fig. 5 by another method.



3. Body installation

- Install special nut A, then special nut B onto the hanging bolt (Fig. 7).
- Mount the body and secure it to the hanging bolt between the special nuts (Fig. 7).
- Turn special nut B to adjust the height of the body (Fig. 7).
- Leveling.
- Check if the panel is level. If not, adjust it with water. Do not use a spirit level.

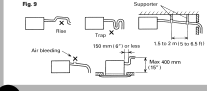
Perform final tightening by tightening the double nut firmly.



INSTALLING DRAIN PIPE

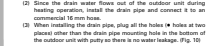
Note: Install the drain pipe.

- Install the drain pipe with downward gradient (1/100) or 1/1000 and so there are no rise or trap in the pipe.
- Use galvanized steel pipe or polyethylene pipe (PE) (outside diameter 22 mm (1.14") and connect it with adhesive polyethylene glue or use a clamp to be installed).
- Install the pipe using the support.
- Do not perform air bleeding.
- Always fasten the drain pipe to the body of the indoor unit.
- When setting a high drain pipe height, use it up to 400 mm (15") or less from the ceiling within a range of 180 mm (6") from the body. A rise dimension over this range will cause leakage.



3. Connection pipes

(1) Indoor unit side



(2) Outdoor unit side



CAUTION

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

When the flare nut is tightened properly by your hand, hold the body side coupling with a separate wrench, then tighten with a torque wrench (Fig. 15).

CAUTION

- Hold the torque wrench at its grip, keeping it in the right angle with the pipe as shown in Fig. 16, in order to tighten the flare nut correctly.

Table 4 Flare nut tightening torque

Flare nut	Tightening torque
Small pipe (15.2 to 20.0 mm)	10.0 to 12.0 N·m
Large pipe (22.2 to 33.3 mm)	20.0 to 30.0 N·m

CAUTION

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

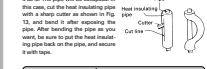
4. CONNECTING THE PIPING

1. Flare processing

- Cut the connection pipe with pipe cutters so that the pipe is not damaged.
- Hold the pipe downward so that cutting cannot enter the pipe, remove the burrs.
- Remove the flare nut from the indoor unit pipe and outdoor unit and assemble as shown in Table 3) and insert the flare nut onto the pipe and flare with a flaring tool.
- Check if the flare nut is "C" (Fig. 17) is applied uniformly and that there are no cracks.

2. Bending pipes

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



CAUTION

- To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 150 mm or more.
- If the pipe is bent repeatedly at the same place, it will break.

HEAT INSULATION

2. Additional charge

Refrigerant capacity for a piping length of 7.5 m is charged in the outdoor unit at the factory.

Table 5

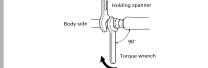
Pipe length	7.5 m	10 m	15 m	20 m
Additional refrigerant	None	23.0 g	112.5 g	160 g
Refrigerant	None	11.3 g	64.0 g	80.0 g
Maximum	7.5 m	7.5 m	7.5 m	1.56 m (5.1 ft)

CAUTION

- When moving and installing the air conditioner, do not use pipe shorter than the specified refrigerant (R22) inside the refrigerant cycle.
- When adding refrigerant, add the refrigerant from the charging valve at the completion of work.
- The maximum length of the piping is 20 m. If the units are further apart than this, correct operation cannot be guaranteed.

6. INSTALLING THE COUPLER

After checking for gas leaks, insulate by wrapping insulation around the bare parts (large and small) of the indoor unit coupling, using the coupler heat insulation.



CAUTION

- Must fit tightly against body without any gap.

7. ELECTRICAL WIRING

HOW TO CONNECT WIRING TO THE TERMINALS

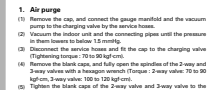
A. For solid core wiring (or F-cable)

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 20 mm (15/16") of excess the terminal wiring.
- Using a screwdriver, remove the terminal screw on the terminal board.
- Using pliers, bend the solid wire to form a loop suitable for the terminal board.
- Slide the loop wire properly place it on the terminal board and tighten securely with the terminal screw using a screw driver.

B. For strand wiring

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 20 mm (15/16") of excess the terminal wiring.
- Using a screwdriver, remove the terminal screw on the terminal board.
- Using a round terminal setter or pliers, securely clamp a round terminal to each stripped wire end.
- Position the round terminal wire, and replace and tighten the terminal screw using a screwdriver.

Fig. 19



8. Indoor unit side

(1) Remove the control box cover and install the connection cord.

Fig. 20

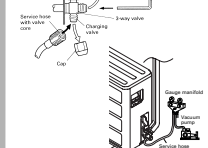


Fig. 21 (Casting model)

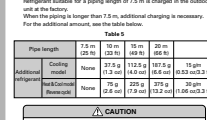
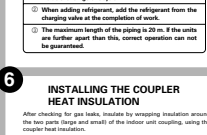


Fig. 21 (Heat & Cool model (Reverse cycle))



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 cord firmly for the terminal board. Imperfect installation may cause a fire.
- Always fasten the outside covering of the connection cord and the power cord with cord clamps. If the insulator is chafed, electric leakage may occur.
- Always connect the ground wire.

- Remove the terminal cover of the outdoor unit, and insert the end of the connection cord and the power cord into the terminal board.
- Fasten the connection cord and the power cord with the cord clamps.

Fig. 22

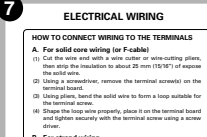


Fig. 22 (Casting model)

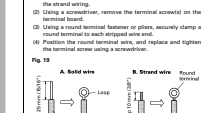
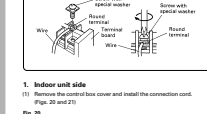


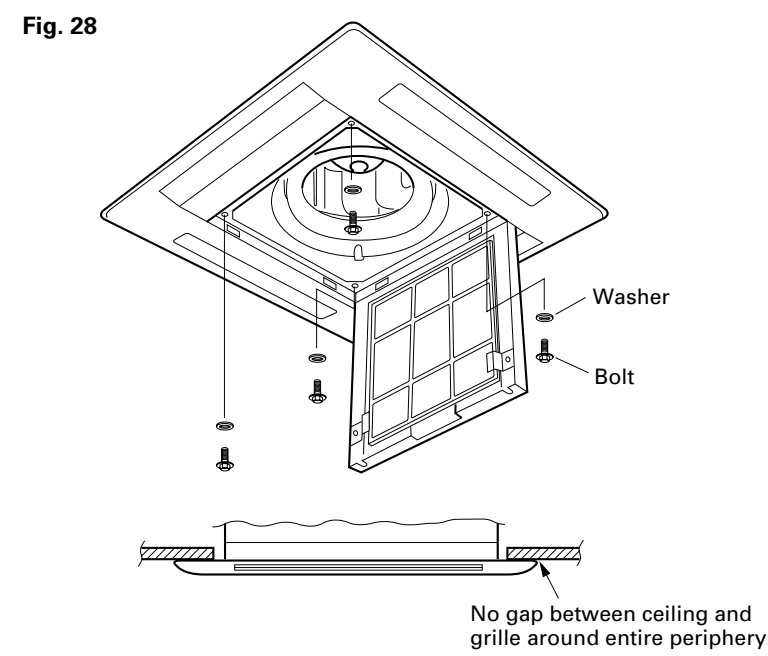
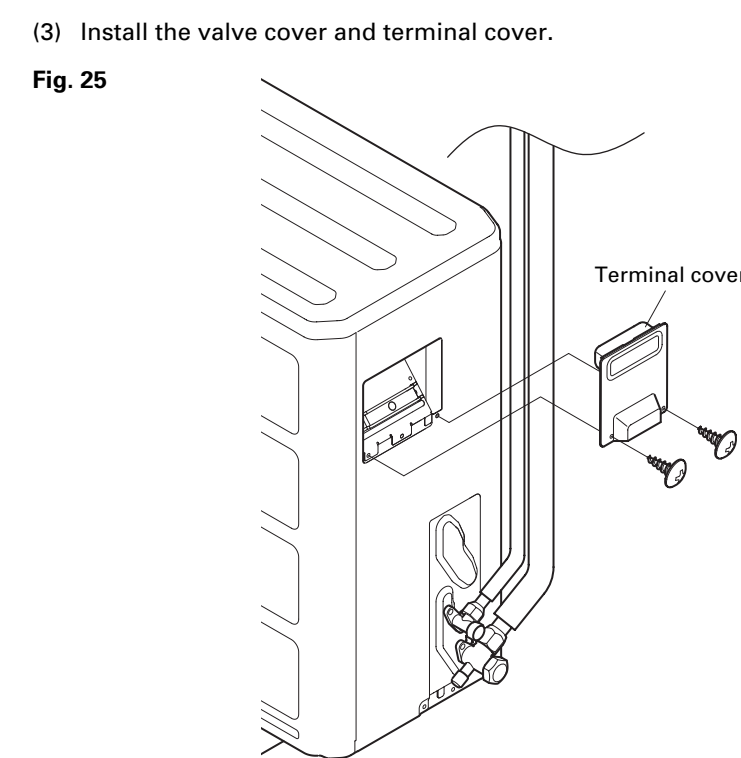
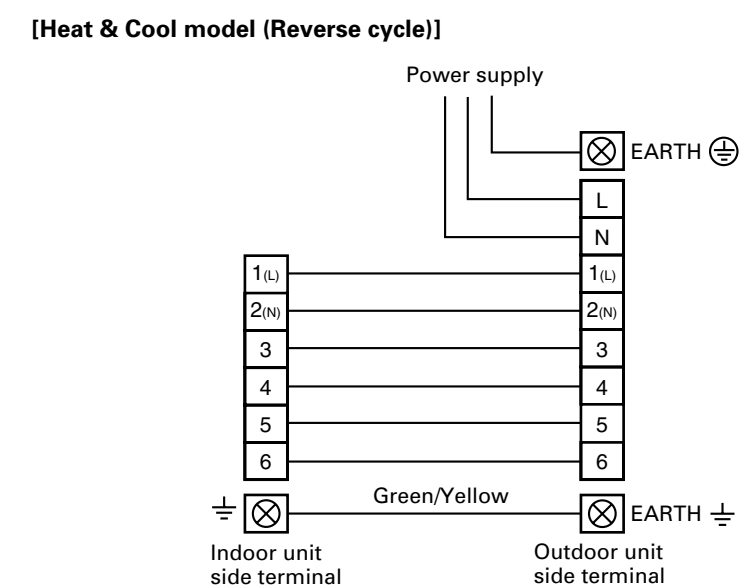
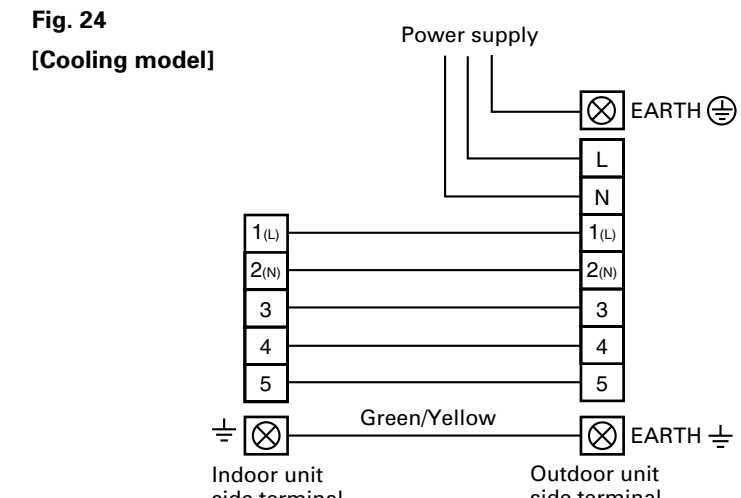
Fig. 22 (Heat & Cool model (Reverse cycle))



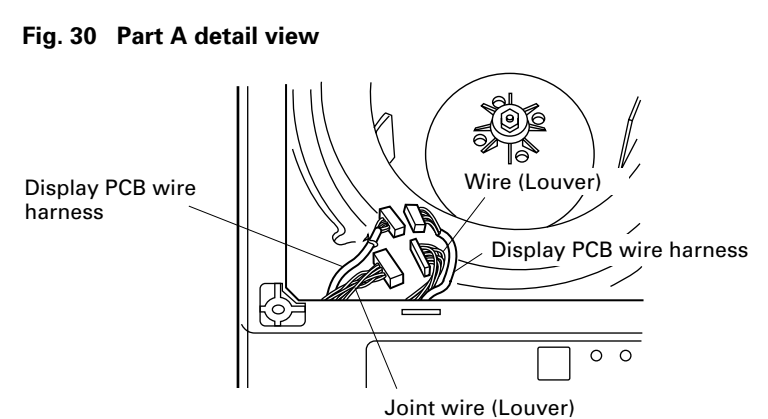
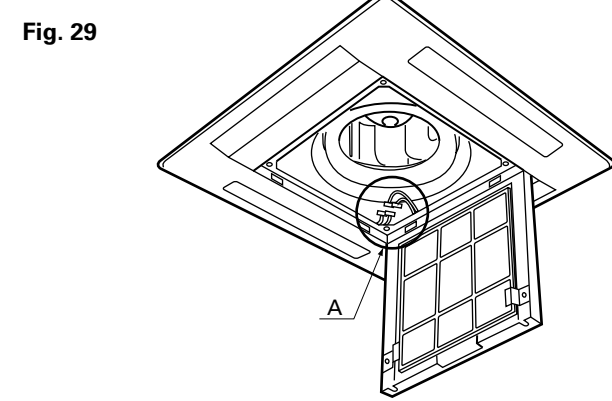
After joining the connection cord through the insulation hole, leave it with the cord clamps.

Fig. 23





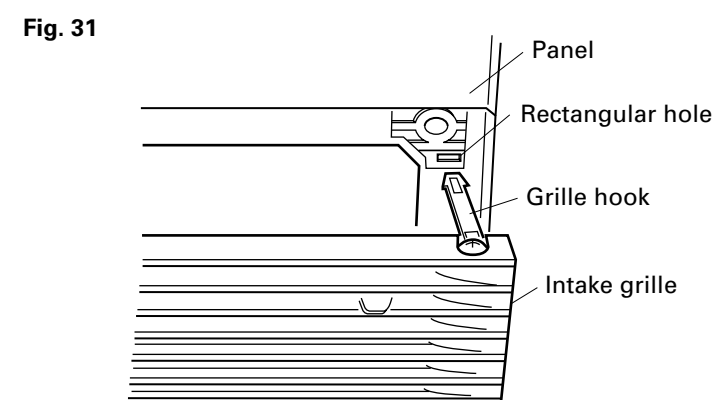
Wireless unit connection wire wiring
Connect the connector in accordance part A detail view. Then clamp the lead wire with clamp so that it does not touch the rotating parts.



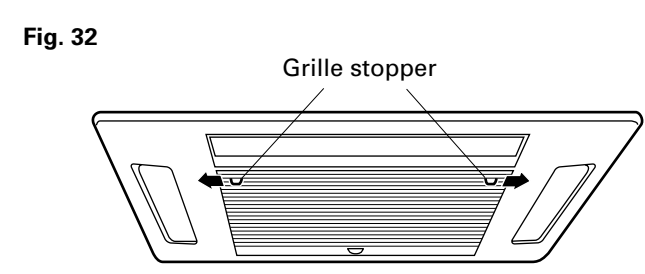
INSTALLING/REMOVING THE INTAKE GRILLE

1. Installing the intake grille

(1) Fully insert the intake grille hooks into the rectangular holes in the panel.

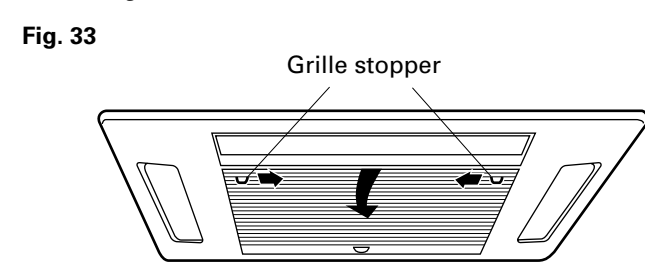


(2) Close the intake grille, then slide the two grille stoppers outward.

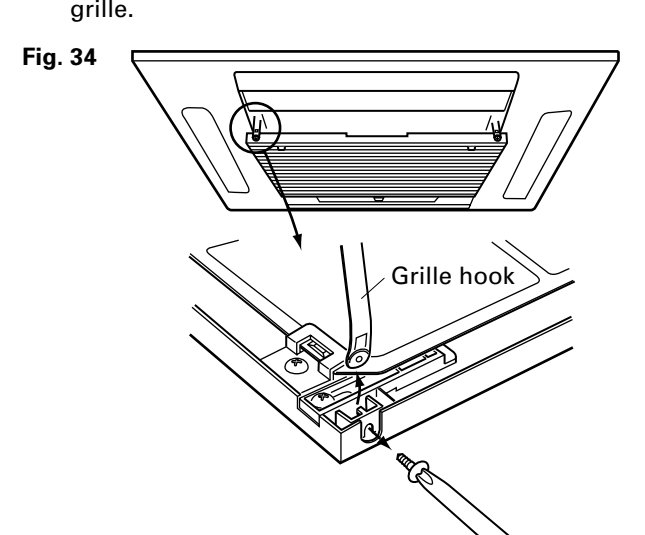


2. Removing the intake grille

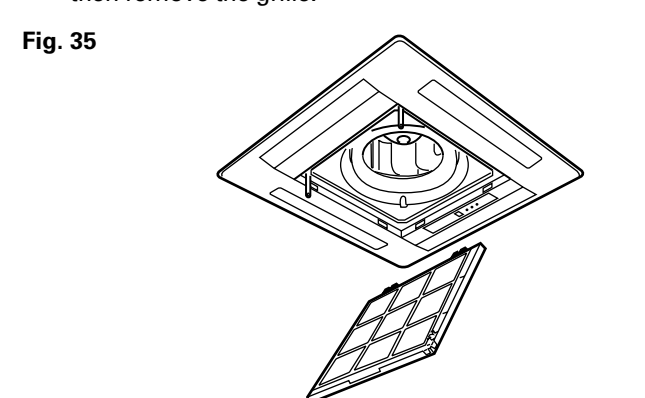
(1) Slide the two grille stoppers inward, then open the intake grille.



(2) Remove the grille hook screws, then open the intake grille.

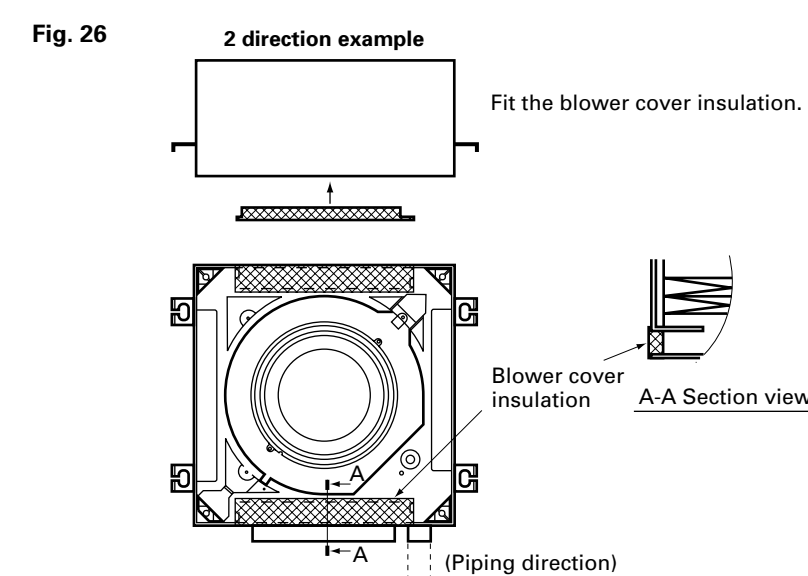


(3) Open the intake grille so that it is at an angle of 20° to 40°, then remove the grille.

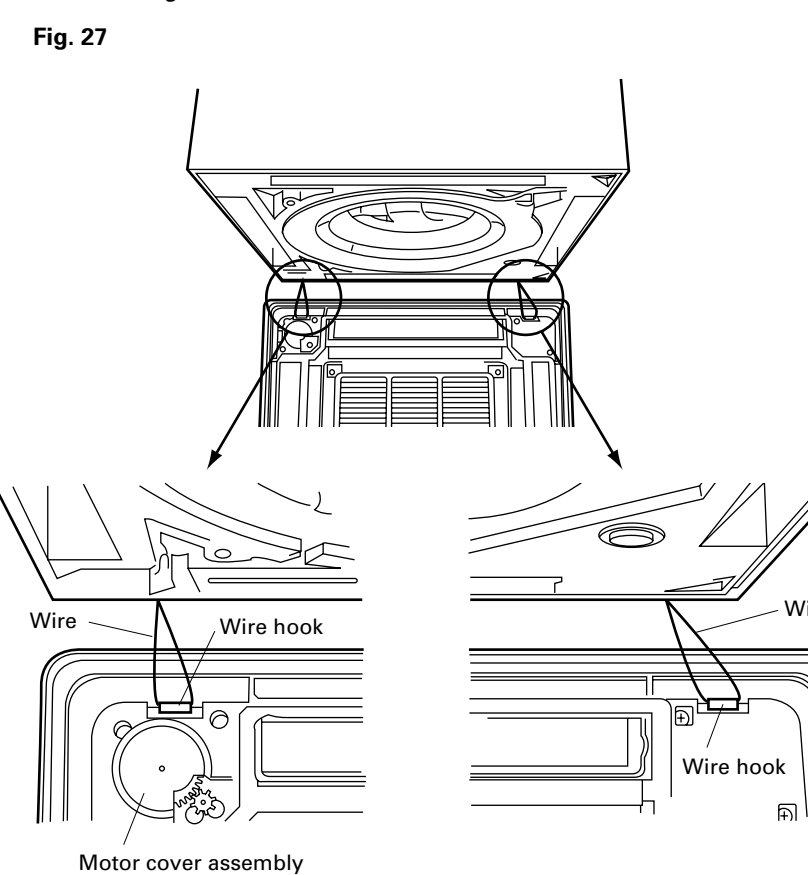


8 GRILLE INSTALLATION

1. Blower cover insulation
Install the blower cover insulation only when the outlet direction is not specified. Two blower cover insulations are packed with the grille assembly. Install the blower cover insulation at the diffuser position shown in Fig. 26. At the time, use the piping position as the criteria.



2. Installing grille assembly to body
Hang the grille assembly on the wires attached to the indoor unit as shown in Fig. 27.



Bolting the grille assembly to the body
Install the grille assembly to the body with the four bolts, spring washers, and washers.

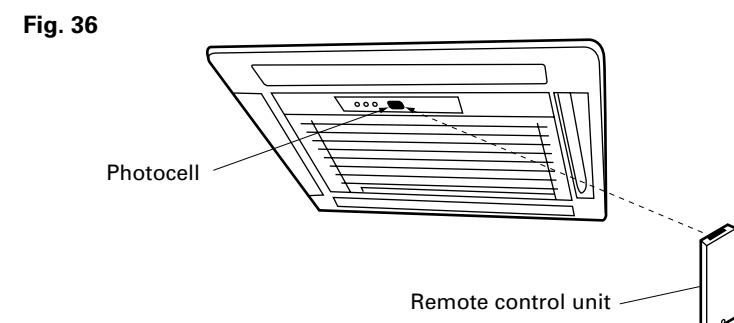
CAUTION

- The louver angle cannot be changed if the power is not on, (if moved by hand, it may be damaged.)
- The grille assembly is directional relative to the air conditioner body.
- Install so that there is no gap between the grille assembly and the air conditioner body.

9

REMOTE CONTROL UNIT INSTALLATION

• Install the remote control unit so that the front is facing the photocell. (Fig. 36)



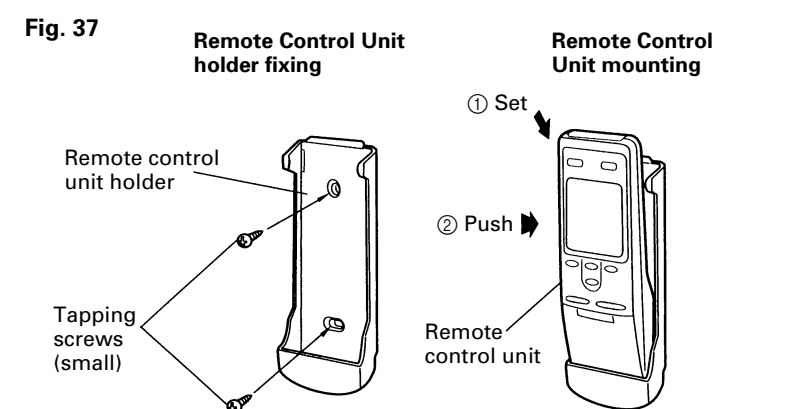
• Install the remote control unit with a distance of 5 m between the remote control unit and the grille photocell as the criteria. However, when installing the remote control unit, check that it operates positively.

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 setting 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.

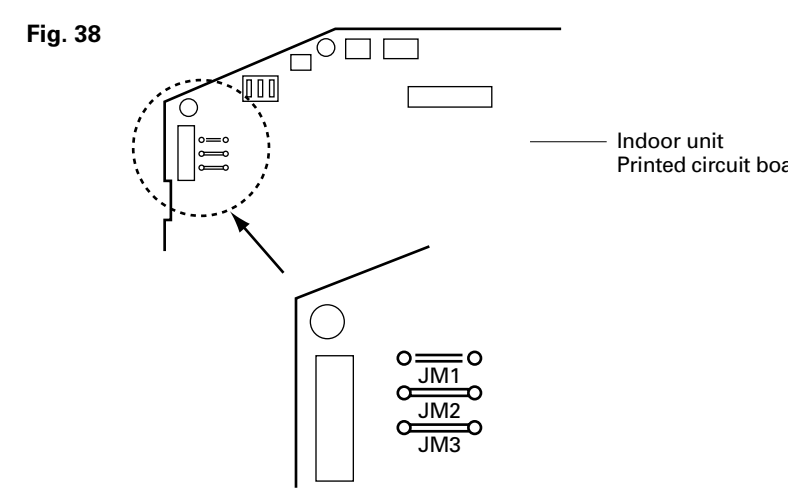
1. REMOTE CONTROL UNIT HOLDER INSTALLATION

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



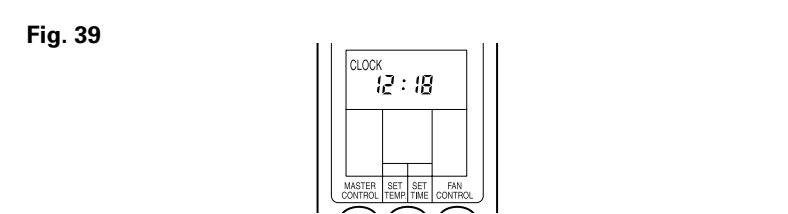
2. SWITCHING REMOTE CONTROL UNIT SIGNAL CODES

• Air conditioner settings

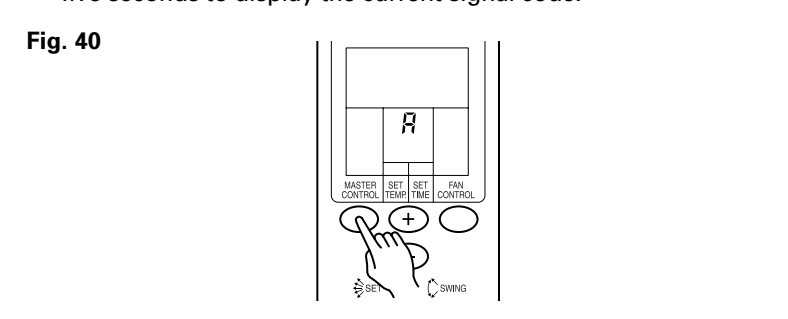


• Remote control unit settings

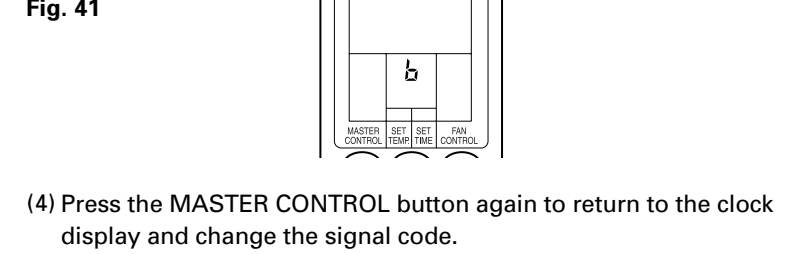
(1) Press the START/STOP button and display only the clock.



(2) Press the MASTER CONTROL button continuously for more than five seconds to display the current signal code.



(3) Change the signal code with the Δ/\square button (R-b-c-d).



(4) Press the MASTER CONTROL button again to return to the clock display and change the signal code.

Confirm the setting of the remote control unit signal code and the printed circuit board setting.

If these are not confirmed, the remote control unit cannot be used to operate for the air conditioner.

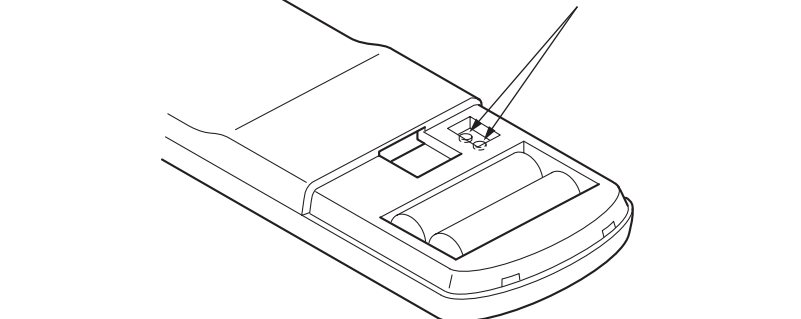
Jumper wire		Remote control unit signal code
JM 2	JM 3	
Connect	Connect	A (Primary setting)
Connect	Disconnect	B
Disconnect	Connect	C
Disconnect	Disconnect	D

10

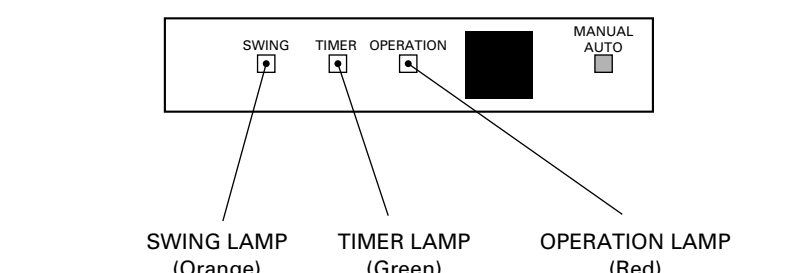
TEST RUNNING

• 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, the "TEST RUN" signal is received during air conditioner operation (use a metallic object to short the two metal contacts under the battery compartment lid and send the "TEST RUN" signal from the remote control unit).

Short the two metal contacts under the battery compartment lid.



• 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.)



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 7) according to the error contents.

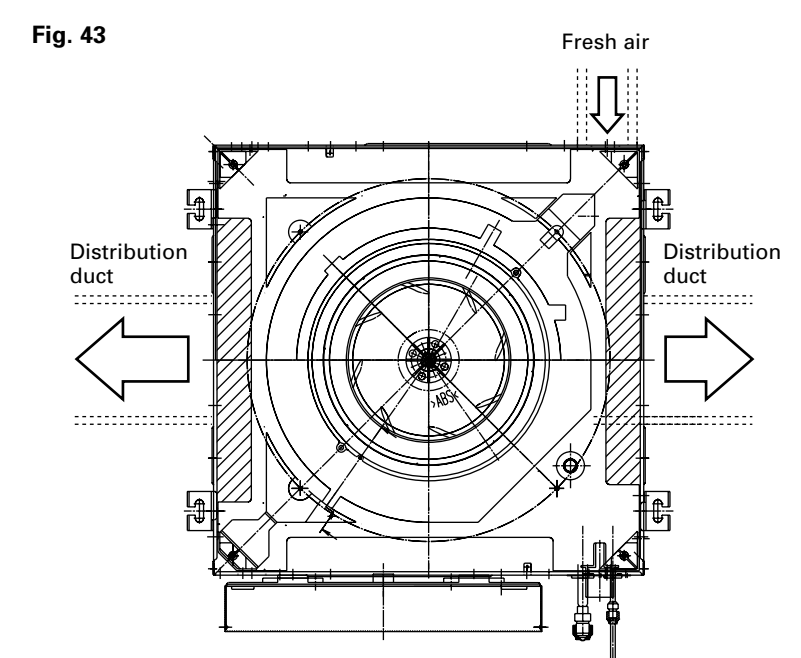
Error display			Error contents
OPERATION lamp	TIMER lamp	SWING lamp	
Blinks	Blinks	Goes off	Model information abnormal (permanent type)
Pulses 4 times	Blinks	Goes off	Drain abnormal (permanent type)
Pulses 6 times	Blinks	Goes off	Indoor fan abnormal
Pulses 2 times	Blinks	Goes off	Room air temperature thermistor open circuit
Pulses 3 times	Blinks	Goes off	Room air temperature thermistor short circuit
Pulses 3 times	Blinks	Goes off	Piping thermistor open circuit
Pulses 3 times	Blinks	Goes off	Piping thermistor short circuit

CHECK ITEMS

- (1) INDOOR UNIT
- Is operation of each button on the remote control unit normal?
 - Does each lamp light normally?
 - Do not air flow direction louvers operate normally?
 - Is the drain normal?
 - Is there any abnormal noise and vibration during operation?
- (2) OUTDOOR UNIT
- Is there any abnormal noise and vibration during operation?
 - Will noise, wind or drain water from the unit disturb the neighbors?
 - Is there any gas leakage?
- Do not operate the air conditioner in the test running state for a long time.

11

OPENING THE DUCT CONNECTION HOLE

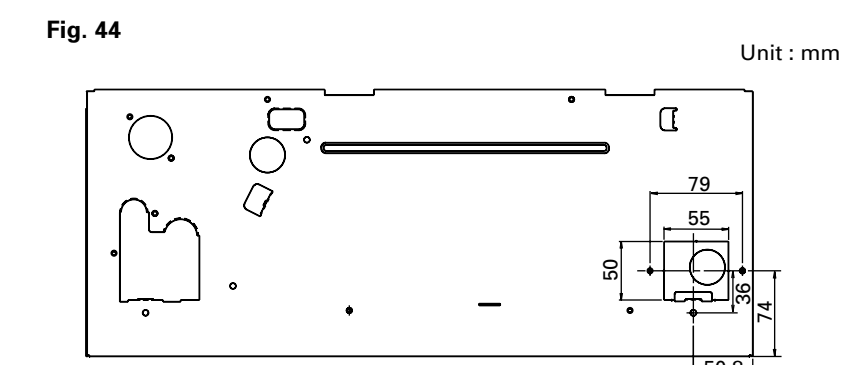


CAUTION

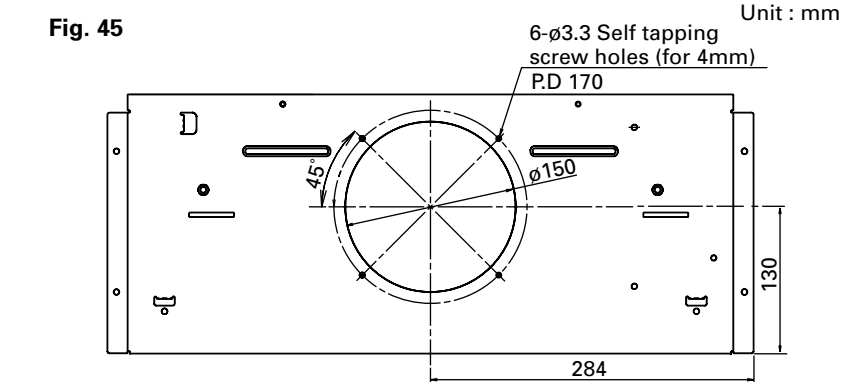
- When performing hole opening work, be careful not to damage the drain pan.
- When connecting the distribution duct, to make the air flow easily, block the outlet port with the blower cover insulation as shown by the hatched lines in Fig. 43. For the blocking direction, refer to Fig. 26.

1. DIMENSION

(1) Fresh air duct connection hole and screw positions.

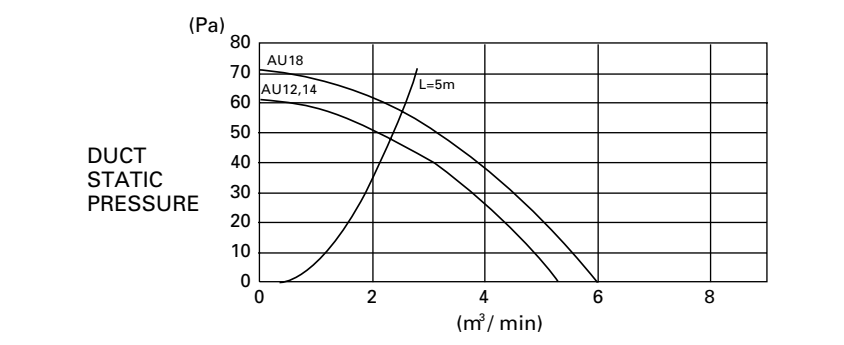
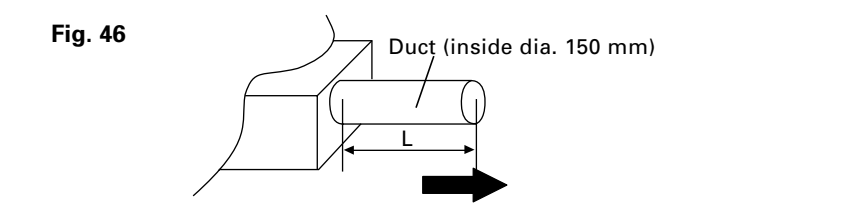


(2) Distribution duct connection hole and screw positions.

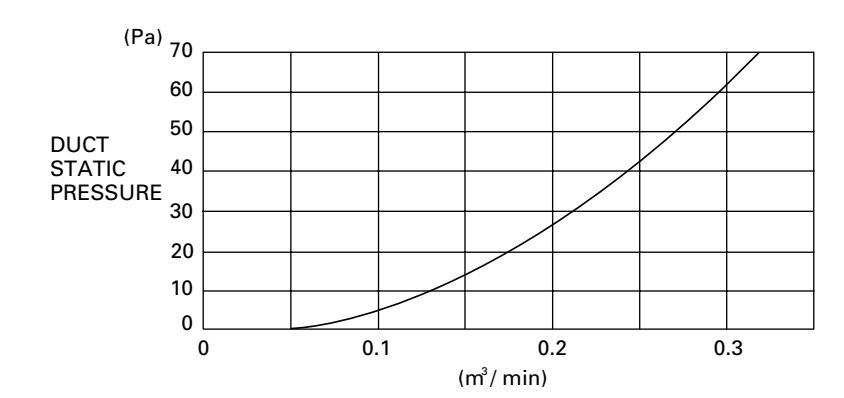
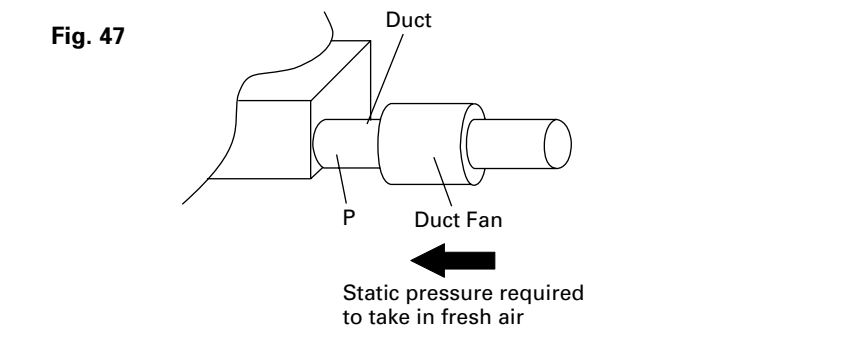


CAUTION
The air conditioner cannot take in fresh air by itself. When connecting a fresh air duct, always use a duct fan.

OUTLET AIR



FRESH AIR



12

INSTALLING THE OPTION PARTS (ADDITIONAL GRILLE)

THE ADDITIONAL GRILLE

- Mount the assembled additional grille to the indoor unit (grille) that has been removed from the main unit.
- Make sure all areas are properly installed the reinforcement plate.
- Mount 4 additional grilles. (Fig. 49)
- After confirming proper meshing of the additional grilles, secure them in place using the 8 screws provided.

