

# SPLIT TYPE AIR CONDITIONER Cassette Type INSTALLATION INSTRUCTION SHEET

(PART NO. 9363217018)

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.

- Be careful not to surpass the air conditioner's rated handling capacity.
- 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

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

### INDOOR UNIT ACCESSORIES

Name and Shape	Qty	Application
Coupler base insulation	2	For indoor side pipe joint
Remote controller cord clamp	10	For installing the remote controller cord
Screw	30	For mounting the remote controller cord clamp
Special nut A (large flange)	4	For installing indoor unit
Special nut B (small flange)	4	For installing indoor unit
Remote controller	1	Installation to indoor unit
Template	1	For marking hole cutting
Band	2	For remote controller cord binding
Blower cover insulation	2	For blower cover insulation
Hook wire	2	For installing intake grille

### OUTDOOR UNIT ACCESSORIES

Power cap	1	For power supply cord installation
Auxiliary pipe assembly	1	For wiring condenser pipe joint connection (May not be required, depending on the model.)
Edge cover	1	For wiring condenser pipe hole edge protection
Fastening screw	12	For cabinet A and Splice (1) mounting (1)
Brackets	2	For power supply cord binding
Putty	1	For sealing
Coupler base insulation	1	For outdoor side pipe joint
Pipe (large)	2	For outdoor unit drain (Drain pipe may not be supplied, depending on the model.)
Flexible tube	2	For outdoor unit drain (Drain pipe may not be supplied, depending on the model.)
Cap (large)	2	

## SELECTING THE MOUNTING POSITION

Exhaustive site inspections are a very important for the split type air conditioner. It is very difficult to move from place to place after the first installation.

Check the mounting position together with the customer as follows:

- Since 3-way outlet is shown below 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 inlet and outlet pipes should not be obstructed; the air should be able to blow out 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 obstructions can be extracted out easily.
- Install the unit where noise and vibration are not amplified.

### OUTDOOR UNIT

- Install the unit where it will not be filled by more than 90°.
- 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 blind that does not interfere with the air flow.
- Do not install the unit near a source of heat, steam, or flammable gas.
- 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 (Remote controller model only).
- Do not install the unit where a strong wind blows or where it is very dusty.
- Do not install the unit where people pass.
- 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 where connection to the indoor unit is easy.

## CONNECTION PIPE REQUIREMENT

Diameter	Maximum length		Maximum height (between indoor and outdoor)
	Small	Large	
20"	20"	164 ft (50 m)	89 ft (28 m)
25"	35.2 ft (10.8 m)		

- Use 0.7 mm to 1.2 mm thick pipe.
- Use pipe with water resistant heat insulation.
- Use pipe that can withstand a pressure of 2.0 MPa.

## ELECTRICAL REQUIREMENT

4 wires are required for indoor and outdoor unit.

Wiring method	MAX.	MIN.
Wiring length	3.5	1.5
Conductor	2.0	2.5
Lead length	2.0	2.5
Power breaker capacity (kVA)	15	20

- Always use HCFRNU or equivalent as the cord.
- Install the disconnect device with a terminal of at least 3 mm (readying the units both indoor unit and outdoor unit).

## INSTALLATION PROCEDURE

### 1. INDOOR UNIT INSTALLATION

- 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 sound or vibration.
- If the installation location is not strong enough, the indoor unit may fall and cause injuries.
- 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 INTAKE GRILLE

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 2. HANGING PREPARATIONS

- Firmly fasten the hanging bolts as shown in Fig. 13 or by another method.
- Install the hanging bolts at a place where they would be capable of holding a weight of at least 50 kg per bolt.

### 3. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 4. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 5. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 6. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 7. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 8. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 9. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 10. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 11. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 12. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 13. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 14. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 15. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

### 16. POSITIONING THE CEILING HOLE AND HANGING BOLTS

- Push the intake grille pushbuttons three places.
- Open the intake grille.

## REMOVING THE PANEL FRAME

- Push up the corner rollers (A) of the panel frame as shown in Fig. 9. (4 locations)

### Fig. 9 Part A detail view



### Fig. 10 Part B detail view



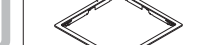
### Fig. 11 Part C detail view



### Fig. 12 Part D detail view



### Fig. 13 Part E detail view



### Fig. 14 Part F detail view



### Fig. 15 Part G detail view



### Fig. 16 Part H detail view



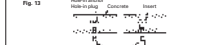
### Fig. 17 Part I detail view



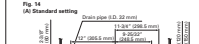
### Fig. 18 Part J detail view



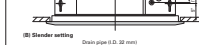
### Fig. 19 Part K detail view



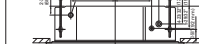
### Fig. 20 Part L detail view



### Fig. 21 Part M detail view



### Fig. 22 Part N detail view



### Fig. 23 Part O detail view



### Fig. 24 Part P detail view



### Fig. 25 Part Q detail view



### Fig. 26 Part R detail view



### Fig. 27 Part S detail view



### Fig. 28 Part T detail view



### Fig. 29 Part U detail view



### Fig. 30 Part V detail view



### Fig. 31 Part W detail view



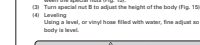
### Fig. 32 Part X detail view



## 3. BODY INSTALLATION

- (The ceiling net height is 11.5" (293 mm) or more.) (Standard setting)
- (The ceiling net height is 9.5" (241 mm) or more.) (Slender setting)

### Fig. 33 Part A detail view



### Fig. 34 Part B detail view



### Fig. 35 Part C detail view



### Fig. 36 Part D detail view



### Fig. 37 Part E detail view



### Fig. 38 Part F detail view



### Fig. 39 Part G detail view



### Fig. 40 Part H detail view



### Fig. 41 Part I detail view



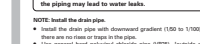
### Fig. 42 Part J detail view



### Fig. 43 Part K detail view



### Fig. 44 Part L detail view



### Fig. 45 Part M detail view



### Fig. 46 Part N detail view



### Fig. 47 Part O detail view



### Fig. 48 Part P detail view



### Fig. 49 Part Q detail view



### Fig. 50 Part R detail view



### Fig. 51 Part S detail view



### Fig. 52 Part T detail view



### Fig. 53 Part U detail view



### Fig. 54 Part V detail view



### Fig. 55 Part W detail view



### Fig. 56 Part X detail view

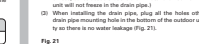


## 3. OUTDOOR UNIT INSTALLATION

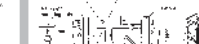
### 1. OUTDOOR UNIT PROCESSING

- When the outdoor unit will be exposed to strong wind, fasten it with bolts or nuts at the four places indicated by the arrows (Fig. 21).
- Since the drain water flows out of the outdoor unit during heating operation, install the drain pipe and connect it to an commercial 1.5 cm hose. (When heating when the outdoor temperature is 5 °C or less, connect to the drain water drained from the outdoor unit will not freeze in the drain pipe.)
- When installing the drain pipe, plug at the holes other than the drain pipe mounting hole in the bottom of the outdoor unit with putty to there is no water leakage (Fig. 21).

### Fig. 21 Part A detail view



### Fig. 22 Part B detail view



### Fig. 23 Part C detail view



### Fig. 24 Part D detail view



### Fig. 25 Part E detail view



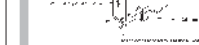
### Fig. 26 Part F detail view



### Fig. 27 Part G detail view



### Fig. 28 Part H detail view



### Fig. 29 Part I detail view



### Fig. 30 Part J detail view



### Fig. 31 Part K detail view



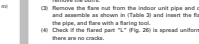
### Fig. 32 Part L detail view



### Fig. 33 Part M detail view



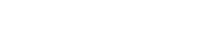
### Fig. 34 Part N detail view



### Fig. 35 Part O detail view



### Fig. 36 Part P detail view



### Fig. 37 Part Q detail view



### Fig. 38 Part R detail view



### Fig. 39 Part S detail view



### Fig. 40 Part T detail view

## VACUUM PROCESS

### 1. VACUUM

- Vacuum inside the indoor unit and the piping to a pressure of 1.5 mmHg abs or less from the charging valve with a vacuum pump.
- After vacuuming inside the indoor unit and the piping, remove the cap of the two valves.
- Open the handle of the two valves from the closed state (Table 6).
- Tighten the cap of the two valves to the specified torque.

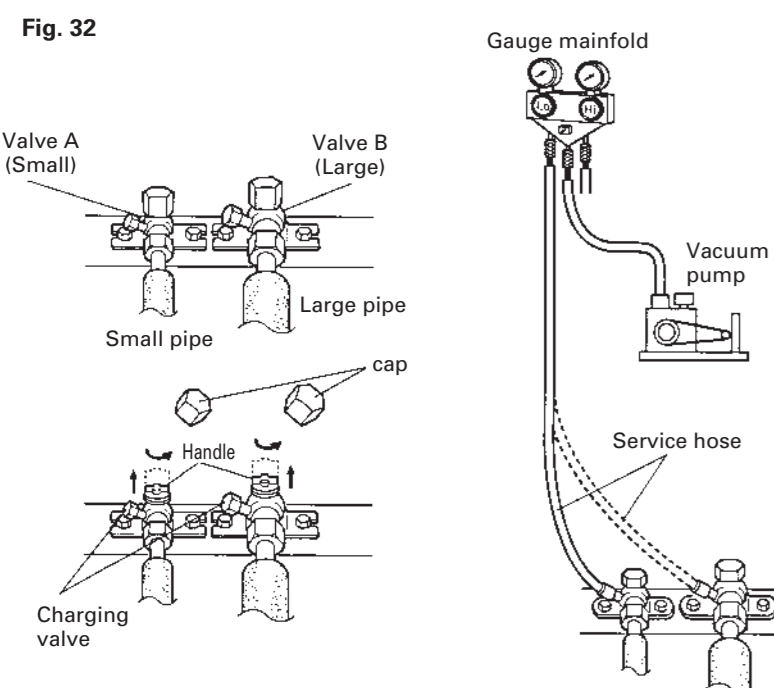
Table 5

Handle	Tightening torque	
	Large valve	Small valve
Handle	15 kgf-cm (1.47 N-m) or less	
Cap	150 to 200 kgf-cm (14.7 to 19.6 N-m)	

Table 6

Open valve state	Closed valve state

\* If the handle is not fully open, performance will drop and an abnormal sound will be generated.



### 2. ADDITIONAL CHARGE

Refrigerant suitable for a piping length 20 m for other model is charged in the outdoor unit at the factory. When the piping is longer than 20 m, additional charging is necessary. For the additional amount, see the table below.

Table 7

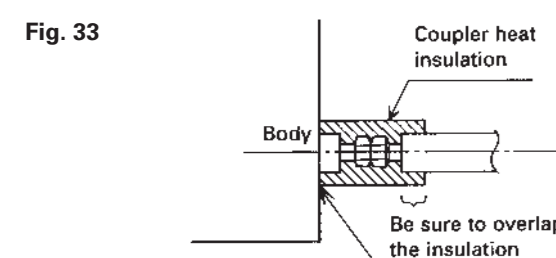
Pipe length Model type	66 ft (20 m)	99 ft (30 m)	132 ft (40 m)	164 ft (50 m)	oz/ft (g/m)
36,000 BTU 45,000 BTU class	None	14.1 oz (400 g)	28.2 oz (800 g)	42.3 oz (1200 g)	1.41 oz/3.3 ft (40 g/m)
54,000 BTU class	None	17.6 oz (500 g)	35.2 oz (1000 g)	52.8 oz (1500 g)	1.76 oz/3.3 ft (50 g/m)

### CAUTION

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

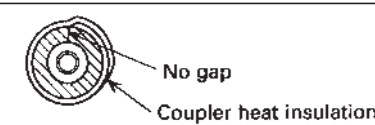
## INSTALLING THE COUPLER HEAT INSULATION

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.



### CAUTION

Must fit tightly against body without any gap.



## ELECTRICAL WIRING

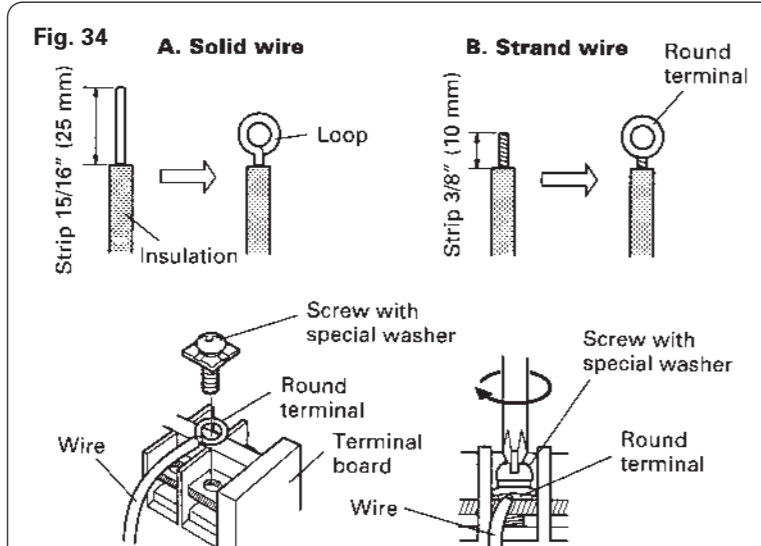
### HOW TO CONNECT WIRING TO THE TERMINALS

#### 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 15/16" (25 mm) 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.

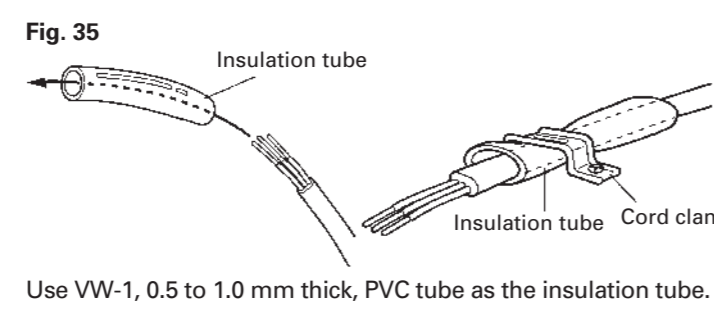
#### B. For strand wiring

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 3/8" (10 mm) 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 stripped wire end.
- Position the round terminal wire, and replace and tighten the terminal screw using a screwdriver.



### HOW TO FIXED CONNECTION CORD AND POWER SUPPLY CORD AT THE CORD CLAMP

After passing the connection cord and power supply cord through the insulation tube, fasten it with the cord clamp.



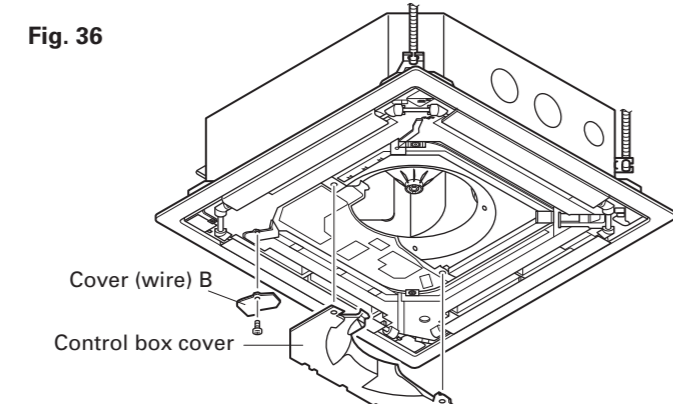
Use VW-1, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

### 1. INDOOR UNIT SIDE

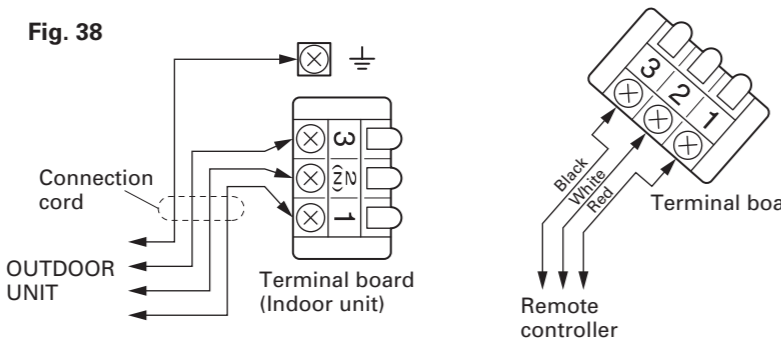
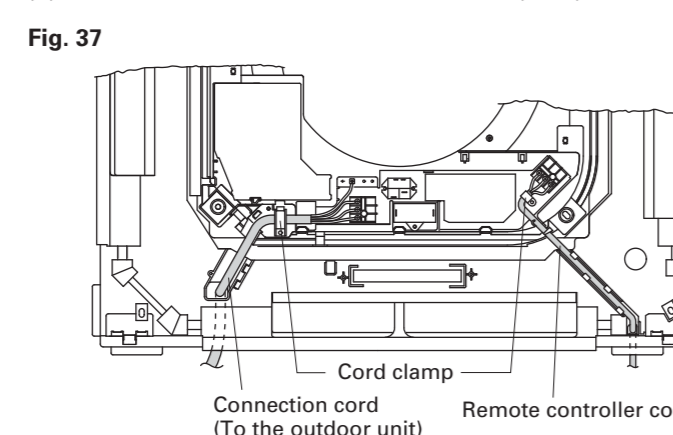
#### WARNING

- 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.



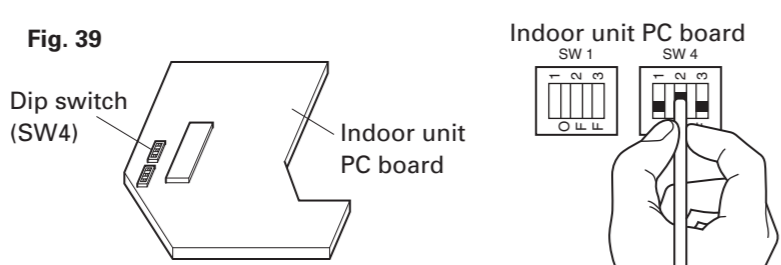
- After wiring is complete, clamp the remote controller cord and connection cord with the cord clamp.
- Install the control box cover and cover (wire) B.



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

Table 8

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



### CAUTION

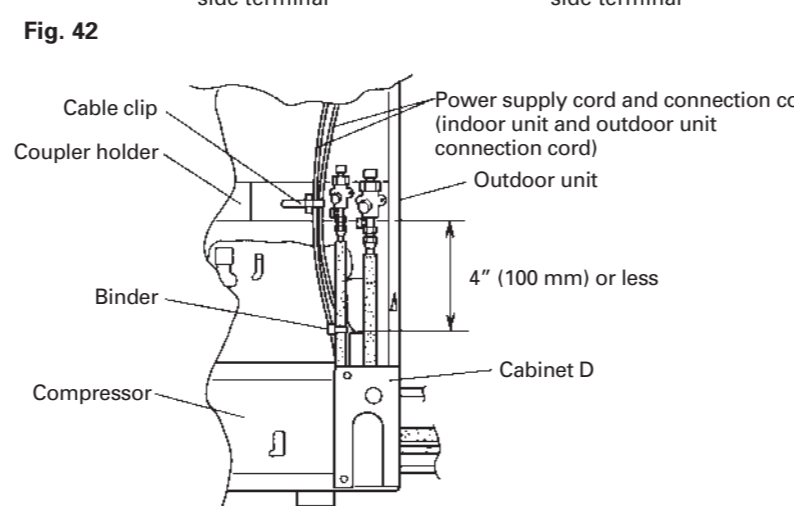
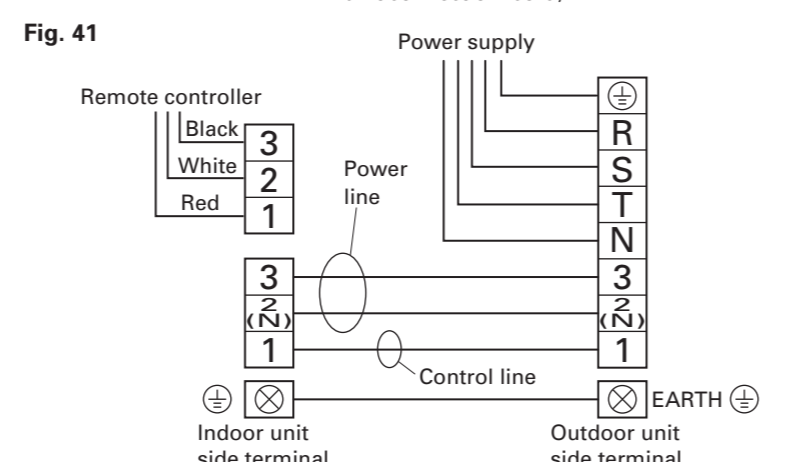
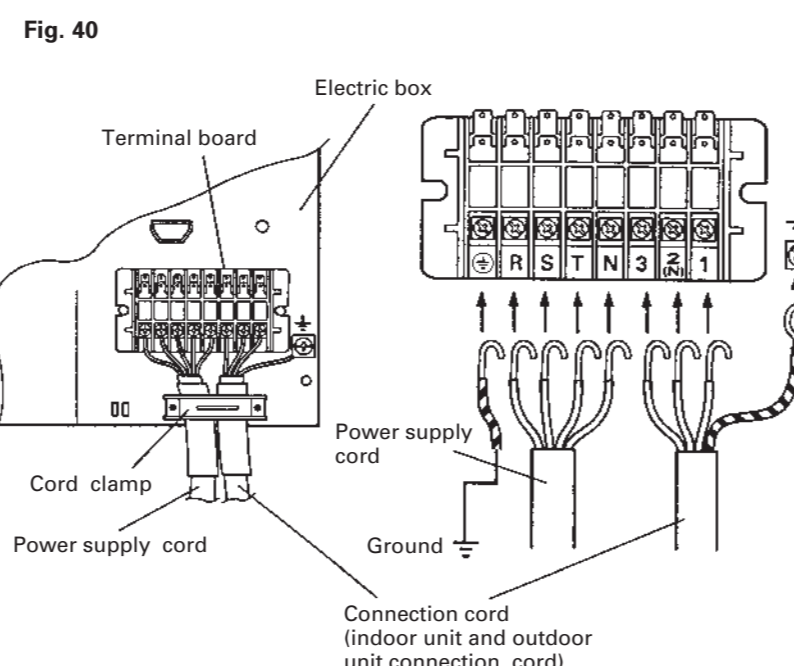
- If the setting for a low ceiling is selected, the capacity of the air conditioner decreases slightly.
- Do not set any switches other than those specified in this sheet or the remote controller installation instruction sheet. The air conditioner may not operate correctly if any switches other than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

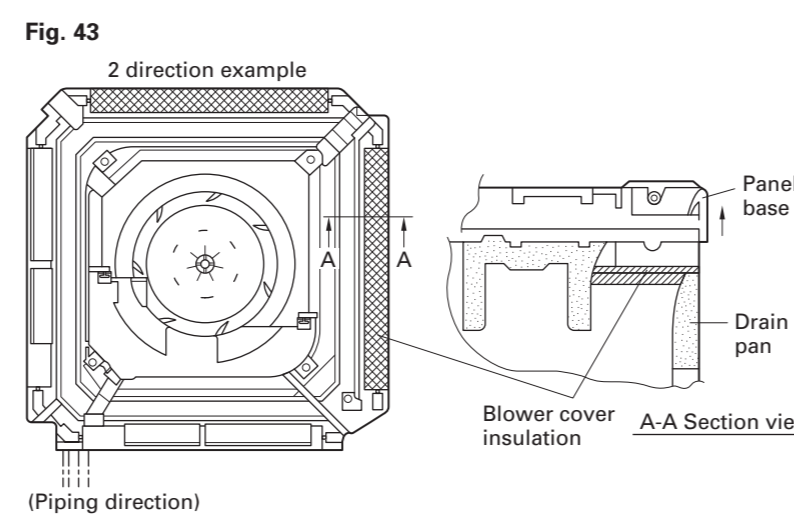
- Remove outdoor unit cabinet A and connect the power supply cord and the outdoor unit connection cord wired at the indoor unit.
- Fasten the power supply cord and connection cord with cable clip and binders as shown in (Fig. 42).



## GRILLE INSTALLATION

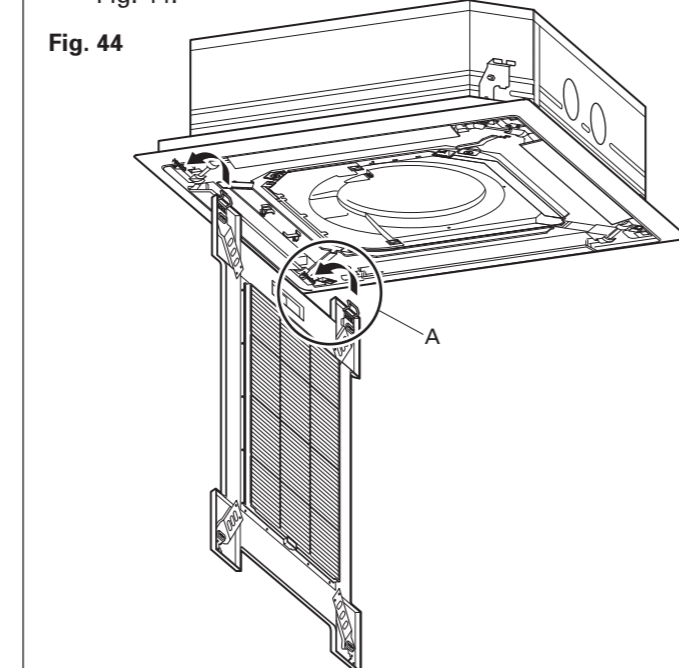
### BLOWER COVER INSULATION

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. 43. At this time, use the piping position as the criteria.



### INSTALLING THE INTAKE GRILLE

- Mount the grille hinge wire to the hook shaft as shown in Fig. 44.



## POWER

### WARNING

- The rated voltage of this product is 380-415 V 3φ 50 Hz.
- Before turning on verify that the voltage is within the 342 to 457 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.

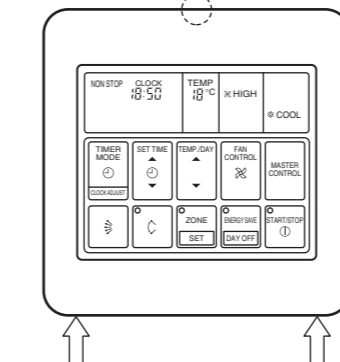
### CAUTION

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

## REMOTE CONTROLLER INSTALLATION

- Insert the end of a flat blade screwdriver at the arrow parts of the groove at the side of the remote controller case and remove the remote controller case top by turning the screwdriver.
- Disconnect the remote controller cord from the remote controller terminal board.

Fig. 51



- When remote controller exposed
  - Make a notch in the thin part (part of Fig. 51) at the remote controller case top and bottom with nippers, file, etc.
  - Connect the remote controller cord to the remote controller terminal board specified in (Fig. 52).
  - Clamp the remote controller cord sheath with the binder (small) as shown in Fig. 52.
  - Cut off the excess binder.
  - Clamp the remote controller cord to a wall, etc. with the remote controller cord clamp furnished (Fig. 53).

Fig. 52

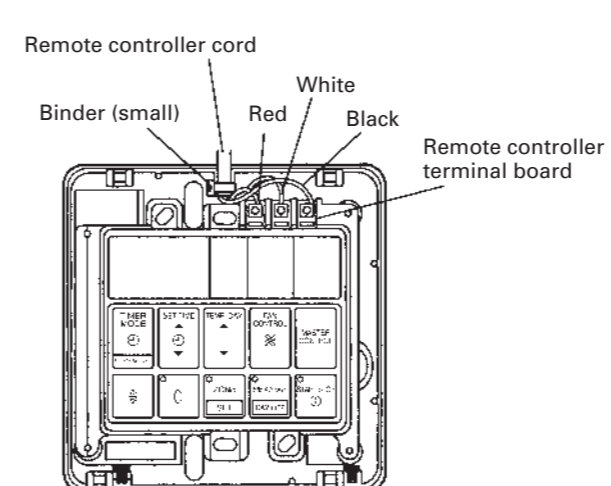
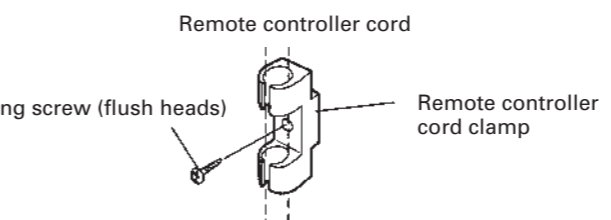
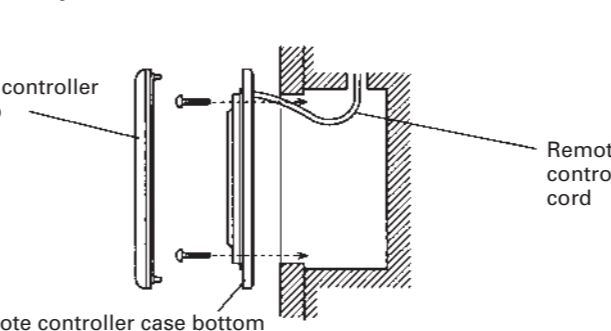


Fig. 53



- When remote controller cord embedded
  - Embed the remote controller cord and box.
  - Pass the remote controller cord through the hole at the remote controller case bottom and install the cord to the box (Fig. 54).
  - Connect the remote controller cord to the remote controller terminal board specified in (Fig. 52).

Fig. 54 [Example]



- After wiring work is complete, return the remote controller case top to its original state.

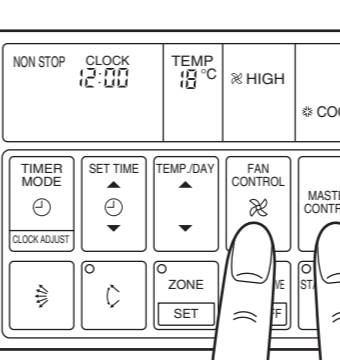
### CAUTION

- Do not bundle the remote controller cord, or wire the remote controller cord in parallel, with the indoor unit connection wire (to the outdoor unit) and the power supply cord. It may cause erroneous operation.
- When installing the remote controller and cord near a source of electromagnetic waves, separate the remote controller from the source of the electromagnetic waves and use shielded cord.
- Do not touch the remote controller PC board and PC board parts directly with your hands.

## TEST RUNNING

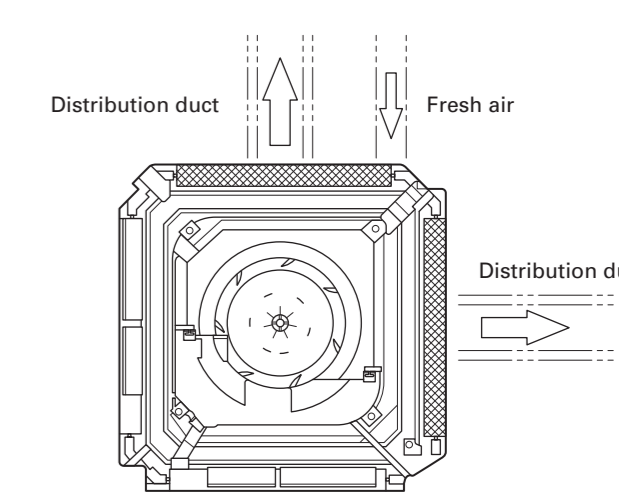
- REMOTE CONTROLLER
  - Supply power to the crankcase heater 12 hours before the start of operation in the winter.
  - For test running, when the remote controller FAN CONTROL button and MASTER CONTROL button are pressed simultaneously for more than three seconds when the air conditioner is not running, the air conditioner starts and TEST is displayed on the remote controller display. However, the SET TEMP./DAY setting button does not function, but all other buttons, displays, and protection functions operate (Fig. 55).

Fig. 55



## OPENING THE DUCT CONNECTION HOLE

Fig. 58



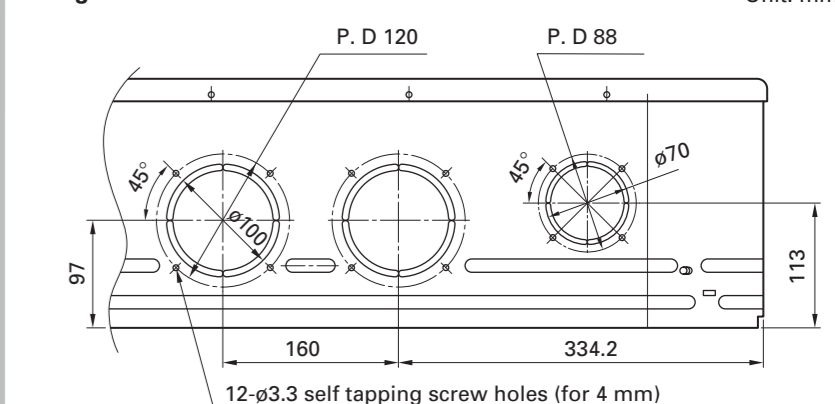
### CAUTION

- 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. 58. For the blocking direction, refer to Fig. 43.

### 1. DIMENSION

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

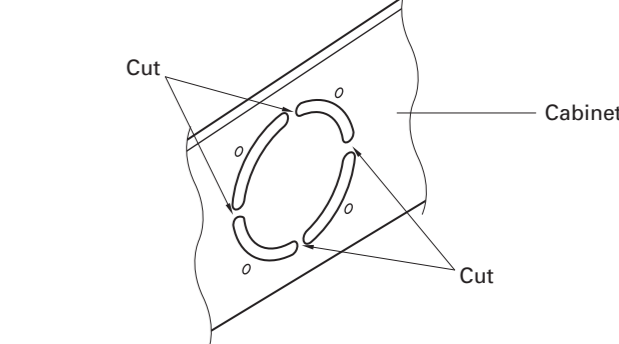
Fig. 59



### 2. DISTRIBUTION DUCT AND FRESH AIR DUCT HOLE PROCESSING

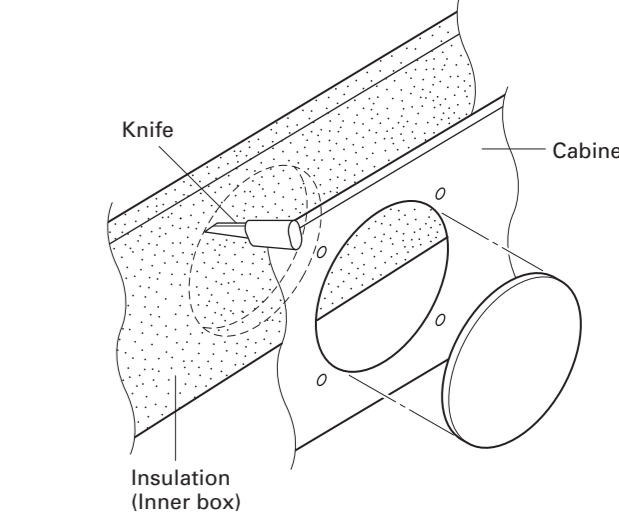
Use the distribution duct hole and fresh air duct hole by removing the insulation material as shown below.

Fig. 60



- Cut off the part (Cabinet) indicated by the arrow in the Fig. 60 with nippers, needle nose pliers, etc.

Fig. 61



- 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.

- When EE:EE blinks at the current time display, there is an error inside the air conditioner. If the SET TIME button (↖) and SET TEMP./DAY button (↘) are pressed simultaneously for more than three seconds, the self diagnosis check will start and the error contents will be displayed at the current time display (Fig. 56). When the operation lamp lights, press the START/STOP button and after operation lamp goes off, perform the same operation (Fig. 56). Process the error contents by referring to (Table 9).

Fig. 56

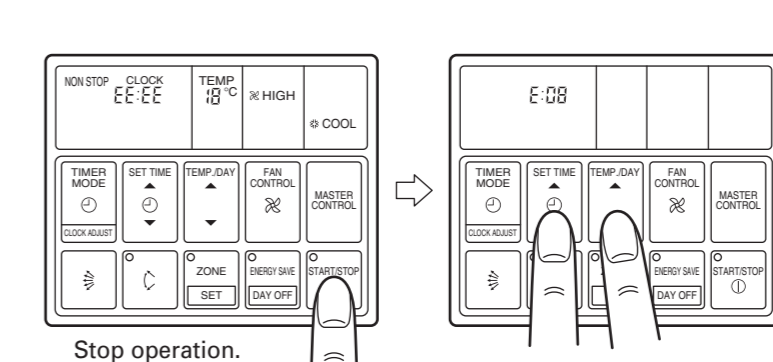


Table 9

Error code	Error contents
E-00	Communication error (indoor unit → remote controller)
E-01	Communication error (indoor unit → outdoor unit)
E-02	Room temperature sensor open
E-03	Room temperature sensor shorted
E-04	Indoor heat exchanger temperature sensor open
E-05	Indoor heat exchanger temperature sensor shorted
E-06	Outdoor heat exchanger temperature sensor open
E-07	Outdoor heat exchanger temperature sensor shorted
E-08	Power source connection error
E-09	Float switch operated
E-0A	Outdoor temperature sensor open
E-0B	Outdoor temperature sensor shorted
E-0C	Discharge pipe temperature sensor open
E-0D	Discharge pipe temperature sensor shorted
E-0E	Outdoor high pressure abnormal
E-0F	Discharge pipe temperature abnormal
E-11	Model abnormal
E-12	Indoor fan abnormal
E-13	Outdoor signal abnormal
E-14	Outdoor EEPROM abnormal

### 2. OUTDOOR UNIT

When the outdoor temperature drops, the outdoor unit's fans may switch to low speed, or one of the fans may stop intermittently.

#### ERROR

The LED lamps operate as follows (Table 10) according to the error contents.

Table 10

Error contents	LED1	LED2	LED3	LED4	LED5	LED6
Signal abnormal	—	—	×	○	×	×
Indoor unit abnormal	—	—	×	×	○	×
Discharge pipe temperature abnormal	—	—	×	×	×	○
Outdoor heat exchanger temperature abnormal	—	—	×	×	○	○
Outdoor temperature abnormal	—	—	×	○	×	○
Power source connection error	—	—	○	×	×	×
EEPROM abnormal	—	—	○	○	○	○
Outdoor high pressure abnormal	○	—	—	—	—	—
Discharge pipe temperature abnormal	—	○	—	—	—	—

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

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. 57.

Fig. 57

