

# Refrigerant R410A Cassette Type SPLIT TYPE AIR CONDITIONER INSTALLATION INSTRUCTION SHEET

(PART NO. 9365388044)

- 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.

## This air conditioner uses new refrigerant HFC (R410A).

The basic installation work procedures are the same as conventional refrigerant (R22) models. However, pay careful attention to the following points:

- Since the working pressure is 1.6 times higher than that of conventional refrigerant (R22) models, some of the piping and installation and service tools are special. (See the table below.) Especially, when replacing a conventional refrigerant (R22) model with a new refrigerant R410A model, always replace the conventional piping and flare nuts with the R410A piping and flare nuts.
- Models that use refrigerant R410A have a different charging port thread diameter to prevent erroneous charging with conventional refrigerant (R22) and for safety. Therefore, check beforehand. (The charging port thread diameter for R410A is 1/2 UNF 20 threads per inch.)
- Be more careful that foreign matter (oil, water, etc.) does not enter the piping than with refrigerant (R22) models. Also, when storing the piping, securely seal the openings by pinching, taping, etc.
- When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable.

### Special tools for R410A

| Tool name            | Contents of change  |
|----------------------|---|
| Gauge manifold       | Pressure is high and cannot be measured with a conventional gauge. To prevent erroneous mixing of other refrigerants, the diameter of each port has been changed. It is recommended the gauge with seals -0.1 to 5.3 MPa (-76 cmHg to 53 kgf/cm <sup>2</sup> ) for high pressure. -0.1 to 3.8 MPa (-76 cmHg to 38 kgf/cm <sup>2</sup> ) for low pressure. |
| Charge hose          | To increase pressure resistance, the hose material and base size were changed.  |
| Vacuum pump          | A conventional vacuum pump can be used by installing a vacuum pump adapter.   |
| Gas leakage detector | Special gas leakage detector for HFC refrigerant R410A.   |

### Copper pipes

It is necessary to use seamless copper pipes and it is desirable that the amount of residual oil is less than 40 mg/10 m. Do not use copper pipes having a collapsed, deformed or discolored portion (especially on the interior surface). Otherwise, the expansion valve or capillary tube may become blocked with contaminants. As an air conditioner using R410A incurs pressure higher than when using R22, it is necessary to choose adequate materials. Thicknesses of copper pipes used with R410A are as shown in Table 1. Never use copper pipes thinner than 0.8 mm (Nominal diameter is 3/8 in.), 1.0 mm (Nominal diameter is 5/8 in.) even when it is available on the market.

Table 1 Thicknesses of Annealed Copper Pipes

| Nominal diameter (inch) | Outer diameter (mm) | Thickness (mm) |            |
|-------------------------|---------------------|----------------|------------|
|                         |                     | R410A          | [ref.] R22 |
| 3/8                     | 9.52                | 0.80           | 0.80       |
| 5/8                     | 15.88               | 1.00           | 1.00       |

### For authorized service personnel only.

- WARNING**

  - For the air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet.
  - Connect the indoor unit and outdoor unit with the air conditioner piping and cords available standards parts. This installation instruction sheet describes the correct connections using the installation set available from our standard parts.
  - Installation work must be performed in accordance with national wiring standards by authorized personnel only.
  - If refrigerant leaks while work is being carried out, ventilate the area. If the refrigerant comes in contact with a flame, it produces a toxic gas.
  - Do not use an extension cord.
  - Do not turn on the power until all installation work is complete.

  - Be careful not to scratch the air conditioner when handling it.
  - After installation, explain correct operation to the customer, using the operating manual.
  - Let the customer keep this installation instruction sheet because it is used when the air conditioner is serviced or moved.

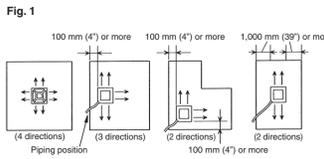
## SELECTING THE MOUNTING POSITION

- 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**

  - Do not install where there is the danger of combustible gas leakage.
  - Do not install near heat sources.
  - If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

Especially, the installation place is very important for the split type air conditioner because it is very difficult to move from place to place after the first installation. Decide the mounting position together with the customer as follows: The discharge direction can be selected as shown below.

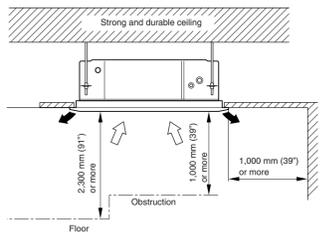


- CAUTION** Since 2-way outlet as shown below causes performance problems, do not set it.
- 

### INDOOR UNIT

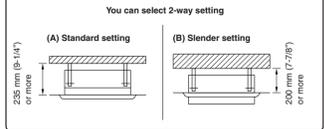
- Install the indoor unit on a place having a sufficient strength so that it withstands against the weight of the indoor unit.
- The inlet and outlet ports should not be obstructed; the air should be able to blow all over the room.
- Leave the space required to service the air conditioner (Fig. 2).
- The ceiling rear height as shown in Fig. 3.
- A place from where the air can be distributed evenly throughout the room by the unit.
- A place from where drainage can be extracted outdoors easily.
- Install the unit where noise and vibrations are not amplified.

Fig. 2



This mechanism enables the cassette body to move 35 mm downward and realizes installation to the space of 200 mm. No special works and option is needed.

Fig. 3



## STANDARD PARTS

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

### INDOOR UNIT ACCESSORIES

| Name and Shape               | Qty | Application                           |
|------------------------------|-----|---------------------------------------|
| Coupler heat insulation      | 2   | For indoor side pipe joint            |
| Special nut A (large flange) | 4   | For installing indoor unit            |
| Special nut B (small flange) | 4   | For installing indoor unit            |
| Template                     | 1   | For ceiling hole cutting              |
| Blower cover insulation      | 2   | For discharged air                    |
| Hook wire                    | 2   | For installing intake grille.         |
| Binder (small)               | 1   | For fixing the remote controller cord |
| Remote controller            | 1   |                                       |
| Tagging screw (flush heads)  | 2   | For installing the remote controller  |
| Remote controller cord       | 1   | For connecting the remote controller  |

### OUTDOOR UNIT ACCESSORIES

|            |   |   |
|------------|---|---|
| Drain pipe | 1 | For outdoor unit drain piping work [Heat & Cool model (Reverse cycle) only] |
| Drain cap  | 1 |   |

## INSTALLATION PROCEDURE

Install the air conditioner as follows:

### 1 INDOOR UNIT INSTALLATION

#### WARNING

- Install the air conditioner in a location which can withstand a load do 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 (two places).
- Open the intake grille.

Fig. 5

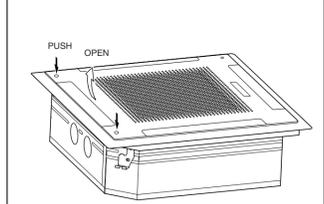
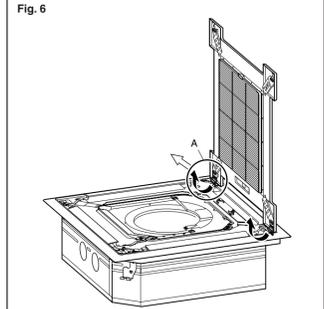
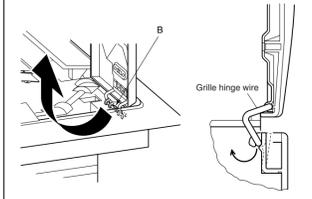


Fig. 6



- Pull up while pressing the B section (Fig. 7).

Fig. 7 Part A detail view Fig. 8 Part A section view



(4) Remove the intake grille.

#### REMOVING THE PANEL FRAME

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

Fig. 9 Part A detail view

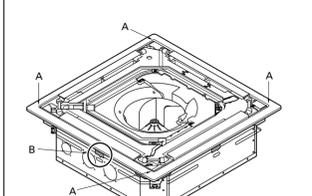
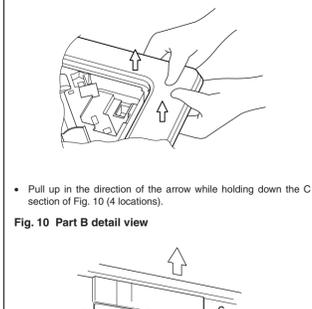


Fig. 10 Part B detail view



## CONNECTION PIPE REQUIREMENT

| Diameter       | Maximum length  | Maximum Height (between indoor and outdoor) |              |
|----------------|-----------------|---|--------------|
|                |                 | Small                                       | Large        |
| 9.52 mm (3/8") | 15.88 mm (5/8") | 25 m (82 ft)                                | 15 m (50 ft) |

- Use pipe with water-resistant heat insulation.

#### CAUTION

Install heat insulation around both the gas and liquid pipes. Failure to do so may cause water leaks. Use heat insulation with heat resistance above 120 °C. (Reverse cycle model only) In addition, if the humidity level at the installation location of the refrigerant piping is expected to exceed 70%, install heat insulation around the refrigerant piping. If the expected humidity level is 70-80%, use heat insulation that is 15 mm or thicker and if the expected humidity exceeds 80%, use heat insulation that is 20 mm or thicker. If heat insulation is used that is not as thick as specified, condensation may form on the surface of the insulation. In addition, use heat insulation with heat conductivity of 0.045 W-(m·K) or less (at 20 °C).

## ELECTRICAL REQUIREMENT

- Electric wire size and fuse/breaker capacity:

| Power supply cord (mm <sup>2</sup> ) | MAX. MIN. | 4.0 3.5 |
|--------------------------------------|-----------|---------|
| Connection cord (mm <sup>2</sup> )   | MAX. MIN. | 2.5 1.5 |
| Fuse/Breaker capacity (A)            |           | 30      |

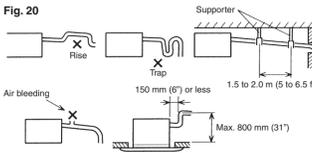
- Always use H07RN-F or equivalent to the connection cord.
- Install the disconnect device with a contact gap of at least 3 mm nearby the units (both indoor unit and outdoor unit).

## 2 INSTALLING DRAIN PIPE

#### CAUTION

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

- NOTE: Install the drain pipe.**
- 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 32 mm (1-1/4")) and connect it with adhesive (polyvinyl chloride) so that there is no leakage.
  - When the pipe is long, install supporters.
  - Do not perform air bleeding.
  - Always heat insulate the indoor side of the drain pipe.
  - When desiring a high drain pipe height, raise it up to 800 mm (31") or less from the ceiling within a range of 150 mm (6") from the body. A rise dimension over this range will cause leakage.

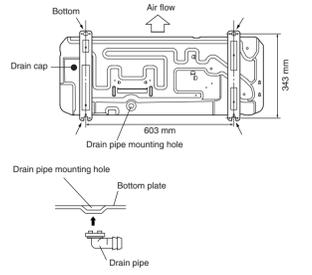


## 3 OUTDOOR UNIT INSTALLATION

### 1. OUTDOOR UNIT PROCESSING

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

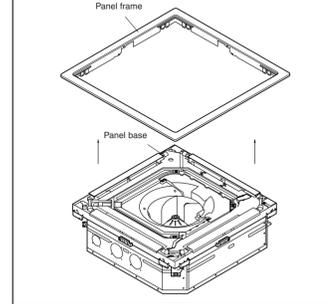
Fig. 21



#### 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.

Fig. 11

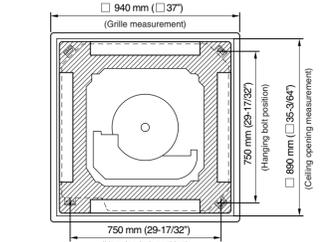


#### CAUTION

Always remove the panel frame after removing the intake grille.

### 1. POSITION THE CEILING HOLE AND HANGING BOLTS

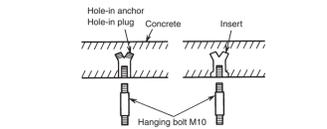
Fig. 12



### 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 kgf per bolt.

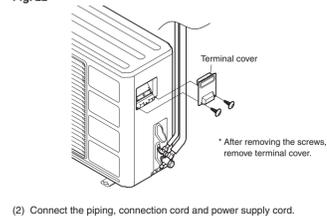
Fig. 13



## 2. OUTDOOR UNIT CONNECTION CORD AND PIPE CONNECTION PREPARATIONS

- Remove outdoor unit terminal cover.

Fig. 22



- Connect the piping, connection cord and power supply cord.

## 4 CONNECTING THE PIPING

#### WARNING

Do not use the existing (for R22) piping and flare nuts. If the existing materials are used, the pressure inside the refrigerant cycle will rise and cause breakage, injury, etc. (Use the special R410A materials.)

#### CAUTION

- Do not use mineral oil on flared part. Prevent mineral oil from getting into the system as this would reduce the lifetime of the units.
- While welding the pipes, be sure to blow dry nitrogen gas through them.
- The maximum lengths of this product are shown in table 2. If the units are further apart than this, correct operation can not be guaranteed.

### 1. FLARING

- Cut the connection pipe to the necessary length with a pipe cutter.
- Hold the pipe downward so that cuttings will not enter the pipe and remove the burrs.
- Insert the flare nut (Always use the flare nut attached to the indoor and outdoor units respectively) onto the pipe and perform the flare processing with a flare tool. Use the special R410A flare tool, or the conventional (for R22) flare tool. When using the conventional flare tool, always use an allowance adjustment gauge and secure the A dimension shown in table 4.

Fig. 23

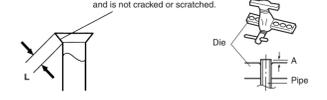
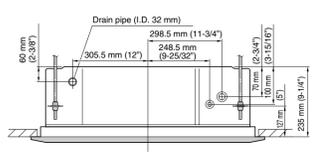


Table 4 Pipe outside diameter

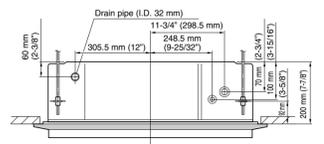
| Pipe outside diameter | A (mm)                           |   |               |
|-----------------------|----------------------------------|---|---------------|
|                       | Flare tool for R410A clutch type | Conventional (R22) flare tool Clutch type | Wing nut type |
| 9.52 mm (3/8 in.)     | 0 to 0.5                         | 1.0 to 1.5                                | 1.5 to 2.0    |
| 15.88 mm (5/8 in.)    | 0 to 0.5                         | 1.0 to 1.5                                | 2.0 to 2.5    |

Fig. 14

### (A) Standard setting



### (B) Slender setting



## 3. BODY INSTALLATION

[The ceiling rear height is 235 mm (9-1/4") or more.] [Standard setting] [The ceiling rear height is 200 mm (7-7/8") or more.] [Slender setting]

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

#### WARNING

Perform final tightening by tightening the double nut firmly.

Fig. 15

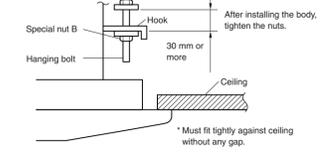
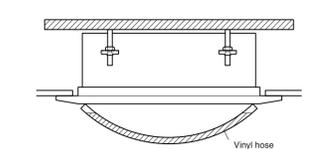


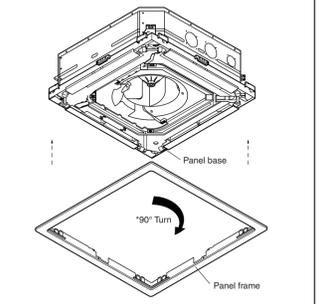
Fig. 16



\* Allowable space between the unit and the ceiling 5 mm or less

## INSTALLING THE PANEL FRAME

Fig. 17



\* With slender setting, turn the panel frame 90° as shown in the diagram above.

Fig. 18

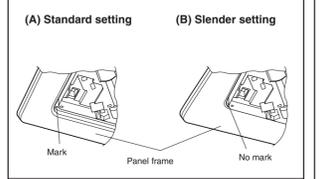
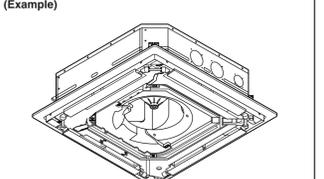


Fig. 19 (Example)

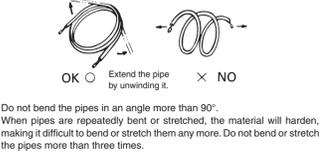


\* Appearance of slender setting

## 2. BENDING PIPES

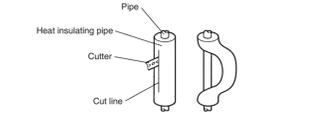
The pipes are shaped by your hands. Be careful not to collapse them.

Fig. 24



Do not bend the pipes in an angle more than 90°. When pipes are repeatedly bent or stretched, the material will harden, making it difficult to bend or stretch them any more. Do not bend or stretch the pipes more than three times.

Fig. 25



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. 25, and bend it after exposing the pipe. After bending the pipe as you want, be sure to put the heat insulating pipe back on the pipe, and secure it with tape.

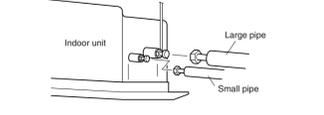
#### CAUTION

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

## 3. CONNECTION PIPES

- Indoor unit side

Fig. 26

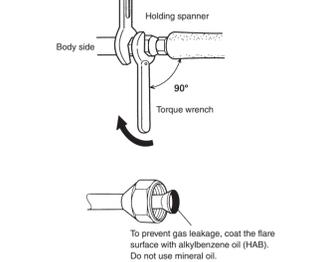


#### CAUTION

- 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.
- 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 spanner, then tighten with a torque wrench (Fig. 27).

Fig. 27



#### CAUTION

Hold the torque wrench at its grip, keeping it in the right angle with the pipe as shown in Fig. 27, in order to tighten the flare nut correctly.

Table 5 Flare nut tightening torque

| Flare nut               | Tightening torque                |
|-------------------------|----------------------------------|
| 9.52 mm (3/8 in.) dia.  | 33 to 42 N·m (330 to 420 kgf-cm) |
| 15.88 mm (5/8 in.) dia. | 63 to 77 N·m (630 to 770 kgf-cm) |

Do not remove the cap from the connection pipe before connecting the pipe.

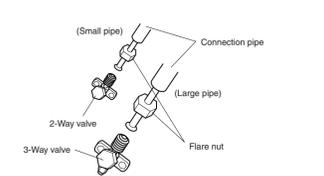
#### CAUTION

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

- Outdoor unit side

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

Fig. 28



## VACUUM PROCESS

### 2. ADDITIONAL CHARGE

Refrigerant suitable for a piping length of 7.5 m is charged in the outdoor unit at the factory.  
When the piping is longer than 7.5 m, additional charging is necessary. For the additional amount, see the table below.

| Additional refrigerant      | Pipe length   |                |                 |                 |
|-----------------------------|---------------|----------------|-----------------|-----------------|
|                             | 7.5 m (25 ft) | 10 m (33 ft)   | 15 m (49 ft)    | 20 m (66 ft)    |
| Heat & Cool (Reverse cycle) | None          | 100 g (3.5 oz) | 300 g (10.6 oz) | 500 g (17.6 oz) |
| Cooling model               | None          | 50 g (1.8 oz)  | 150 g (5.3 oz)  | 250 g (8.8 oz)  |

Between 7.5 m and 25 m, when using a connection pipe other than that in the table, charge additional refrigerant with 40 g (1.4 oz)/1 m (3.3 ft) (Reverse cycle model), 20 g (0.71 oz)/1 m (3.3 ft) (Cooling model) as the criteria.

### CAUTION

When moving and installing the air conditioner, do not mix gas other than the specified refrigerant (R410A) inside the refrigerant cycle.

When charging the refrigerant R410A, always use an electronic balance for refrigerant charging (to measure the refrigerant by weight).

When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable.

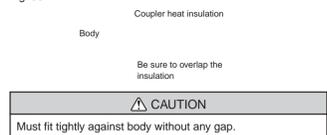
Add refrigerant from the charging valve after the completion of the work.

If the units are further apart than the maximum pipe length, correct operation can not be guaranteed.

## INSTALLING THE COUPLER HEAT INSULATION

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

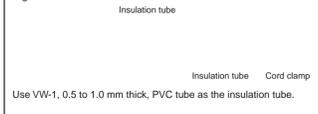
Fig. 30



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

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

Fig. 32



### 1. INDOOR UNIT SIDE

#### WARNING

Before starting work, check that power is not being supplied to the indoor unit and outdoor 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.

## ELECTRICAL WIRING

### HOW TO CONNECT WIRING TO THE TERMINALS

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

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 25 mm (15/160) of expose the solid wire.
- Using a screwdriver, remove the terminal screw(s) on the terminal board.
- Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
- Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.

#### B. For strand wiring

- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 10 mm (3/80) 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.

Fig. 31

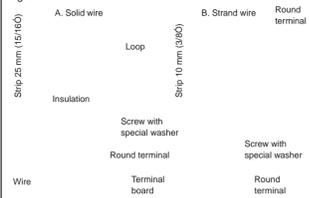
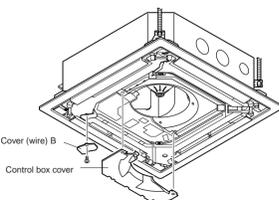


Fig. 33



- 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.

Fig. 34

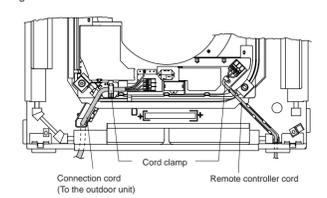
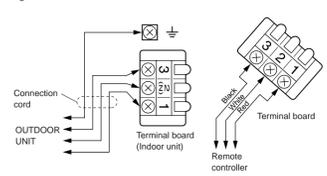


Fig. 35

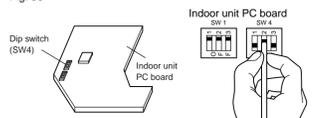


#### Ceiling height setting

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

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

Fig. 36



Do not set any switches other than those specified in this 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 indoor unit and 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.

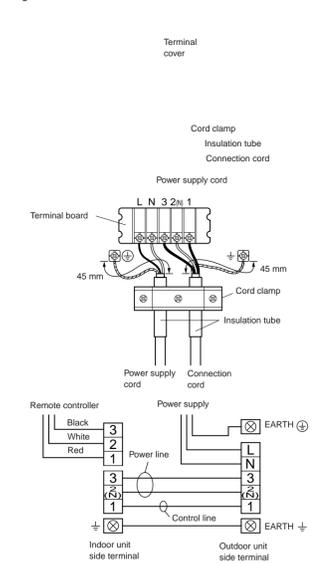
Connect the connection cords and the power supply cord firmly to the terminal board. Imperfect installation may cause a fire.

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 the terminal cover of the outdoor unit, and insert the end of the connection cord and the power supply cord into the terminal board.
- Fasten the connection cord and the power supply cord with the cord clamp, and install the terminal cover.

Fig. 37



When routing the ground wires, leave slack as shown in the illustrations.

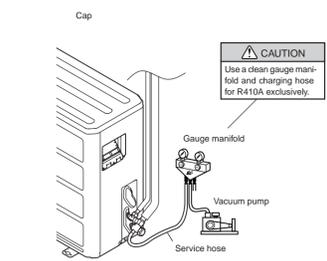
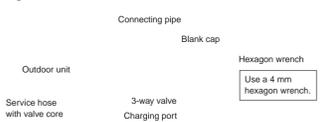
### 1. VACUUM

- Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve and the service hoses.
- Vacuum the indoor unit and the connecting pipes until the pressure gauge indicates 0.1 MPa (0.76 cmHg).
- When 0.1 MPa (0.76 cmHg) is reached, operate the vacuum pump for at least 15 minutes.
- Disconnect the service hoses and fit the cap to the charging valve to the specified torque.
- Remove the blank caps, and fully open the spindles of the 2-way and 3-way valves with a hexagon wrench (Torque : 6 to 7 N·m (60 to 70 kgf·cm)).
- Tighten the blank caps of the 2-way valve and 3-way valve to the specified torque.

Table 6

|                         | Tightening torque                |
|-------------------------|----------------------------------|
| Blank cap (2-way valve) | 20 to 25 N·m (200 to 250 kgf·cm) |
| Blank cap (3-way valve) | 30 to 35 N·m (300 to 350 kgf·cm) |
| Charging port cap       | 10 to 12 N·m (100 to 120 kgf·cm) |

Fig. 29



## POWER

#### WARNING

The rated voltage of this product is 230 V A.C. 50 Hz.  
Before turning on verify that the voltage is within the 198 V to 264 V range.  
Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.  
Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner. (Install in accordance with standard.)  
Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.  
Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.

#### CAUTION

The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.  
When the voltage is low and the air conditioner is difficult to start, contact the power company the voltage raised.  
This air conditioner must be connected to a power source that has an electrical impedance of 0.159 or less or has a supply current of 100 A or greater. If the power supply does not meet the specifications, contact the power company.

## REMOTE CONTROLLER SETTING

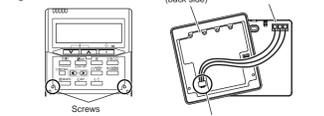
#### CAUTION

In order to detect the room temperature correctly when using the temperature sensor of the remote controller, do not install the remote controller in a place where it will be exposed to direct sunlight or directly below the air outlet of the indoor unit.  
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.

### 1. INSTALLING THE REMOTE CONTROLLER

- Open the operation panel on the front of the remote controller, remove the two screws indicated in the following figure, and then remove the front case of the remote controller.

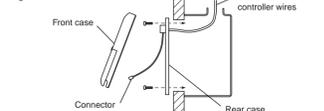
Fig. 46



When installing the remote controller, remove the connector from the front case. The wires may break if the connector is not removed and the front case hangs down.  
When installing the front case, connect the connector to the front case.

- Install the rear case to the wall, etc. with the two tapping screws. Refer to the following information to install the remote controller wires.

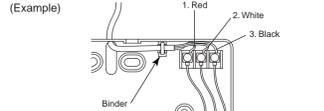
Fig. 47



### 2. ROUTING THE REMOTE CONTROLLER WIRES

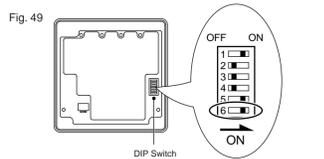
- Install the remote controller wires to the terminals on the top of the rear case as shown in the following figure.
- Fasten the wires with the binder.
- If the remote controller wires run through the room, use a tool to cut away the thin area on the upper center of the front case.

Fig. 48 (Example)



### 3. SETTING THE DIP SWITCHES

When using a battery (memory backup)



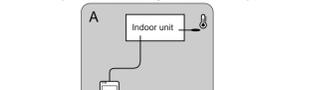
Change the DIP switch setting to use batteries. (The DIP switch is not set to use batteries at the factory.)  
Change DIP switch No. 6 from OFF to ON.  
If batteries are not used, all of the settings stored in memory will be deleted if there is a power failure.

### 4. SETTING THE ROOM TEMPERATURE DETECTION LOCATION

The detection location of the room temperature can be selected from the following three examples. Choose the detection location that is best for the installation location.

#### A. Indoor unit setting (factory setting)

The room temperature is detected by the indoor unit temperature sensor.



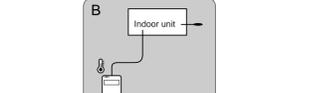
- When the THERMO SENSOR button is pressed, the lock display flashes because the function is locked at the factory.

Fig. 50



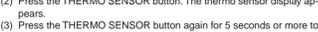
#### B. Remote controller setting

The room temperature is detected by the remote controller temperature sensor.



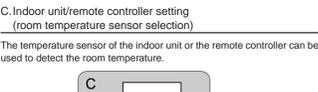
- Press the THERMO SENSOR button for 5 seconds or more to unlock the function. The thermo sensor display flashes and then disappears when the function is unlocked.
- Press the THERMO SENSOR button. The thermo sensor display appears.
- Press the THERMO SENSOR button again for 5 seconds or more to lock the function. The thermo sensor display flashes and then remains on when the function is locked.
- Make sure that the function is locked.

Fig. 51



#### C. Indoor unit/remote controller setting (room temperature sensor selection)

The temperature sensor of the indoor unit or the remote controller can be used to detect the room temperature.



- Press the THERMO SENSOR button for 5 seconds or more to unlock the function. The thermo sensor display flashes and then disappears when the function is unlocked.
- Press the THERMO SENSOR button to select the temperature sensor of the indoor unit or the remote controller.

Fig. 52



When the function to change the temperature sensor is used as shown in examples A and B (other than example C), be sure to lock the detection location. If the function is locked, the lock display will flash when the THERMO SENSOR button is pressed.

#### NOTES

If the function to change the temperature sensor is used as shown in examples A and B (other than example C), be sure to lock the detection location. If the function is locked, the lock display will flash when the THERMO SENSOR button is pressed.

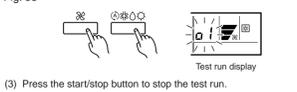
## TEST RUN

#### CAUTION

Supply power to the crankcase heater for at least 12 hours before the start of operation in winter.

- Stop the air conditioner operation.
- Press the master control button and the fan control button simultaneously for 2 seconds or more to start the test run.

Fig. 53



- Press the start/stop button to stop the test run.

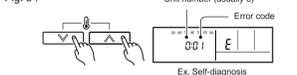
#### [SELF-DIAGNOSIS]

When the error indication  $\text{E}$  or  $\text{EE}$  is displayed, follow the following items to perform the self-diagnosis.  $\text{E}$ : Error code,  $\text{EE}$ : Error code.

#### 1. REMOTE CONTROLLER DISPLAY

- Stop the air conditioner operation.
- Press the set temperature buttons  $\Delta / \nabla$  simultaneously for 5 seconds or more to start the self-diagnosis. Refer to the following tables for the description of each error code.

Fig. 54



#### Table 9

| Error code | Error contents  |
|------------|---|
| 00         | Communication error (indoor unit $\leftrightarrow$ remote controller) |
| 01         | Communication error (indoor unit $\leftrightarrow$ outdoor unit)      |
| 02         | Room temperature sensor open  |
| 03         | Room temperature sensor short-circuited                               |
| 04         | Indoor heat exchanger temperature sensor open                         |
| 05         | Indoor heat exchanger temperature sensor short-circuited              |
| 06         | Outdoor heat exchanger temperature sensor open                        |
| 07         | Outdoor heat exchanger temperature sensor short-circuited             |
| 08         | Power source connection error   |
| 09         | Float switch operated   |
| 0A         | Outdoor temperature sensor open                                       |
| 0b         | Outdoor temperature sensor short-circuited                            |
| 0c         | Discharge pipe temperature sensor open                                |
| 0d         | Discharge pipe temperature sensor short-circuited                     |

| Error code | Error contents                      |
|------------|-------------------------------------|
| 0E         | Outdoor high pressure abnormal      |
| 0F         | Discharge pipe temperature abnormal |
| 11         | Model abnormal                      |
| 12         | Indoor fan abnormal                 |
| 13         | Outdoor signal abnormal             |
| 14         | Outdoor EEPROM abnormal             |

### 2. OUTDOOR UNIT LEDS

Heat & Cool model (reverse cycle) only

When a malfunction occurs in the outdoor unit, the LEDs on the circuit board light to indicate the error. Refer to the following table for the description of each error according to the LEDs.

Table 10

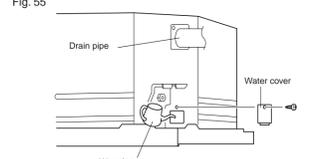
| LED1                       | LED2                       | Error contents                                  |
|----------------------------|----------------------------|---|
| ON 0.1 sec. / OFF 0.1 sec. | ON 0.1 sec. / OFF 0.1 sec. | Model abnormal or EEPROM abnormal               |
| Quick flash continued      | Quick flash continued      | Power source connection error                   |
| ON 0.5 sec. / OFF 2.2 sec. | ON 0.5 sec. / OFF 2.2 sec. | Discharge temperature sensor error              |
| 1 quick flash repeated     | Lighting continued         | Outdoor heat exchanger temperature sensor error |
| 2 quick flash repeated     | Lighting continued         | Outdoor temperature sensor error                |
| 3 quick flash repeated     | Lighting continued         | Communication signal error                      |
| 4 quick flash repeated     | Lighting continued         | Indoor unit error                               |
| 5 quick flash repeated     | Lighting continued         | Discharge temperature abnormal                  |
| 6 quick flash repeated     | Lighting continued         | High pressure abnormal                          |
| 7 quick flash repeated     | Lighting continued         |   |
| 8 quick flash repeated     | Lighting continued         |   |

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. 55.

Fig. 55



## SPECIAL INSTALLATION METHODS

#### CAUTION

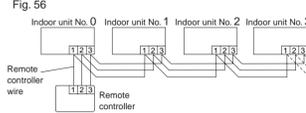
When setting the rotary switch and DIP switches, do not touch any other parts on the circuit board directly with your bare hands.  
Be sure to turn off the main power.

### 1. GROUP CONTROL SYSTEM

A number of indoor units can be operated at the same time using a single remote controller.

- Wiring method (indoor unit to remote controller)

Fig. 56



- Rotary switch setting (indoor unit)

Set the unit number of each indoor unit using the rotary switch on the indoor unit circuit board.  
The rotary switch is normally set to 0.

- DIP switch setting (remote controller)

Change DIP switch No. 3 on the remote controller from OFF to ON.

Fig. 57



### 2. DUAL REMOTE CONTROLLERS (OPTIONAL)

Two separate remote controllers can be used to operate the indoor units.

- Wiring method (indoor unit to remote controller)

Fig. 59

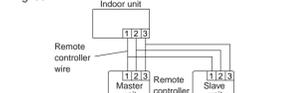
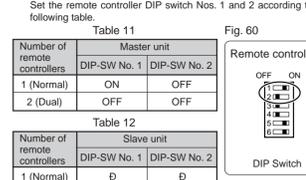


Fig. 60



### 3. AUTO RESTART

When the air conditioner power was temporarily turned off by a power failure etc., it restarts automatically after the power recovers. (Operated by setting before the power failure)

The auto restart function can be canceled.

- DIP switch setting (indoor unit)

Change the DIP switch (SW1-1) on the indoor unit circuit board from ON to OFF. The auto restart function will be canceled.

Fig. 61



#### [DIP-SWITCH SETTING]

#### Indoor unit

| NO.          | SW state |            | Detail                                     |
|--------------|----------|------------|--|
|              | OFF      | ON         |  |
| DIP-Switch 1 | 1        | Invalidity | Auto restart setting                       |
|              | 2        | N          | Temperature correction setting for heating |
|              |          |            |  |