

5. 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.

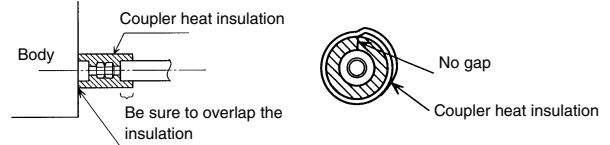
Pipe length	7.5 m (25 ft)	10 m (33 ft)	15 m (49 ft)	Additional refrigerant		
				Heat & Cool (Reverse cycle)	Reverse cycle	Model
None	None	100 g (3.5 oz)	300 g (10.6 oz)	500 g (17.6 oz)	700 g (24.7 oz)	900 g (31.7 oz)
None	50 g (1.8 oz)	150 g (5.3 oz)	250 g (8.8 oz)	350 g (12.3 oz)	450 g (15.9 oz)	550 g (19.4 oz)

Between 7.5 m and 30 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.

- GAS LEAKAGE INSPECTION**
- CAUTION**
- After connecting the piping, check the all joints for gas leakage with gas leak detector.
 - When inspecting gas leakage, always use the vacuum pump for pressure. Do not use nitrogen gas.

- HEAT INSULATION ON THE PIPE JOINTS (INDOOR SIDE ONLY)**
- After checking for gas leaks, insulate by wrapping insulation around the two parts (gas and liquid) 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.

5 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 latest 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.

CAUTION

- Do not bundle the remote controller cable, or wire the remote controller cable in parallel, with the indoor unit connection wire (to the outdoor unit) and the power supply cable. It may cause erroneous operation.

6 ELECTRICAL WIRING

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 cable colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.
- Connect the connection cables firmly to the terminal board. Imperfect installation may cause a fire.
- Always fasten the outside covering of the connection cable with the cable clamp. (If the insulator is chafed, electric leakage may occur.)
- Always connect the ground wire.

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 to 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 to 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.

CAUTION
Do not bundle the remote controller cable, or wire the remote controller cable in parallel, with the indoor unit connection wire (to the outdoor unit) and the power supply cable. It may cause erroneous operation.

3. CONNECTION DIAGRAMS

Remote controller, Power supply, Indoor unit side terminal, Outdoor unit side terminal.

2. CONNECTION CABLE PREPARATION

For earth, 30 mm, 40 mm or more, Power supply cable or connection cable.

3. INDOOR UNIT

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

4. OUTDOOR UNIT

- Service cover removal
 - Remove the two mounting screws.
 - Remove the service cover by pushing downwards.
- Valve cover removal
 - Remove the one mounting screw.
 - Remove the valve cover by sliding upward.
- Connect the power supply cable and the connection cable to terminal.
- Fasten the power supply cable and connection cable with cable clamp.

CAUTION
Do not make power supply cable and connection cable come in contact with valve (Gas).

4. OUTDOOR UNIT

- Service cover removal
- Valve cover removal
- Connect the power supply cable and the connection cable to terminal.
- Fasten the power supply cable and connection cable with cable clamp.

CAUTION
Do not make power supply cable and connection cable come in contact with valve (Gas).

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

CAUTION
If the setting for a low ceiling is selected, the capacity of the air conditioner decreases slightly.

CAUTION
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.

7 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 the figure. At this time, use the piping position as the criteria.

INSTALLING THE INTAKE GRILLE
(1) Mount the grille hinge wire to the hook shaft as shown in the figure.

CAUTION
Install the intake grille hook wire to the grille assembly. If it fails, it may cause injuries.

(4) Bring up the intake grille by pushing it up at an angle as shown in the figure, and fasten.

8 REMOTE CONTROLLER SETTING

CAUTION

- When detecting the room temperature using the remote controller, please set up the remote controller according to the following conditions.
If the remote controller is not well set, the correct room temperature will not be detected, and thus the abnormal conditions like "not cooled" or "not heated" will occur even if the air conditioner is running normally.
 - A location with an average temperature for the room being airconditioned.
 - Not directly exposed to the outlet air from the air conditioner.
 - Out of direct sunlight.
 - Away from the influence of other heat sources.
- When installing the remote controller and cable near a source of electromagnetic waves, separate the remote controller from the source of the electromagnetic waves and use shielded cable.
- 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.

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.

(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 when the function is locked at the factory.

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.

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.

CAUTION
When select the "Remote controller setting", if the detected temperature value between the temperature sensor of the indoor unit and the temperature sensor of the remote controller varies significantly, it is likely to return to the control status of temperature sensor of the indoor unit temporarily.

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.

9 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 MODE button and FAN button simultaneously for 2 seconds or more to start the test run.
- Press the START/STOP button to stop the test run.

[SELF-DIAGNOSIS]
When the error indication "E-EE" is displayed, follow the following items to perform the self-diagnosis. "E-EE" indicates an error has occurred.

1. REMOTE CONTROLLER DISPLAY

- Stop the air conditioner operation.
- Press the SET TEMP. buttons Δ / ∇ simultaneously for 5 seconds or more to start the self-diagnosis. Refer to the following tables for the description of each error code.
- Press the SET TEMP. buttons Δ / ∇ simultaneously for 5 seconds or more to stop the self-diagnosis.

Error code	Error contents
00	Communication error (indoor unit ←→ remote controller)
01	Communication error (indoor unit ←→ 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
0E	Outdoor high pressure error
0F	Discharge pipe temperature error
11	Model error
12	Indoor fan error
13	Outdoor signal error
14	Outdoor EEPROM error

2. OUTDOOR UNIT LEADS
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.

3. CHECKING DRAINAGE

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

11 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.

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.

11 OPENING THE DUCT CONNECTION HOLE
Screw position and connection hole which are fresh air duct and distribution duct.

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

SAFETY PRECAUTIONS

WARNING

- During installation, make sure that the refrigerant pipe is attached firmly before you run the compressor. Do not operate the compressor under the condition of refrigerant piping not attached properly with 2-way or 3-way valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.
- During the pump-down operation, make sure that the compressor is turned off before you remove the refrigerant piping. Do not remove the connection pipe while the compressor is in operation with 2-way or 3-way valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.
- When installing and relocating the air conditioner, do not mix gases other than the specified refrigerant (R410A) to enter the refrigerant cycle. If air or other gas enters the refrigerant cycle, the pressure inside the cycle will rise to an abnormally high value and cause breakage, injury, etc.

DIP-SWITCH SETTING

Indoor unit

NO.	SW state	Detail
DIP-Switch 1	Invalidity	Validity
	OFF	ON
	*	*
DIP-Switch 4	2	3
	*	*

Remote controller

NO.	SW state	Detail
DIP-Switch	OFF	ON
	*	*
3	One unit	Multiple unit
	*	*
4	Heat & Cool	Cooling only
	*	*
5	Invalidity	Validity
	*	*
6	Invalidity	Validity
	*	*

*: Factory setting

12 DISTRIBUTION DUCT CONNECTION HOLE PROCESSING

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

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

SAFETY PRECAUTIONS

WARNING

- During installation, make sure that the refrigerant pipe is attached firmly before you run the compressor. Do not operate the compressor under the condition of refrigerant piping not attached properly with 2-way or 3-way valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.
- During the pump-down operation, make sure that the compressor is turned off before you remove the refrigerant piping. Do not remove the connection pipe while the compressor is in operation with 2-way or 3-way valve open. This may cause abnormal pressure in the refrigeration cycle that leads to breakage and even injury.
- When installing and relocating the air conditioner, do not mix gases other than the specified refrigerant (R410A) to enter the refrigerant cycle. If air or other gas enters the refrigerant cycle, the pressure inside the cycle will rise to an abnormally high value and cause breakage, injury, etc.