

4 VACUUM PROCESS

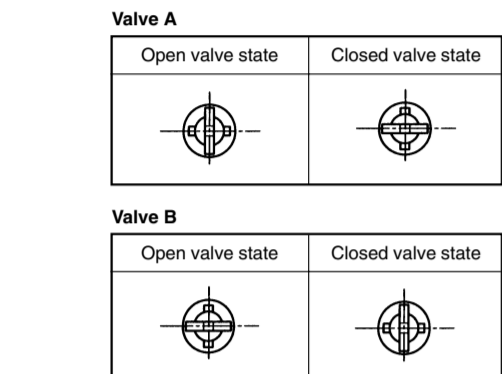
- CAUTION**
- Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation! There is no extra refrigerant in the outdoor unit for air purging!
 - Use a vacuum pump for R407C exclusively. Using the same vacuum pump for different refrigerant may damage the vacuum pump or the unit.

1. VACUUM

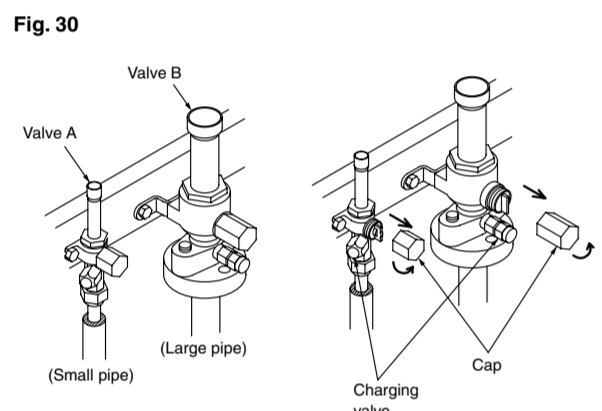
- Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve by the service hoses.
- Vacuum the indoor unit and the connecting pipes until the pressure gauge indicates -0.1 MPa (-76 cmHg).
- When -0.1 MPa (-76 cmHg) is reached, operate the vacuum pump for at least 1 hour.
- After vacuuming inside the indoor unit and the piping, remove the cap of the two valves.
- Open the spindle (handle) of the two valves from the closed state. (Table 6)
- Tighten the cap and charging valve of the two valves to the specified torque (Table 5).

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

Table 6

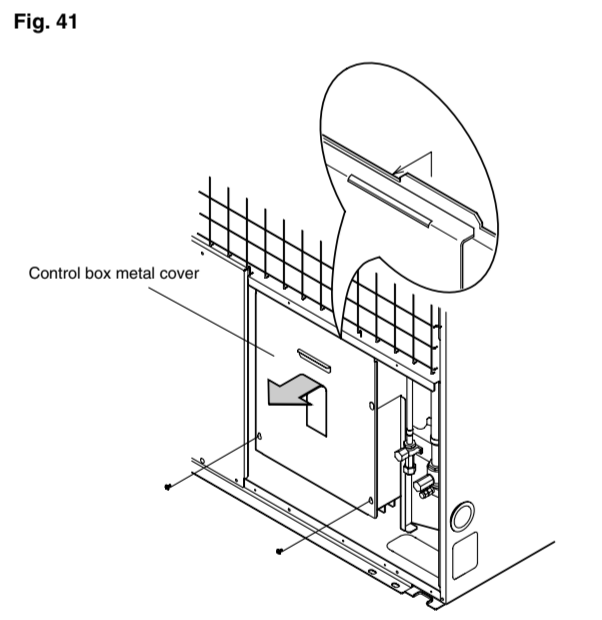


* If the spindle (handle) is not fully open, performance will drop and an abnormal sound will be generated.

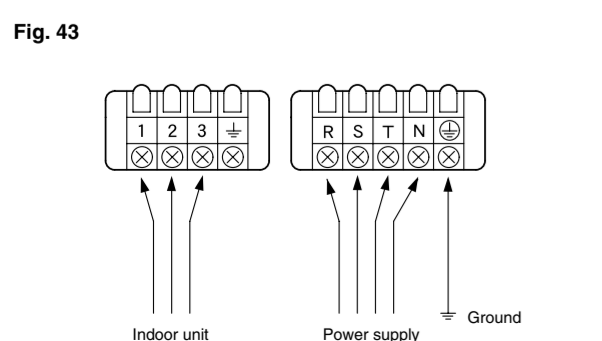
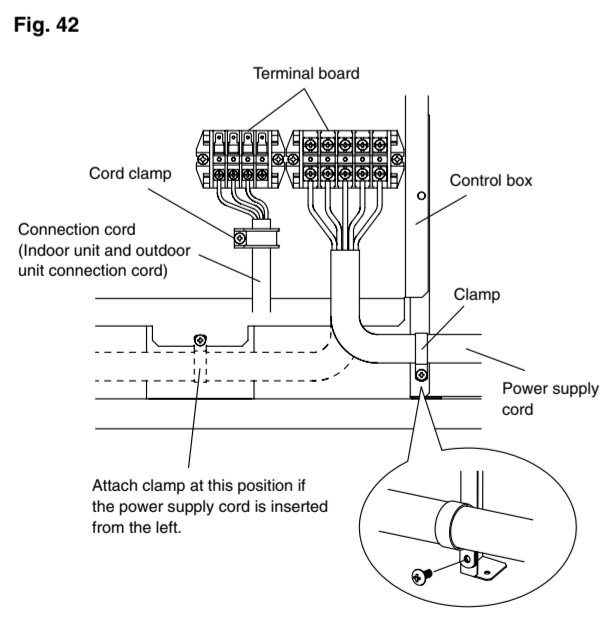


3. OUTDOOR UNIT SIDE

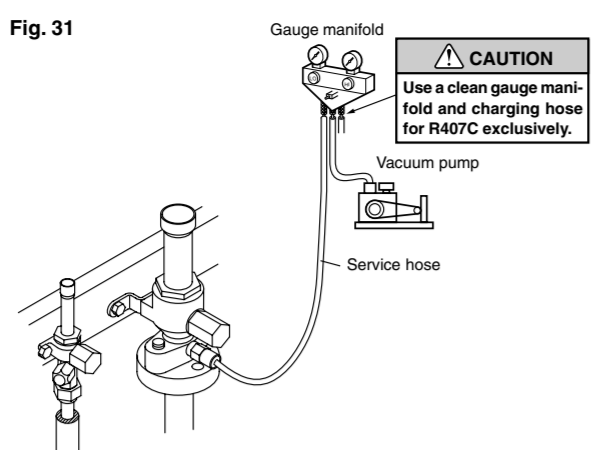
- Remove the control box metal cover and install each connection cord.



- After wiring is complete, clamp connection cord and power supply cord with cord clamp.
- Attach the control box cover.



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2. ADDITIONAL CHARGE

- Up to a pipe length of 30 m, charging with additional refrigerant is not necessary.
- If the pipe length exceeds 30 m, charging with refrigerant is necessary.
- Charge with additional refrigerant in the amounts shown in the table below.

Actual pipe length	30 m (99 ft)	40 m (132 ft)	50 m (164 ft)	g/m (oz/ft)
Additional refrigerant (R407C)	Cooling model	None	500 g (18 oz)	1,000 g (35 oz)
	Reverse cycle model	None	1,000 g (35 oz)	2,000 g (70 oz)

CAUTION

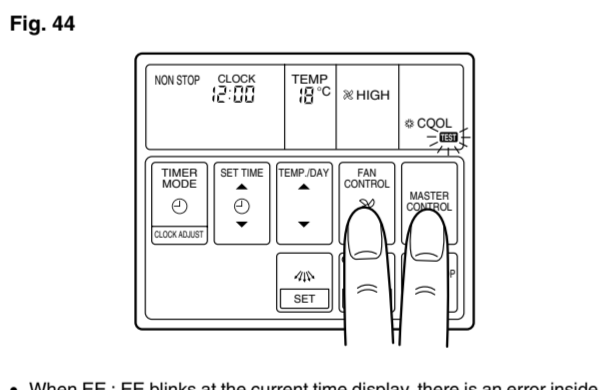
- When moving and installing the air conditioner, do not mix gas other than the specified refrigerant R407C inside the refrigerant circuit.
- When charging the refrigerant R407C, always use an electronic balance for refrigerant charging (to measure the refrigerant by weight).
- When charging the refrigerant, 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.
- The maximum length of the piping is 50 m. If the units are further apart than this, correct operation can not be guaranteed.



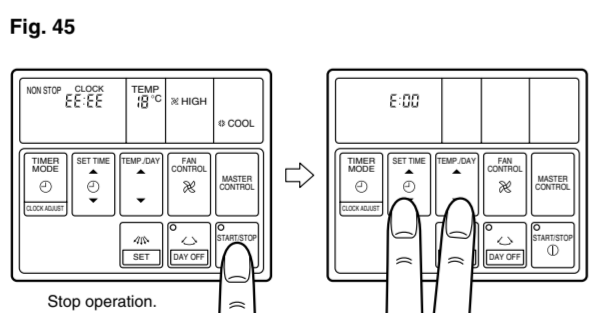
8 TEST RUNNING

1. 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 TEMP/DAY setting button does not function, but all other buttons, displays, and protection functions operate (Fig. 44).



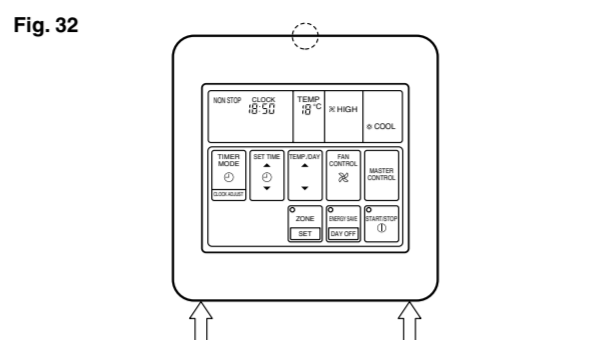
- When EE : EE blinks at the current time display, there is an error inside the air conditioner. If the SET TIME button (←) and TEMP/DAY button (→) are pressed simultaneously for more than three seconds, the self diagnosis check will start and the error contents will be displayed at the current time display (Fig. 45). When the operation lamp lights, press the START/STOP button and after operation lamp goes off, perform the same operation (Fig. 45). Process the error contents by referring to (Table 8).



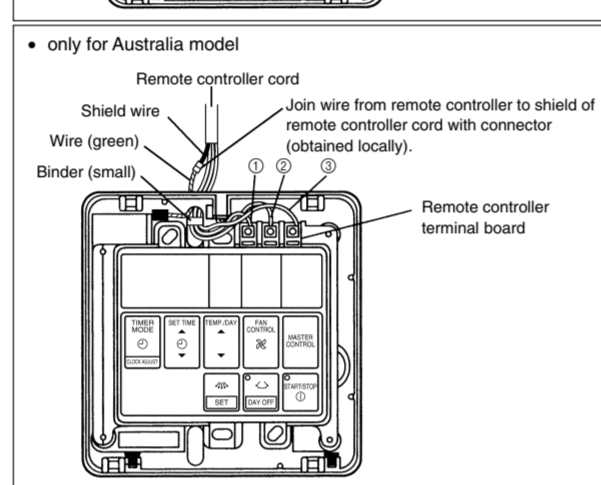
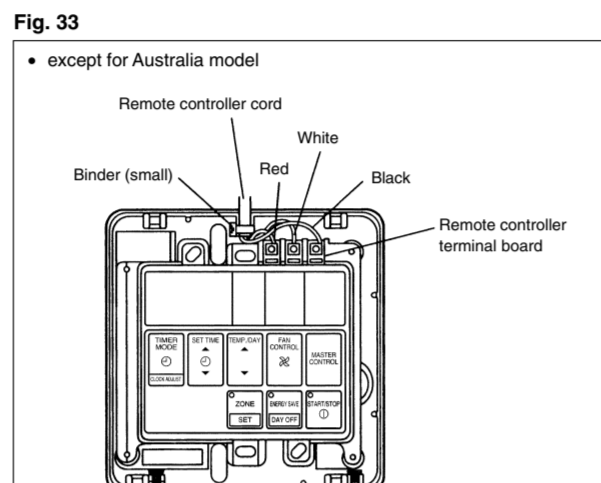
Error code	Error contents
E:00	Communication error (indoor unit ← remote controller)
E:01	Communication error (indoor unit → outdoor unit)
E:02	Room temperature sensor open
E:03	Room temperature sensor shortcircuited
E:04	Indoor heat exchanger temperature sensor open
E:05	Indoor heat exchanger temperature sensor shortcircuited
E:06	Outdoor heat exchanger temperature sensor open
E:07	Outdoor heat exchanger temperature sensor shortcircuited
E:08	Power source connection error
E:09	Float switch operated
E:0A	Outdoor temperature sensor open

5 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.

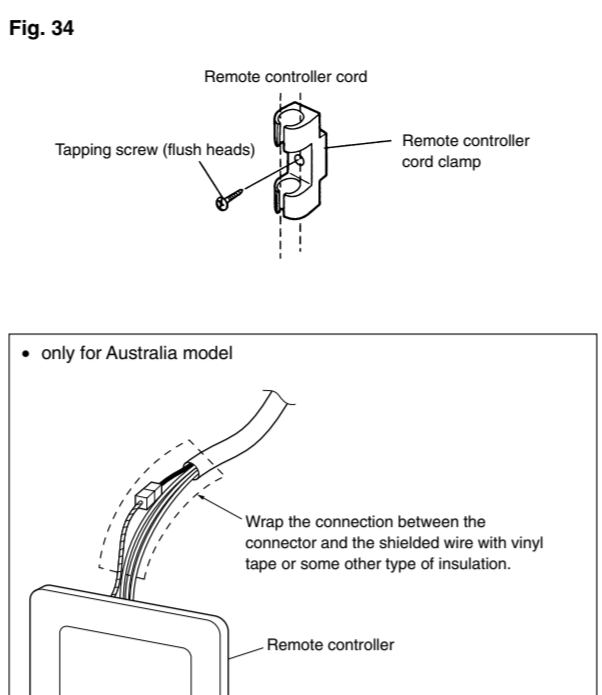


- When remote controller exposed
 - Make a notch in the thin part (□ part of Fig. 32) at the remote controller case top and bottom with nippers, file, etc.
 - Connect the remote controller cord to the remote controller terminal board specified in (Fig. 33).
 - Clamp the remote controller cord sheath with the binder (small) as shown in Fig. 33.
 - Cut off the excess binder.
 - Clamp the remote controller cord to a wall, etc. with the remote controller cord clamp furnished (Fig. 34).

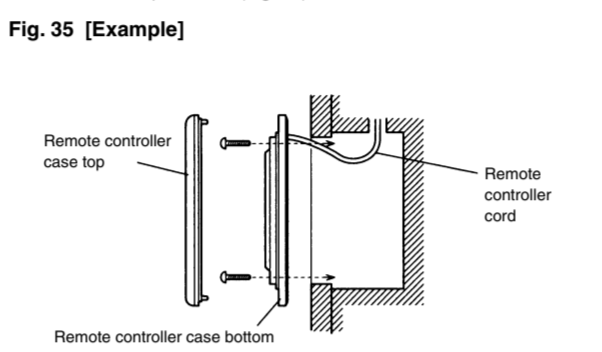


- Use a shielded wire (obtained locally) for the remote controller cord.

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- 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. 35).
 - Connect the remote controller cord to the remote controller terminal board specified in (Fig. 33).



- 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.

6 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.

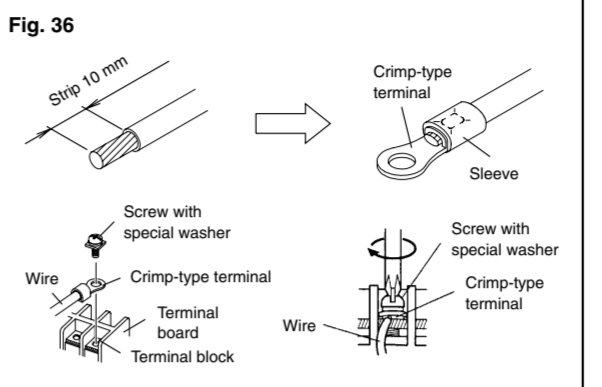
- CAUTION**
- When the voltage is low and the air conditioner is difficult to start, contact the power company the voltage raised.

7 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 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.
 - Install the remote controller wires so as not to be directly touched with your hand.

HOW TO CONNECT WIRING TO THE TERMINALS

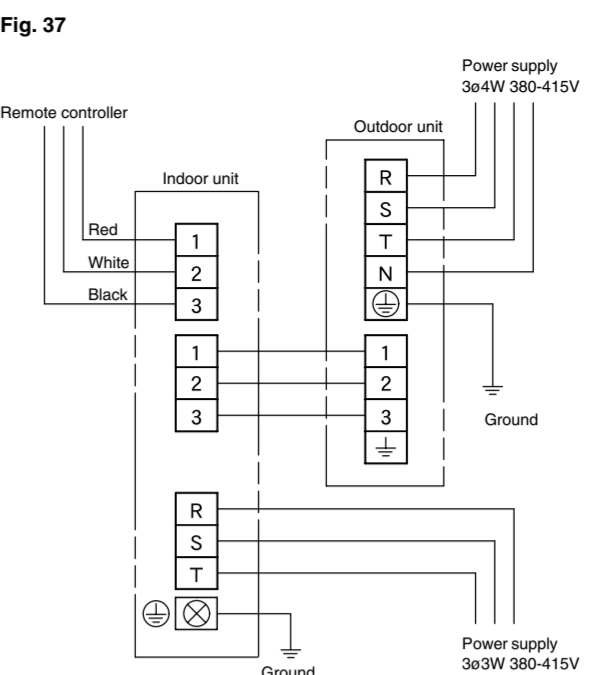
- For strand wiring**
- Use crimp-type terminals with insulating sleeves as shown in the figure below to connect to the terminal block.
 - Securely crimp the crimp-type terminals to the wires using an appropriate tool so that the wires do not come loose.
 - Use the specified wires, connect them securely, and fasten them so that there is no stress placed on the terminals.
 - Use an appropriate screwdriver to tighten the terminal screws. Do not use a screwdriver that is too small, otherwise, the screw heads may be damaged and prevent the screws from being properly tightened.
 - Do not tighten the terminal screws too much, otherwise, the screws may break.
 - See the table below for the terminal screw tightening torques.



Screw	Tightening torque
M4 screw	1.2 to 1.8 N·m (12 to 18 kgf·cm)
M5 screw	2.0 to 3.0 N·m (20 to 30 kgf·cm)

- WARNING**
- Use crimp-type terminals and tighten the terminal screws to the specified torques, otherwise, abnormal overheating may be produced and possibly cause heavy damage inside the unit.

1. CONNECTIONS DIAGRAM

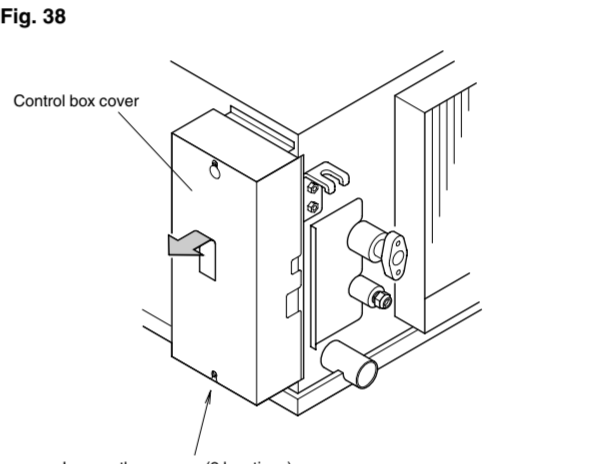


- A separated power supply must be provided for the indoor unit and outdoor unit.
- Outdoor unit : 3 φ 4W 380-415V
- Indoor unit : 3 φ 3W 380-415V
- The max. current is as follows table.

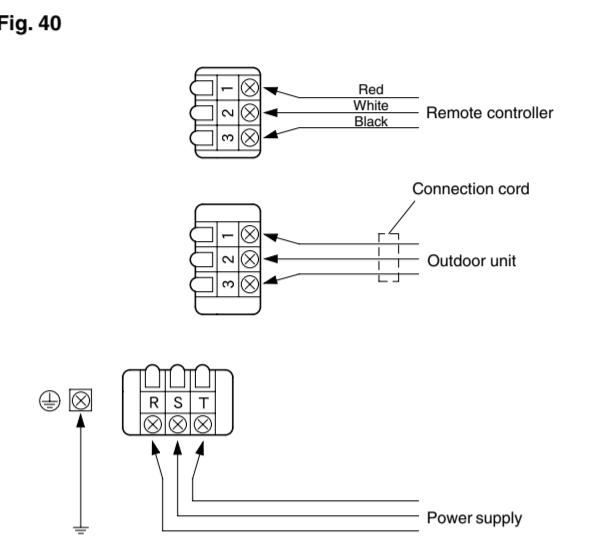
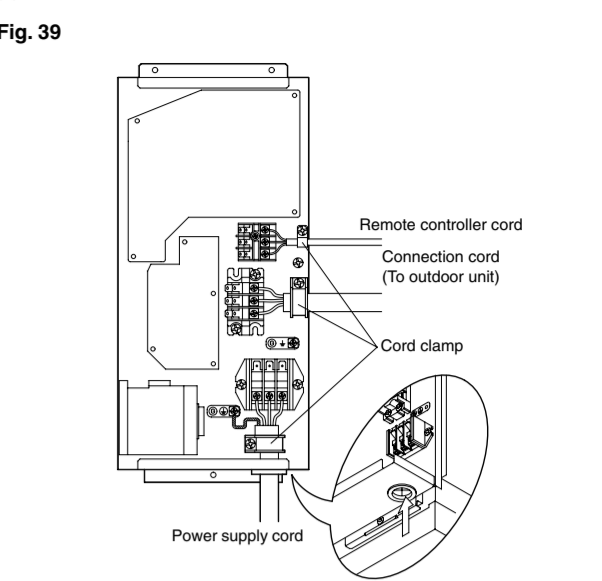
Max current [A]	Reverse cycle model		Cooling model
	Cooling	Heating	Cooling
Outdoor unit	24.0	24.0	26.6
Indoor unit	2.0	2.0	2.0
Total	26.0	26.0	28.6

2. INDOOR UNIT SIDE

- Remove the control box cover and install each connection cord.



- After wiring is complete, clamp the remote controller cord, connection cord and power supply cord with cord clamp.
- Attach the control box cover.



- CAUTION**
- Use care not to mistake the power supply and connection wires when installing.
 - Install so that the wire for the remote controller will not come in contact with other connection wires.

Error code	Error contents
E:0b	Outdoor temperature sensor shortcircuited
E:0c	Discharge pipe temperature sensor open
E:0d	Discharge pipe temperature sensor shortcircuited
E:0e	Outdoor low 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

- To stop test running, press the START/STOP button.
- For the operation method, refer to the operating manual and perform operation check.
- Check that there are no abnormal sounds or vibration sounds during test running.

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 9) according to the error contents.

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

