

1. AIR PURGE

- (1) Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve by the service hoses.
- (2) Vacuum the indoor unit and the connecting pipes until the pressure in them lowers to below 1.5 mmHg.

(3) Disconnect the service hoses and fit the cap to the charging valve

- (Tightening torque: 70 to 90 kgf·cm). (4) Remove the blank caps, and fully open the spindles of the 2-way and 3-way valves with a hexagon wrench (Torque: 2-way valve: 70
- to 90 kgf·cm, 3-way valve: 100 to 120 kgf·cm).
- (5) Tighten the blank caps of the 2-way valve and 3-way valve to the specified torque (200 to 250 kgf·cm).

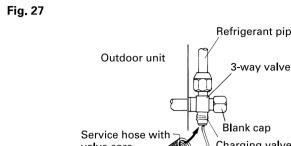
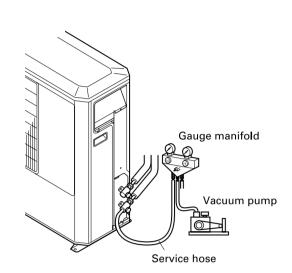


Fig. 28



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.

	Table 6							
	Pipe length		25 ft (7.5 m)	33 ft (10 m)	49 ft (15 m)	66 ft (20 m)	82 ft (25 m)	99 ft (30 m)
- 1	Additional refrigerant	Heat & Cool (Reverse cycle)	None	4.4 oz (125 g)	13.2 oz (375 g)	22.0 oz (625 g)	30.9 oz (875 g)	
		Cooling model	None	1.8 oz (50 g)	5.3 oz (150 g)	8.8 oz (250 g)	12.3 oz (350 g)	15.9 oz (450 g)

Between 7.5 m and 30 m, when using a connection pipe other than that in the table, charge additional refrigerant with 1.8 oz (50 g) / 3.3 ft (1 m) (Reverse cycle model), 0.7 oz (20 g) / 3.3 ft (1 m) (Cooling model) as the

CAUTION

- (1) When moving and installing the air conditioner, do not mix gas other than the specified refrigerant (R22) inside the refrigerant cycle.
- (2) When adding refrigerant, add the refrigerant from the charging valve at the completion of work.
- (3) If the units are further apart than the maximum pipe length, correct operation can not be guaranteed.

GAS LEAKAGE INSPECTION

(CAUTION

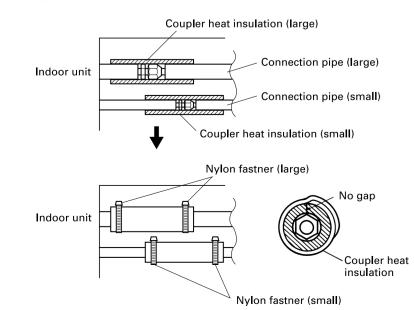
After connecting the piping, check the joints for gas leakage with gas leak detector.

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.

Secure both ends of the heat insulation material using nylon fasteners.

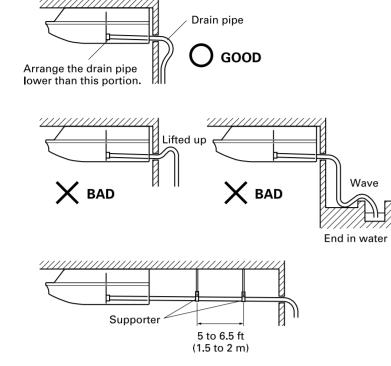


• When using an auxiliary pipe, make sure that the fastener

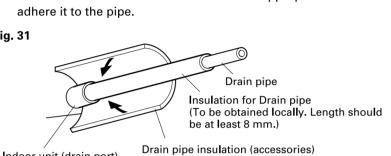
used is insulated in the same way.

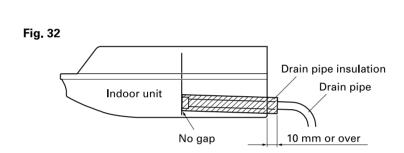
DRAIN PIPING

- 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 38 • During installation of the drain pipe, be careful to avoid applying
- pressure to the drain port of the indoor unit. • When the pipe is long, install supporters (Fig. 30).
- Do not perform air bleeding. • Always heat insulate (8 mm or over thick) the indoor side of the drain

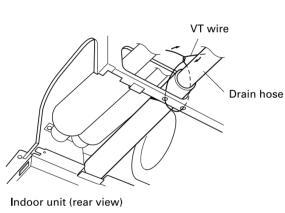


(1) Install insulation for the drain pipe. (See Figs. 31 and 32.) Cut the included insulation material to an appropriate size and





(2) If "1) Right rear piping": fasten the drain pipe with VT wire so that the pipe slopes correctly within the indoor unit. (Fig. 33)



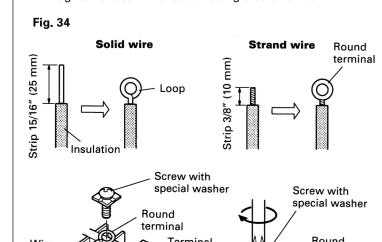
ELECTRICAL WIRING

HOW TO CONNECT WIRING TO THE TERMINALS

- A. For solid core wiring (or F-cable) (1) Cut the wire and with a wire cutter or wire-cutting pliers, then strip the insulation to about 15/16" (25 mm) of ex-
- pose the solid wire. (2) Using a screwdriver, remove the terminal screw(s) on
- the terminal board. (3) Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
- (4) Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.

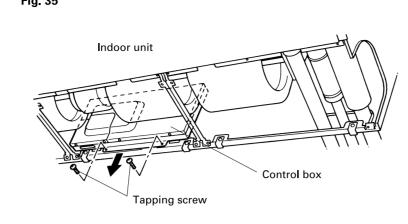
B. For strand wiring

- (1) Cut the wire and with a wire cutter or wire-cutting pliers, then strip the insulation to about 3/8" (10 mm) of expose the strand wiring
- (2) Using a screwdriver, remove the terminal screw(s) on
- (3) Using a round terminal fastener or pliers, securely
- clamp a round terminal to each stripped wire end. (4) Position the round terminal wire, and replace and tighten the terminal screw using a screwdriver.

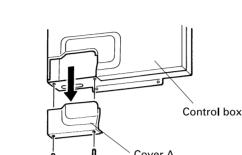


1. INDOOR UNIT SIDE

(1) Remove the two tapping screws and pull the control box downward. (Fig. 35)



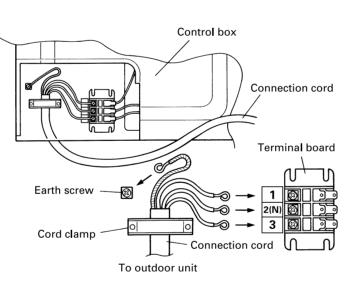
- (2) Remove the Cover A and install the Connection cord (Fig. 36 and
- (3) After wiring is complete, clamp the Connection cord with the Cord clamp. (Fig. 37)
- (4) Reattach Cover A. Then fasten the control box back into its original position using the two tapping screws.
- (5) Attach the connection cord and cable clips. Make sure that they are positioned so that they will not interfere with opening and closing of the intake grille or with removal and installation of the air filters. (Fig. 37)

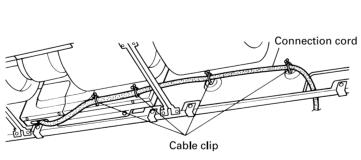


№ WARNING

- (1) Before starting work, check that power is not being supplied to the outdoor unit.
- (2) Match the terminal board numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric
- (3) Connect the connection cord firmly to the terminal board. Imperfect installation may cause a fire.
- (4) Always fasten the outside covering of the connection cord with the cord clamp. (If the insulator is chafed, electric leakage may occur.)
- (5) Always connect the ground wire.

Fig. 37





2. OUTDOOR UNIT SIDE

/ WARNING

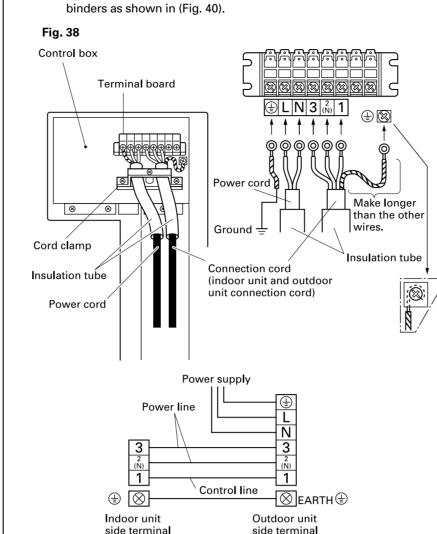
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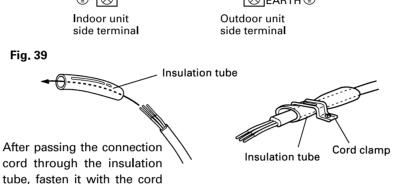
(CAUTION

- (1) Use 1.0 mm² to 1.5 mm² H07RN-F or equivalent as the connection cord.
- (2) Select power cable matched to the fuse capacity. (Install in accordance with standard.)
- (3) Use VW-1, 12 mm diameter, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

(1) Remove outdoor unit valve cover and connect the power cord and the outdoor unit connection cord wired at the indoor unit.

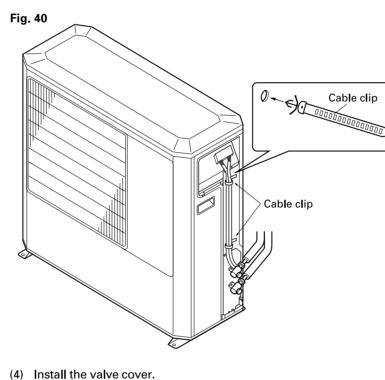
- (2) Fasten the sheath with a cord clamp. (3) Fasten the power cord and connection cord with cable clip and

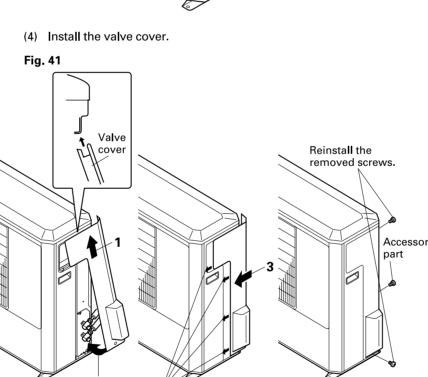




• Use VW-1, 0.5 to 1.0 mm thick, PVC tube as the insulation tube.

clamp





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POWER

! WARNING

- (1) The rated voltage of this product is 220-240V AC
- (2) Before turning on verify that the voltage is within the 198V to 264V range
- (3) Always use a special branch circuit and install a special receptacle to supply power to the air conditioner. (4) Use a special branch circuit breaker and receptacle
- matched to the capacity of the air conditioner. (Fuse/Breaker capacity: 30 A) (5) The special branch circuit breaker is installed in the per-
- poles of the wiring and has an isolation distance of at least 3mm between the contacts of each pole. (6) Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.

manent wiring. Always use a circuit that can trip all the

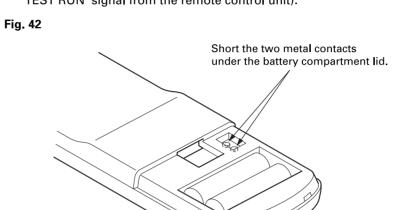
(7) Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.

⚠ CAUTION

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

TEST RUNNING

- Perform test operation and check items 1 and 2 below. For the operation method, refer to the operating manual. The outdoor unit may not run, depending on the room
- In this case, the 'TEST RUN' signal is received during air conditioner operation (use a metallic object to short the two metal contacts under the battery compartment lid and send the 'TEST RUN' signal from the remote control unit).



 To end test operation, press the remote control unit START/STOP (When the air conditioner is run by pressing the remote control

. INDOOR UNIT

multaneously flash slowly.)

(1) Is operation of each button on the remote control unit nor-

unit TEST RUN button, the OPERATION and TIMER lamps will si-

(2) Does each lamp light normally? (3) Do not air flow direction flap and louvers operate normally? (4) Is the drain normal?

2. OUTDOOR UNIT

(1) Is there any abnormal noise and vibration during operation? (2) Will noise, wind, or drain water from the unit disturb the neighbors? (3) Is there any gas leakage?



FINISHING

- (1) Install the filter guide.
- (2) Install the intake grills. (3) Install side covers A and B (if the unit is installed in a half-
- concealed orientation, only install side cover A). (4) Install the air filters.

CUSTOMER GUIDANCE

Explain the following to the customer in accordance with the operating

- (1) Starting and stopping method, operation switching, temperature adjustment, timer, air flow adjustment, and other remote control
- unit operations. (2) Air filter removal and cleaning.
- (3) Give the operating and installation manuals to the customer. (4) If the signal code is changed, explain to the customer how it changed (the system returns to signal code A when the batteries in the remote control unit are replaced).



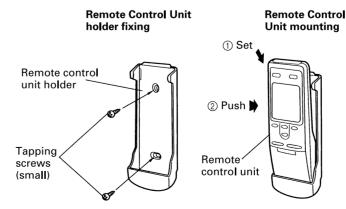
REMOTE CONTROL UNIT INSTALLATION

CAUTION

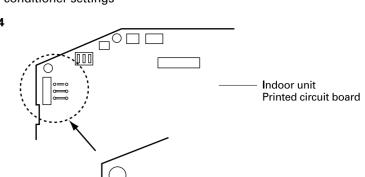
- (1) Check that the indoor unit correctly receives the signal from the remote control unit, then install the remote control unit holder
- (2) Select the remote control unit holder selection site by paying careful attention to the following: Avoid places in direct sunlight.
- Select a place that will not be affected by the heat from a stove, etc.
- 1. REMOTE CONTROL UNIT HOLDER INSTALLATION • Install the remote control unit holder to a wall or pillar with the

Fig. 43

tapping screws.

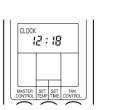


2. SWITCHING REMOTE CONTROL UNIT SIGNAL CODES Air conditioner settings

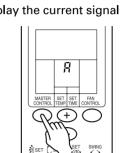


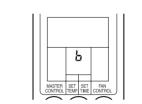
Remote control unit settings

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



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





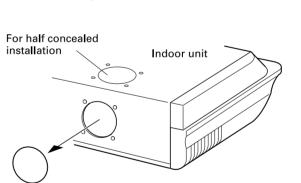
(4) Press the MASTER CONTROL button again to return to the clock display and change the signal code.

Confirm the remote control unit signal selector switch selection and printed circuit board setting. If these are not confirmed, the remote control unit cannot be operated for the air conditioner.

	Table /					
Jumpe	er wire	Remote control unit				
JM 2	JM 3	signal selector switch				
Connect	Connect	A (Primary setting)				
Connect	Disconnect	В				
Disconnect	Connect	С				
Disconnect	Disconnect	D				

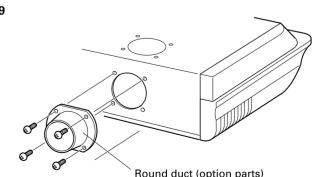
L FRESH-AIR INTAKE

(1) Open up the knockout hole for the fresh-air intake, as shown in Fig. 48. (If using half-concealed installation, open up the top knockout hole instead.)



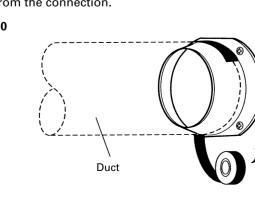
! CAUTION (1) When removing the cabinet (iron plate), be careful not to damage the indoor unit internal parts and sur-

- rounding area (outer case). (2) When processing the cabinet (iron plate), be careful not to injure yourself with burrs, etc.
- (2) Fasten the round flange (optional) to the fresh-air intake, as shown in Fig. 49. (If using half-concealed installation, attach to the top.)



[After completing "2 INDOOR UNIT INSTALLATION"...]

(3) Connect the duct to the round flange. (4) Seal with a band and vinyl tape, etc. so that air does not leak from the connection.



A ERROR DISPLAY

1. INDOOR UNIT

Operation can be checked by lighting and flashing of the display section OPERATION, TIMER and VERTICAL SWING lamps. Perform judgment in accordance with the following.

Fig. 51

VERTICAL SWING lamp (Orange) TIMER lamp (Green) OPERATION lamp (Red)

Test running

When the air conditioner is run by pressing the remote control unit test run button, the OPERATION, TIMER and VERTICAL SWING lamps flash slowly at the same time.

Error

The OPERATION, TIMER and VERTICAL SWING lamps operate as follows (Table 8) according to the error contents.

Error contents	OPERATION lamp (RED)	TIMER lamp (GREEN)	SWING Ia (ORANG
Indoor EEPROM abnormal	0	0	×
Outdoor EEPROM abnormal	0	0	0
Indoor room temperature sensor open	(2 times)	0	×
Indoor room temperature sensor shortcircuited	(2 times)	0	0
Indoor heat exchanger temperature sensor open	(3 times)	0	×
Indoor heat exchanger temperature sensor shortcircuited	(3 times)	0	0
Float switch operated	(4 times)	0	×
Indoor signal abnormal	(5 times)	0	×
Outdoor signal abnormal	(5 times)	0	0
Indoor fan abnormal	(6 times)	0	×
Outdoor power source connection abnormal	0	(2 times)	×
Outdoor heat exchanger temperature sensor open	0	(3 times)	×
Outdoor heat exchanger temperature sensor shortcircuited	0	(3 times)	0
Outdoor temperature sensor open	0	(4 times)	×
Outdoor temperature sensor shortcircuited	0	(4 times)	0
Outdoor discharge pipe temperature sensor open	0	(5 times)	×
Outdoor discharge pipe temperature sensor shortcircuited	0	(5 times)	0
Outdoor high pressure abnormal	0	(6 times)	×
Outdoor discharge pipe temperature abnormal	0	(7 times)	×
: 0.1s ON/0.1s OFF (flash)	× : OFF	=	ı

■ : 0.5s ON/0.5s OFF (flash)

2. OUTDOOR UNIT

HEAT &COOL (REVERSE CYCLE) MODEL ONLY

Error The LED lamps operate as follows (Table 9) according to the error contents.

Table 9					
Error o					
LED1	LED2	Error contents			
ON OFF	ON OFF	Model abnormal or EEPROM abnormal			
Quick flash continued	Quick flash continued				
OFF 2 sec.	ON OFF	Power source connection error			
1 quick flash repeated	Lighting continued				
OFF 0.5 sec. 2 sec.	ON OFF	Discharge temperature sensor error			
2 quick flash repeated	Lighting continued				
OFF 0.5 sec. OFF 2 sec. 3 quick flash repeated	ON OFF	Outdoor heat exchanger temperature sensor error			
4 quick flash repeated	Lighting continued	Outdoor tomporature concer arror			
5 quick flash repeated	Lighting continued	Outdoor temperature sensor error			
<u> </u>	0 0	Communication signal error			
6 quick flash repeated	Lighting continued	Indoor unit error			
7 quick flash repeated	Lighting continued	Discharge temperature abnormal			

8 quick flash repeated | Lighting continued | High pressure abnormal 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.