# SPLIT TYPE ROOM AIR CONDITIONER INSTALLATION INSTRUCTION

SHEET

**R410A** REFRIGERANT

# (PART NO. 9373534013-02)

For authorized service personnel only.

<b>⚠ DANGER</b>	This mark indicates procedures which, if improperly performed, are most likely to result in the death of or serious injury to the user or service personnel.
<b>⚠ WARNING</b>	This mark indicates procedures which, if improperly performed, might lead to the death or serious injury of the user.
<b>⚠</b> 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 models.

However, pay careful attention to the following points:

1) Since the working pressure is 1.6 times higher than that of conventional refrigerant models, some of the piping and installation and service tools are special. (See the table below.) Especially, when replacing a conventional refrigerant model with a new refrigerant R410A model, always replace the conventional piping and flare nuts with the R410A piping and flare nuts.

(2) Models that use refrigerant R410A have a different charging port thread diameter to prevent erroneous charging with conventional refrigerant and for safety. Therefore, check beforehand. [The charging port thread diameter for R410A is 1/2

(3) Be more careful that foreign matter (oil, water, etc.) does not enter the piping than with refrigerant models. Also, when storing the piping, securely seal the openings by pinching, taping, etc.

(4) 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

pecial tools for 114 for				
Tool name	Contents of change			
	Pressure is high and cannot be measured with a conventional gauge. To prevent erroneous mixing of other			
Cause monifold	refrigerants, the diameter of each port has been changed.			
Gauge manifold	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/cm²) 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.			

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

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 Table1. 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.

# **⚠** CAUTION

THIS PRODUCT MUST ONLY BE INSTALLED OR SERVICED BY QUALIFIED PERSONNEL. Refer to Commonwealth, State, Territory and local legislation,

Battery (penlight) Remote control unit holder

control unit

Use as remote control unit Tapping screw (big) For wall hook bracket

STANDARD ACCESSORIES

Q'ty

For indoor unit installation

Use for air conditioner

For remote control unit

Name and Shape

Wall hook bracket

Tapping screw (small) For remote control unit  $(ø3 \times 12)$ holder installation

# **OUTDOOR UNIT ACCESSORIES**

Hexagon wrench	1	For opening the refrigerant valve on the outdoor unit
Cable clip	1	For power supply cord binding
Tapping screw (painted)	1	For fixing the valve cover
Drain pipe	1	For outdoor unit drain piping work [Heat & Cool model
Drain cap	2	(Reverse cycle) only]
Putty	1	For sealing

Table 1 Thicknesses of Annealed Copper Pipes					
		Thickness (mm)			
Nominal ameter (inch)	Outer diameter (mm)	R410A			
3/8	9.52	0.80			
5/8	15.88	1.00			

# For authorized service personnel only.

(1) For the room air conditioner to operate satisfactorily, install it as outlined in this installation instruction sheet. (2) Connect the indoor unit and outdoor unit with the room 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.

(3) Installation work must be performed in accordance with national wiring standards by authorized personnel only.

(4) 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.

(5) Do not use an extension cord.

(6) Do not turn on the power until all installation work is complete.

- Be careful not to scratch the room 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**

Install at a place that can withstand the weight of the indoor and outdoor units and install positively so that the units will not

**↑** CAUTION

(1) Do not install where there is the danger of combustible gas leakage

(2) Do not install near heat sources. (3) If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

Decide the mounting position with the customer as follows:

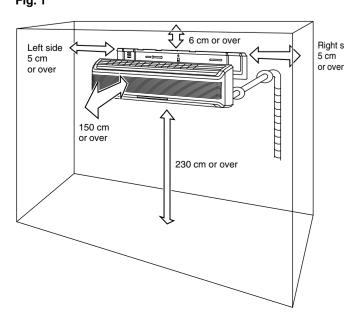
# 1. INDOOR UNIT

(2) The inlet and outlet ports should not be obstructed: the air should be able to blow all over the room.

(3) Do not install the unit where it will be exposed to direct sunlight. (4) Install the unit where connection to the outdoor unit is easy.

(1) Install the indoor unit level on a strong wall which is not subject to

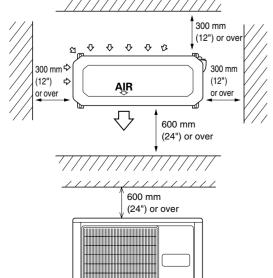
(5) Install the unit where the drain pipe can be easily installed. (6) Take servicing, etc., into consideration and leave the spaces shown in Fig. 1. Also install the unit where the filter can be removed.



(3) Do not install the unit where people pass.

(4) Take your neighbors into consideration so that they are not disturbed by air blowing into their windows or by noise. (5) Provide the space shown in Fig. 2 so that the air flow is not blocked. Also for efficient operation, leave open three of the four directions

# Fig. 2



# 2. OUTDOOR UNIT

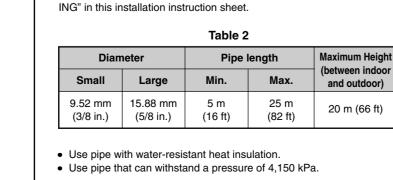
(1) If possible, do not install the unit where it will be exposed to direct sunlight. (If necessary, install a blind that does not interfere with the air flow.) (2) Do not install the unit where a strong wind blows or where it is very dusty.

> 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 front, rear, and both sides. 80%, use heat insulation that is 20 mm or thicker. If heat insulation is used that is not as thick as specified,

**OUTDOOR UNIT** 

verse cycle model only)

0.045 W/(m·K) or less (at 20 °C).



**CONNECTION PIPE REQUIREMENT** 

**↑** CAUTION

Install heat insulation around both the gas and liquid pipes.

Use heat insulation with heat resistance above 120 °C. (Re-

In addition, if the humidity level at the installation location

condensation may form on the surface of the insulation.

In addition, use heat insulation with heat conductivity of

Connect the connection pipes according to "3 CONNECTING THE PIP-

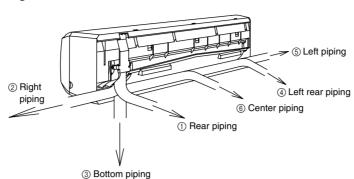
Failure to do so may cause water leaks.

# INSTALLATION PROCEDURE

# The following installation accessories are supplied. Use them as required. INDOOR UNIT ACCESSORIES

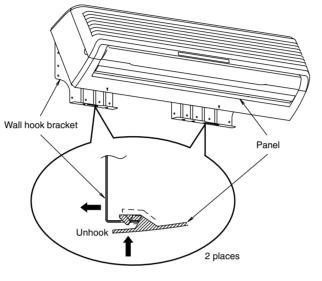
# **INDOOR UNIT INSTALLATION**

The piping can be connected in the six directions indicated by ①, ②, ③ (4), (5) and (6) in Fig. 4. When the piping is connected in direction (2) or (5), cut along the piping groove in the side of the front panel with metal shears. When connecting the piping in direction ③, cut along the piping groove at the bottom of the front panel.



# 1. INSTALLING THE WALL HOOK BRACKET

[Removing THE WALL HOOK BRACKET] Remove the wall hook bracket in the following order. (1) Remove the hook inside the panel (Fig. 5). (2) Pull off the wall hook bracket.



## [Installation directly to a wall]

Before fastening the wall hook bracket to the wall with the screws, level it by tapping the hook at the center of bracket to the wall with the handle of

wall hook bracket holes (11  $\times$  43 mm dia. and 11  $\times$  94 mm dia. (Fig. 6)).

• Fasten the wall hook bracket to the wall with 6 or more screws and anchor bolts through the holes near the outer edge of the bracket. Do not install the wall hook bracket at only one place or at an angle. For a concrete wall, embed anchor bolts (10 mm dia.) into the wall at the

Allow the anchor bolts to stick out at least 18 mm from the wall (Fig. 7). Install the unit to the anchor bolts with nuts through the wall hook bracket. Use 2 bolts for concrete wall and 4 bolts for blister concrete wall (Fig. 8). Finally tighten the bolts and tapping screws after confirming, using the level indicator, that the clamp is horizontal.

# **ELECTRICAL REQUIREMENT**

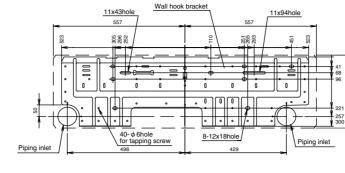
• Electric wire size and fuse capacity:

15.88 mm (5/8") dia.

9.52 mm (3/8") dia.

Power supply cord (mm²)	MAX.	4.0
	MIN.	3.5
Connection cord (mm²)	MAX.	2.5
Connection cord (mm²)	MIN.	1.5
Fuse capacity (A)		30

- Install the disconnect device with a contact gap of at least 3 mm nearby the units. (Both indoor unit and outdoor unit)
- Always make the air conditioner power supply a special branch circuit and provide a special breaker
- Always use H07RN-F or equivalent as the power supply cord and the connection cord.



**↑** WARNING

Install the wall hook bracket so that it is correctly po-

(2) As the weight of the indoor unit is 15 to 18 kg (33 to 40

lbs), it should be installed after properly examining the place where it is intended to be installed. If the place is

not strong enough, a plank or girder should be used to

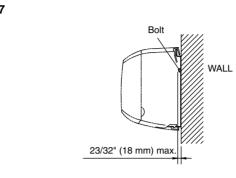
make the place sufficiently strong so that the wall can

bracket is tilted, water will drip to the floor.

support the weight.

Fig. 6 UNIT [mm]

sitioned horizontally and vertically. If the wall hook



# Fig. 8 bracket

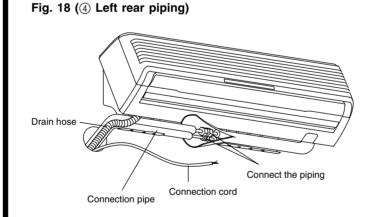
2. CUTTING THE HOLE IN THE WALL FOR THE CONNECTING PIPING

# **↑** WARNING

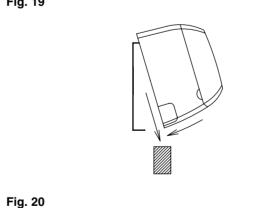
If the wall pipe is not used, the cord interconnecting the indoor and outdoor units may touch metal and cause electric leakage.

Piping work can be made easier by laying out, shaping, and temporar-

ily fastening the connection pipe and connection cord as shown in Fig.



# Fig. 19



# Wall hook bracket

# Method B

(1) Open the screw cover and intake grille (Fig. 21). (2) Remove the seven tapping screws (Fig. 22). (3) Remove the panel (Fig. 23).

(4) Mount the indoor unit to the wall hook bracket.

(5) Mount the drain hose and pipe to the indoor unit (Fig. 24). (6) Hang the inside panel hook and then mount the panel and secure it with seven tapping screws (Fig. 25).

# Intake grille

Insert the drain hose until it

(1) Cut a 80 mm diameter hole in the wall at the position shown in Fig. 9.

(2) When cutting the wall hole at the inside of the installation frame, cut

(3) Cut the hole so that the outside end is lower (5 to 10 mm) than the

(4) Always align the center of the wall hole. If misaligned, water leakage

(5) Cut the wall pipe to match the wall thickness, stick it into the wall cap,

(The connection pipe is supplied in the installation set.) (Fig. 9).

(6) For ⑤ left piping and ② right piping, cut the hole a little lower so that

fasten the cap with vinyl tape, and stick the pipe through the hole.

When cutting the wall hole at the outside of the installation frame, cut

the hole to a point of intersection of center marks

the hole at least 10 mm below less.

drain water will flow freely (Fig. 9).

3. ATTACH THE DRAIN HOSE

nected properly, leaking will occur.

hose to the drain port on its opposite side.

• The drain hose and drain cap are used as they are.

Insert the drain hose and drain cap into the drain port.

making sure that it comes in contact with the back of the

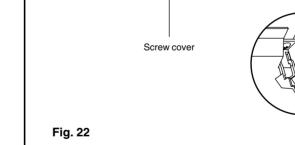
drain port, and then mount it. If the drain hose is not con-

[For ① Rear piping, ② Right piping and ③ Bottom piping]

[For 4 Left rear piping, 5 Left piping and 6 Center piping]

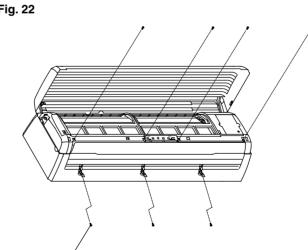
• Remove the drain cap and drain hose. Mount the drain cap and drain

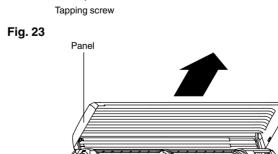
will occur.

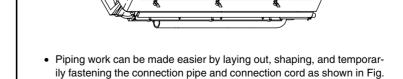


Insert the drain cap until it

butts against the drain port.

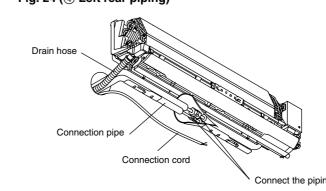






# Fig. 24 (4) Left rear piping

24 beforehand.

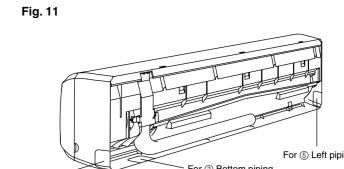


# 4. CUT-OUT FOR PIPING ON FRONT PANEL

[For ② Right piping, ③ Bottom piping and ⑤ Left piping] • Use a metal shears or other cutting tool to cut along the groove in the

plastic for the piping that will coming out of the front panel. Fig. 11

For ② Right piping



# 5. FORMING THE DRAIN HOSE AND PIPE

# **↑** CAUTION (1) Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection

(3) If the pipe is bent repeatedly at the same place, it will

(2) To prevent breaking of the pipe, avoid sharp bends.

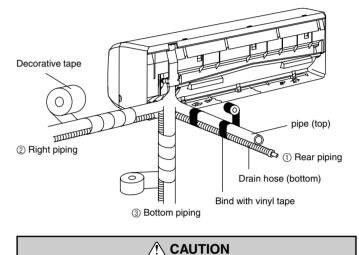
Bend the pipe with a radius of curvature of 100 mm or

[For ① Rear piping, ② Right piping and ③ Bottom piping] • Install the indoor unit piping in the direction of the wall hole and bind the drain hose and pipe together with vinvl tape (Fig. 12). • Install the piping so that the drain hose is at the bottom.

# Fig. 12

Fig. 25

Wall hook



Do not wrap the tape too tightly on drain hose. If the tape is too tight (as shown in the Figure below) the insulation effect will be lost and the moisture from condensation may Fig. 13 Bad Example

Vinyl Tape Too Tight

• Perform "5 ELECTRICAL WIRING" before performing this piping. • Wrap the pipes of the indoor unit that are visible from the outside with decorative tape.

 After passing the indoor piping and drain hose through the wall hole, hang the indoor unit on the hooks at the top of the wall hook bracket.

# Fig. 14

# [For 4 Left rear piping, 5 Left piping and 6 Center piping] • For ④ Left rear piping, ⑤ Left piping and ⑥ Center piping, preset the

 Bend the connection piping at a bend radius of at least 100 mm and position it no more than 50 mm from the wall.

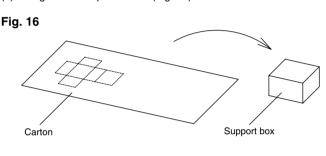
end of the pipe to the dimensions shown in Fig. 15 and form the con-

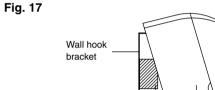
# Connection pipe Connection pipe (9.52 mm dia.) (15.88 mm dia.)

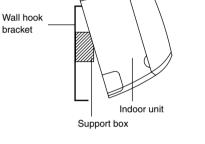
• The two methods for mounting the drain hose and piping 4, 5 and 6 are as shown below. Please choose the most efficient method of installation. Method A: Floating the panel method. Method B: Removing the panel.

(1) Create a box using material from the packing carton. This box is called the support box (Fig. 16). (2) Mount the indoor unit to the wall hook bracket. (3) Insert the support box between the indoor unit and wall hook bracket (Fig. 17).

## (4) Mount the drain hose and pipe to the indoor unit (Fig. 18). (5) Remove the support box from the indoor unit (Fig. 19). (6) Hang the inside panel hook (Fig. 20).







# 804 mm (31-21/32")

# **OUTDOOR UNIT INSTALLATION**

# (1) Install the unit where it will not be tilted by more than 5°

(2) When installing the outdoor unit where it may exposed to strong wind, fasten it securely.

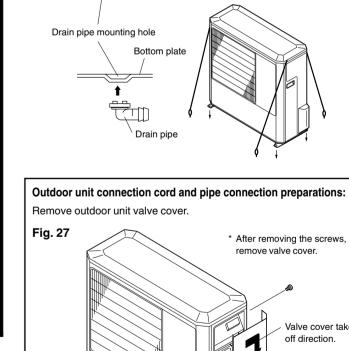
**↑** WARNING

• Set the unit on a strong stand, such as one made of concrete blocks to minimize shock and vibration • Do not set the unit directly on the ground because it will cause trouble. • Since the drain water flows out of the outdoor unit during heating operation, install the drain pipe sold separately and connect it to a com-

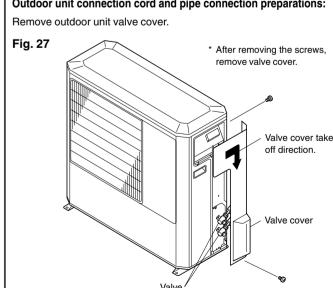
mercial 16 mm hose. (Heat & Cool model (Reverse cycle) only) When installing the drain pipe, plug all the holes (• holes at two places) other than the drain pipe mounting hole in the bottom of the outdoor unit with putty so there is no water leakage (Fig. 26). (Heat & Cool model (Reverse cycle) only)

## **↑** CAUTION Installation in cold regions. Do not use the accessory drain

(If the drain pipe is used, the drain water in the pipe may freeze in extremely cold weather.)



19 mm (3/4")



- Continued on back -

# **CAUTION**

1) 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. 2) While welding the pipes, be sure to blow dry nitrogen

gas through them. (3) The maximum lengths of this product are shown in ta-

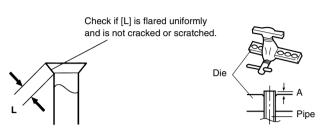
ble 2. If the units are further apart than this, correct operation can not be guaranteed.

# 1. FLARING

(1) Cut the connection pipe to the necessary length with a pipe cutter. (2) Hold the pipe downward so that cuttings will not enter the pipe and remove the burrs.

(3) 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 flare tool.

When using the conventional flare tool, always use an allowance adjustment gauge and secure the A dimension shown in table 4.



# Table 4 Pipe outside diameter

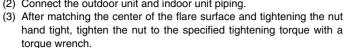
Pipe outside	A (mm)
diameter	Flare tool for R410A, clutch type
9.52 mm (3/8 in.)	0 to 0.5
15.88 mm (5/8 in.)	0 to 0.5

## 2. BENDING PIPES

(1) When bending the pipe, be careful not to crush it. (2) To prevent crushing of the pipe, do not bend the pipe at a radius curvature of 100 mm or over. (3) If the copper pipe is bend the pipe or pulled to often, it will become stiff. Do not bend the pipes more than three times at one place.

# 3. CONNECTION

(1) Install the outdoor unit wall cap (supplied with the optional installation set or procured at the site) to the wall hole pipe. (2) Connect the outdoor unit and indoor unit piping.



# **R410A REFRIGERAN**

To prevent gas leakage coat the flare surface with alkylbenzene oil (HAB). Do not use mineral oil.

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)

# **VACUUM PROCESS**

(1) Do not purge the air with refrigerants but use a vacuum frigerant in the outdoor unit for air purging!

**↑** CAUTION

pump to vacuum the installation! There is no extra re-(2) Use a vacuum pump for R410A exclusively. Using the

same vacuum pump for different refrigerants may dam-

1. VACUUM (1) Remove the cap, and connect the gauge manifold and the vacuum

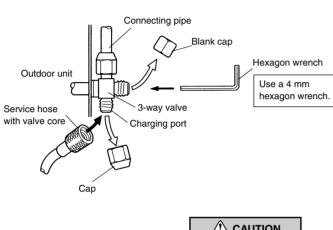
age the vacuum pump or the unit.

pump to the charging valve by the service hoses.

- (2) Vacuum the indoor unit and the connecting pipes until the pressure gauge indicates -0.1 MPa (-76 cmHg). (3) When -0.1 MPa (-76 cmHg) is reached, operate the vacuum pump
- for at least 15 minutes. 4) Disconnect the service hoses and fit the cap to the charging valve to
- the specified torque. 5) 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
- (6) Tighten the blank caps of the 2-way valve and 3-way valve to the

# 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)



**⚠** CAUTION Use a clean gauge man fold and charging hose for R410A exclusively.

# 2. ADDITIONAL CHARGE

For the additional amount, see the table below.

Refrigerant suitable for a piping length of 10 m is charged in the outdoor unit at the factory. When the piping is longer than 10 m, additional charging is necessary.

### Table 7

Pipe length	10 m (33 ft)	15 m (49 ft)	20 m (66 ft)	25 m (82 ft)	
Additional refrigerant	None	250 g (8.8 oz)	500 g (17.6 oz)	750 g (26.5 oz)	50 g / 1 m (1.76 oz / 3.3 ft)

Between 10 m and 25 m, when using a connection pipe other than that in the table, charge additional refrigerant with 50 g (1.76 oz) / 1 m (3.3 ft) as the criteria.

# **⚠** CAUTION

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

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

### (3) 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.

(4) Add refrigerant from the charging valve after the completion of the work.

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

# 3. GAS LEAKAGE INSPECTION

**⚠** CAUTION After connecting the piping, check the joints for gas leak age with gas leak detector.

# **ELECTRICAL WIRING**

# **↑** WARNING (1) Before starting work, check that power is not being supplied to indoor unit and the outdoor unit.

colors of the indoor unit and the outdoor unit. Erroneous wiring may cause burning of the electric parts. (3) Connect the connection cords firmly to the terminal

block. 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,

(2) Match the terminal block numbers and connection cord

(5) Always connect the ground wire.

electric leakage may occur.)

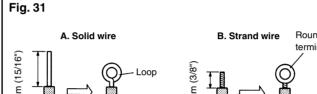
## **HOW TO CONNECT WIRING** TO THE TERMINALS

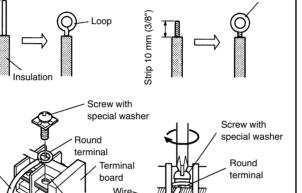
# A. For solid core wiring (or F-cable)

- ) Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 25 mm (15/16") to expose the solid wire. 2) Using a screwdriver, remove the terminal screw(s) on the terminal
- (3) 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.

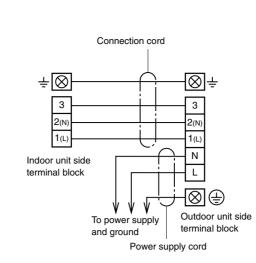
# B. For strand wiring

- ) Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 10 mm (3/8") to expose the strand wiring. (2) Using a screwdriver, remove the terminal screw(s) on the terminal
- (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 ter-
- minal screw using a screwdriver.





# 1. CONNECTION DIAGRAM



# 2. INDOOR UNIT SIDE

- (1) Open the intake grille. Remove the tapping screw for the control box cover and remove the control box cover (Fig. 33).
- remove the cord holder (Fig. 34). (3) Connect the end of the connection cord fully into the terminal block

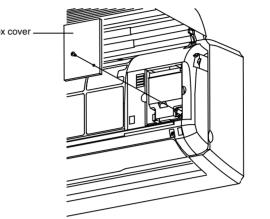
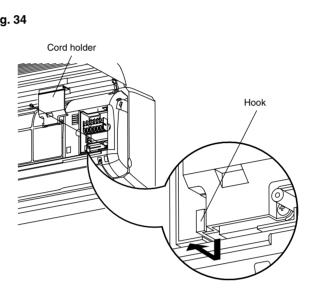
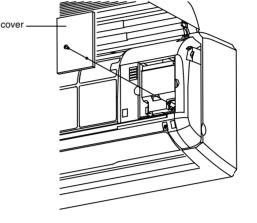


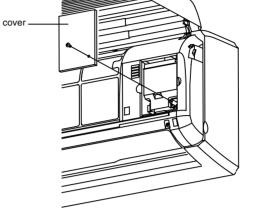
Fig. 34

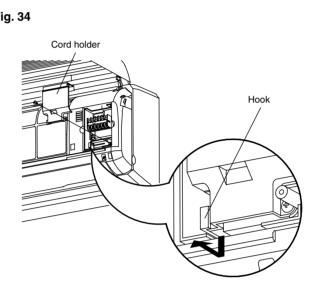


(2) Remove the tapping screw and while minding the cord holder hook,



# Fig. 33





**↑** CAUTION Apply putty so that there is no gap when the valve cover is

Connection cord

- (1) Process the end of the connection cords to the dimensions shown in (2) Connect the end of the connection cord fully into the terminal block and fasten with the screws.
- (3) Fasten the sheath with a cord clamp (Fig. 36). (4) Fasten the power supply cord and connection cord with a cable clip.
- (Fig. 38). (5) Install the valve cover (Fig. 39).

3. OUTDOOR UNIT SIDE

Fig. 35

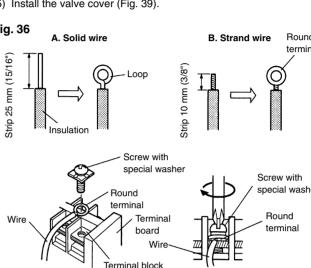
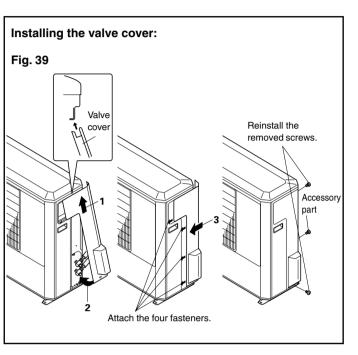


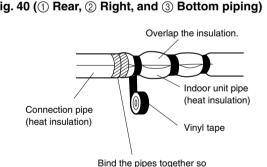
Fig. 37 1(L) 2(N) 3 L N Connection cord -



# **FINISHING**

# (1) Insulate between pipes.

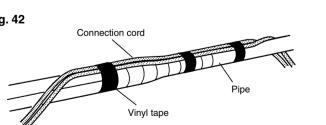
• For ① Rear, ② Right, and ③ Bottom piping, overlap the connection pipe heat insulation and indoor unit pipe heat insulation and bind them with vinyl tape so that there is no gap (Fig. 40). • For ④ Left rear and ⑤ Left piping, butt the connection pipe heat insulation and indoor unit pipe heat insulation together and bind



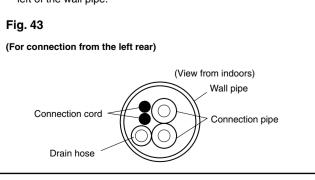
that there is no gap. • For 4 Left rear piping, 5 Left piping and 6 Center piping, wrap the

# Fig. 41 (4) Left rear piping, 5 Left piping and 6 Center piping)

• For 4 Left rear piping, 5 Left piping and 6 Center piping bind the connection cord to the top of the pipe with vinyl tape.

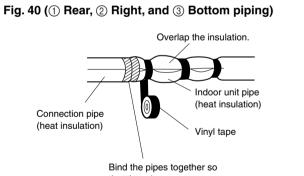


When connected from the left rear, the drain hose is at the bottom left of the wall pipe.

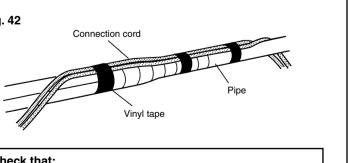


# 1. CONNECTION PIPE, CORD AND DRAIN HOSE

# them with vinyl tape so that there is no gap (Fig. 41).

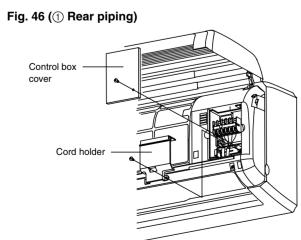


# area which accommodates the rear piping housing section with cloth



(3) Fasten the connection pipe to the outside wall with a saddle, etc. (4) Fill the gap between the outside wall pipe hole and the pipe with sealer so that rain water and wind cannot blow in.

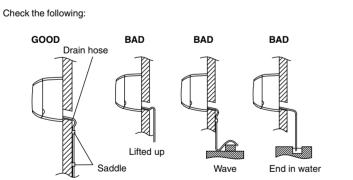
(1) Secure the cord holder with tapping screw (Fig. 46). (2) Secure the control box cover and tapping screw (Fig. 46). (3) Close the intake grille (Fig. 47).



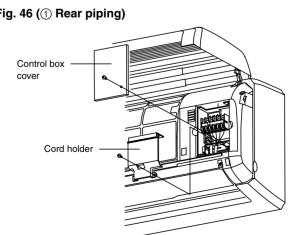
(2) Temporarily fasten the connection cord along the connection pipe with vinyl tape. (Wrap to about 1/3 the width of the tape from the bottom of the pipe so that water does not enter.)

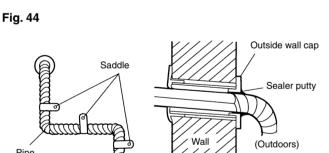
# Fig. 44

# Fig. 45

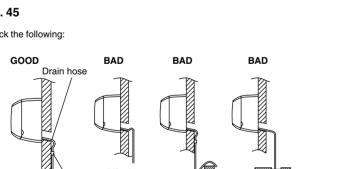


# 2. INSTALLING FINAL PARTS





# (5) Fasten the drain hose to the outside wall, etc



The top and bottom hooks are hooked firmly and the indoor unit

Check that:

# does not move to the front and rear or left and right. The indoor unit is accurately positioned horizontally and vertically.

# **POWER**

# **⚠** WARNING

the 198 V to 264 V range.

(5) The circuit breaker is installed in the permanent wiring. Always use a circuit that can trip all the poles of the wiring and has an isolation distance of at least 3

that the room air conditioner can be operated safely and positively. (7) Install a leakage circuit breaker in accordance with the

(6) Perform wiring work in accordance with standards so

The power source capacity must be the sum of the room air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.

(2) When the voltage is low and the air conditioner is diffi-

cult to start, contact the power company the voltage

1) The rated voltage of this product is 220-240 V A.C.

(2) Before turning on the verify that the voltage is within

(3) Always use a special branch circuit and install a special breaker to supply power to the room air conditioner. (4) Use a circuit breaker matched to the capacity of the

room air conditioner. (Install in accordance with stand-

mm between the contacts of each pole.

related laws and regulations and electric company

**⚠** CAUTION

# **↑** CAUTION

operation in order to ensure compressor protection. • Perform test operation and check items 1 and 2 below. • For the operation method, refer to the operating manual.

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). Fig. 49 Short the two metal contacts under the battery compartment lid.

Operation can be checked by lighting and flashing of the display section

Test running

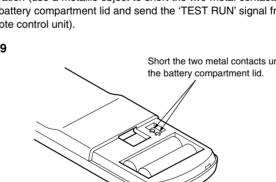
Table 8							
	CURRENT						
1	2	3	(MAX.)				
OFF	OFF	OFF	16.5 A				
ON	OFF	OFF	1404				

and the unit will not operate properly.

performance will be reduced.

# **TEST RUNNING**

# Always turn on the power 4 hours prior to the start of the

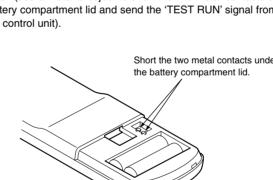


(1) When the air conditioner is run by pressing the remote control unit TEST RUN button, the OPERATION and TIMER lamps flash slowly at the same time.

**↑** CAUTION 1) Never set the 24,000 BTU model to the maximum current of 16.5 A. The protection devices will be activated

(2) If the maximum current is reduced, cooling or heating

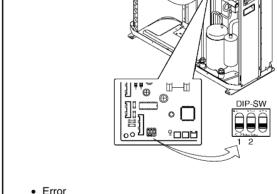
• The outdoor unit may not run, depending on the room temperature. In this case, the 'TEST RUN' signal is received during air conditioner



OPERATION and TIMER lamps. Perform judgement in accordance with the following.

(2) If the breaker is tripped during the test operation due to insufficient current capacity, change the DIP switches on the circuit board to the settings shown in Table 8 below.

Fig. 50



# ble 9) according to the error contents.

The OPERATION, TIMER and SWING lamps operate as follows (Ta-

	Error display			
Error contents	OPERATION (RED)		SWING (ORANGE	
Indoor unit circuit board error	0	0	_	
Indoor unit room temperature sensor wire opened	2 times	0	_	
Indoor unit room temperature sensor wire short circuited	2 times	0	0	
Indoor unit piping sensor wire opened	3 times	0	_	
Indoor unit piping sensor short circuited	3 times	0	0	
Indoor unit fan error	6 times	0	_	
Outdoor unit circuit board error or miswiring between outdoor unit and indoor unit	5 times	0	0	
Outdoor unit discharge temperature sensor error	0	5 times	_	
Outdoor unit piping sensor	0	3 times		
Outdoor unit outdoor temperature sensor		4 times		

**CHECK ITEMS** 

(1) INDOOR UNIT

(2) OUTDOOR UNIT

(3) Is there any gas leakage?

(1) Is operation of each button on the remote control unit normal? (2) Does each lamp light normally? (3) Do not air flow direction louvers operate normally? (4) Is the drain normal? (5) Is there any abnormal noise and vibration during operation?

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

○ : Fast flashing● : Slow flashing— : Off

• Do not operate the air conditioner in the test running state for a long • For the operation method, refer to the operating manual and perform operation check.

# 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.

### Avoid places in direct sunlight. Select a place that will not be affected by the heat from a stove, etc.

paying careful attention to the following:

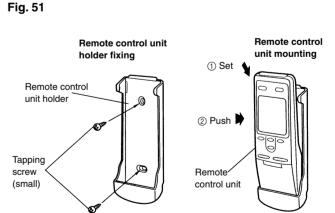
(2) Select the remote control unit holder selection site by

1. REMOTE CONTROL UNIT HOLDER INSTALLA-• Install the remote control unit with a distance of 7 m between the remote control unit and the photocell as the criteria. However, when in-

stalling the remote control unit, check that it operates positively.

• Install the remote control unit holder to a wall, pillar, etc. with the tap-

ping screw (Fig. 51).



2. SWITCHING REMOTE CONTROL UNIT SIGNAL

Air conditioner settings

Indoor unit

circuit board

Fig. 52

circuit board setting.

DIP-SW		Remote control unit
DIP-SW3	DIP-SW4	signal code
ON	ON	A (Primary setting)
OFF	ON	В
ON	OFF	С
OFF	OFF	D

Explain the following to the customer in accordance with the operating

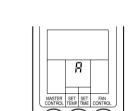
(2) Air filter removal and cleaning, and how to use the air louvers. (3) Give the operating manual and installation instruction sheet to the

justment, timer, air flow switching, and other remote control unit op-

# (1) Press the START/STOP button and display only the clock. 12 : 18

Remote control unit settings

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



(3) Change the signal code with the +/- button (--) b



Confirm the setting of the remote control unit signal code and the printed

If these are not confirmed, the remote control unit cannot be used to

Table 10

# operate for the air conditioner.

DIP-SW3	DIP-SW4	signal code
ON	ON	A (Primary setting)
OFF	ON	В
ON	OFF	С
OFF	OFF	D

# **CUSTOMER GUIDANCE**

(1) Starting and stopping method, operation switching, temperature ad-

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