SPLIT TYPE ROOM AIR CONDITIONER
INSTALLATION INSTRUCTION SHEET
(PART NO. 9373460015)

IMPORTANT!
Please Read Before Starting

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.

For safe installation and trouble-free operation, you must:

- Carefully read this instruction booklet before beginning.
- Follow each installation or repair step exactly as shown.
- Observe all local, state, and national electrical codes.
- Pay close attention to all danger, warning, and caution notices given in this manual.

WARNING: This symbol refers to a hazard or unsafe practice which can result in severe personal injury or death.

CAUTION: This symbol refers to a hazard or unsafe practice which can result in personal injury and the potential for product or property damage.

- Hazel alerting symbols

Electrical

Safety / alert

If Necessary, Get Help

These instructions are all you need for most installation sites and maintenance conditions. If you require help for a special problem, contact our sales/service outlet or your certified dealer for additional instructions.

In Case of Improper Installation

The manufacturer shall in no way be responsible for improper installation or maintenance service, including failure to follow the instructions in this document.

SPECIAL PRECAUTIONS

When Wiring

ELECTRICAL SHOCK CAN CAUSE SEVERE PERSONAL INJURY OR DEATH. ONLY A QUALIFIED, EXPERIENCED ELECTRICIAN SHOULD ATTEMPT TO WIRE THIS SYSTEM.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause **accidental injury or death**.
- **Ground the unit** following local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

When Transporting

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your fingers.

When Installing...

...In a Ceiling or Wall

Make sure the ceiling/wall is strong enough to hold the unit's weight. It may be necessary to construct a strong wood or metal frame to provide added support.

...In a Room

Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to walls and floors.

...In Moist or Uneven Locations

Use a raised concrete pad or concrete blocks to provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

...In an Area with High Winds

Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

...In a Snowy Area (for Heat Pump-type Systems)

Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When Connecting Refrigerant Tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Apply refrigerant lubricant to the matching surfaces of the flare and union tubes before connecting them, then tighten the nut with a torque wrench for a leak-free connection.
- Check carefully for leaks before starting the test run.

NOTE:

Depending on the system type, liquid and gas lines may be either narrow or wide. Therefore, to avoid confusion the refrigerant tubing for your particular model is specified as either "small" or "large" rather than as "liquid" or "gas".

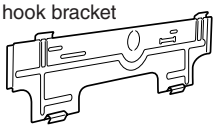
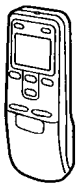
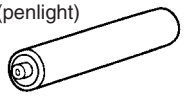
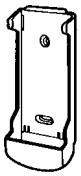
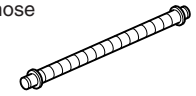
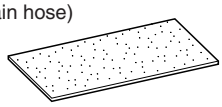
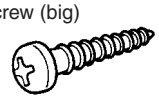
When Servicing

- Turn the power OFF at the main circuit breaker panel before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.
- After installation, explain correct operation to the customer, using the operating manual.

STANDARD ACCESSORIES

The following installation accessories are supplied. Use them as required.

INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Use
Wall hook bracket 	1	For indoor unit installation
Remote control unit 	1	Use for air conditioner operation
Battery (penlight) 	2	For remote control unit
Remote control unit holder 	1	Use as remote control unit holder
Drain hose 	1	For indoor unit installation
Insulation (Drain hose) 	1	For drain hose installation
Tapping screw (big) (ø4 × 20) 	12	For wall hook bracket installation
Tapping screw (small) (ø3 × 12) 	2	For remote control unit holder installation

OUTDOOR UNIT ACCESSORIES

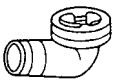
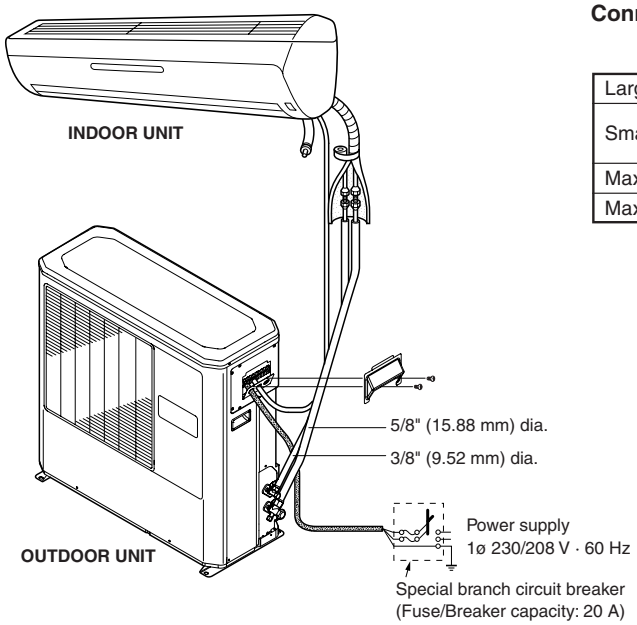
Drain pipe 	1	For outdoor unit drain piping work [Heat & Cool model (Reverse cycle) only]
Drain cap 	5	

Fig. 1



Connection pipe

Table 1

Large pipe		5/8" (ø15.88 mm)
Small pipe	18000 BTU model	1/4" (ø6.35 mm)
	24000 BTU model	3/8" (ø9.52 mm)
Max. height		49.2 ft (15 m)
Max. length		130 ft (40 m)

GENERAL

This INSTALLATION INSTRUCTION SHEET briefly outlines where and how to install the air conditioning system. Please read over the entire set of instructions for the indoor and outdoor units and make sure all accessory parts listed are with the system before beginning.

1. TYPE OF COPPER PIPE AND INSULATION MATERIAL

Copper tubing for connecting the outdoor unit to the indoor unit and insulation material is available for purchase locally. When you purchase them, please specify the following.

(1) Deoxidized annealed copper pipe for refrigerant piping as:

Table 2

		Outer diameter	Thickness
Small pipe	18000 BTU model	1/4" (6.35 mm)	1/32" (0.8 mm)
	24000 BTU model	3/8" (9.52 mm)	
Large pipe		5/8" (15.88 mm)	3/64" (1.0 mm)

Cut each pipe to the appropriate length + 12" (30 cm) to 16" (40 cm) to dampen vibration between units.

⚠ CAUTION

(1) Limit the height difference between the indoor and outdoor units to within 49.2 ft (15 m).

(2) The maximum piping length is 130 ft (40 m). If the units are further apart than this, correct operation can not be guaranteed.

(2) Foamed polyethylene insulation for copper pipes as required to precise length of piping. Wall thickness of the insulation should not be less than 5/16" (8 mm).

⚠ CAUTION

Install heat insulation around both the gas and liquid pipes. Failure to do so may cause water leaks.
Use heat insulation with heat resistance above 248 °F. (Reverse cycle model only)
In addition, if the humidity level at the installation location of the refrigerant piping is expected to exceed 70%, install heat insulation around the refrigerant piping. If the expected humidity level is 70-80%, use heat insulation that is 5/8" (15 mm) or thicker and if the expected humidity exceeds 80%, use heat insulation that is 13/16" (20 mm) or thicker. If heat insulation is used that is not as thick as specified, condensation may form on the surface of the insulation. In addition, use heat insulation with heat conductivity of 0.045 W/(m·K) or less (at 68 °F).

(3) Use insulated copper wire for field wiring.

⚠ CAUTION

Check local electrical codes and regulations before obtaining wire. Also, check any specified instructions or limitations.

2. ADDITIONAL MATERIALS REQUIRED FOR INSTALLATION

(1) Refrigeration (armored) tape
(2) Insulated staples or clamps for connecting wire (See your local electrical codes.)
(3) Putty
(4) Refrigeration lubricant
(5) Clamps or saddles to secure refrigerant piping

3. OPERATING RANGE

Table 3

	Temperature	Indoor air intake	Outdoor air intake
Cooling	Maximum	90˚F DB, 73˚F WB	115˚F DB
	Minimum	65˚F DB, 57˚F WB	32˚F DB
Heating	Maximum	80˚F DB, – WB	75˚F DB, 65˚F WB
	Minimum	– DB, – WB	32˚F DB, – WB

ELECTRICAL REQUIREMENT

Always make the air conditioner power supply a special branch circuit and provide a special switch and receptacle. Do not extend the power cord.

⚠ CAUTION

MINIMUM CIRCUIT AMPACITY 15 A
MAXIMUM OVERCURRENT PROTECTION 20 A
(TIME DELAY FUSE OR HACR TYPE CIRCUIT BREAKER)

SELECTING THE MOUNTING POSITION

⚠ WARNING

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

⚠ CAUTION

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

(2) Do not install the unit near a source of heat, steam, or flammable gas.

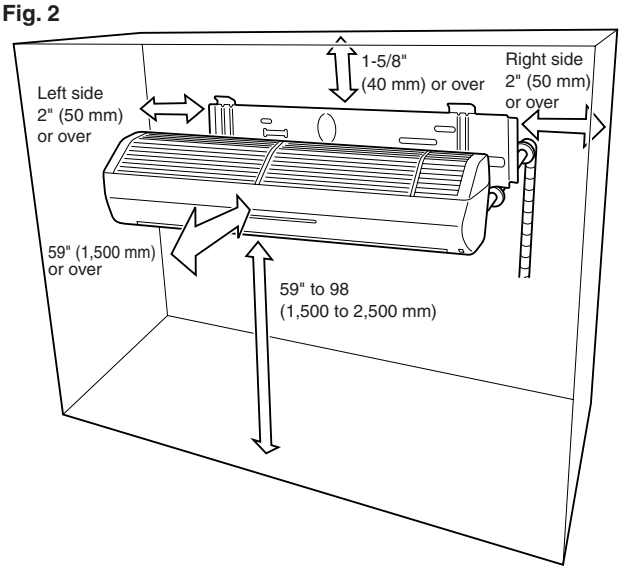
(3) If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

Decide the mounting position with the customer as follows:

1. INDOOR UNIT

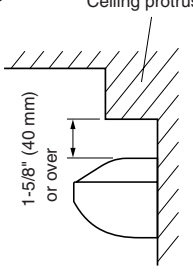
(1) Install the indoor unit level on a strong wall which is not subject to vibration.
(2) The inlet and outlet ports should not be obstructed : the air should be able to blow all over the room.
(3) Do not install the unit where it will be exposed to direct sunlight.
(4) Install the unit where connection to the outdoor unit is easy.
(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. 2. Also install the unit where the filter can be removed.

Fig. 2



⚠ CAUTION

Fig. 3



If there is a section of the ceiling that protrudes, mount in a position that allows for 1-5/8" (40 mm) or more of space between the unit and the protrusion.

2. OUTDOOR UNIT

⚠ WARNING

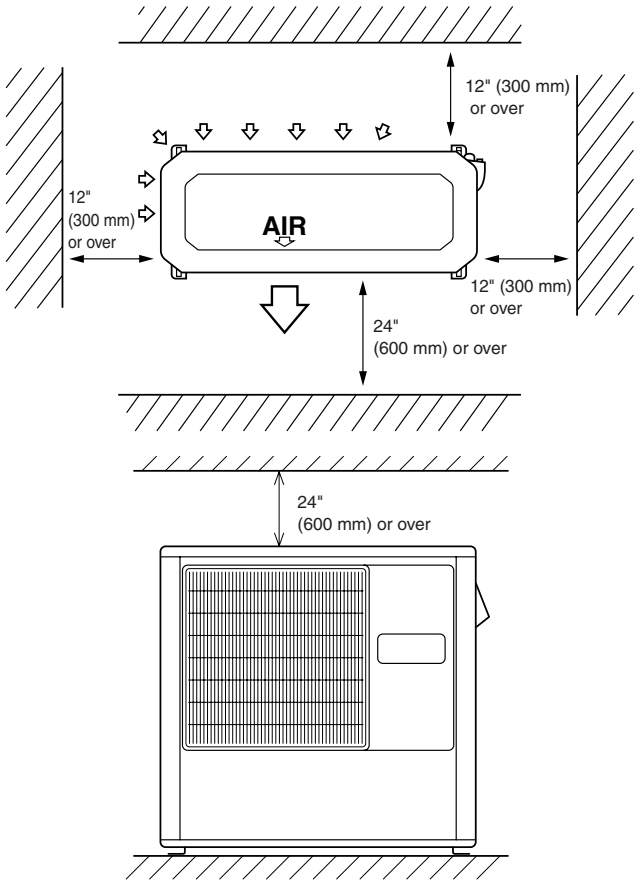
(1) Install the unit where it will not be tilted by more than 5°.

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

- 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.

(1) If possible, do not install the unit where it will be exposed to direct sunlight. (If necessary, install a blind that not interfere with the air flow.)
(2) Do not install the unit where a strong wind blows or where it is very dusty.
(3) Do not install the unit where people pass.
(4) Take you 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. 4 so that the air flow is not blocked. Also for efficient operation, leave open three of the four directions front, rear, and both sides.

Fig. 4

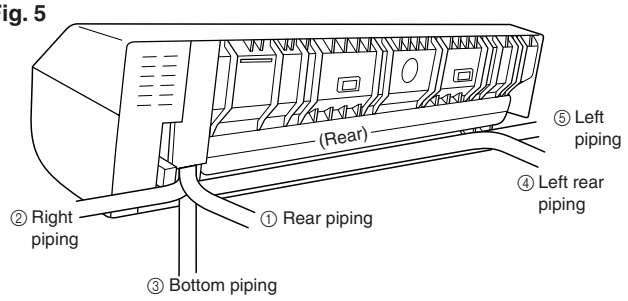


INSTALLATION PROCEDURE

1 INDOOR UNIT INSTALLATION

The piping can be connected in the five directions indicated by ①, ②, ③, ④, and ⑤ in Fig. 5.

Fig. 5



1. INSTALLING THE WALL HOOK BRACKET

[Removing THE WALL HOOK BRACKET]

Remove the wall hook bracket in the following order.

- Open the screw cover and remove the two screws. (Fig. 6)
- Pull off the front cover to the front. (Fig. 7)
- Remove the tapping screws securing the wall hook bracket. (Fig. 8)

Fig. 6

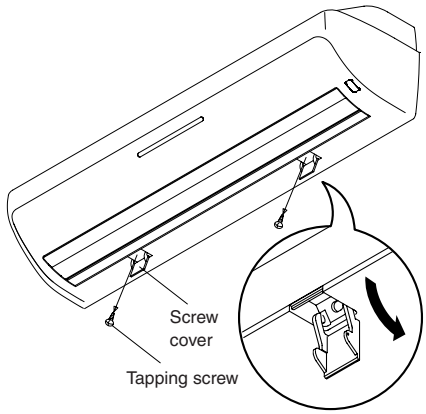


Fig. 7

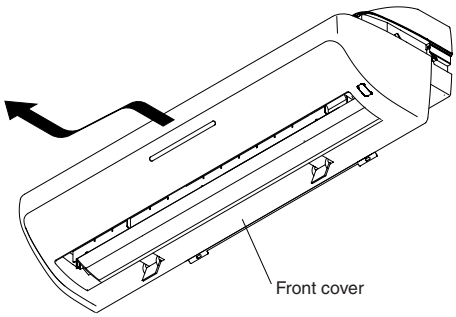
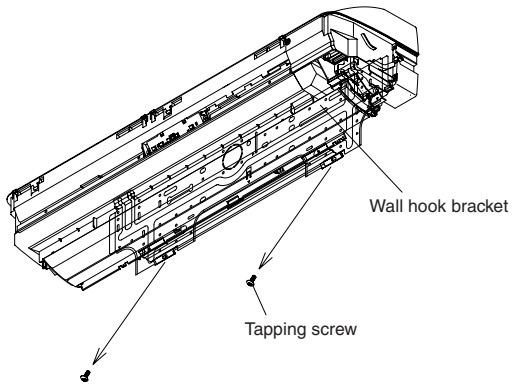


Fig. 8



[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 a screwdriver.

- 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 (3/8" (10 mm) dia.) into the wall at the wall hook bracket holes (2-7/16" × 1-11/16" (11 × 43 mm)). Allow the anchor bolts to stick out at least 15/32" (12 mm) from the wall. (Fig. 10) 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.
- Finally tighten the bolts and tapping screws after confirming, using the level indicator, that the clamp is horizontal.

⚠ WARNING

(1) Install the wall hook bracket so that it is correctly positioned horizontally and vertically. If the wall hook bracket is tilted or the installation point of the indoor unit is not level, water will drip to the floor.

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

Fig. 9 UNIT: inch (mm)

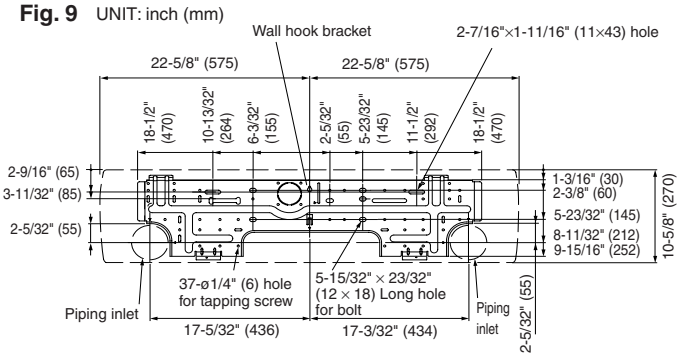


Fig. 10

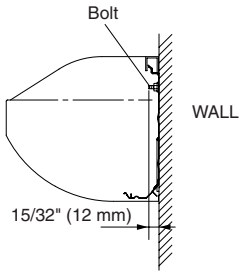
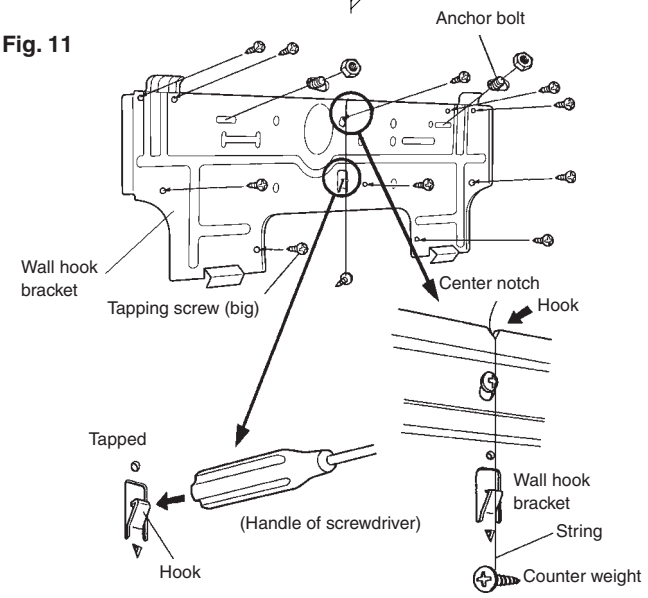


Fig. 11



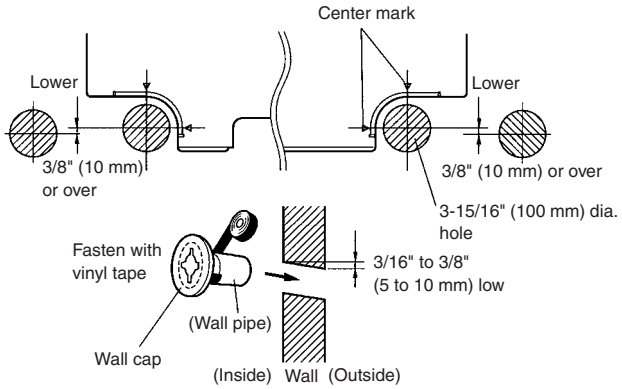
2. CUTTING THE HOLE IN THE WALL FOR THE CONNECTING PIPING

⚠ WARNING

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

(1) Cut a 3-15/16" (100 mm) diameter hole in the wall at the position shown in Fig. 12.
(2) When cutting the wall hole at the inside of the installation frame, cut the hole to a point of intersection of center marks.
When cutting the wall hole at the outside of the installation frame, cut the hole at least 3/8" (10 mm) below less.
(3) Cut the hole so that the outside end is lower (3/16" to 3/8" (5 to 10 mm)) than the inside end.
(4) Always align the center of the wall hole. If misaligned, water leakage will occur.
(5) Cut the wall pipe to match the wall thickness, stick it into the wall cap, fasten the cap with vinyl tape, and stick the pipe through the hole. (The connection pipe is supplied in the installation set.) (Fig. 12).
(6) For ⑤ left piping and ② right piping, cut the hole a little lower so that drain water will flow freely (Fig. 12).

Fig. 12



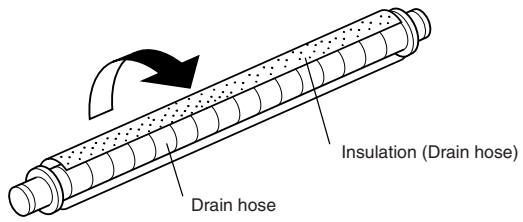
3. ATTACH THE DRAIN HOSE

⚠ CAUTION

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 connected properly, leaking will occur.

• Attach the Insulation (Drain hose) to the drain hose.

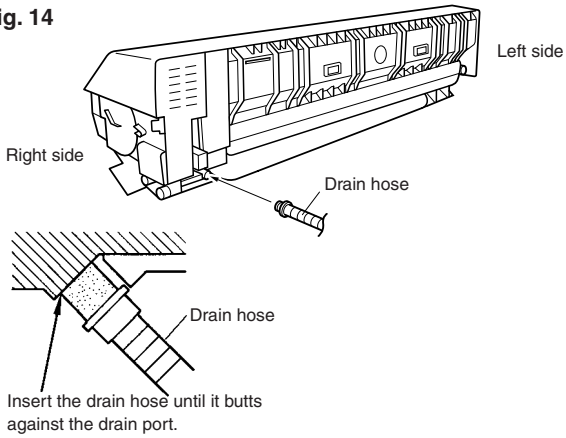
Fig. 13



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

• Mount the drain hose to the drain port on the right side.

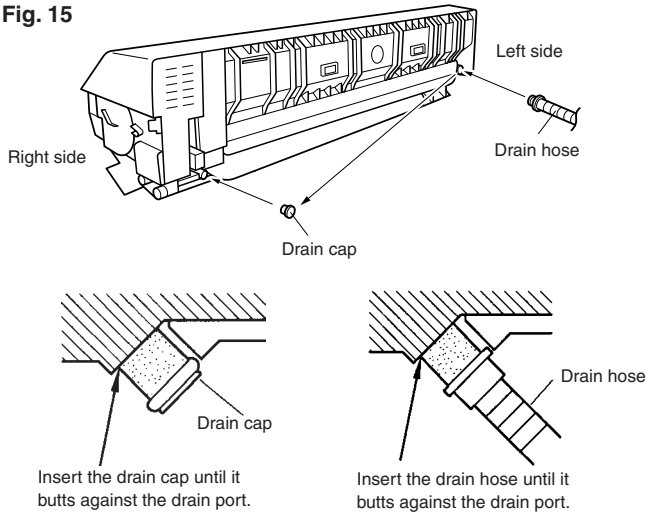
Fig. 14



[For ④ Left rear piping, ⑤ Left piping]

• Remove the drain cap and mount to the drain port on the right side.
• Mount the drain hose to the drain port on the left side.

Fig. 15

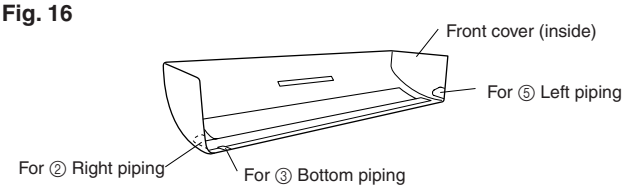


4. CUT-OUT FOR PIPING ON FRONT COVER

[For ② Right piping, ③ Bottom piping, ⑤ Left piping]

• Use a metal shears or other cutting tool to cut along the groove in the thin metal for the piping that will coming out of the front cover.

Fig. 16



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 pipe.

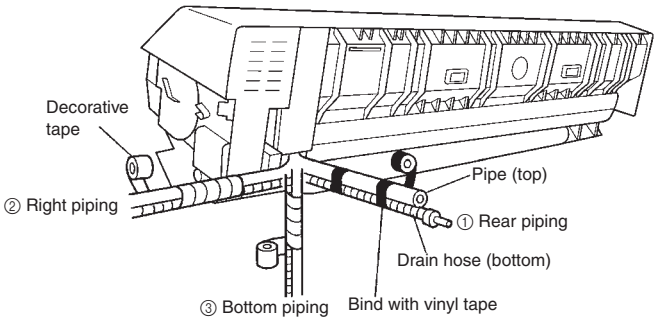
(2) To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 6" (150 mm) or over.

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

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

- Install the indoor unit piping in the direction of the wall hole and bind the drain hose and pipe together with vinyl tape (Fig. 17).
- Install the piping so that the drain hose is at the bottom.

Fig. 17



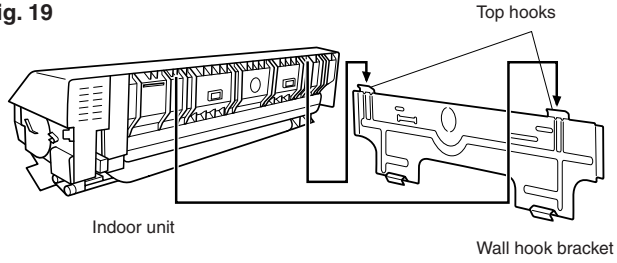
⚠ CAUTION

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 accumulate.

Fig. 18 Bad Example

- 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. 19



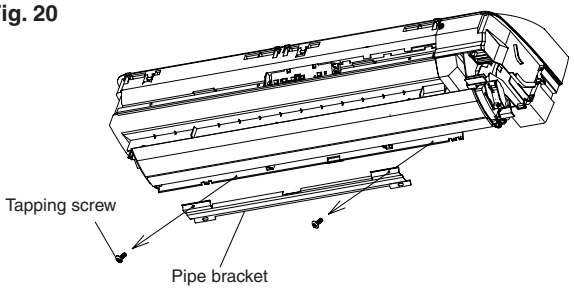
[For ④ Left rear piping, ⑤ Left piping]

- For ④ Left rear piping and ⑤ Left piping can be easily installed by removing the pipe bracket.

Removing the pipe bracket:

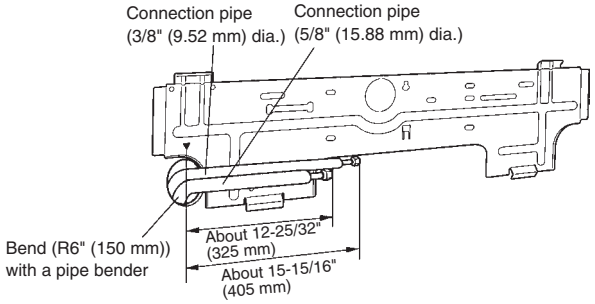
Remove the two tapping screws holding the pipe bracket (Fig. 20).

Fig. 20



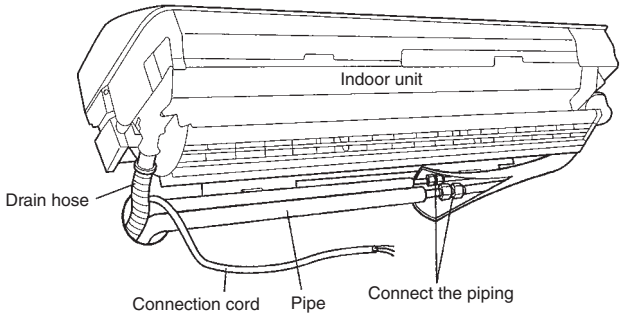
- For ④ Left rear piping and ⑤ Left piping, preset the end of the pipe to the dimensions shown in Fig. 21 and form the connection pipe.
- Bend the connection piping at a bend radius of at least 6" (150 mm) and position it no more than 2" (50 mm) from the wall.

Fig. 21



- Piping work can be made easier by laying out, shaping, and temporarily fastening the connection pipe and connection cord as shown in Fig. 22 beforehand.

Fig. 22 (Left rear piping)

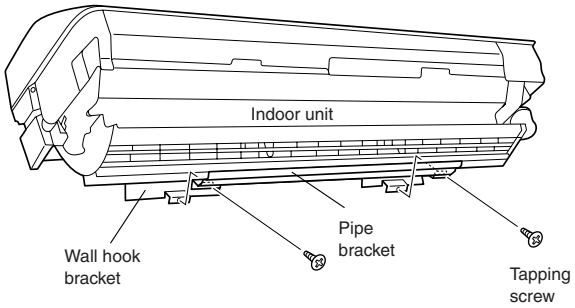


6. INSTALLING THE INDOOR UNIT

After connecting the piping, fasten the bottom of the indoor unit and the wall hook bracket with the tapping screws.

- If the unit has ④ left rear piping and ⑤ left piping, use the process shown in "7 FINISHING" following for securing the indoor unit.

Fig. 23



2 OUTDOOR UNIT INSTALLATION

⚠ WARNING

(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.

- 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 an commercial 5/8" (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. 24) (Heat & Cool model (Reverse cycle) only)

⚠ CAUTION

Installation in cold regions. Do not use the accessory drain pipe.
(If the drain pipe is used, the drain water in the pipe may freeze in extremely cold weather.)

Fig. 24

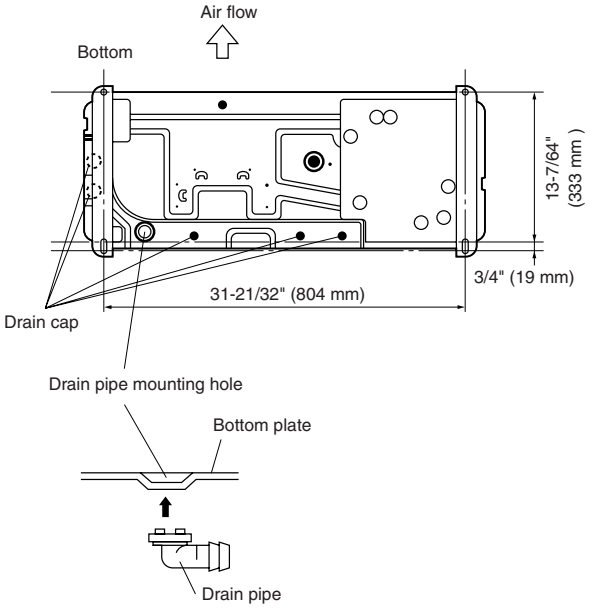
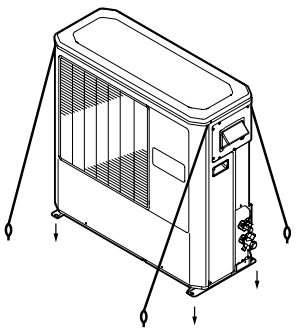


Fig. 25



3 CONNECTING THE PIPING

⚠ CAUTION

The maximum lengths of this product are shown in Table 1. 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 onto the pipe and flare the pipe with a flaring tool.

Fig. 26

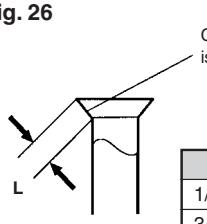


Table 4

Pipe	L dimension
1/4" (6.35 mm) dia.	1/16" (1.4 to 1.7 mm)
3/8" (9.52 mm) dia.	5/64" (1.8 to 2.0 mm)
5/8" (15.88 mm) dia.	3/32" (2.2 to 2.4 mm)

2. BENDING PIPES

(1) When bending the pipe, be careful not to crush it.
(2) To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 6" (150 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.
(3) After matching the center of the flare surface and tightening the nut hand tight, tighten the nut to the specified tightening torque with a torque wrench.

Fig. 27

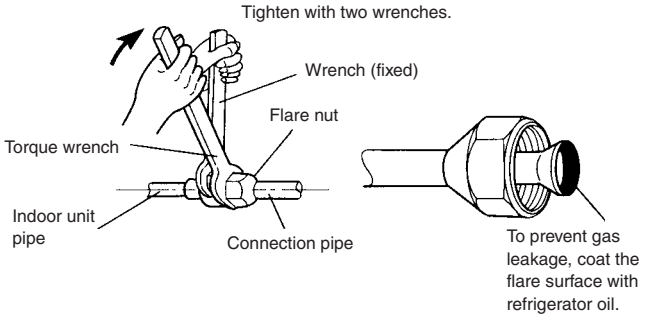


Table 5 Flare nut tightening torque

Flare nut	Tightening torque
1/4" (6.35 mm) dia.	10.8 to 14.5 ft·lbs (150 to 200 kgf·cm)
3/8" (9.52 mm) dia.	22.4 to 25.3 ft·lbs (310 to 350 kgf·cm)
5/8" (15.88 mm) dia.	54.2 to 57.9 ft·lbs (750 to 800 kgf·cm)

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

- Continued on back -

4 VACUUM PROCESS

⚠ CAUTION

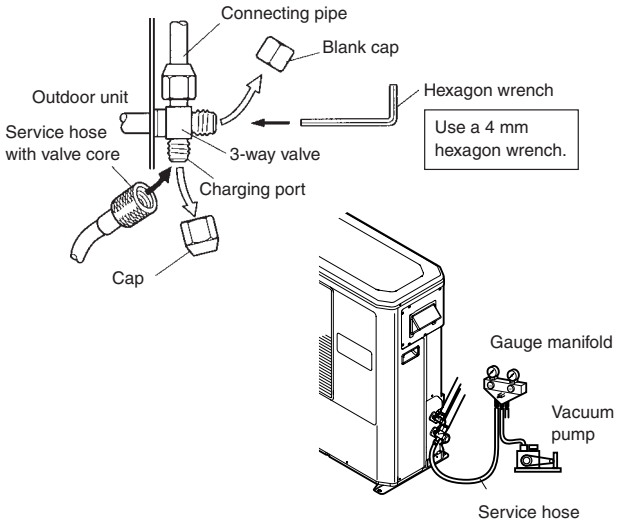
(1) When moving and installing the room air conditioner, do not mix gas other than the specified refrigerant (R22) inside the refrigerant cycle.

(2) Charging of additional refrigerant (R22) according to the piping length is unnecessary.

1. VACUUM

(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: 5.0 to 6.5 ft·lbs (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: 5.0 to 6.5 ft·lbs (70 to 90 kgf·cm), 3-way valve: 7.2 to 8.7 ft·lbs (100 to 120 kgf·cm)).
(5) Tighten the blank caps of the 2-way valve and 3-way valve to the specified torque (14.5 to 18.1 ft·lbs (200 to 250 kgf·cm)).

Fig. 28



2. ADDITIONAL CHARGE

Refrigerant suitable for a piping length of 33 ft (10 m) (18000 BTU model), 66 ft (20 m) (24000 BTU model) is charged in the outdoor unit at the factory.
When the piping is longer than 33 ft (10 m) (18000 BTU model), 66 ft (20 m) (24000 BTU model), additional charging is necessary.
For the additional amount, see the table below.

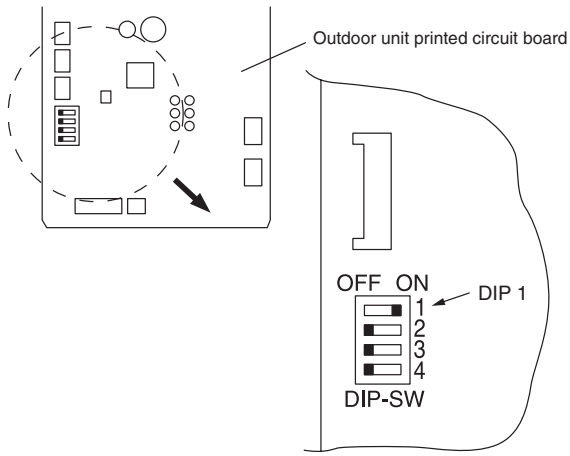
Table 6

Pipe length		33 ft (10 m)	66 ft (20 m)	99 ft (30 m)	131 ft (40 m)	
Additional refrigerant	18000 BTU model	None	5.3 oz (150 g)	10.6 oz (300 g)	15.9 oz (450 g)	0.53 oz/3.3 ft (15 g/1 m)
	24000 BTU Cooling model	None		7.1 oz (200 g)	14.1 oz (400 g)	0.71 oz/3.3 ft (20 g/1 m)
	24000 BTU Heat & Cool model (Reverse cycle)	None		14.1 oz (400 g)	28.2 oz (800 g)	1.41 oz/3.3 ft (40 g/1 m)

For piping lengths longer than 66 ft (20 m)

If the piping length is longer than 66 ft (20 m), set DIP switch No. 1 on the printed circuit board of the outdoor unit to ON as shown in Fig. 29 (the factory setting for DIP switch No. 1 is OFF).

Fig. 29



Between 33 ft (10 m) and 130 ft (40 m), when using a connection pipe other than that in the table, charge additional refrigerant with 1.41 oz (40 g)/3.3 ft (1 m) (24000 BTU Heat & Cool model (Reverse cycle)), 0.71 oz (20 g)/3.3 ft (1 m) (24000 BTU Cooling model), 0.53 oz (15 g)/3.3 ft (1 m) (18000 BTU model)) as the criteria.

3. GAS LEAKAGE INSPECTION

⚠ CAUTION

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

5 ELECTRICAL WIRING

⚠ WARNING

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

(2) Match the terminal block numbers and connection cord 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, electric leakage may occur.)

(5) Always connect the ground wire.

HOW TO CONNECT WIRING TO THE TERMINALS

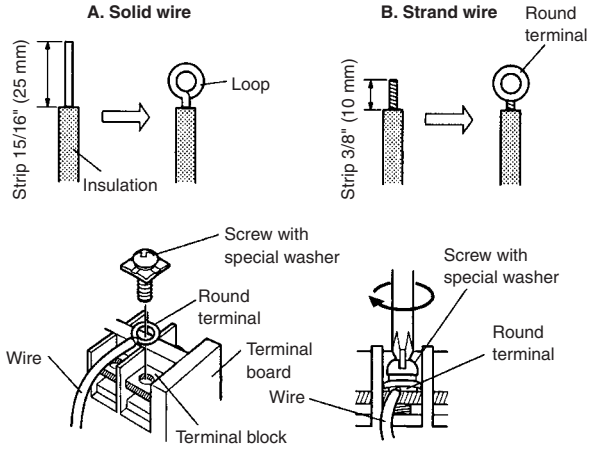
A. For solid core wiring (or F-cable)

(1) Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 15/16" (25 mm) to expose 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 end with a wire cutter or wire-cutting pliers, then strip the insulation to about 3/8" (10 mm) to expose the strand wiring.
(2) Using a screwdriver, remove the terminal screw(s) on the terminal board.
(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.

Fig. 30

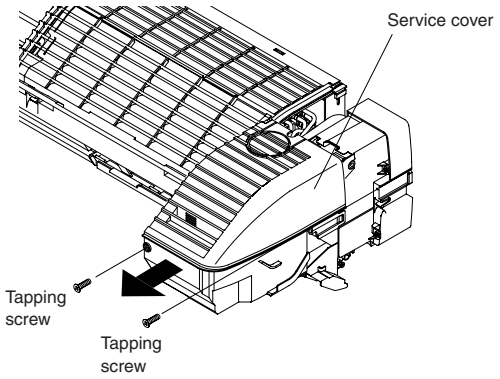


1. INDOOR UNIT SIDE

(1) Remove the service cover (Fig. 31).
(2) Remove the control box cover (Fig. 32).

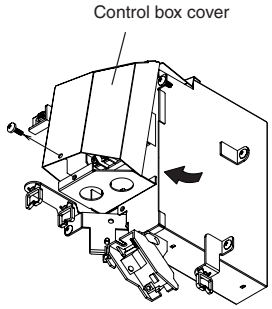
Remove the service cover

Fig. 31



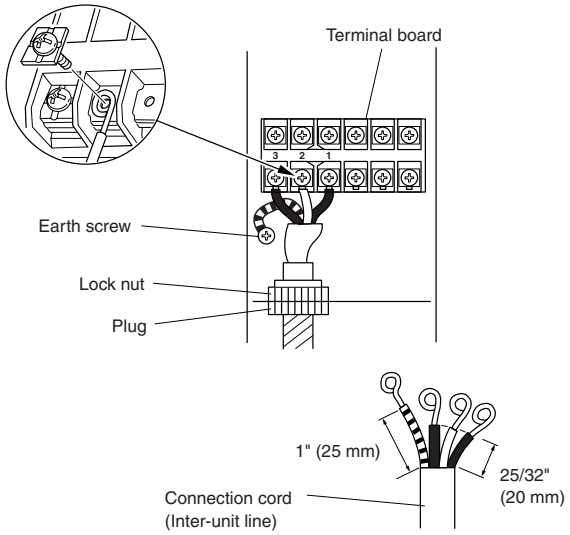
Removing the control box cover

Fig. 32



(3) Process the end of the connection cords to the dimension shown in Fig. 33 and bend the end of each wire as shown.
(4) Connect the end of the connection cord fully into the terminal board and fasten with the screw.

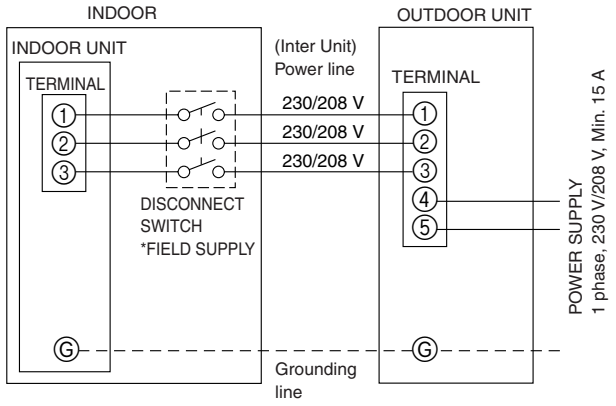
Fig. 33



(5) Fasten the control box cover and the service cover with the screw.

Fig. 34

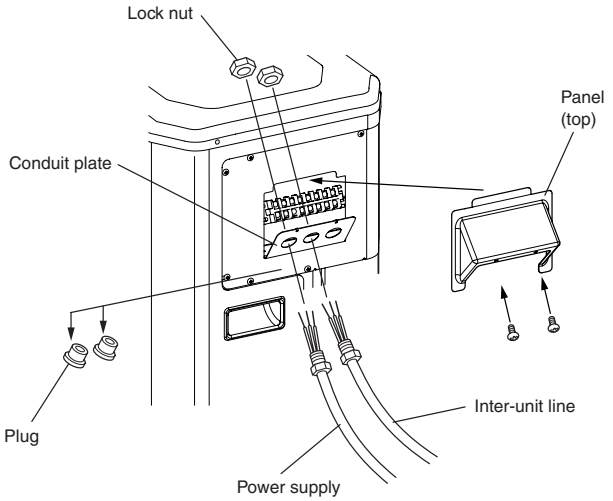
WIRING SYSTEM DIAGRAM



2. OUTDOOR UNIT SIDE

(1) Remove the panel (top), remove the 2 screws.
(2) Dismount the plugs on the cunduit plate.
(3) Temporarily mount the conduit tubes on the conduit plate.
(4) Properly connect both the power supply and inter-unit lines to the corresponding terminals on the terminal board.
Refer to the wiring system diagram in Fig. 35 [Which also appears on the side panel].
(5) Ground the unit in accordance with local codes.
(6) Be sure to size each wire allowing several inches longer than the required length for wiring.
(7) Use lock nuts to secure the conduit tube.

Fig. 35



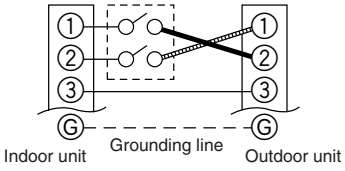
⚠ CAUTION

■ EXAMPLE OF INCORRECT WIRING
The following are examples of improper wiring that results in system malfunction. You should confirm that you have wired the units correctly before beginning the test run.

Fig. 36

- Short circuit will occur after approx. 3 minutes and the power circuit fuse blows.

(Ex) Disconnect switch



NOTE

- Connector trade size for this unit is 1/2" (12.7 mm). The connector can be bought at a hardware store. Refer to "How to connect wiring to the terminals" for instructions on connecting depending on the wire type you are using.
- The fuse located in the outdoor unit provides power supply protection and may blow when power is applied if the system has been incorrectly wired.

6 POWER

⚠ WARNING

(1) The rated voltage of this product is 230/208 V A.C. 60 Hz.

(2) Before turning on the verify that the voltage is within the 187 V to 253 V range.

(3) Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.

(4) Use a circuit breaker and receptacle matched to the capacity of the air conditioner.

(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 1/8" (3 mm) 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.

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

⚠ CAUTION

(1) The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current carrying capacity is insufficient, change the circuit capacity.

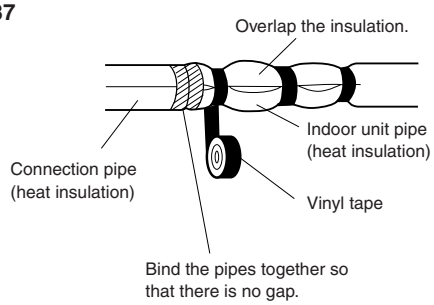
(2) When the voltage is low and the air conditioner is difficult to start, contact the power company to have the voltage raised.

7 FINISHING

1. CONNECTION PIPE, CORD AND DRAIN HOSE

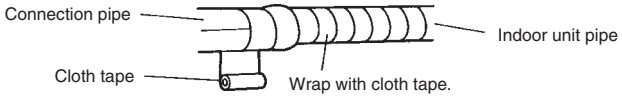
(1) Insulate between pipes.
- For ① Rear, ② Right, and ③ Bottom piping, overlap the connection pipe heat insulation and indoor unit pipe heat insulation and bind them with vinyl tape so that there is no gap.
- For ④ Left rear and ⑤ Left piping, butt the connection pipe heat insulation and indoor unit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

Fig. 37



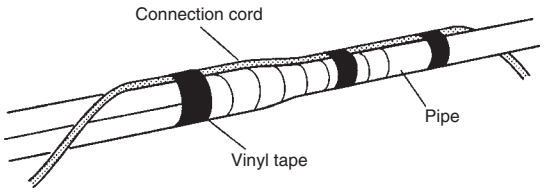
- For ④ Left rear and ⑤ Left piping, wrap the area which accommodates the rear piping housing section with cloth tape.

Fig. 38



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

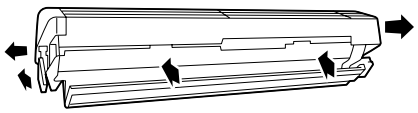
Fig. 39



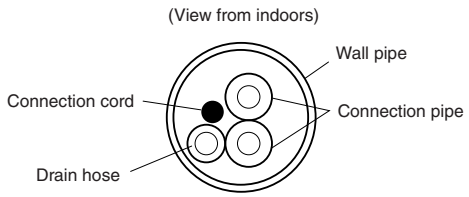
Check that:

- The top and bottom hooks are hooked firmly and the indoor unit does not move to the front and rear or left and right.
- The indoor unit is accurately positioned horizontally and vertically.
- When connected from the left rear, the drain hose is at the bottom left of the wall pipe.

Fig. 40

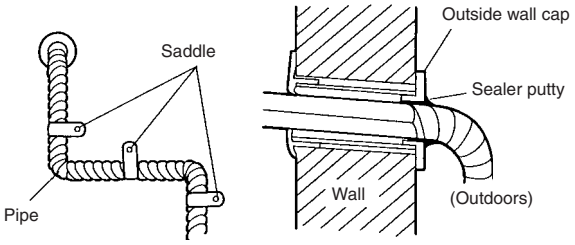


(For connection from the left rear)



(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.)
(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.

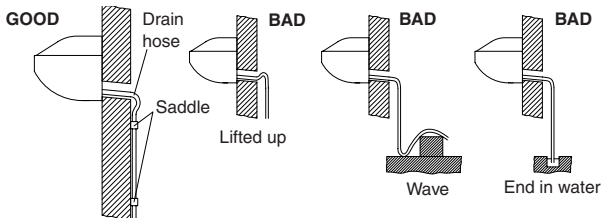
Fig. 41



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

Fig. 42

Check the following:



2. INSTALLING FRONT COVER

- Carefully attach the front cover to the diffuser on the front of the body of the indoor unit.
- Secure the lower section of the front cover with tapping screws in two locations and close the screw cover.
- Push in the following hooks from the outside: front hook, 3 locations; side hook, 2 locations; under hook, 1 location.
- The last step is to push in the hook above the blower outlet.

Fig. 43

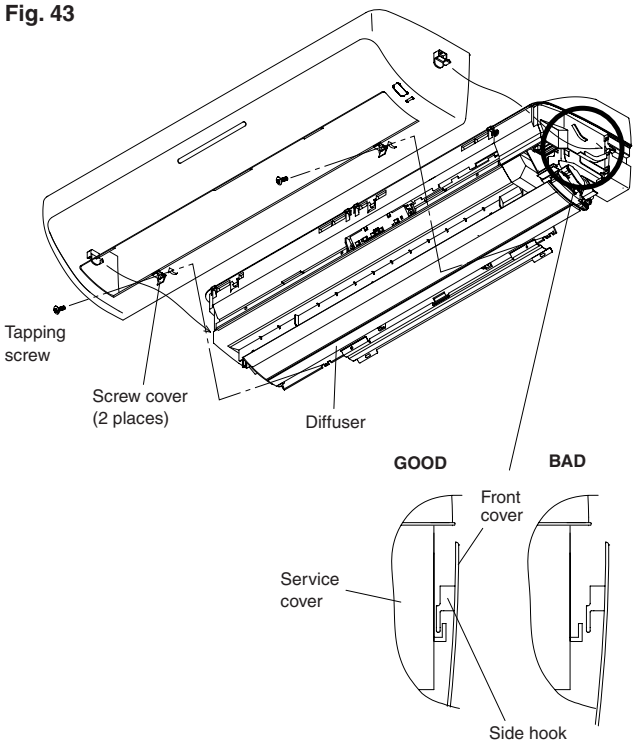
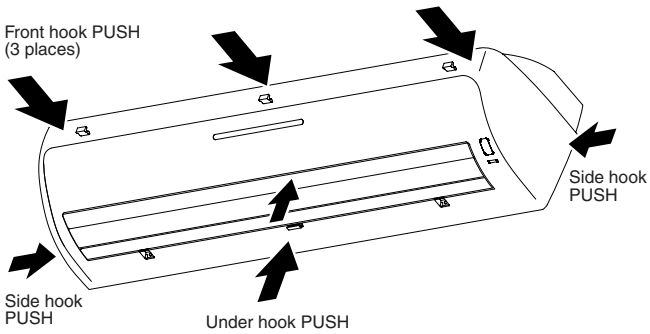


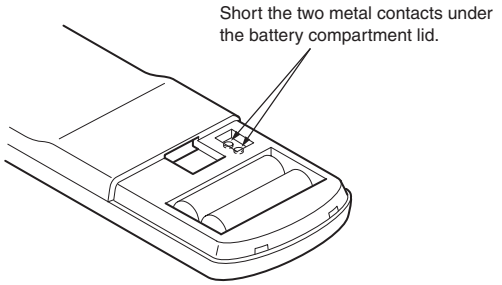
Fig. 44



8 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 temperature. 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).

Fig. 45



1. INDOOR UNIT

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

- Test running

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.

- Error

The OPERATION, TIMER and SWING lamps operate as follows (Table 7) according to the error contents.

Table 7

Error contents	OPERATION lamp (RED)	TIMER lamp (YELLOW)	SWING lamp (ORANGE)
Indoor EEPROM abnormal	○	○	×
Outdoor EEPROM abnormal	○	○	○
Indoor room temperature sensor open	(2 times) ●	○	×
Indoor room temperature sensor shortcircuited	(2 times) ●	○	○
Indoor heat exchanger temperature sensor open	(3 times) ●	○	×
Indoor heat exchanger temperature sensor shortcircuited	(3 times) ●	○	○
Float switch operated	(4 times) ●	○	×
Indoor signal abnormal	(5 times) ●	○	×
Outdoor signal abnormal	(5 times) ●	○	○
Indoor fan abnormal	(6 times) ●	○	×
Air cleaner abnormal	(7 times) ●	○	×
Outdoor power source connection abnormal	○	(2 times) ●	×
Outdoor heat exchanger temperature sensor open	○	(3 times) ●	×
Outdoor heat exchanger temperature sensor shortcircuited	○	(3 times) ●	○
Outdoor temperature sensor open	○	(4 times) ●	×
Outdoor temperature sensor shortcircuited	○	(4 times) ●	○
Outdoor discharge pipe temperature sensor open	○	(5 times) ●	×
Outdoor discharge pipe temperature sensor shortcircuited	○	(5 times) ●	○
Outdoor high pressure abnormal	○	(6 times) ●	×
Outdoor discharge pipe temperature abnormal	○	(7 times) ●	×

○: 0.1s ON/0.1s OFF (flash) ×: OFF
●: 0.5s ON/0.5s OFF (flash)

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 8) according to the error contents.

Table 8

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

CHECK ITEMS

1. INDOOR UNIT

(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?

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?

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

9 REMOTE CONTROL UNIT INSTALLATION

⚠ CAUTION

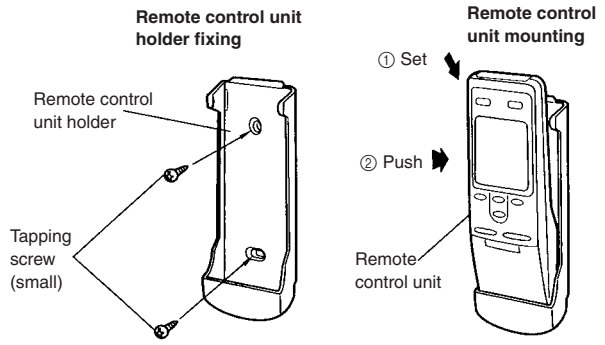
(1) Check that the indoor unit correctly receives the signal from the remote control unit, then install the remote control unit holder.

(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 with a distance of 23 ft (7 m) between the remote control unit and the photocell as the criteria. However, when installing the remote control unit, check that it operates positively.
- Install the remote control unit holder to a wall, pillar, etc. with the tapping screw (Fig. 46).

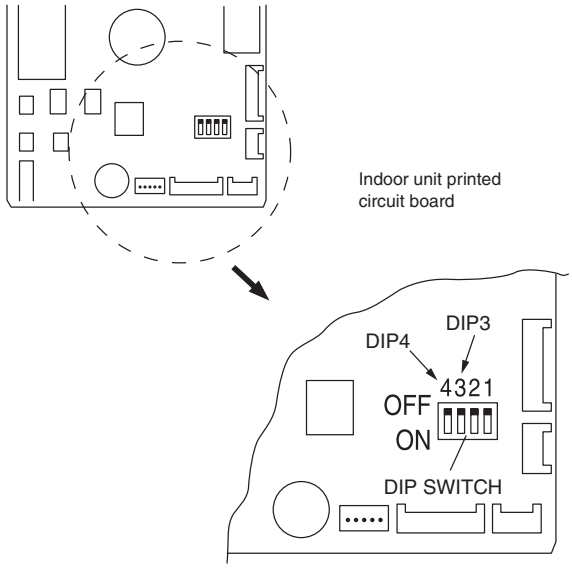
Fig. 46



2. SWITCHING REMOTE CONTROL UNIT SIGNAL CODES

• Air conditioner settings

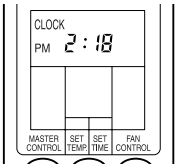
Fig. 47



• Remote control unit settings

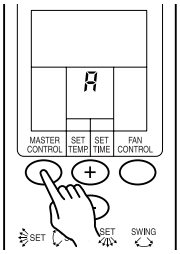
(1) Press the START/STOP button and display only the clock.

Fig. 48



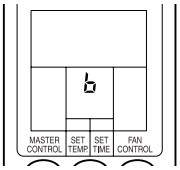
(2) Press the MASTER CONTROL button continuously for more than five seconds to display the current signal code.

Fig. 49



(3) Change the signal code with the ⊕ / ⊖ button (A→b→C→d).

Fig. 50



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

- Confirm the setting of the remote control unit signal code and the printed circuit board setting.
  If these are not confirmed, the remote control unit cannot be used to operate for the air conditioner.

Table 9

DIP SWITCH		Remote control unit signal code
DIP3	DIP4	
OFF	OFF	A (Primary setting)
OFF	ON	B
ON	OFF	C
ON	ON	D

10 CUSTOMER GUIDANCE

Explain the following to the customer in accordance with the operating manual:

(1) Starting and stopping method, operation switching, temperature adjustment, timer, air flow switching, and other remote control unit operations.
(2) Air filter removal and cleaning, and how to use the air louvers.
(3) Give the operating manual and installation instruction sheet 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).