

Refrigerant

R410A

Ceiling Suspension Type SPLIT TYPE AIR CONDITIONER INSTALLATION INSTRUCTION SHEET

(PART NO. 9364488028)

For authorized service personnel only.

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.

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.

CONNECTION PIPE REQUIREMENT

Diameter	
Liquid	Gas
9.52 mm (3/8 in.)	15.88 mm (5/8 in.)

- Use pipe with water-resistant heat insulation.

⚠ 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 15 mm (19/32 in.) or thicker and if the expected humidity exceeds 80%, use heat insulation that is 20 mm (3/4 in.) 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).

ELECTRICAL REQUIREMENT

- Electric wire size:

Connection cord (mm ²)	
MAX.	MIN.
2.5	1.0

- Install all electrical works in accordance to the standard.
- Install the disconnect device with a contact gap of at least 3 mm (1/8") in all poles nearby the units. (Both indoor unit and outdoor unit)
- Install the circuit breaker nearby the units.

SELECTING THE MOUNTING POSITION

Decide the mounting position with the customer as follows:

⚠ WARNING

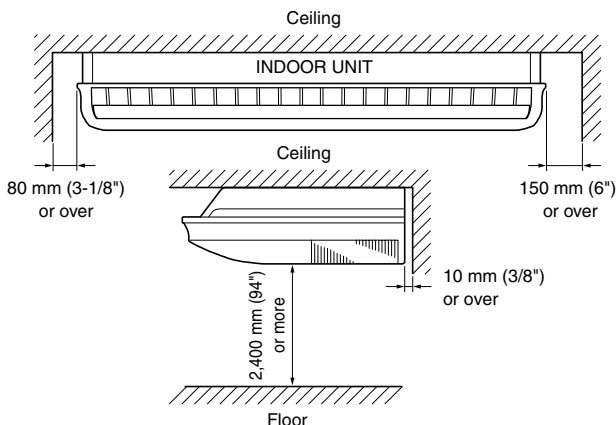
Select installation locations that can properly support the weight of the indoor and outdoor units. Install the units securely so that they do not topple or fall.

⚠ CAUTION

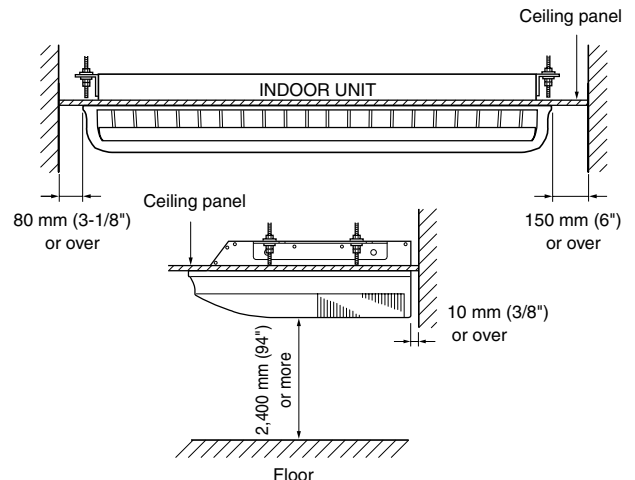
- ① Do not install where there is the danger of combustible gas leakage.
- ② Do not install the unit near heat source of heat, steam, or flammable gas.
- ③ If children under 10 years old may approach the unit, take preventive measures so that they cannot reach the unit.

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 the figure. Also install the unit where the filter can be removed.



[FOR HALF CONCEALED INSTALLATION]



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 UNF 20 threads per inch.]
- 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.
- ⑤ When moving, if the compressor stops during pump down, close the valve immediately.

Special tools for R410A

Tool name	Contents of change
Gauge manifold	Pressure is high and cannot be measured with a conventional gauge. To prevent erroneous mixing of other refrigerants, the diameter of each port has been changed. It is recommended the gauge with seals -0.1 to 5.3 MPa (-76 cmHg to 53 kgf/cm ²) for high pressure. -0.1 to 3.8 MPa (-76 cmHg to 38 kgf/cm ²) 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.

Copper pipes

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 contaminants. As an air conditioner using R410A incurs pressure higher than when using conventional refrigerant, it is necessary to choose adequate materials. Thicknesses of copper pipes used with R410A are as shown in the table. Never use copper pipes thinner than that in the table even when it is available on the market.

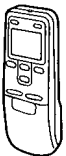






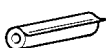



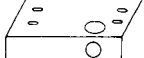
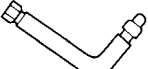
Thicknesses of Annealed Copper Pipes (R410A)

Pipe outside diameter	Thickness
6.35 mm (1/4 in.)	0.80 mm (0.0315 in.)
9.52 mm (3/8 in.)	0.80 mm (0.0315 in.)
12.70 mm (1/2 in.)	0.80 mm (0.0315 in.)
15.88 mm (5/8 in.)	1.00 mm (0.0394 in.)

STANDARD PARTS

The following installation parts are furnished.
Use them as required.

INDOOR UNIT ACCESSORIES

Name and Shape	Q'ty	Application
Remote control unit 	1	Use for air conditioner operation
Battery (penlight) 	2	For remote control unit
Remote control unit holder 	1	For mounting the remote control unit
Tapping screw (ø3 × 12) 	2	For remote control unit holder installation
Drain hose insulation 	1	Adhesive type 70 × 230
VT wire 	1	For fixing the drain hose L 280 mm
Coupler heat insulator (large) 	2	For indoor side pipe joint (Gas pipe)
Coupler heat insulator (small) 	1	For indoor side pipe joint (Liquid pipe)
Nylon fastener 	Large 4 Small 4	For fixing the coupler heat insulator
Special nut A (large flange) 	4	For installing indoor unit
Special nut B (small flange) 	4	For installing indoor unit
Installation template 	1	For positioning the indoor unit
Auxiliary pipe assembly 	1	For connecting the piping

OPTIONAL PARTS

The following options are available.

- DRAIN PUMP UNIT: UTR-DPB241 (P/N 9034087001)
- WIRED REMOTE CONTROLLER UNIT: UTB-UUB (P/N 9075887004)

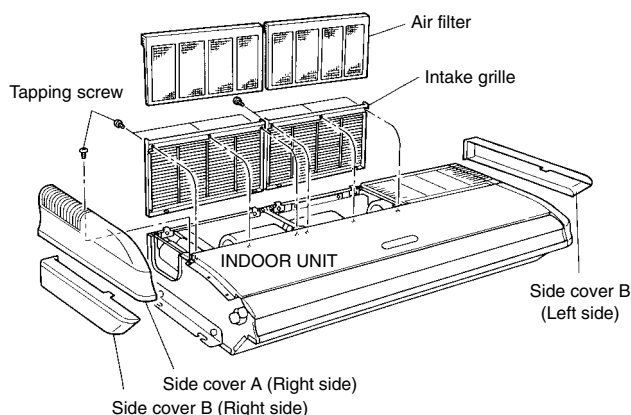
INSTALLATION PROCEDURE

1

PREPARING INDOOR UNIT INSTALLATION

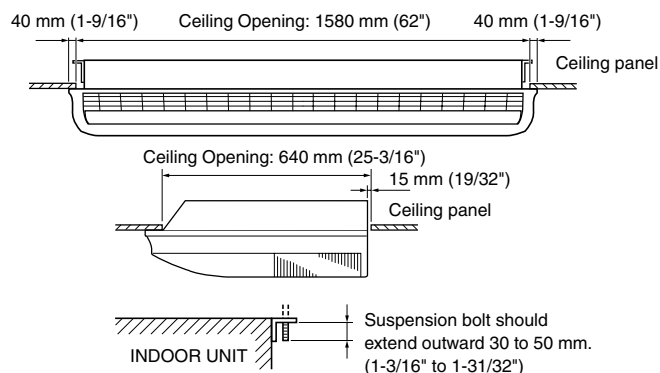
REMOVE THE INTAKE GRILLE AND SIDE COVER

- (1) Remove the two Air filters.
- (2) Remove the two Intake grilles.
 - For ④ Left rear drain and ⑤ Left drain: Remove air filters and intake grilles at three places. (Refer to "2 INDOOR UNIT INSTALLATION".)
- (3) Remove the Side cover A (Right side) and Side cover B (Right and Left side).
 - For ⑤ Left drain: Remove both the Side cover A (Right and Left side). (Refer to "2 INDOOR UNIT INSTALLATION".)
- (4) This air conditioner can be set up to intake fresh air. For information about how to install for fresh-air intake, refer to "10 FRESH-AIR INTAKE".



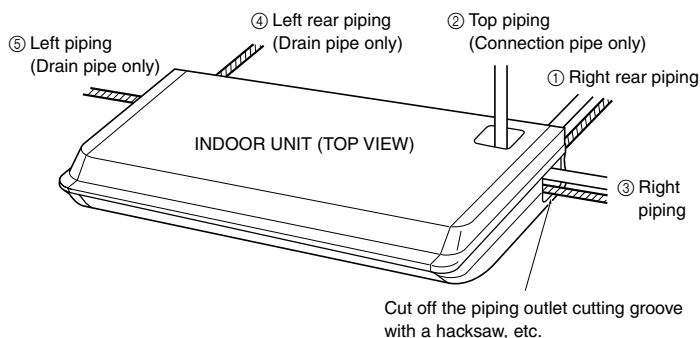
[For Half-Concealed Installation]

- Suspension-bolt pitch should be as shown in the figure.



2. SELECT PIPING DIRECTION

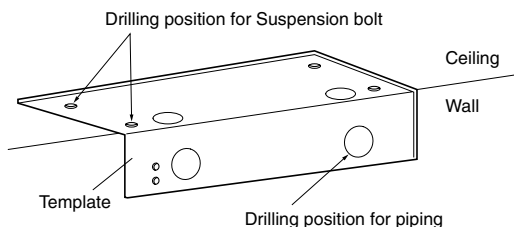
Select connection piping and drain piping directions.



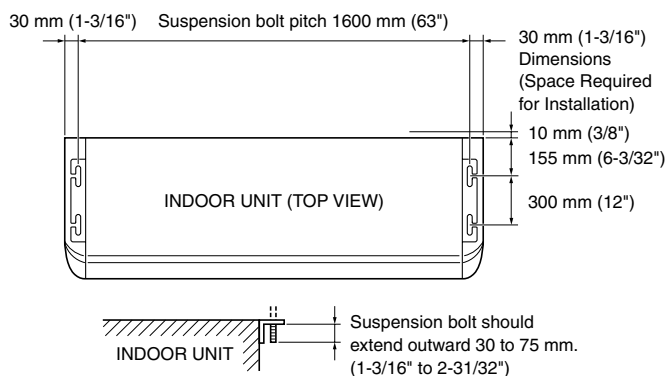
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INDOOR UNIT INSTALLATION

You can use the accessory template to help you install the indoor unit. The template helps you determine the appropriate locations for suspension bolts and pipe opening (drain pipe and connection cord).

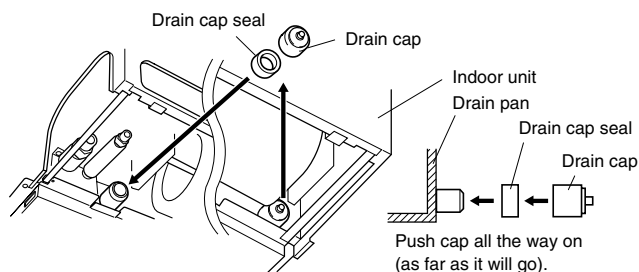


1. LOCATION OF CEILING SUSPENSION BOLTS



[FOR ④ Left rear piping, ⑤ Left piping]

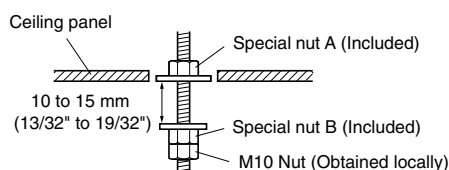
- Transfer the Drain cap and Drain cap seal.



3. DRILLING THE HOLES AND ATTACHING THE SUSPENSION BOLTS

- (1) Drill $\phi 25$ mm holes at the suspension-bolt locations.
- (2) Install the bolts, then temporarily attach Special nuts A and B and a normal M10 nut to each bolt. (The two special nuts are provided with the unit. The M10 nut must be obtained locally.) Refer to the figure.

Bolt Strength	980 to 1470 N (100 to 150 kgf)
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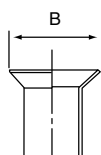
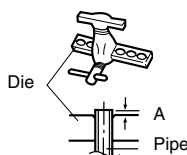
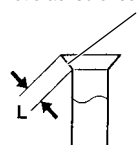
⚠ CAUTION

- 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 the table. 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.

Check if [L] is flared uniformly and is not cracked or scratched.

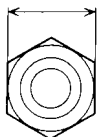


Pipe outside diameter	Dimension A
	Flare tool for R410A, clutch type
6.35 mm (1/4 in.)	0 to 0.5 mm (0 to 0.0197 in.)
9.52 mm (3/8 in.)	
12.70 mm (1/2 in.)	
15.88 mm (5/8 in.)	

Pipe outside diameter	Dimension B $\begin{smallmatrix} 0 \\ -0.4 \end{smallmatrix}$
6.35 mm (1/4 in.)	9.1 mm (0.3583 in.)
9.52 mm (3/8 in.)	13.2 mm (0.5197 in.)
12.70 mm (1/2 in.)	16.6 mm (0.6536 in.)
15.88 mm (5/8 in.)	19.7 mm (0.7756 in.)

When using conventional flare tools to flare R410A pipes, the dimension A should be approximately 0.5 mm (1/32 in.) more than indicated in the table (for flaring with R410A flare tools) to achieve the specified flaring. Use a thickness gauge to measure the dimension A.

Width across flats



Pipe outside diameter	Width across flats of Flare nut
6.35 mm (1/4 in.)	17 mm (0.6693 in.)
9.52 mm (3/8 in.)	22 mm (0.8661 in.)
12.70 mm (1/2 in.)	26 mm (1.0236 in.)
15.88 mm (5/8 in.)	29 mm (1.1417 in.)

2. BENDING PIPES

The pipes are shaped by your hands. Be careful not to collapse them. Do not bend the pipes in an angle more than 90°. When pipes are repeatedly bent or stretched, the material will harden, making it difficult to bend or stretch them any more. Do not bend or stretch the pipes more than three times.

⚠ CAUTION

- ① To prevent breaking of the pipe, avoid sharp bends. Bend the pipe with a radius of curvature of 150 mm (6") or over.
- ② If the pipe is bent repeatedly at the same place, it will break.

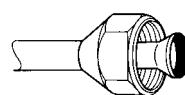
3. CONNECTION PIPES**Indoor unit**

- (1) Detach the caps and plugs from the pipes.

⚠ CAUTION

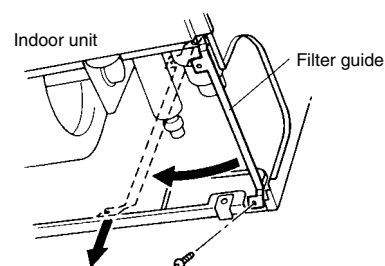
- ① Be sure to apply the pipe against the port on the indoor unit correctly. If the centering is improper, the flare nut cannot be tightened smoothly. If the flare nut is forced to turn, the threads will be damaged.
- ② Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection pipe.

- (2) Centering the pipe against port on the indoor unit, turn the flare nut with your hand.

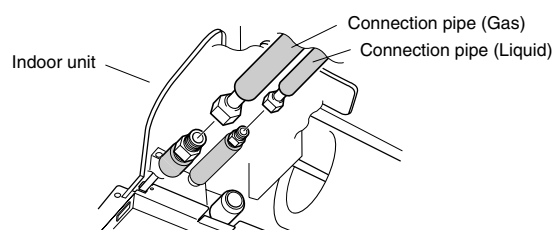


To prevent gas leakage, coat the flare surface with alkylbenzene oil (HAB). Do not use mineral oil.

- (3) Remove the filter guide.



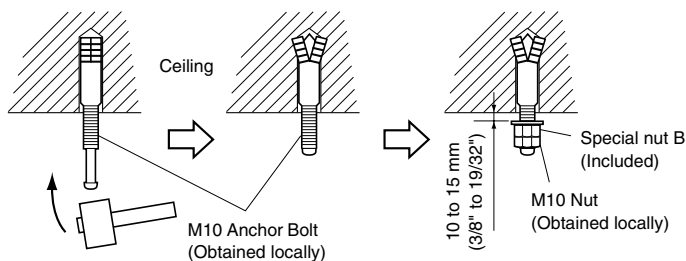
- (4) Attach the connection pipe.



[If using anchor bolts]

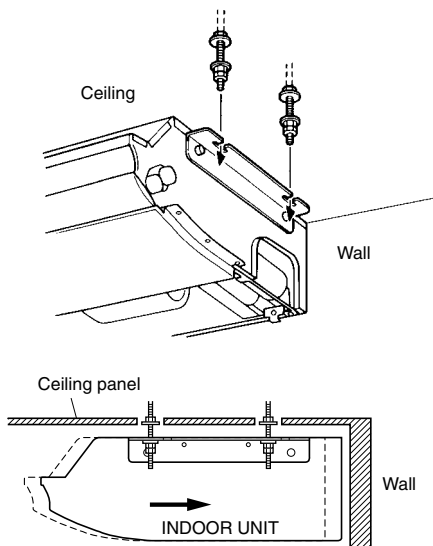
- (1) Drill holes for anchor bolts at the locations at which you will set the suspension bolts. Note that anchor bolts are M10 bolts (to be obtained locally).
- (2) Install the anchor bolts, then temporarily attach special nut "B" (included) and a locally-procured M10 nut to each of the bolts.

Anchor-Bolt Strength	980 to 1470 N (100 to 150 kgf)
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4. INSTALLING THE INDOOR UNIT

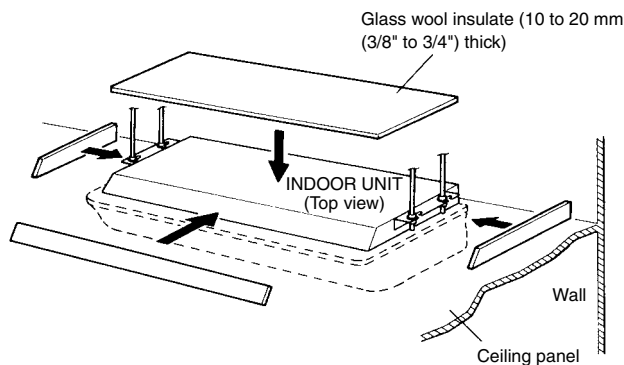
- (1) Lift unit so that suspension bolts pass through the suspension fittings at the sides (four places), and slide the unit back.



- (2) Fasten the indoor unit into place by tightening-up the special "B" bolts and the M10 nuts. Make sure that unit is secure and will not shift back and forth.

[For Half-Concealed Installation]

When installing the indoor unit in a semi-concealed orientation, make sure to reinforce the insulation of the unit on all sides. Drops of water may fall from the unit if it is not thoroughly insulated.



⚠ CAUTION

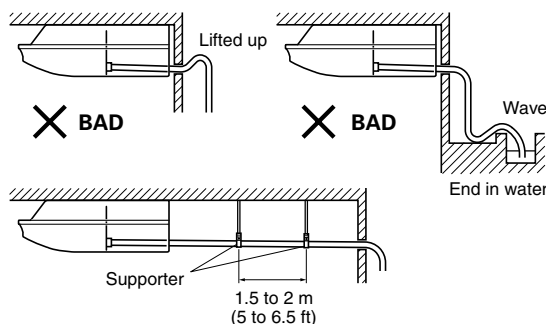
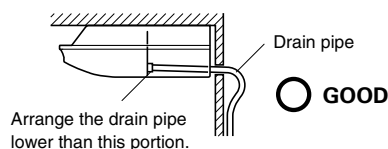
In order to check the drainage, be sure to use a level during installation of the indoor unit. If the installation site of the indoor unit is not level, water leakage may occur.

5. DRAIN PIPING

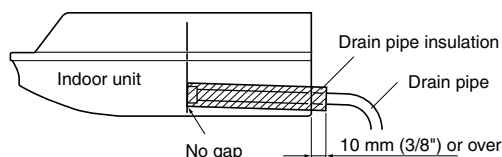
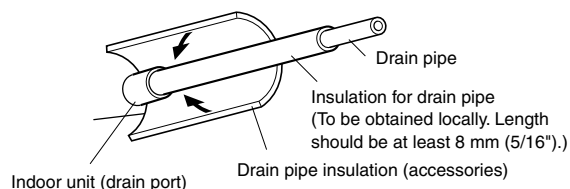
⚠ CAUTION

Install the drain pipe in accordance with the instructions in this installation instruction sheet and keep the area warm enough to prevent condensation. Problems with the piping may lead to water leaks.

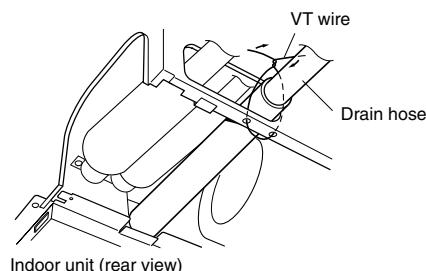
- Install the drain pipe with downward gradient (1/50 to 1/100) and so there are no rises or traps in the pipe.
- Use general hard polyvinyl chloride pipe (VP25) [outside diameter 38 mm (1-1/2")].
- During installation of the drain pipe, be careful to avoid applying pressure to the drain port of the indoor unit.
- When the pipe is long, install supporters.
- Do not perform air bleeding.
- Always heat insulate (8 mm (5/16") or over thick) the indoor side of the drain pipe.



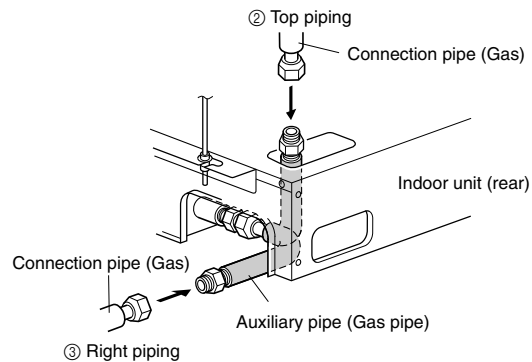
- (1) Install insulation for the drain pipe.
Cut the included insulation material to an appropriate size and adhere it to the pipe.



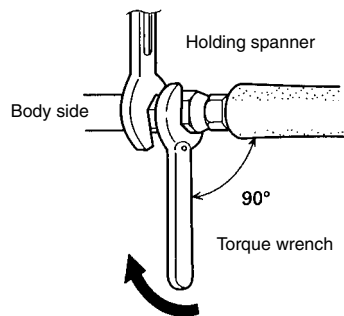
- (2) If "① Right rear piping" : fasten the drain pipe with VT wire so that the pipe slopes correctly within the indoor unit.



- For ② Top piping and ③ Right piping connections, use the Auxiliary pipe (Gas pipe) provided.



- (5) When the flare nut is tightened properly by your hand, use a torque wrench to finally tighten it.



⚠ CAUTION

Hold the torque wrench at its grip, keeping it in the right angle with the pipe, in order to tighten the flare nut correctly.

Flare nut	Tightening torque
6.35 mm (1/4 in.) dia.	16 to 18 N·m (160 to 180 kgf·cm)
9.52 mm (3/8 in.) dia.	30 to 42 N·m (300 to 420 kgf·cm)
12.70 mm (1/2 in.) dia.	49 to 61 N·m (490 to 610 kgf·cm)
15.88 mm (5/8 in.) dia.	63 to 75 N·m (630 to 750 kgf·cm)

⚠ WARNING

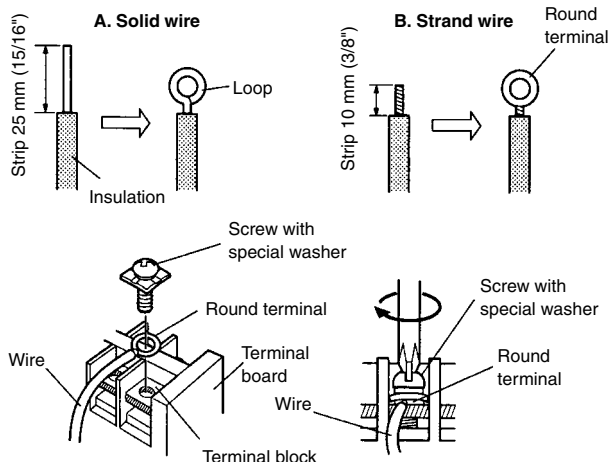
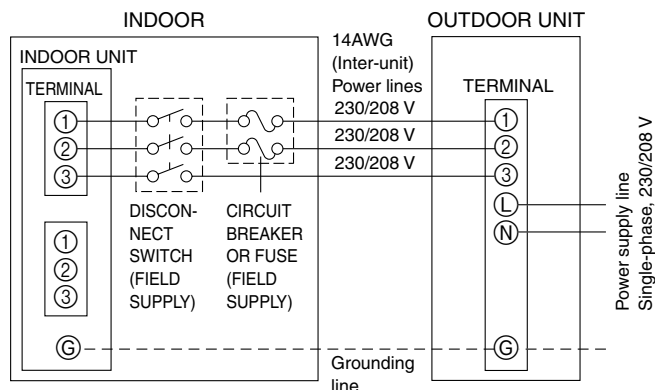
- ① Before starting work, check that power is not being supplied to the indoor unit and outdoor unit.
- ② Match the terminal board numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.
- ③ Connect the connection cords firmly to the 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.

HOW TO CONNECT WIRING TO THE TERMINALS**A. For solid core wiring**

- (1) 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 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 10 mm (3/8") 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.

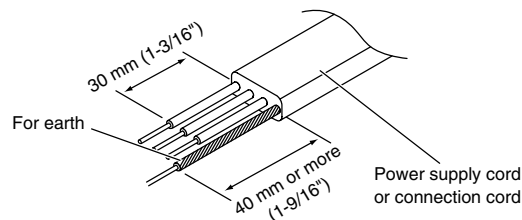
**1. CONNECTION DIAGRAMS****⚠ WARNING**

Disconnect switch and circuit breaker for over current protection given in the table below is to be installed between the indoor unit and the outdoor unit.

Disconnect switch	Circuit breaker (or Fuse)
15A	240 V - 5A

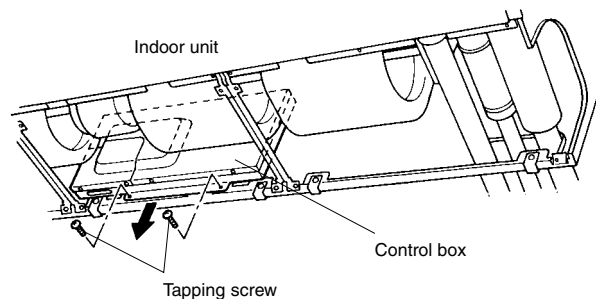
⚠ CAUTION

- ① Be sure to refer the above diagram and do correct field wiring. Wrong wiring causes malfunction of the unit.
- ② Check local electrical codes and also any specific wiring instructions or limitation.

2. CONNECTION CORD PREPARATION**3. INDOOR UNIT****⚠ CAUTION**

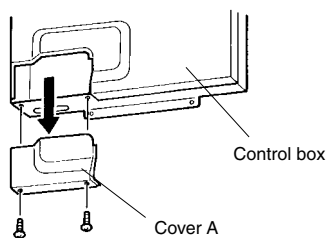
Use care not to mistake the power supply cord and connection wires when installing.

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

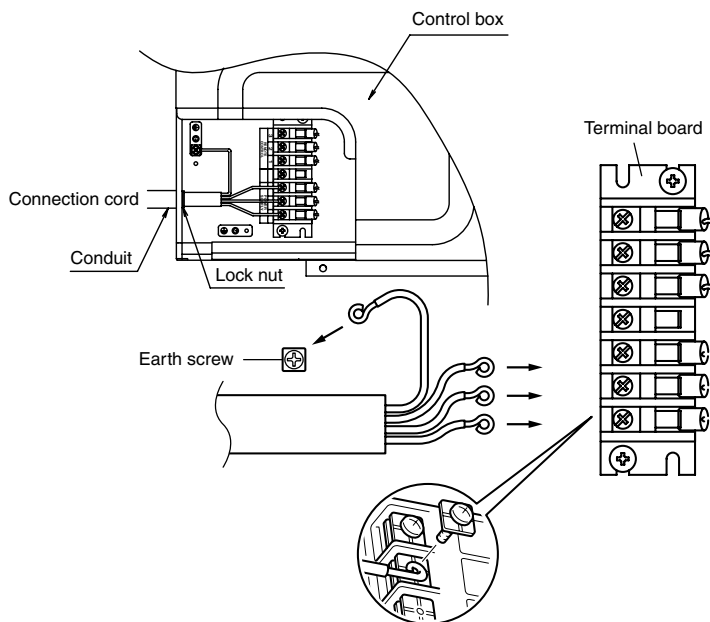


REMOTE CONTROL UNIT INSTALLATION

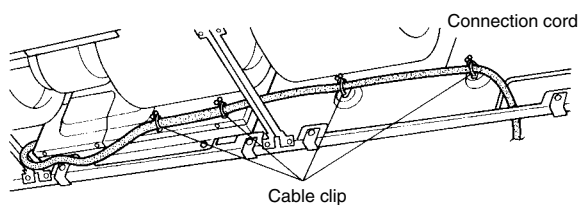
- (2) Remove the Cover A and install the Connection cord.
- (3) Reattach Cover A. Then fasten the control box back into its original position using the two tapping screws.



- (4) Use lock nuts to secure the conduit tube.



- (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.

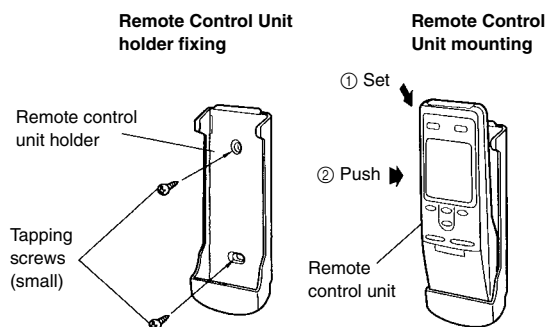


CAUTION

- 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 tapping screws.



2. SWITCHING REMOTE CONTROL UNIT 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.

Jumper wire		Remote control unit signal code
JM2	JM3	
Connect	Connect	A (Primary setting)
Connect	Disconnect	B
Disconnect	Connect	C
Disconnect	Disconnect	D

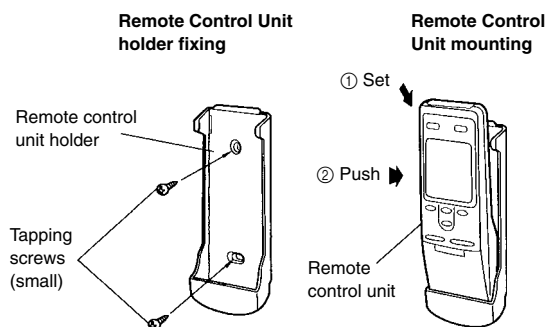
REMOTE CONTROL UNIT INSTALLATION

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 tapping screws.

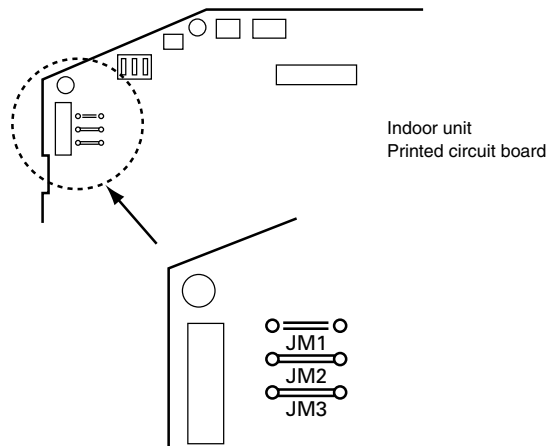


2. SWITCHING REMOTE CONTROL UNIT SIGNAL CODE

Confirm the setting of the remote control unit signal code and the printed circuit board setting.

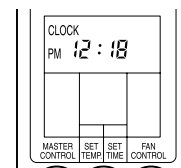
If these are not confirmed, the remote control unit cannot be used to operate for the air conditioner.

Jumper wire		Remote control unit signal code
JM2	JM3	
Connect	Connect	A (Primary setting)
Connect	Disconnect	B
Disconnect	Connect	C
Disconnect	Disconnect	D

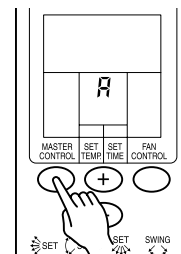


Remote control unit settings

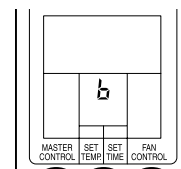
- (1) Press the START/STOP button and display only the clock.



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



- (3) Change the signal code with the \oplus/\ominus button (A \rightarrow b \rightarrow c \rightarrow d).



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

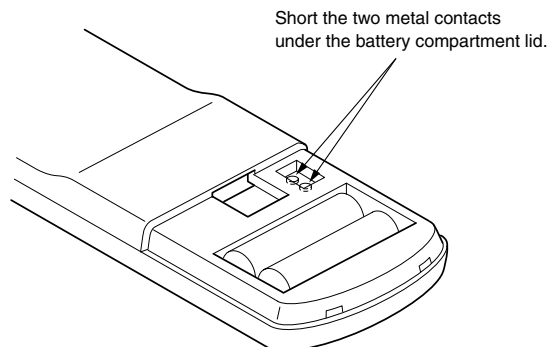
- (1) Install the filter guide.
- (2) Install the intake grilles.
- (3) Install side covers A and B (if the unit is installed in a half-concealed orientation, only install side cover A).
- (4) Install the air filters.

CUSTOMER GUIDANCE

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

- (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 manual and installation instruction sheet to the customer.

- 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).



- To end test operation, press the remote control unit START/STOP button.
(When the air conditioner is run by pressing the remote control unit TEST RUN button, the OPERATION and TIMER lamps will simultaneously flash slowly.)

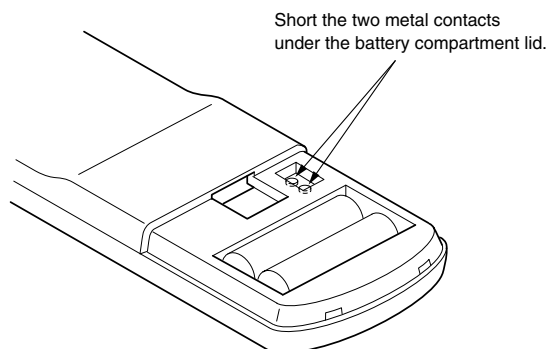
1. INDOOR UNIT

- (1) Is operation of each button on the remote control unit normal?
- (2) Does each lamp light normally?
- (3) Do not air flow direction 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?

- 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).



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

1. INDOOR UNIT

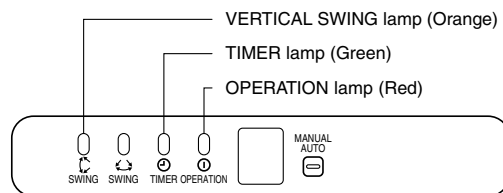
- (1) Is operation of each button on the remote control unit normal?
- (2) Does each lamp light normally?
- (3) Do not air flow direction flap and louvers operate normally?
- (4) Is the drain normal?

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?

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.



- 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

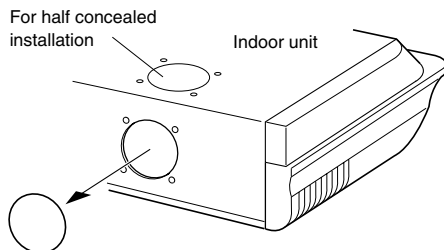
The OPERATION, TIMER and VERTICAL SWING lamps operate as follows according to the error contents.

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

○ : 0.1s ON/0.1s OFF (flash) × : OFF

● : 0.5s ON/0.5s OFF (flash)

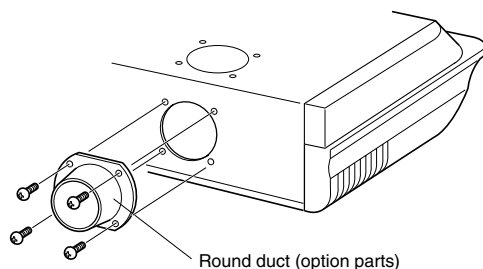
- (1) Open up the knockout hole for the fresh-air intake, as shown in the figure. (If using half-concealed installation, open up the top knockout hole instead.)



CAUTION

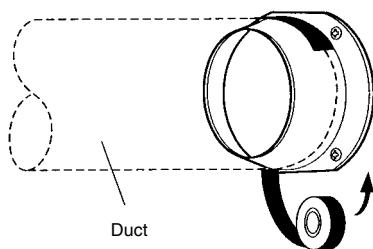
- ① When removing the cabinet (iron plate), be careful not to damage the indoor unit internal parts and surrounding area (outer case).
- ② When processing the cabinet (iron plate), be careful not to injure yourself with burrs, etc.

- (2) Fasten the round flange (optional) to the fresh-air intake, as shown in the figure. (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.



CAUTION

- ① When the optional wired remote control is used, please refer to the wired remote control manual supplied with the wired remote control.
- ② When the unit is set for the optional wired remote control, the wireless remote control cannot be used.
- ③ When the unit is set for the optional wired remote control, MANUAL/AUTO switch on the indoor unit cannot be used.
- ④ When the unit is set for the optional wired remote control, the Display Timer lamp (Green) on the indoor unit will no longer light.

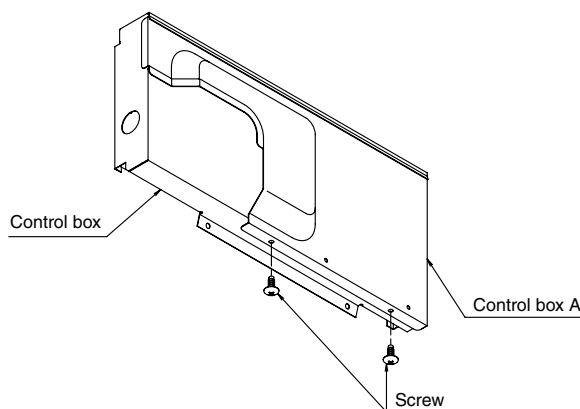
BEFORE INSTALL WIRED REMOTE CONTROL UNIT

- The wired remote control unit is an option. It isn't included in main body of air-conditioner.
- When you use wired remote control unit, some functions may not be used.
- please use the recommended wired remote control unit.
(Before installing, Please read the FEATURES AND FUNCTIONS section of OPERATING MANUAL to confirm the concerned contents.)

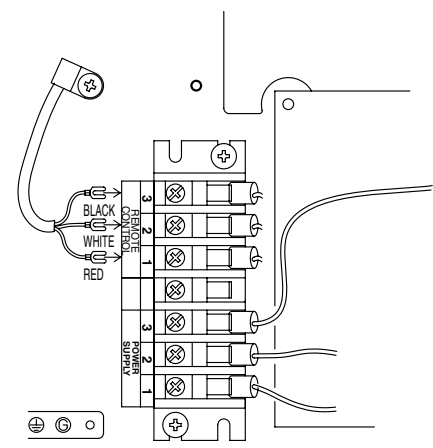
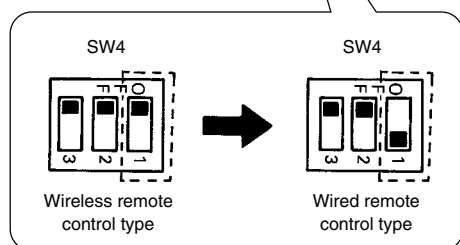
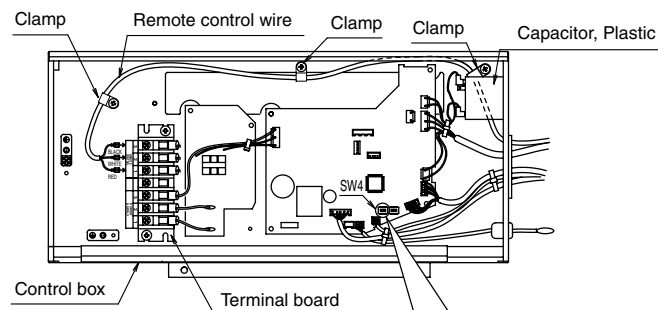
CAUTION

- ① Before installing, be sure to disconnect all power supply.
- ② Don't touch the heat exchanger.
- ③ During installing or removing operation, be sure not to have wire caught by parts or draw it hard. Or it may result troubles to the air-conditioner.
- ④ Avoid place in direct sunlight.
- ⑤ Select place that will not be affected by the heat from a stove, etc.
- ⑥ Insure the length of wire is not over the recommended maximum length.
- ⑦ Before setting up the wired remote control unit, please confirm whether air-conditioner can receive the signal.

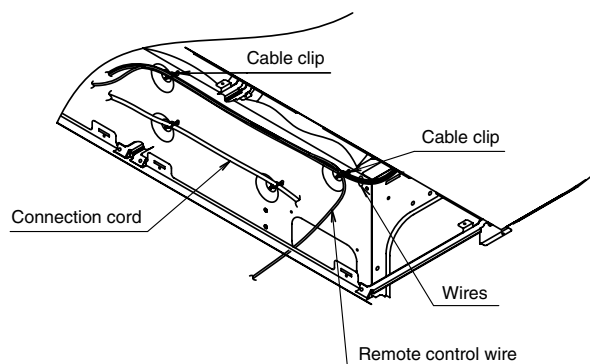
Remove the two screws on the bottom and then remove control box A.



- To use the optional wired remote control, set up the wiring as shown in the diagram below.
- Use the clamps to fasten the remote control wire in three locations.
- Set up the wiring so that the remote control wire passes under the capacitor and the plastic.
- Change the setting for the electrical circuits.
Switch 4 (SW4) on the printed circuit board inside the electric component box must be set as follows.

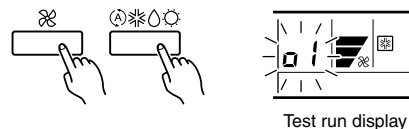


Attach the remote control wire and cable clips.
Do not group the connection cord and remote control wire together.



TEST RUN

- (1) Stop the air conditioner operation.
- (2) Press the master control button and the fan control button simultaneously for 2 seconds or more to start the test run.



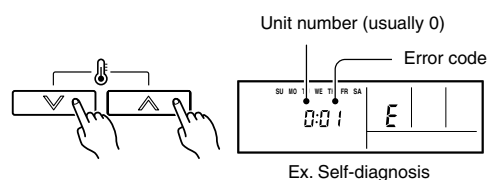
- (3) Press the start/stop button to stop the test run.

[SELF-DIAGNOSIS]

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

REMOTE CONTROLLER DISPLAY

- (1) Stop the air conditioner operation.
- (2) Press the set temperature buttons Δ / ∇ simultaneously for 5 seconds or more to start the self-diagnosis.
Refer to the following tables for the description of each error code.



- (3) Press the set temperature buttons Δ / ∇ simultaneously for 5 seconds or more to stop the self-diagnosis.

Error code	Error contents
00	Communication error (indoor unit ↔ remote controller)
01	Communication error (indoor unit ↔ outdoor unit)
02	Room temperature sensor open
03	Room temperature sensor short-circuited
04	Indoor heat exchanger temperature sensor open
05	Indoor heat exchanger temperature sensor short-circuited
06	Outdoor heat exchanger temperature sensor
08	Power source connection error
09	Float switch operated
0A	Outdoor temperature sensor
0c	Discharge pipe temperature sensor
11	Model abnormal
12	Indoor fan abnormal

Error code	Error contents
13	Outdoor signal abnormal
14	Excessive outdoor pressure (permanent stop)
15	Compressor temperature sensor
16	Pressure switch error
17	IPM error
18	CT error
19	Active filter module (AFM) error
1A	Compressor does not operate
1b	Outdoor unit fan error
1c	Communication error (inverter → multicontroller)
1d	2 way valve sensor error
1E	Expansion valve error
1F	Connection indoor unit error

SPECIAL INSTALLATION METHODS

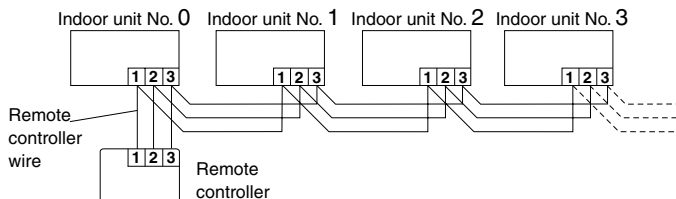
⚠ CAUTION

- When setting the rotary switch and DIP switches, do not touch any other parts on the circuit board directly with your bare hands.
- Be sure to turn off the main power.

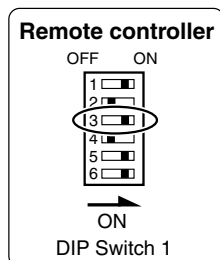
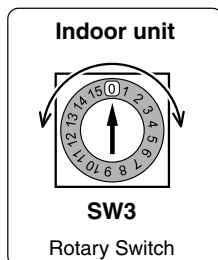
1. GROUP CONTROL SYSTEM

A number of indoor units can be operated at the same time using a single remote controller.

- Wiring method (indoor unit to remote controller)



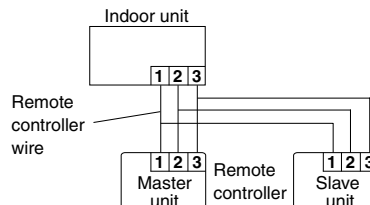
- Rotary switch setting (indoor unit)
Set the unit number of each indoor unit using the rotary switch on the indoor unit circuit board.
The rotary switch is normally set to 0.
- DIP switch setting (remote controller)
Change DIP switch 1 No. 3 on the remote controller from OFF to ON.



2. DUAL REMOTE CONTROLLERS (OPTIONAL)

Two separate remote controllers can be used to operate the indoor units.

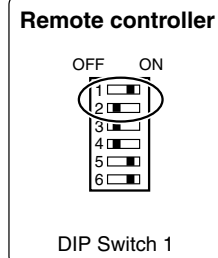
- Wiring method (indoor unit to remote controller)



- DIP switch setting (remote controller)
Set the remote controller DIP switch 1 No. 1 and 2 according to the following table.

Number of remote controllers	Master unit	
	DIP-SW 1 No. 1	DIP-SW 1 No. 2
1 (Normal)	ON	OFF
2 (Dual)	OFF	OFF

Number of remote controllers	Slave unit	
	DIP-SW 1 No. 1	DIP-SW 1 No. 2
1 (Normal)	—	—
2 (Dual)	ON	ON

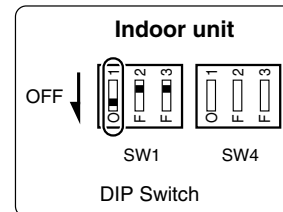


3. AUTO RESTART

- When the air conditioner power was temporarily turned off by a power failure etc., it restarts automatically after the power recovers.
(Operated by setting before the power failure)

The auto restart function can be canceled.

- DIP switch setting (indoor unit)
Change the DIP switch (SW1-1) on the indoor unit circuit board from ON to OFF. The auto restart function will be canceled.



[DIP-SWITCH SETTING]

● Indoor unit

	NO.	SW state		Detail
		OFF	ON	
DIP-Switch 1	1	Invalidity	Validity ★	Auto restart setting
	2	—	— ★	Temperature correction setting
	3	—	— ★	
DIP-Switch 4	1	Wireless ★	Wired	Remote controller setting
	2	— ★	—	Air flow setting
	3	— ★	—	

● Remote controller

	No.	SW state		Detail
		OFF	ON	
DIP-switch 1	1		★	Dual remote controller setting
	2	★		
	3	★ One unit	Multiple units	Group control setting
	4	★ Heat & cool model	Cooling only model	Model setting
	5	Invalidity	★ Validity	AUTO changeover setting
	6	★ Invalidity	Validity	Memory Backup setting
DIP-switch 2	1	★ Validity	Invalidity	THERMO SENSOR button setting
	2	★ Validity	Invalidity	ENERGY SAVE button setting
	3	★ Validity	Invalidity	Horizontal airflow direction and swing button setting
	4	★ Validity	Invalidity	Vertical airflow direction and swing button setting
	5	★ Fixed at OFF		Cannot be used.
	6	★ Fixed at OFF		Cannot be used.

(★: Factory setting)