

Refrigerant R410A Ceiling Suspension Type SPLIT TYPE AIR CONDITIONER INSTALLATION INSTRUCTION SHEET

(PART NO. 9360461094)

For authorized service personnel only.

| | |
|----------------|---|
| WARNING | This mark indicates procedures which, if improperly performed, might lead to the death or serious injury of the user. |
| CAUTION | This mark indicates procedures which, if improperly performed, might possibly result in personal harm to the user, or damage to property. |

This air conditioner uses new refrigerant HFC (R410A).

The basic installation work procedures are the same as conventional refrigerant models. However, pay careful attention to the following points:

- 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.
- 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.]
- 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.
- 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.
- 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 |
| 9.52 mm (3/8 in.) | 0.80 mm |
| 12.70 mm (1/2 in.) | 0.80 mm |
| 15.88 mm (5/8 in.) | 1.00 mm |
| 19.05 mm (3/4 in.) | 1.20 mm |

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 |

OUTDOOR UNIT ACCESSORIES

| Name and Shape | Q'ty | Application |
|-------------------|------|---|
| Drain pipe | 1 | For outdoor unit drain piping work (May not be supplied, depending on the model.) |
| Drain cap | 2 | |
| Insulation (seal) | 1 | For filling in a gap at the entrance of connection cords |

OPTIONAL PARTS

The following options are available.
• DRAIN PUMP UNIT: UTR-DPB241 (P/N 9034087001)

CONNECTION PIPE REQUIREMENT

CAUTION
The maximum lengths of this product are shown in the following table. If the units are further apart than this, correct operation can not be guaranteed.

| Liquid | Diameter | | Pipe length | | Maximum height (between indoor and outdoor) |
|-------------------|--------------------|--------------------|-------------|------|---|
| | 36 Type | 45, 54 Type | MAX. | MIN. | |
| 9.52 mm (3/8 in.) | 15.88 mm (5/8 in.) | 19.05 mm (3/4 in.) | 50 m | 5 m | 30 m |

- 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 120 °C. (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 or thicker and if the expected humidity exceeds 80%, use heat insulation that is 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 20 °C).

ELECTRICAL REQUIREMENT

- Electric wire size and breaker capacity:
- | Power supply cord (mm ²) | Connection cord (mm ²) | Breaker capacity (A) |
|--------------------------------------|------------------------------------|----------------------|
| MAX. MIN. | MAX. MIN. | |
| 4.0 2.5 | 2.5 1.0 | 20 |
- Always use H07RN-F or equivalent to the connection cord.
 - Install all electrical works in accordance to the standard.
 - Install the disconnect device with a contact gap of at least 3 mm in all poles nearby the units. (Both indoor unit and outdoor unit)
 - Install the circuit breaker nearby the units.

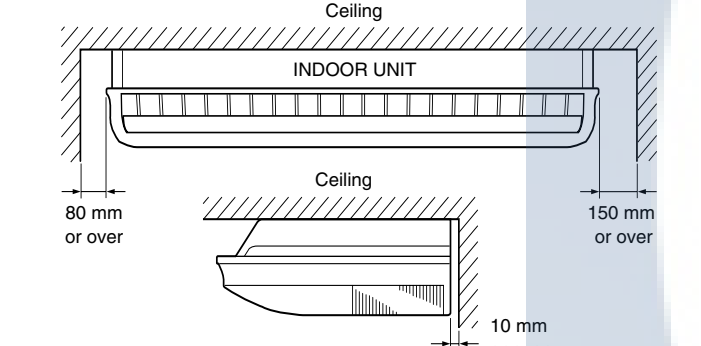
SELECTING THE MOUNTING POSITION

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

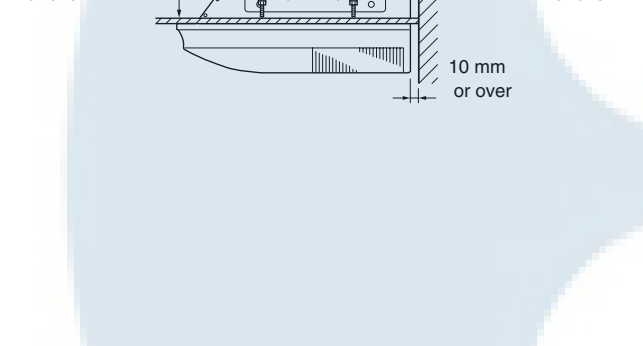
INDOOR UNIT

- Install the indoor unit level on a strong wall which is not subject to vibration.
- The inlet and outlet ports should not be obstructed: the air should be able to blow all over the room.
- Do not install the unit where it will be exposed to direct sunlight.
- Install the unit where connection to the outdoor unit is easy.
- Install the unit where the drain pipe can be easily installed.
- 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]

- Install the indoor unit level on a strong wall which is not subject to vibration.
- The inlet and outlet ports should not be obstructed: the air should be able to blow all over the room.
- Do not install the unit where it will be exposed to direct sunlight.
- Install the unit where connection to the outdoor unit is easy.
- Install the unit where the drain pipe can be easily installed.
- Take servicing, etc., into consideration and leave the spaces shown in the figure. Also install the unit where the filter can be removed.

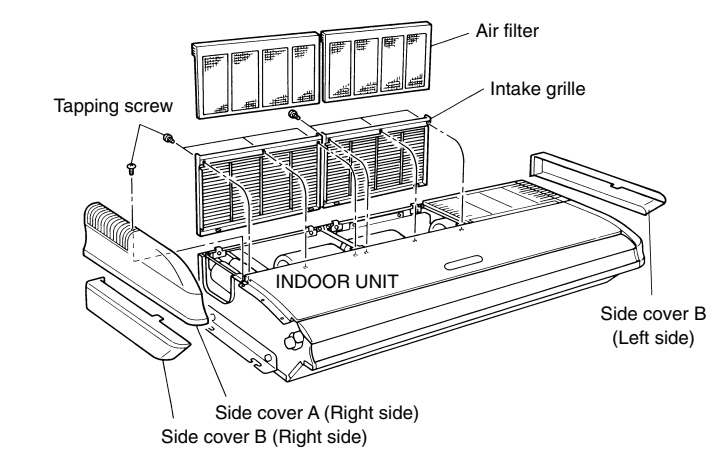


INSTALLATION PROCEDURE

1 PREPARING INDOOR UNIT INSTALLATION

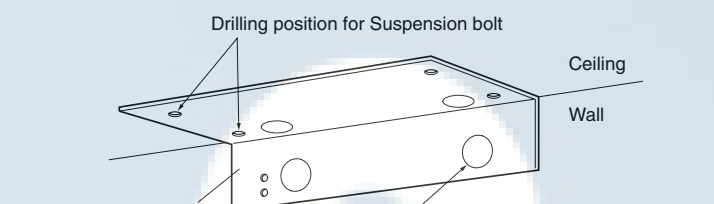
REMOVE THE INTAKE GRILLE AND SIDE COVER

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

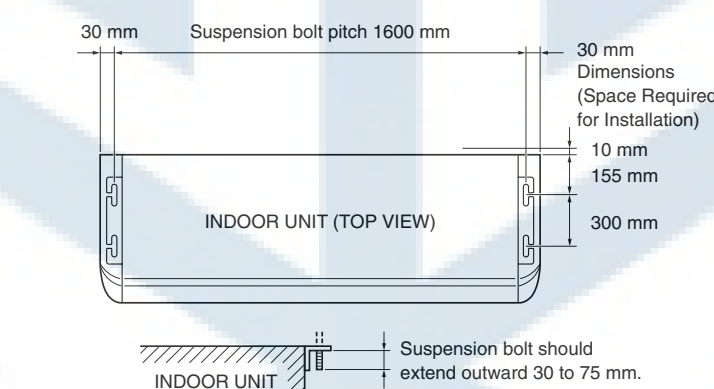


2 INDOOR UNIT INSTALLATION

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).

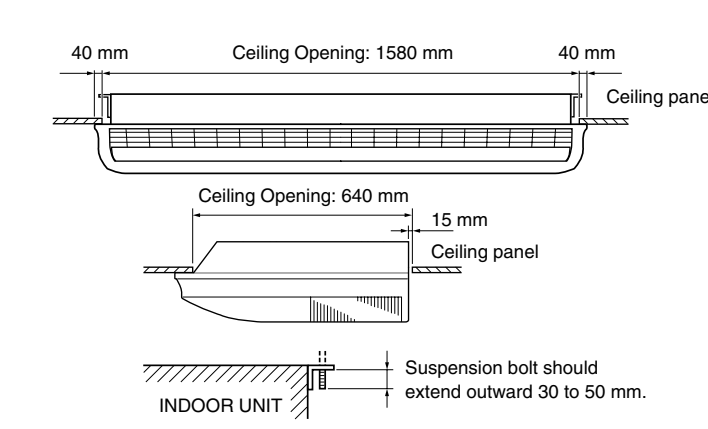


1. LOCATION OF CEILING SUSPENSION BOLTS



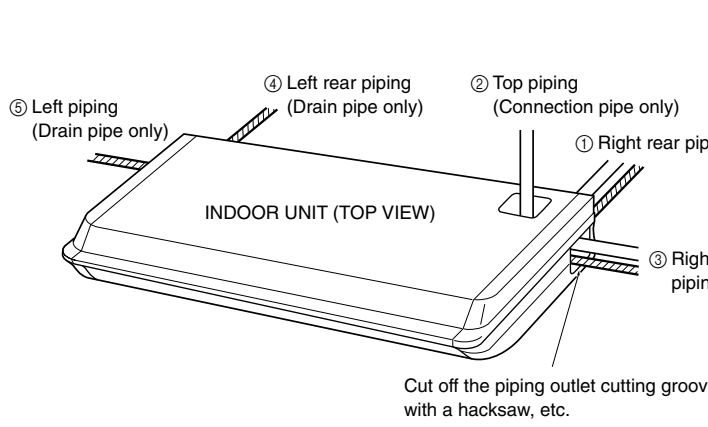
[For Half-Concealed Installation]

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



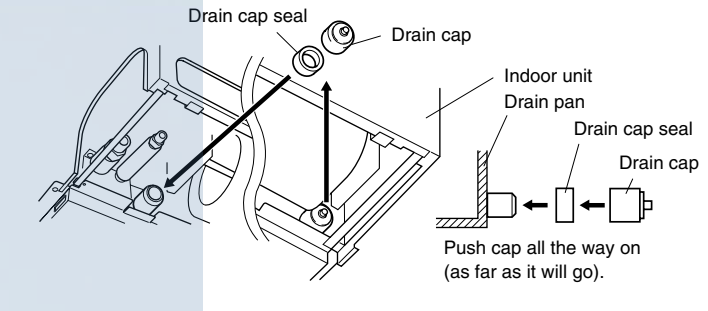
2. SELECT PIPING DIRECTION

Select connection piping and drain piping directions.



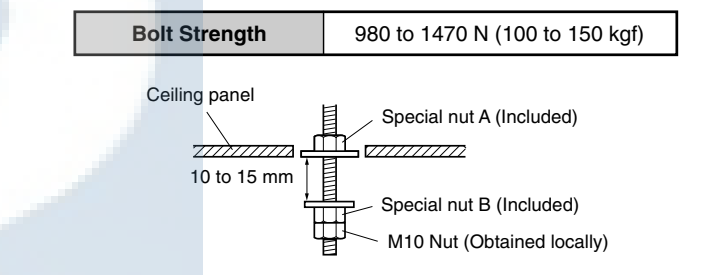
[FOR Left rear piping, Left piping]

- Transfer the Drain cap and Drain cap seal.



3. DRILLING THE HOLES AND ATTACHING THE SUSPENSION BOLTS

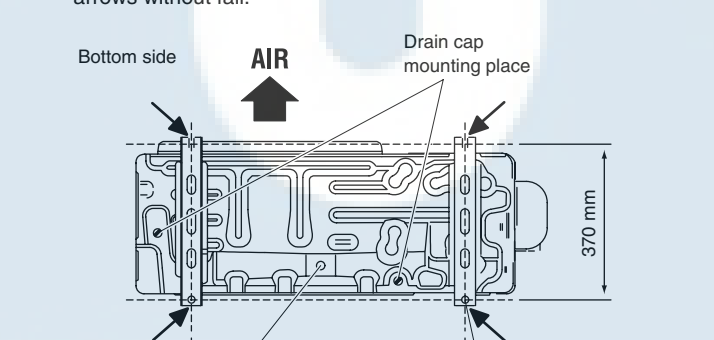
- Drill ø25 mm holes at the suspension-bolt locations.
- Install the bolts, then temporarily attach Special nuts A and B and a normal M10 nut to each bolt. (The two special nuts are provided with the unit. The M10 nut must be obtained locally.) Refer to the figure.



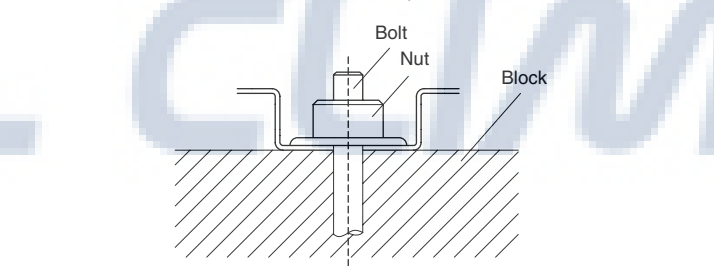
3 OUTDOOR UNIT INSTALLATION

1. OUTDOOR UNIT PROCESSING

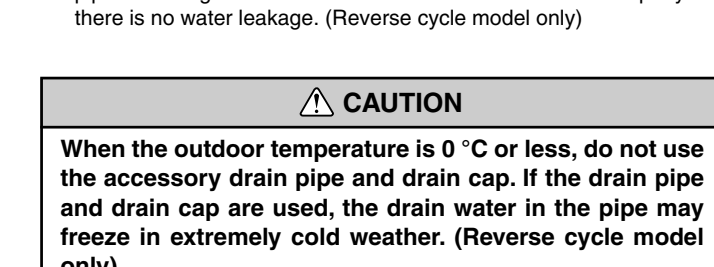
- Outdoor unit to be fastened with bolts at the four places indicated by the arrows without fail.



- Fix securely with bolts on a solid block. (Use 4 sets of commercially available M10 bolt, nut and washer.)



- Since the drain water flows out of the outdoor unit during heating operation, install the drain pipe and connect it to a commercial 16 mm hose. (Reverse cycle model only)
- When installing the drain pipe, plug all the holes other than the drain pipe mounting hole in the bottom of the outdoor unit with putty so there is no water leakage. (Reverse cycle model only)



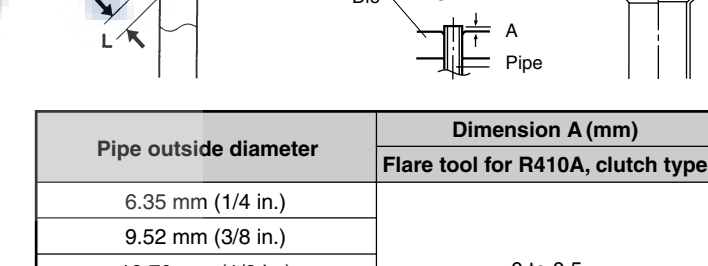
CAUTION
When the outdoor temperature is 0 °C or less, do not use the accessory drain pipe and drain cap. If the drain pipe and drain cap are used, the drain water in the pipe may freeze in extremely cold weather. (Reverse cycle model only)

4 CONNECTING THE PIPE

- 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.
- While welding the pipes, be sure to blow dry nitrogen gas through them.
- 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.

| Pipe outside diameter | Dimension A (mm) |
|-----------------------|------------------|
| 6.35 mm (1/4 in.) | 0 to 0.5 |
| 9.52 mm (3/8 in.) | |
| 12.70 mm (1/2 in.) | |
| 15.88 mm (5/8 in.) | |
| 19.05 mm (3/4 in.) | |

- Flaring
- Hold the pipe downward so that cuttings will not enter the pipe and remove the burrs.
- 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.



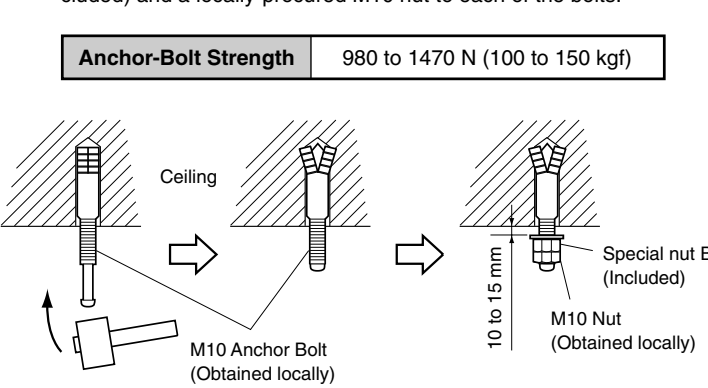
| Pipe outside diameter | Dimension B L ₁ (mm) |
|-----------------------|---------------------------------|
| 6.35 mm (1/4 in.) | 9.1 |
| 9.52 mm (3/8 in.) | 13.2 |
| 12.70 mm (1/2 in.) | 16.6 |
| 15.88 mm (5/8 in.) | 19.7 |
| 19.05 mm (3/4 in.) | 24.0 |

When using conventional flare tools to flare R410A pipes, the dimension A should be approximately 0.5 mm 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.

| Pipe outside diameter | Width across flats of Flare nut |
|-----------------------|---------------------------------|
| 6.35 mm (1/4 in.) | 17 mm |
| 9.52 mm (3/8 in.) | 22 mm |
| 12.70 mm (1/2 in.) | 26 mm |
| 15.88 mm (5/8 in.) | 29 mm |
| 19.05 mm (3/4 in.) | 36 mm |

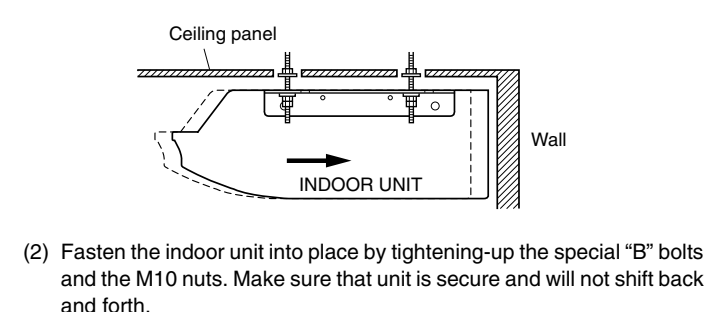
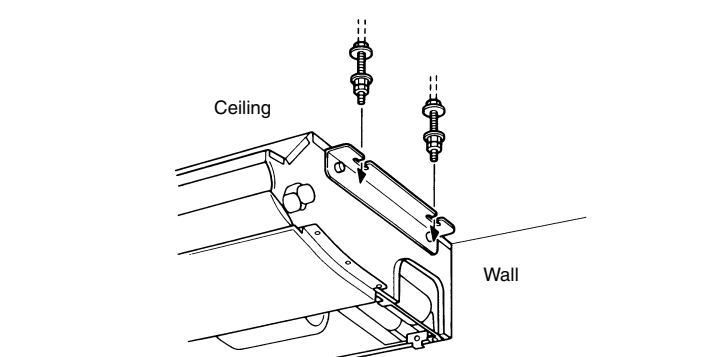
[If using anchor bolts]

- 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).
- Install the anchor bolts, then temporarily attach special nut "B" (included) and a locally-processed M10 nut to each of the bolts.

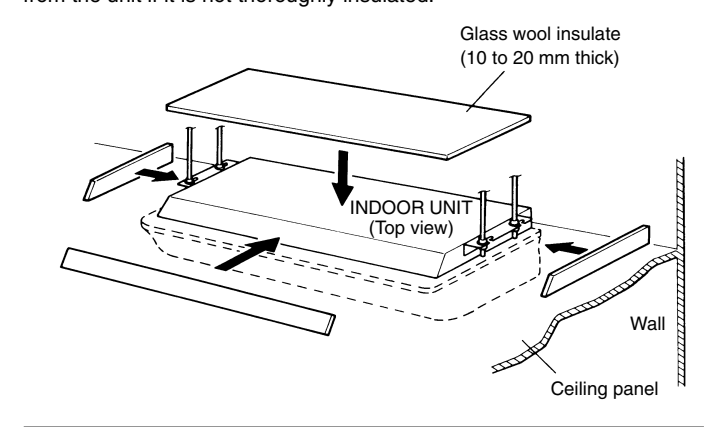


4. INSTALLING THE INDOOR UNIT

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



- 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.

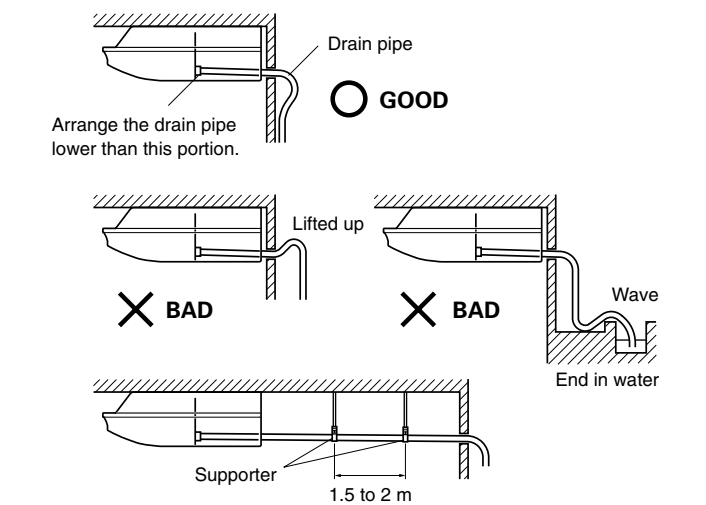


CAUTION
In order to check the drainage, be sure to use a level during installation of the indoor unit. If the installation site of the indoor unit is not level, water leakage may occur.

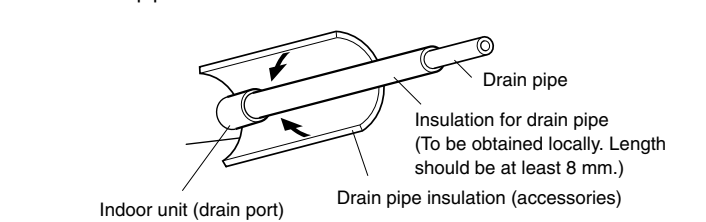
5. DRAIN PIPING

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.

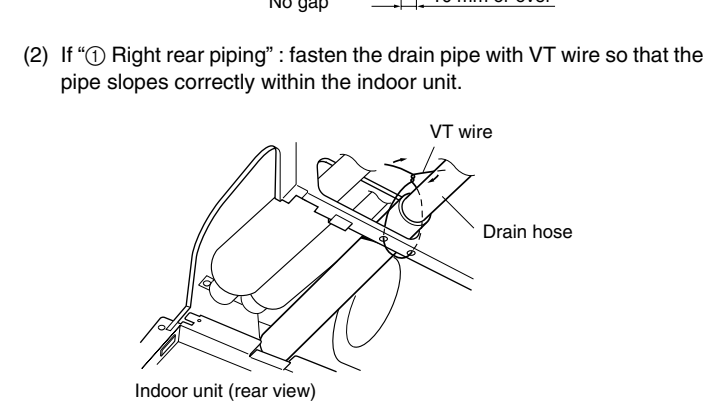
- Install the drain pipe with downward gradient (1/50 to 1/100) and so there are no ribs or traps in the pipe.
- Use general hard polyvinyl chloride pipe (VP25) [outside diameter 38 mm].
- During installation of the drain pipe, be careful to avoid applying pressure to the drain port of the indoor unit.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



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



- If "Right rear piping", fasten the drain pipe with VT wire so that the pipe slopes correctly within the indoor unit.



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 bend 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.

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

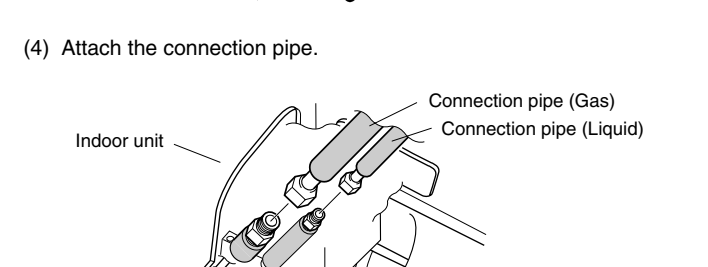
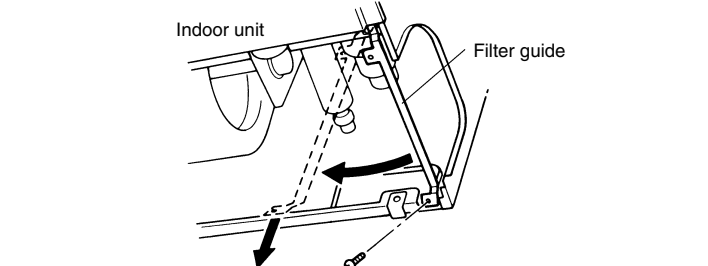
3. CONNECTION PIPES

Indoor unit

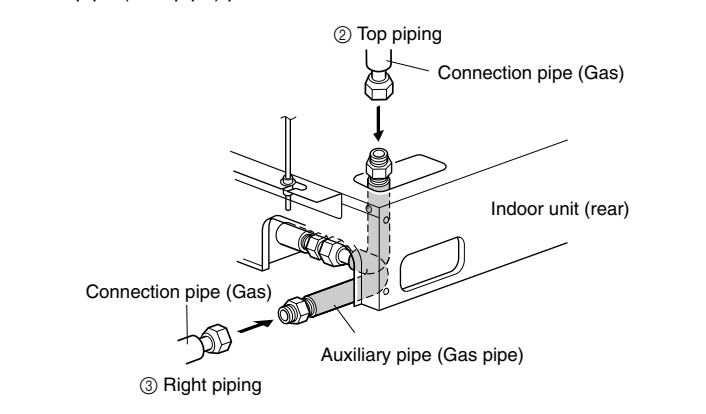
- Detach the caps and plugs from the pipes.

- 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.
- Do not remove the flare nut from the indoor unit pipe until immediately before connecting the connection pipe.

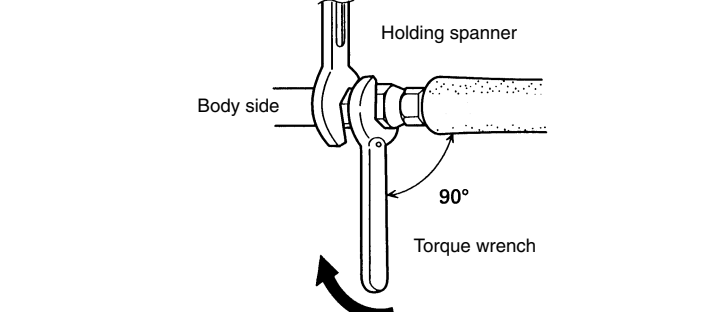
- Centering the pipe against port on the indoor unit, turn the flare nut with your hand.
- Remove the filter guide.



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



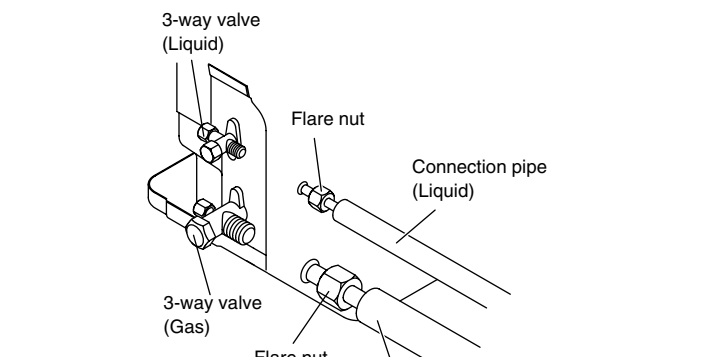
- When the flare nut is tightened properly by your hand, use a torque wrench to finally tighten it.



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. | 14 to 18 N·m (140 to 180 kgf·cm) |
| 9.52 mm (3/8 in.) dia. | 33 to 42 N·m (330 to 420 kgf·cm) |
| 12.70 mm (1/2 in.) dia. | 50 to 62 N·m (500 to 620 kgf·cm) |
| 15.88 mm (5/8 in.) dia. | 63 to 77 N·m (630 to 770 kgf·cm) |
| 19.05 mm (3/4 in.) dia. | 100 to 110 N·m (1000 to 1100 kgf·cm) |

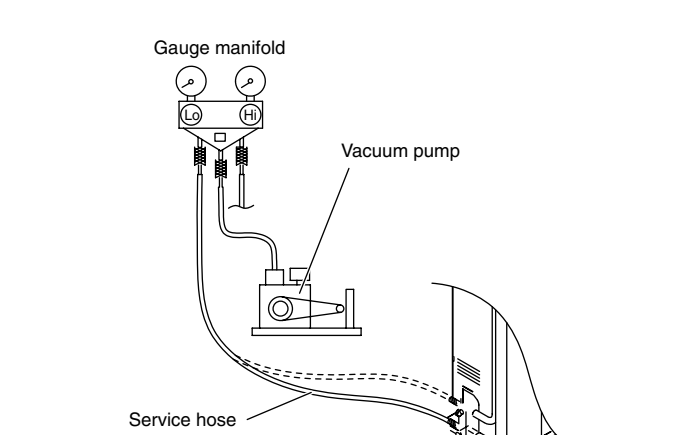
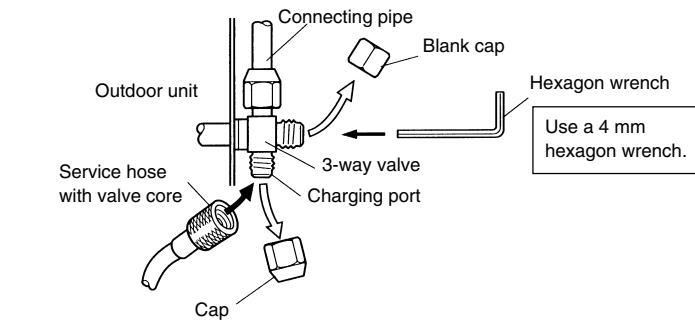
Outdoor unit
Tighten the flare nut of the connection pipe at the outdoor unit valve connector. The tightening method is the same as that as at the indoor side.



4. VACUUM

- Remove the cap, and connect the gauge manifold and the vacuum pump to the charging valve by the service hoses.
- Vacuum the indoor unit and the connecting pipes until the pressure gauge indicates -0.1 MPa (-76 cmHg).
- When -0.1 MPa (-76 cmHg) is reached, operate the vacuum pump for at least 60 minutes.
- Disconnect the service hoses and fit the cap to the charging valve to the specified torque.
- Remove the blank caps, and fully open the spindles of the 2-way and 3-way valves with a hexagon wrench [Torque: 6-7 N·m (60 to 70 kgf·cm)].
- Tighten the blank caps of the 2-way valve and 3-way valve to the specified torque.

| Blank cap | Tightening torque | |
|-------------------|----------------------------------|----------------------------------|
| | 6.35 mm (1/4 in.) | 20 to 25 N·m (200 to 250 kgf·cm) |
| | 9.52 mm (3/8 in.) | 20 to 25 N·m (200 to 250 kgf·cm) |
| | 12.70 mm (1/2 in.) | 25 to 30 N·m (250 to 300 kgf·cm) |
| | 15.88 mm (5/8 in.) | 30 to 35 N·m (300 to 350 kgf·cm) |
| | 19.05 mm (3/4 in.) | 35 to 40 N·m (350 to 400 kgf·cm) |
| Charging port cap | 10 to 12 N·m (100 to 120 kgf·cm) | |



CAUTION

- Do not purge the air with refrigerants, but use a vacuum pump to vacuum the installation! There is no extra refrigerant in the outdoor unit for air purging!
- Use a vacuum pump and gauge manifold and charging hose for R410A exclusively. Using the same vacuum for different refrigerants may damage the vacuum pump or the unit.

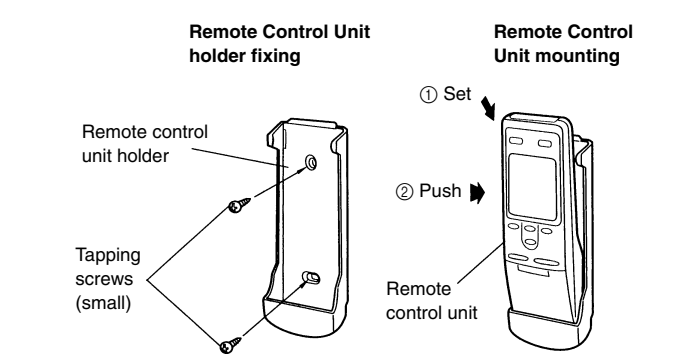
7. REMOTE CONTROL UNIT INSTALLATION

CAUTION

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

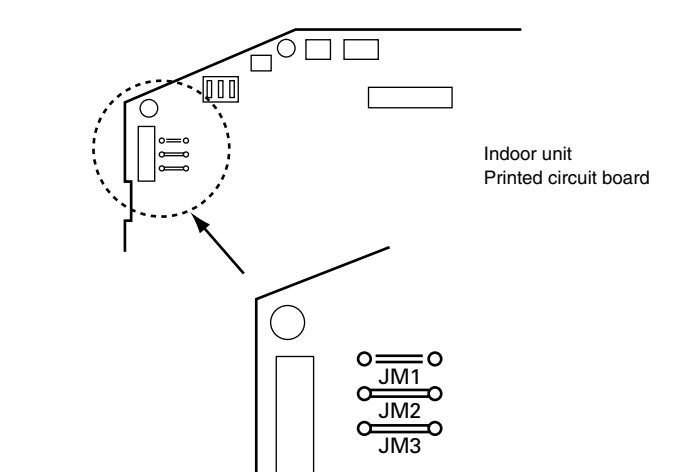
- Install the remote control unit holder to a wall or pillar with the tapping screws.



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 |



5. ADDITIONAL CHARGE

Refrigerant suitable for a piping length of 20 m is charged in the outdoor unit at the factory. When the piping is longer than 20 m, additional charging is necessary. For the additional amount, see the table below.

| Pipe length | 20 m (66 ft) | 30 m (99 ft) | 40 m (132 ft) | 50 m (164 ft) | g/m (oz/ft) |
|---|--------------|-----------------|-----------------|------------------|-------------------------|
| 36,000 BTU/h class (cooling mode) (Reverse cycle model) | None | 300 g (10.6 oz) | 600 g (21.2 oz) | 900 g (31.8 oz) | 30 g/m (1.06 oz/3.3 ft) |
| 45,000 BTU/h class (cooling mode) (Reverse cycle model) | None | 400 g (14.1 oz) | 800 g (28.2 oz) | 1200 g (42.3 oz) | 40 g/m (1.41 oz/3.3 ft) |
| 54,000 BTU/h class (cooling mode) (Reverse cycle model) | None | 400 g (14.1 oz) | 800 g (28.2 oz) | 1200 g (42.3 oz) | 40 g/m (1.41 oz/3.3 ft) |

CAUTION

- When moving and installing the air conditioner, do not mix gas other than the specified refrigerant R410A inside the refrigerant cycle.
- When charging the refrigerant R410A, always use an electronic balance for refrigerant charging (to measure the refrigerant by weight).
- When charging the refrigerant, take into account the slight change in the composition of the gas and liquid phases, and always charge from the liquid phase side whose composition is stable.
- Add refrigerant from the charging valve after the completion of the work.
- The maximum length of piping is 50 m. If the units are further apart than this, correct operation can not be guaranteed.

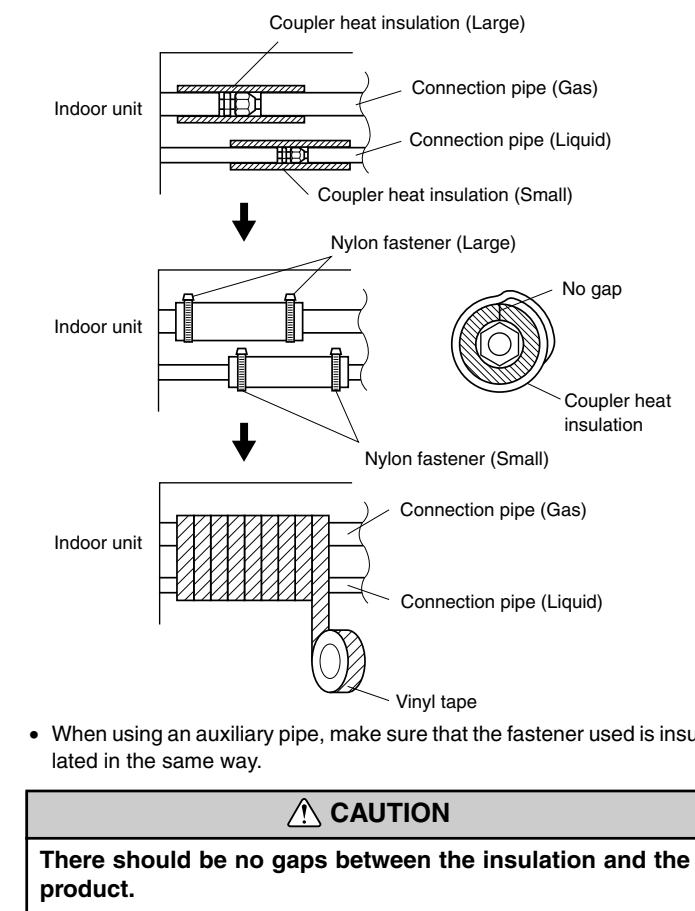
6. GAS LEAKAGE INSPECTION

CAUTION

- After connecting the piping, check the all joints for gas leakage with gas leak detector.
- When inspecting gas leakage, always use the vacuum pump for pressure. Do not use nitrogen gas.

7. HEAT INSULATION ON THE PIPE JOINTS (INDOOR SIDE ONLY)

After checking for gas leaks, insulate by wrapping insulation around the two parts (Gas and Liquid) of the indoor unit coupling, using the coupler heat insulation. After installing the coupler heat insulation, wrap both ends with vinyl tape so that there is no gap. Secure both ends of the heat insulation material using nylon fasteners. And finally fix connection pipe (Liquid) to connection pipe (Gas) by rolling vinyl tape over coupler heat insulation (Gas) and coupler heat insulation (Liquid).



5. POWER

WARNING

- The rated voltage of this product is 400 V 3ø 50 Hz.
- Before turning on, verify that the voltage is within the 342 V to 457 V range.
- Always use a special branch circuit and install a special receptacle to supply power to the air conditioner.
- Use a special branch circuit breaker and receptacle matched to the capacity of the air conditioner. (Install in accordance with standard.)
- Perform wiring work in accordance with standards so that the air conditioner can be operated safely and positively.
- Install a leakage special branch circuit breaker in accordance with the related laws and regulations and electric company standards.

CAUTION

- The power source capacity must be the sum of the air conditioner current and the current of other electrical appliances. When the current contracted capacity is insufficient, change the contracted capacity.
- When the voltage is low and the air conditioner is difficult to start, contact the power company the voltage raised.
- This air conditioner must be connected to a power source that has an electrical impedance of 0.16 Ω or less or has a supply current of 100 A or greater. If the power supply does not meet the specifications, contact the power company.

6. ELECTRICAL WIRING

WARNING

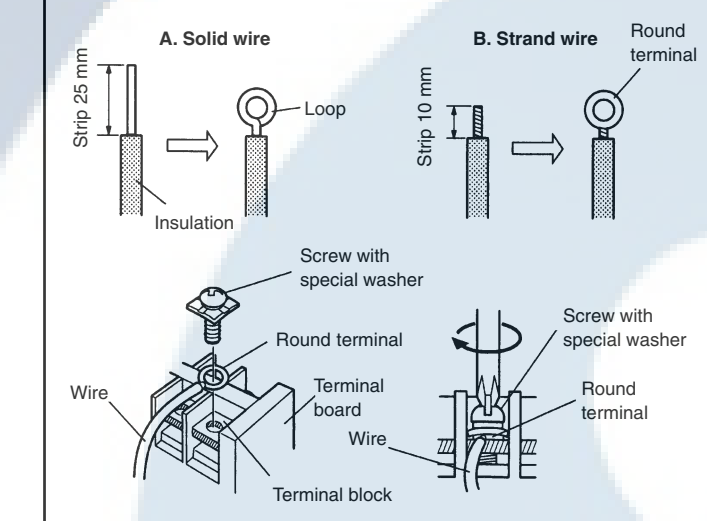
- Before starting work, check that power is not being supplied to the indoor unit and outdoor unit.
- Match the terminal board numbers and connection cord colors with those of the outdoor unit. Erroneous wiring may cause burning of the electric parts.
- Connect the connection cords firmly to the terminal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

HOW TO CONNECT WIRING TO THE TERMINALS

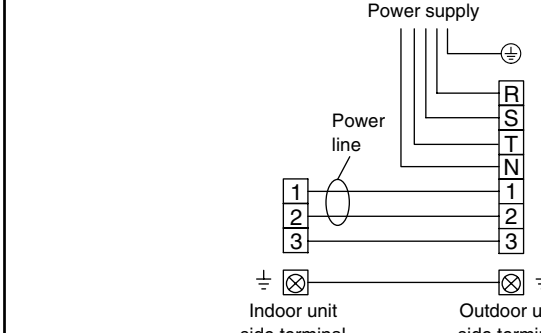
- A. For solid core wiring (or F-cable)**
- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 25 mm to expose the solid wire.
 - Using a screwdriver, remove the terminal screw(s) on the terminal board.
 - Using pliers, bend the solid wire to form a loop suitable for the terminal screw.
 - Shape the loop wire properly, place it on the terminal board and tighten securely with the terminal screw using a screwdriver.

B. For strand wiring

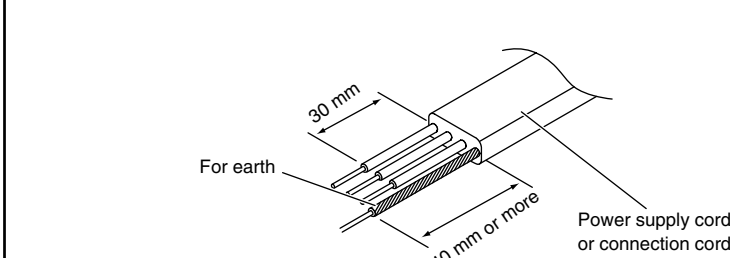
- Cut the wire end with a wire cutter or wire-cutting pliers, then strip the insulation to about 10 mm to expose the strand wiring.
- Using a screwdriver, remove the terminal screw(s) on the terminal board.
- Using a round terminal fastener or pliers, securely clamp a round terminal to each stripped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



1. CONNECTION DIAGRAMS



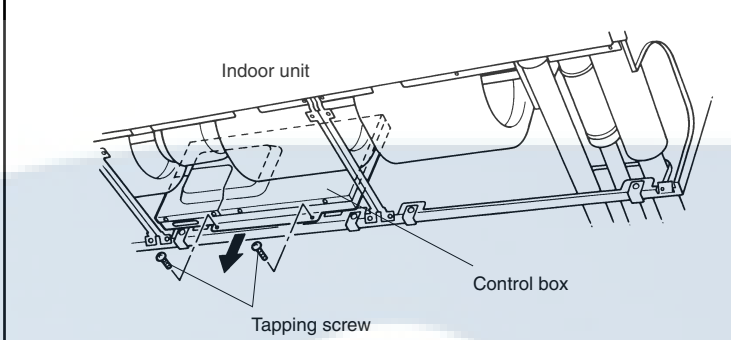
2. CONNECTION CORD PREPARATION



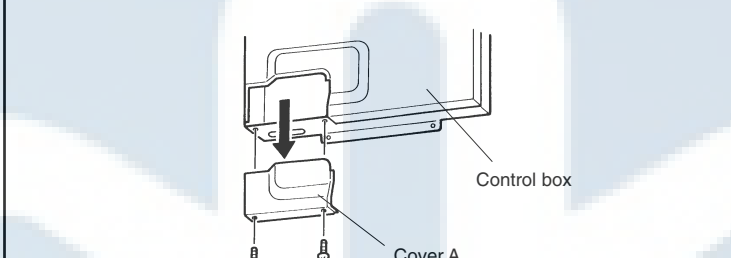
3. INDOOR UNIT

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

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

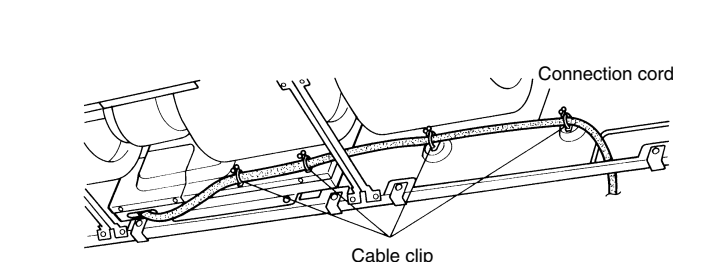
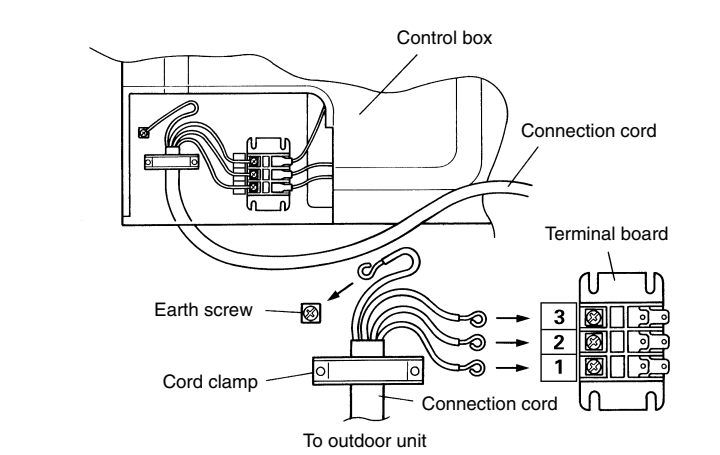


- Remove the Cover A and install the Connection cord.
- Reattach Cover A. Then fasten the control box back into its original position using the two tapping screws.



- After wiring is complete, clamp the Connection cord with the Cord clamp.

- 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.

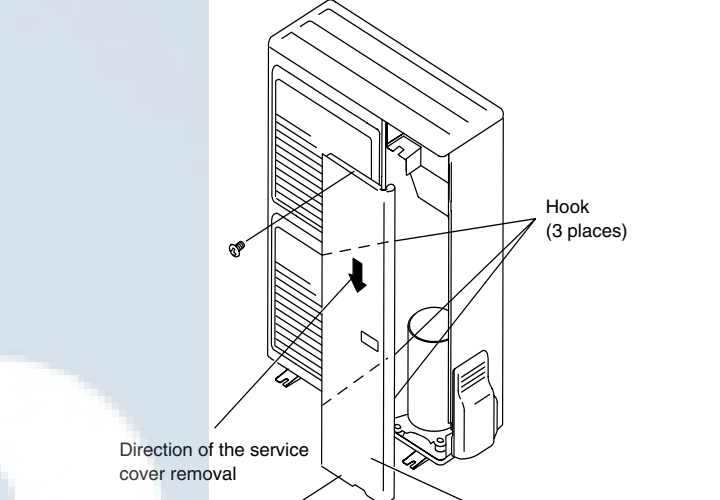


4. OUTDOOR UNIT

CAUTION

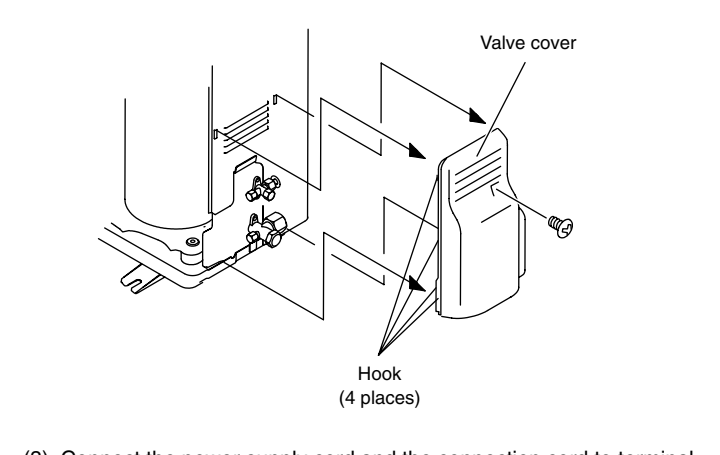
When connecting the power supply cord, make sure that the phase of the power supply matches with the phase of the terminal board. If the phases do not match, the compressor will rotate in reverse and will not be able to compress.

- Service cover removal
 - Remove the two mounting screws.
 - Remove the service cover by pushing downwards.

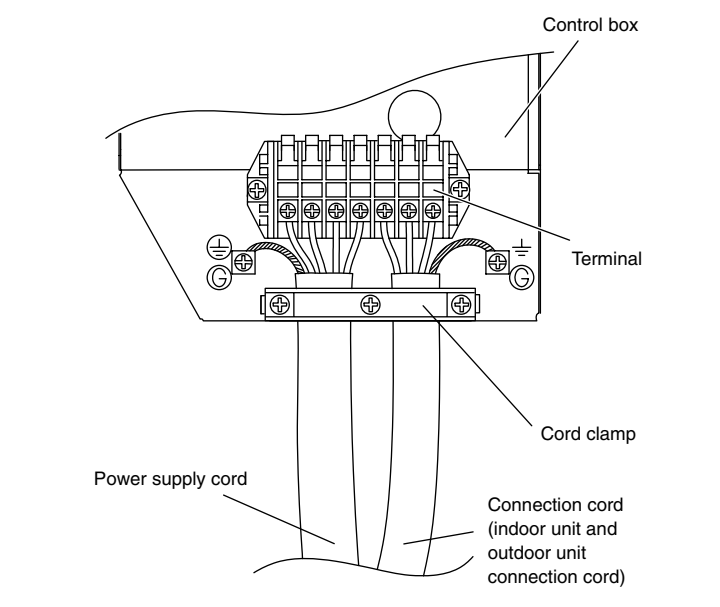


- After wiring is complete, clamp the Connection cord with the Cord clamp.

- Valve cover removal.
 - Remove the one mounting screw.
 - Remove the valve cover by sliding upward.

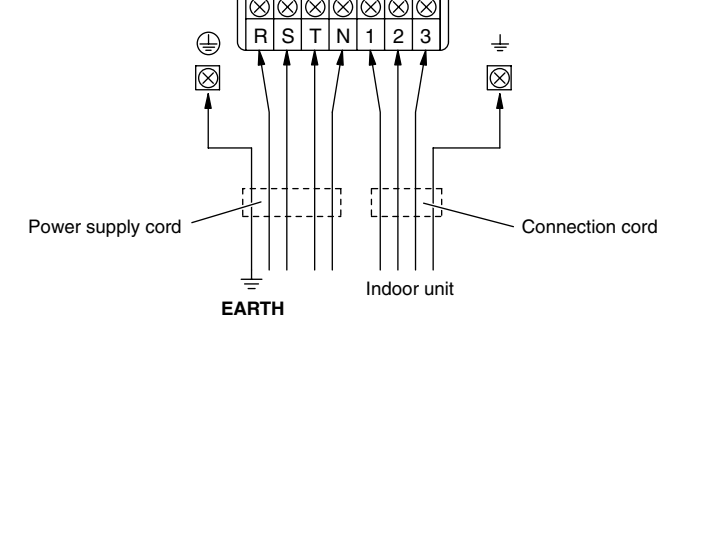


- Connect the power supply cord and the connection cord to terminal.
- Fasten the power supply cord and connection cord with cord clamp.



CAUTION

Do not make power supply cord and connection cord come in contact with valve (Gas).



- Put the service cover and valve cover back after completion of the work.

8. FINISHING

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

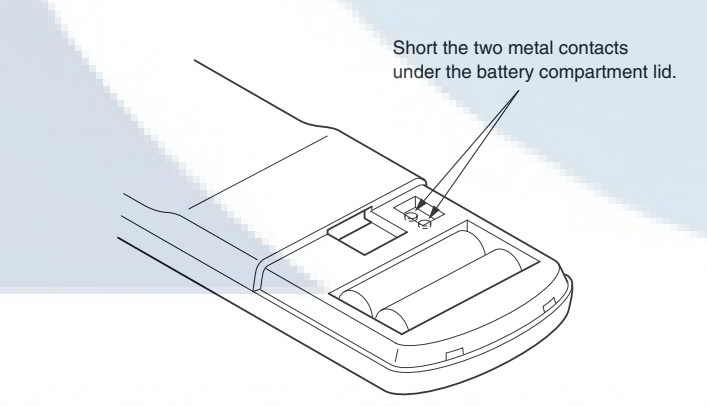
9. CUSTOMER GUIDANCE

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

- Starting and stopping method, operation switching, temperature adjustment, timer, air flow adjustment, and other remote control unit operations.
- Air filter removal and cleaning.
- Give the operating manual and installation instruction sheet to the customer.

10. 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).



- 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

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

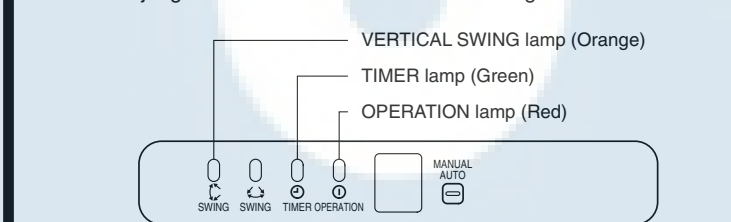
2. OUTDOOR UNIT

- Is there any abnormal noise and vibration during operation?
- Will noise, wind, or drain water from the unit disturb the neighbors?
- Is there any gas leakage?

11. AN ERROR DISPLAY

1. INDOOR UNIT

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



- 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

2. OUTDOOR UNIT LEDS

Heat & Cool model (reverse cycle) only

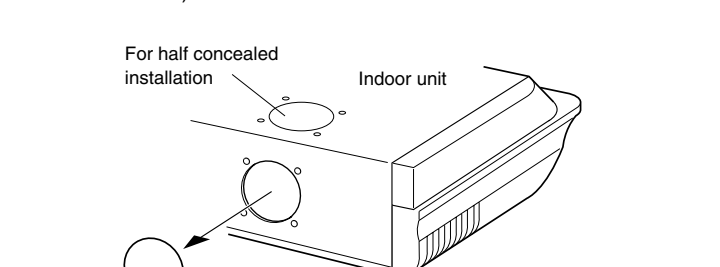
When a malfunction occurs in the outdoor unit, the LEDs on the circuit board light to indicate the error. Refer to the following table for the description of each error according to the LEDs.

| LED1 | LED2 | Error contents |
|----------|-------------|-----------------------------------|
| flash | flash | Model abnormal or EEPROM abnormal |
| 1 flash | Lighting | Power source connection error |
| 2 flash | Lighting | Discharge temp. sensor error |
| 3 flash | Lighting | Heat exchanger temp. sensor error |
| 4 flash | Lighting | Outdoor temp. sensor error |
| 5 flash | Lighting | Communication signal error |
| 6 flash | Lighting | Indoor unit error |
| 7 flash | Lighting | Discharge temp. abnormal |
| 8 flash | Lighting | High pressure abnormal |
| 9 flash | Lighting | Compressor temp. abnormal |
| 10 flash | Lighting | Compressor temp. sensor error |
| | Dislighting | No error. Protect operation |

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.

12. FRESH-AIR INTAKE

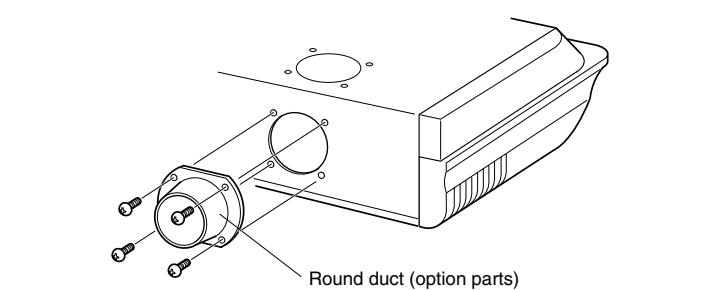
- Open up the knockout hole for the fresh-air intake, as shown in the figure. (If using half-concealed installation, open up the top knockout hole instead.)



CAUTION

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

- 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 "INDOOR UNIT INSTALLATION" ...]

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

