

## 8. INSTALLATION PROCEDURE

### 8-1. Safety Cautions

#### For general public use

Power supply cord of parts of appliance for Outdoor use shall be at least polychloroprene sheathed flexible cord (design H07 RN-F), or cord designation 245 IEC 66.

#### CAUTION

##### New Refrigerant Air conditioner Installation

- **THIS AIR CONDITIONER USES THE NEW HFC REFRIGERANT (R-410A), WHICH DOES NOT DESTROY THE OZONE LAYER.**

R-410A refrigerant is apt to be affected by impurity such as water, oxidizing membranes, and oils because the pressure of R-410A refrigerant is approx. 1.6 times of refrigerant R-22. As well as the adoption of this new refrigerant, refrigerating machine oil has also been changed. Therefore, during installation work, be sure that water, dust, former refrigerant, or refrigerating machine oil does not enter into the refrigerating cycle of a new-refrigerant air conditioner.

To avoid mixing refrigerant and refrigerating machine oil, the sizes of charging port connecting sections on the main unit are different from those for the conventional refrigerant, and different size tools are also required. Accordingly, special tools are required for the new refrigerant (R-410A) as shown below. For connecting pipes, use new and clean piping materials with high-pressure withstand capabilities, designed for R-410A only, and ensure that water or dust does not enter. Moreover, do not use any existing piping as its pressure withstand may be insufficient, and may contain impurities.

#### CAUTION

##### To Disconnect the Appliance from the Main Power Supply

This appliance must be connected to the main power supply by means of a circuit breaker or a switch with a contact separation of at least 3 mm.

If this is not possible, a power supply plug with earth must be used. This plug must be easily accessible after installation. The plug must be disconnected from the power supply socket in order to disconnect the appliance completely from the mains.

**DANGER**

- FOR USE BY QUALIFIED PERSONS ONLY.
- TURN OFF MAIN POWER SUPPLY BEFORE ATTEMPTING ANY ELECTRICAL WORK. MAKE SURE ALL POWER SWITCHES ARE OFF. FAILURE TO DO SO MAY CAUSE ELECTRIC SHOCK.
- CONNECT THE CONNECTING CABLE CORRECTLY. IF THE CONNECTING CABLE IS CONNECTED WRONGLY, ELECTRIC PARTS MAY BE DAMAGED.
- CHECK THE EARTH WIRE THAT IT IS NOT BROKEN OR DISCONNECTED BEFORE INSTALLATION.
- DO NOT INSTALL NEAR CONCENTRATIONS OF COMBUSTIBLE GAS OR GAS VAPORS. FAILURE TO FOLLOW THIS INSTRUCTION CAN RESULT IN FIRE OR EXPLOSION.
- TO PREVENT OVERHEATING THE INDOOR UNIT AND CAUSING A FIRE HAZARD, PLACE THE UNIT WELL AWAY (MORE THAN 2 M) FROM HEAT SOURCES SUCH AS RADIATORS, HEATERS, FURNACE, STOVES, ETC.
- WHEN MOVING THE AIR-CONDITIONER FOR INSTALLING IT IN ANOTHER PLACE AGAIN, BE VERY CAREFUL NOT TO GET THE SPECIFIED REFRIGERANT (R-410A) WITH ANY OTHER GASEOUS BODY INTO THE REFRIGERATION CYCLE. IF AIR OR ANY OTHER GAS IS MIXED IN THE REFRIGERANT, THE GAS PRESSURE IN THE REFRIGERATION CYCLE BECOMES ABNORMALLY HIGH AND IT RESULTINGLY CAUSES BURST OF THE PIPE AND INJURIES ON PERSONS.
- IN THE EVENT THAT THE REFRIGERANT GAS LEAKS OUT OF THE PIPE DURING THE INSTALLATION WORK, IMMEDIATELY LET FRESH AIR INTO THE ROOM. IF THE REFRIGERANT GAS IS HEATED BY FIRE OR SOMETHING ELSE, IT CAUSES GENERATION OF POISONOUS GAS.

**WARNING**

- Never modify this unit by removing any of the safety guards or bypassing any of the safety interlock switches.
- Do not install in a place which cannot bear the weight of the unit. Personal injury and property damage can result if the unit falls.
- Before doing the electrical work, attach an approved plug to the power supply cord. Also, make sure the equipment is properly earthed.
- Appliance shall be installed in accordance with national wiring regulations. If you detect any damage, do not install the unit. Contact your TOSHIBA dealer immediately.

**CAUTION**

- Exposure of unit to water or other moisture before installation could result in electric shock. Do not store it in a wet basement or expose to rain or water.
- After unpacking the unit, examine it carefully for possible damage.
- Do not install in a place that can increase the vibration of the unit. Do not install in a place that can amplify the noise level of the unit or where noise and discharged air might disturb neighbors.
- To avoid personal injury, be careful when handling parts with sharp edges.
- Please read this installation manual carefully before installing the unit. It contains further important instructions for proper installation.

**REQUIREMENT OF REPORT TO THE LOCAL POWER SUPPLIER**

Please make absolutely sure that the installation of this appliance is reported to the local power supplier before installation. If you experience any problems, or if the installation is not accepted by the supplier, the service agency will take adequate countermeasures.

**Remark per EMC Directive 89/336/EEC**

To prevent flicker impressions during the start of the compressor (technical process) following installation conditions do apply.

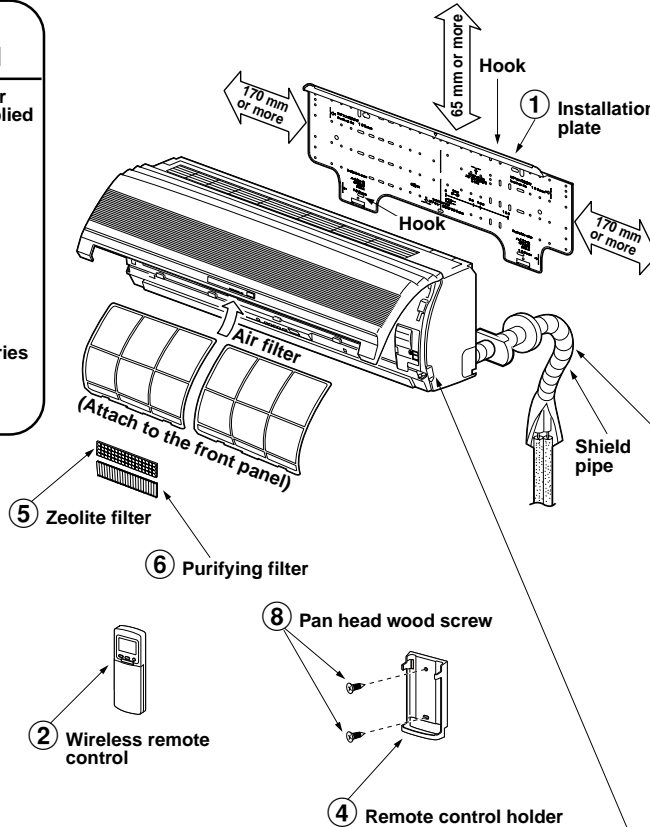
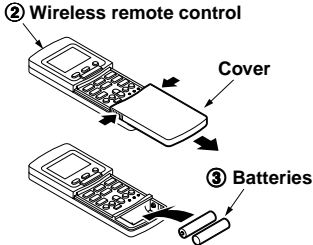
1. The power connection for the air conditioner has to be done at the main power distribution. This distribution has to be of an impedance.  
Normally the required impedance is reached at a 32A fusing point. Air conditioner fuse has to be 16A max.!
2. No other equipment should be connected to this power line.
3. For detailed installation acceptance, please contact your power supplier whether its restriction does apply for products like washing machines, air conditioners or electrical ovens.
4. For power details of the air conditioner, refer to the rating plate of the product.

## 8-2. Installation Diagram of Indoor and Outdoor Units

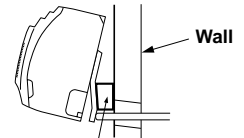
For installation of the indoor unit, use the paper pattern on the back of the installation manual.

### Before installing the wireless remote control

- With the remote control cover open, load the batteries supplied correctly, observing their polarity.

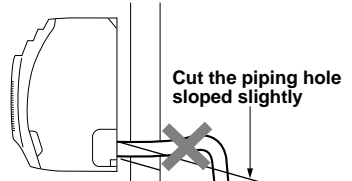


### For the rear left and left piping



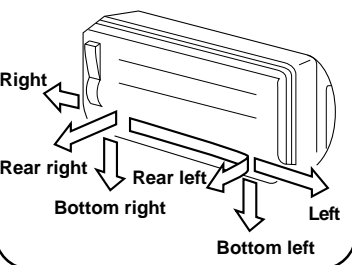
Insert the cushion between the indoor unit and wall, and tilt the indoor unit for better operation.

### Do not allow the drain hose to get slack.

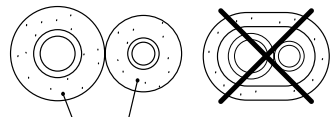


Make sure to run the drain hose sloped downward.

The auxiliary piping can be connected the left, rear left, rear right, right, bottom right or bottom left.

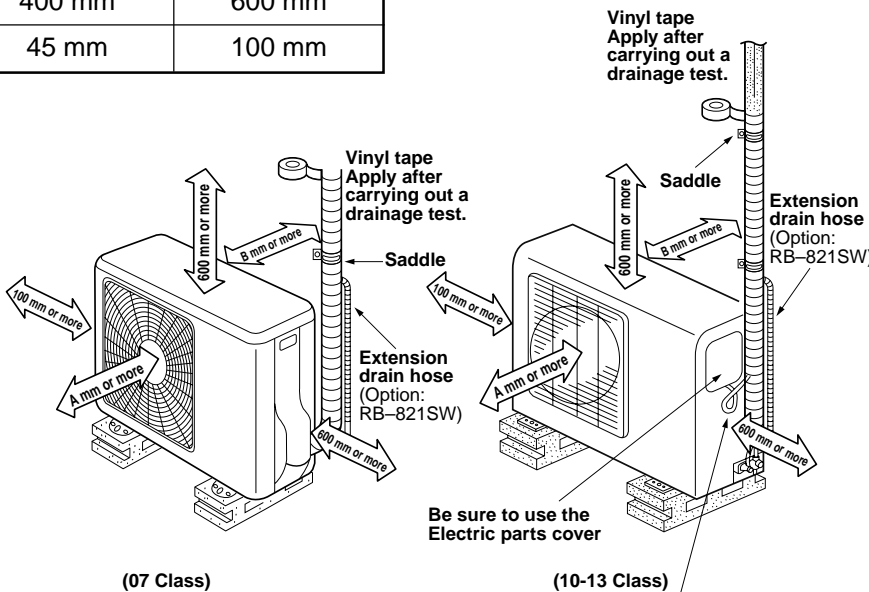


Insulate the refrigerant pipes separately with insulation, not together.



6 mm thick heat resisting polyethylene foam

	07, 10 class	13 class
A	400 mm	600 mm
B	45 mm	100 mm



Be sure to use the Electric parts cover

Loop the connective cable (about 100 mm in diameter and 300 – 350 mm long).

### 8-3. Installation

#### 8-3-1. Optional installation parts

Part Code	Parts name	Q'ty
Ⓐ	Refrigerant piping Liquid side : $\varnothing 6.35$ mm Gas side : $\varnothing 9.52$ mm	One each
Ⓑ	Pipe insulating material (polyethylene foam, 6 mm thick)	1
Ⓒ	Putty, PVC tapes	One each

#### <Fixing bolt arrangement of outdoor unit>

RAS-13UA-ES

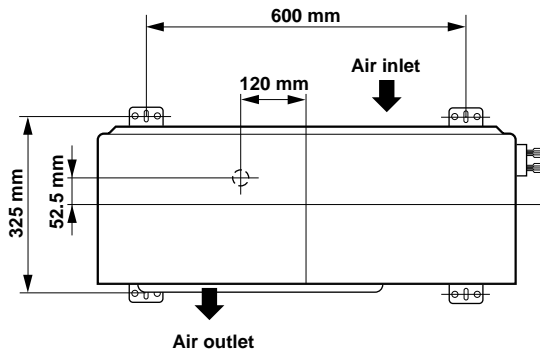


Fig. 8-3-1

RAS-10UA-ES

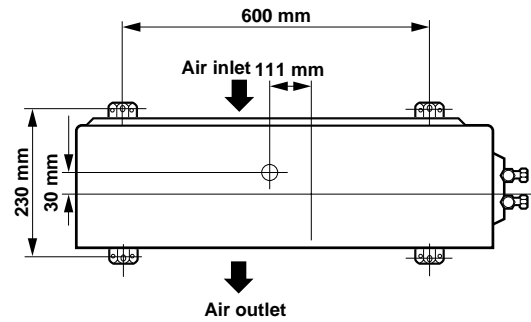


Fig. 8-3-2

RAS-07UA-ES

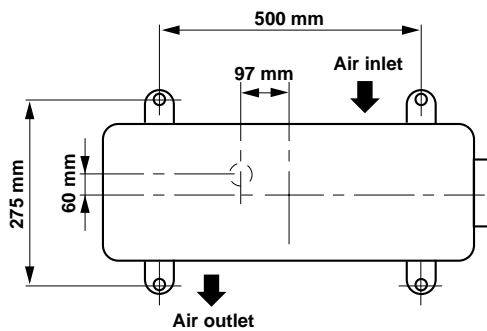
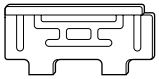
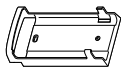

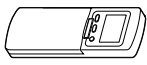


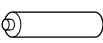



Fig. 8-3-3

- Secure the outdoor unit with fixing bolts and nuts if the unit is likely to be exposed to a strong wind.
- Use  $\varnothing 8$  mm or  $\varnothing 10$  mm anchor bolts and nuts.

**8-3-2. Accessory and installation parts**

Part No.	Part name (Q'ty)	Part No.	Part name (Q'ty)	Part No.	Part name (Q'ty)
①	 Installation plate x 1	④	 Remote control holder x 1	⑦	 Mounting screw $\varnothing 4 \times 25 \text{ l} \times 6$
②	 Wireless remote control x 1	⑤	 Zeolite filter x 1	⑧	 Pan head wood screw $\varnothing 3.1 \times 16 \text{ l} \times 2$
③	 Battery x 2	⑥	 Purifying filter x 1		

**Others**

Name
Owner's manual
Installation manual

**Option :**








For the extension drain hose, use an optionally available RB-821SW or commercially available one.

**8-3-3. Installation/Serviceing tools**

**<Changes in the product and components>**

In the case of an air conditioner using R-410A, in order to prevent any other refrigerant from being charged accidentally, the service port diameter of the outdoor unit control valve (3 way valve) has been changed. (1/2 UNF 20 threads per inch)

- In order to increase the pressure withstand strength of the refrigerant piping, flare processing diameter and size of opposite side of flare nuts have been changed. (for copper pipes with nominal dimensions 1/2 and 5/8)

New tools for R-410A	Applicable to R-22 model		Changes
Gauge manifold	×		As pressure is high, it is impossible to measure by means of conventional gauge. In order to prevent any other refrigerant from being charged, each port diameter has been changed.
Charge hose	×		In order to increase pressure withstand strength, hose materials and port size have been changed (to 1/2 UNF 20 threads per inch). When purchasing a charge hose, be sure to confirm the port size.
Electronic balance for refrigerant charging	○		As pressure is high and gasification speed is fast, it is difficult to read the indicated value by means of a charging cylinder, as air bubbles occur.
Torque wrench (nominal dia. 1/2, 5/8)	×		The size of opposing flare nuts has been increased. Incidentally, a common wrench is used for nominal diameters 1/4 and 3/8.
Flare tool (clutch type)	○		By increasing the clamp bar's receiving hole, strength of spring in the tool has been improved.
Gauge for projection adjustment	—		Used when flare is made with a conventional flare tool.
Vacuum pump adapter	○		Connected to conventional vacuum pump. It is necessary to use an adapter to prevent vacuum pump oil from flowing back to the charge hose. The charge hose connecting part has two ports: one for conventional refrigerant (7/16 UNF 20 threads per inch) and one for R-410A. If the vacuum pump mineral oil mixes with R-410A, a sludge may occur and damage the equipment.
Gas leakage detector	×		Exclusive for HFC refrigerant.

- Incidentally, the “refrigerant cylinder” comes with the refrigerant designation (R-410A) and protector coating in the U. S ARI specified rose color (ARI color code: PMS 507).
- Also, the “charge port and packing for refrigerant cylinder” require 1/2 UNF 20 threads per inch corresponding to the port size of the charge hose.

## 8-4. Indoor Unit

### 8-4-1. Installation place

- A place which provides the spaces around the indoor unit as shown in the above diagram.
- A place where there is no obstacle near the air inlet and outlet.
- A place that allows easy installation of the piping to the outdoor unit.
- A place which allows the front panel to be opened.

### CAUTION

- Direct sunlight to the indoor unit's wireless receiver should be avoided.
- The microprocessor in the indoor unit should not be too close to RF noise sources.  
(For details, see the owner's manual.)

### <Remote control>

- A place where there are no obstacles such as a curtain that may block the signal from the indoor unit.
- Do not install the remote control in a place exposed to direct sunlight or close to a heating source, such as a stove.
- Keep the remote control at least 1 m apart from the nearest TV set or stereo equipment. (This is necessary to prevent image disturbances or noise interference.)
- The location of the remote control should be determined as shown below.

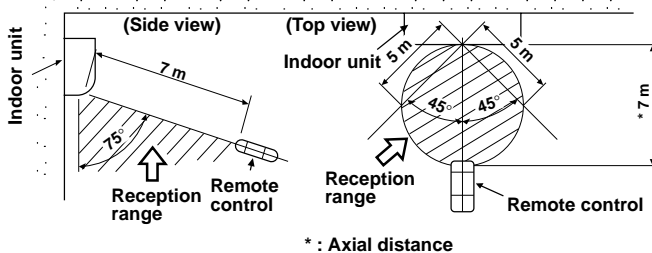


Fig. 8-4-1

### 8-4-2. Cutting a hole and mounting installation plate

#### <Cutting a hole>

When installing the refrigerant pipes from the rear.

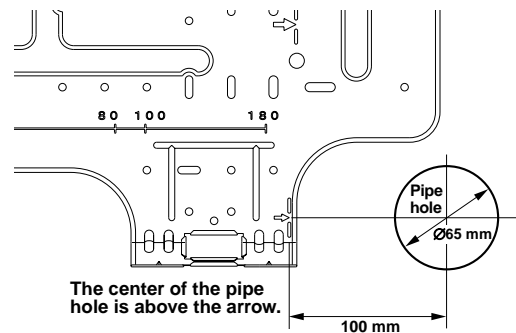


Fig. 8-4-2

1. After determining the pipe hole position on the mounting plate (➡), drill the pipe hole (Ø65 mm) at a slight downward slant to the outdoor side.

#### NOTE

- When drilling a wall that contains a metal lath, wire lath or metal plate, be sure to use a pipe hole brim ring sold separately.

#### <Mounting the installation plate>

For installation of the indoor unit, use the paper pattern on the back.

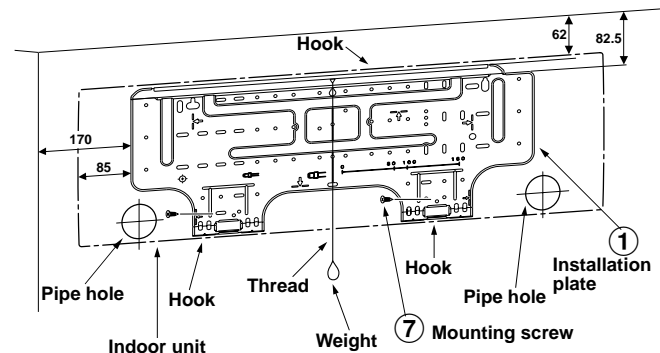


Fig. 8-4-3

**<When the installation plate is directly mounted on the wall>**

1. Securely fit the installation plate onto the wall by screwing it in the upper and lower parts to hook up the indoor unit.
2. To mount the installation plate on a concrete wall with anchor bolts, utilize the anchor bolt holes as illustrated in the above figure.
3. Install the installation plate horizontally in the wall.

**CAUTION**

When installing the installation plate with a mounting screw, do not use the anchor bolt hole. Otherwise the unit may fall down and result in personal injury and property damage.

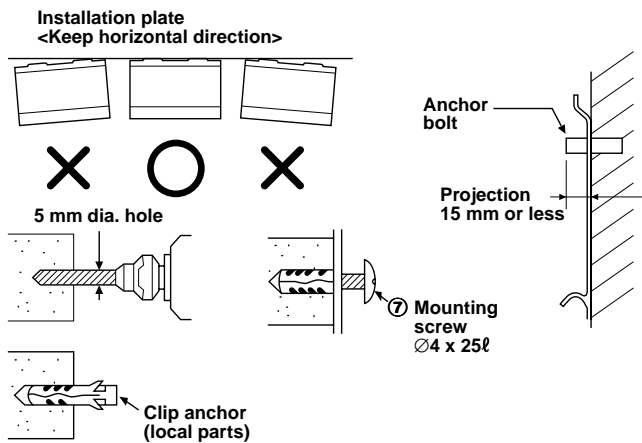


Fig. 8-4-4

**CAUTION**

Failure to firmly install the unit may result in personal injury and property damage if the unit falls.

- In case of block, brick, concrete or similar type walls, make 5 mm dia. holes in the wall.
- Insert clip anchors for appropriate ⑦ mounting screws.

**NOTE**

- Secure four corners and lower parts of the installation plate with 4 to 6 mounting screws to install it.

**8-4-3. Electrical work**

1. The supply voltage must be the same as the rated voltage of the air conditioner.
2. Prepare the power source for exclusive use with the air conditioner.

**CAUTION**

- This appliance can be connected to the mains in either of the following two ways.
  - (1) Connection to fixed wiring: A switch or circuit breaker which disconnects all poles and has a contact separation of at least 3 mm must be incorporate in the fixed wiring. An approved circuit breaker or switches must used.
  - (2) Connection with power supply plug: Attach power supply plug with power cord and plug it into wall outlet. An approved power supply cord and plug must be used.

**NOTE**

- Ensure all wiring is used within its electrical rating.

Model	RAS-13UKP-ES	RAS-10UKP-ES	RAS-07UKP-ES
Power source	50 Hz, 220 – 240 V Single phase		
Maximum running current	12A	7.5A	5A
Plug socket & fuse rating	16A		
Power cord	1.3mm <sup>2</sup> or more	1mm <sup>2</sup> or more	



### 8-4-4. Wiring connection

#### <How to connect the power cord>

For the air conditioner that does not have power cord, connect a power cord to it as mentioned below.

- (1) Open the air inlet grille upward.
- (2) Remove the four screws securing the front panel.
- (3) Slightly open the lower part of the front panel then pull the upper part of the front panel toward you to remove it from the rear plate.
- (4) After removing the front panel, remove the power cord connect cover and the cord clamp.
- (5) Connect and secure the power supply cord and secure the cord clamp and the power connect cover.
- (6) Put the power supply cord through the notch.
- (7) Be sure to smooth the notch with a file, etc.

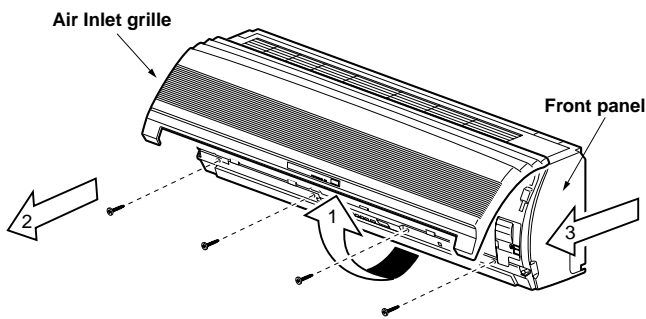


Fig. 8-4-5

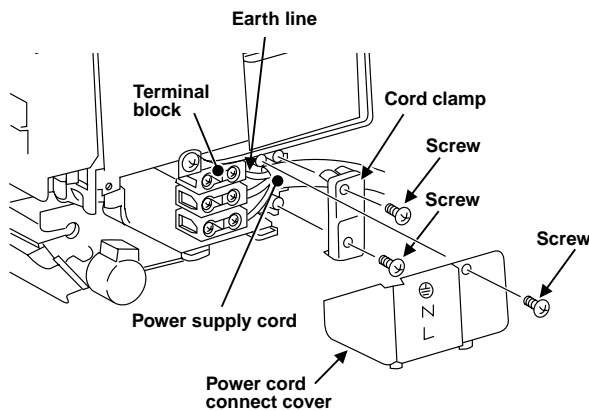


Fig. 8-4-6

#### <Stripping length of the connecting cable>

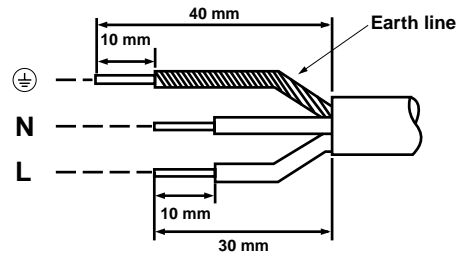


Fig. 8-4-7

#### NOTE

- Use standard wire only.
- Wire type : H07 RN-F or more

#### <Taking out the power cord>

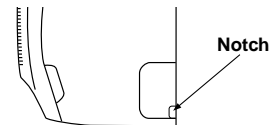


Fig. 8-4-8

- Put the power supply cord through the notch.

<How to connect the connecting cable>

Wiring of the connecting cable can be carried out without removing the front panel.

1. Remove the air inlet grille.  
Open the air inlet grille upward and pull it toward you.
2. Remove the terminal cover and cord clamp.
3. Insert the connecting cable (according to the local cords) into the pipe hole on the wall.
4. Take out the connecting cable through the cable slot on the rear panel so that it protrudes about 15 cm from the front.
5. Insert the connecting cable fully into the terminal block and secure it tightly with screws.
6. Tightening torque : 1.2 N·m (0.12 kgf·m)
7. Secure the connecting cable with the cord clamp.
8. Fix the terminal cover, rear plate bushing and air inlet grille on the indoor unit.

<How to install the air inlet grille on the indoor unit>

- When attaching the air inlet grille, the contrary of the removed operation is performed.

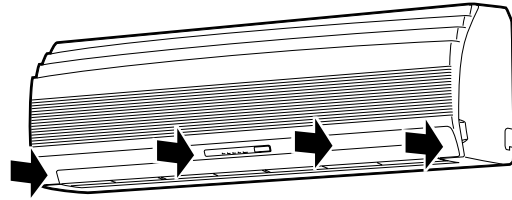


Fig. 8-4-12

**CAUTION**

- Be sure to refer to the wiring system diagram labeled inside the front panel.
- Check local electrical cords and also any specific wiring instructions or limitations.

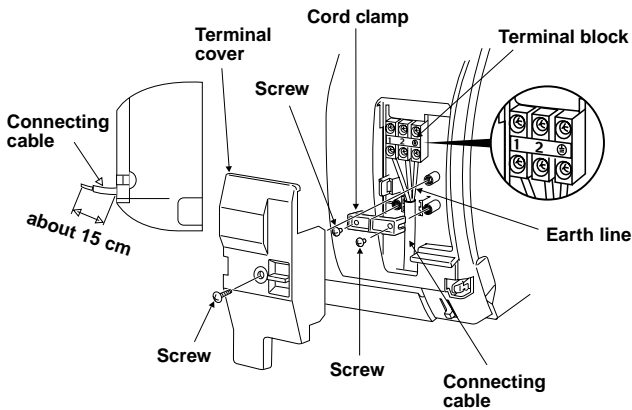
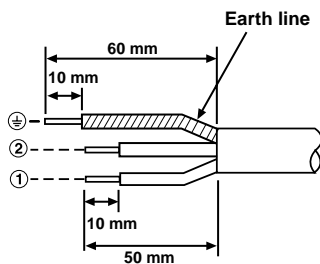


Fig. 8-4-10



Stripping length of the connecting cable

Fig. 8-4-11

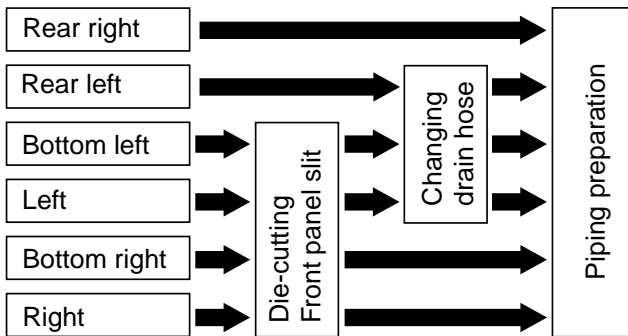
**NOTE**

- Use standard wire only.
- Wire type : H07 RN-F or more

### 8-4-5. Piping and drain hose installation

#### <Piping and drain hose forming>

\* Since dewing results in a machine trouble, make sure to insulate both the connecting pipes. (Use polyethylene foam as insulating material.)



#### 1. Die-cutting Front panel slit

For leftward connection, cut out slit on the left side of the front panel. (A knife will produce splinters, so use nippers.)

#### 2. Changing drain hose

For leftward connection, bottom leftward connection and rear leftward connection's piping, it is necessary to change the drain hose and drain cap.

#### How to remove the drains cap

Clip drain cap by needle-nose plier, and pull out.

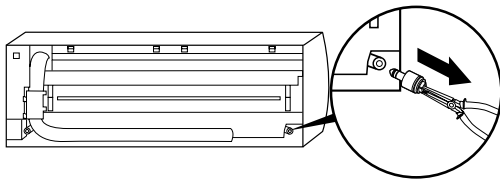


Fig. 8-4-13

#### How to install the drain hose

Firmly insert drain hose connecting part until hitting on a heat insulator.

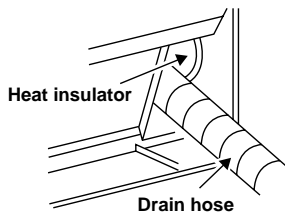


Fig. 8-4-14

#### How to fix the drains cap

1) Insert hexagonal wrench (4 mm) in a center head.

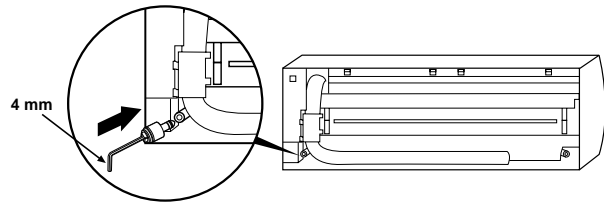


Fig. 8-4-15

2) Firmly insert drains cap.

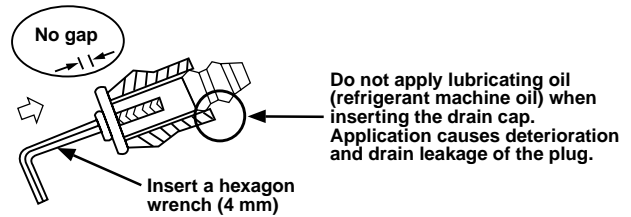


Fig. 8-4-16

### CAUTION

Firmly insert the drain hose and drain cap; otherwise, water may leak.

#### <In case of right or left piping>

- After scribing slits of the front panel with a knife or a making-off pin, cut them with a pair of nippers or an equivalent tool.

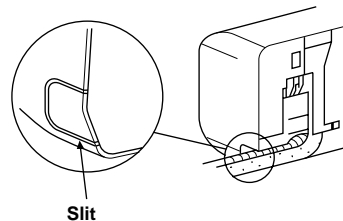


Fig. 8-4-17

#### <In case of bottom right or bottom left piping>

- After scribing slits of the front panel with a knife or a making-off pin, cut them with a pair of nippers or an equivalent tool.

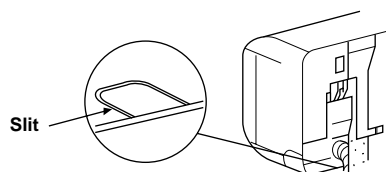


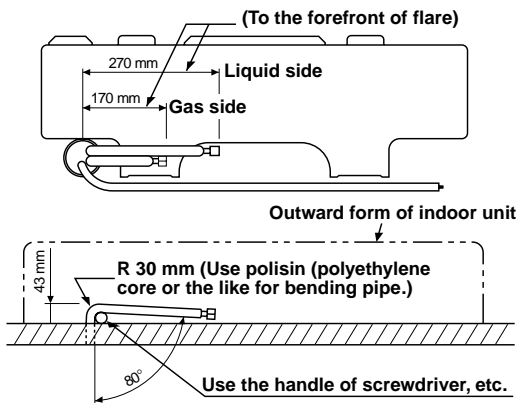
Fig. 8-4-18

**<Left-hand connection with piping>**

Bend the connecting pipe so that it is laid within 43 mm above the wall surface. If the connecting pipe is laid exceeding 43 mm above the wall surface, the indoor unit may unstably be set on the wall. When bending the connecting pipe, make sure to use a spring bender so as not to crush the pipe.

**Bend the connection pipe within a radius of 30 mm.**

To connect the pipe after installation of the unit (figure)



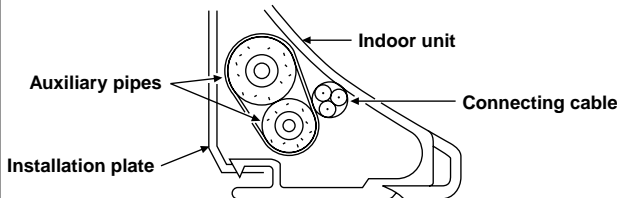
**Fig. 8-4-19**

**NOTE**

If the pipe is bent incorrectly, the indoor unit may unstably be set on the wall. After passing the connecting pipe through the pipe hole, connect the connecting pipe to the auxiliary pipes and wrap the facing tape around them.

**CAUTION**

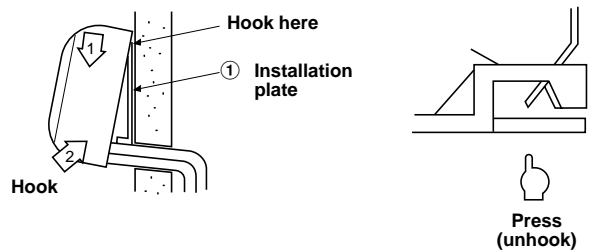
- Bind the auxiliary pipes (two) and connecting cable with facing tape tightly. In case of leftward piping and rear-leftward piping, bind the auxiliary pipes (two) only with facing tape.



- Carefully arrange pipes so that any pipe does not stick out of the rear plate of the indoor unit.
- Carefully connect the auxiliary pipes and connecting pipes to each other and cut off the insulating tape wound on the connecting pipe to avoid double-taping at the joint, moreover, seal the joint with the vinyl tape, etc.
- Since dewing results in a machine trouble, make sure to insulate both the connecting pipes. (Use polyethylene foam as insulating material.)
- When bending a pipe, carefully do it, not to crush it.

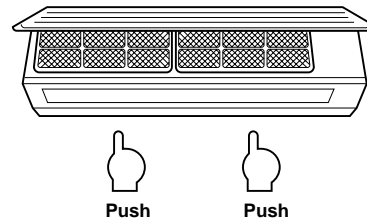
**8-4-6. Indoor unit fixing**

1. Pass the pipe through the hole in the wall, and hook the indoor unit on the installation plate at the upper hooks.
2. Swing the indoor unit to right and left to confirm that it is firmly hooked up on the installation plate.
3. While pressing the indoor unit onto the wall, hook it at the lower part on the installation plate. Pull the indoor unit toward you to confirm that it is firmly hooked up on the installation plate.



**Fig. 8-4-20**

- For detaching the indoor unit from the installation plate, pull the indoor unit toward you while pushing its bottom up at the specified parts.



**Fig. 8-4-21**

### 8-4-7. Drainage

1. Run the drain hose sloped downwards.

#### NOTE

- Hole should be made at a slight downward slant on the outdoor side.

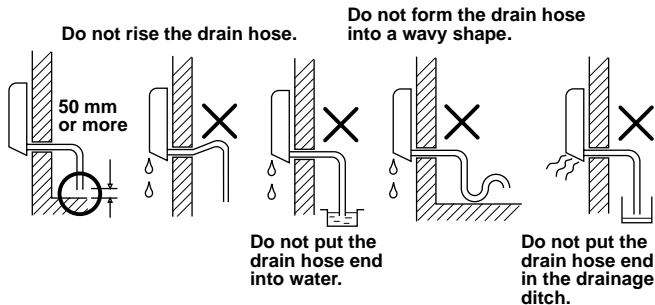


Fig. 8-4-22

2. Put water in the drain pan and make sure that the water is drained out of doors.
3. When connecting extension drain hose, insulate the connecting part of extension drain hose with shield pipe.

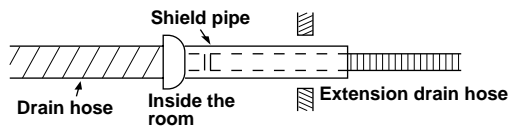


Fig. 8-4-23

#### CAUTION

Arrange the drain pipe for proper drainage from the unit.  
Improper drainage can result in dew-dropping.

This air conditioner has the structure designed to drain water collected from dew, which forms on the back of the indoor unit, to the drain pan. Therefore, do not store the power cord and other parts at a height above the drain guide.

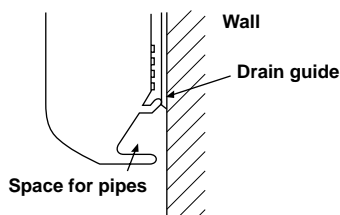


Fig. 8-4-24

### 8-5. Outdoor Unit

#### 8-5-1. Installation place

- A place which provides the spaces around the outdoor unit as shown in the left diagram.
- A place which can bear the weight of the outdoor unit and does not allow an increase in noise level and vibration.
- A place where the operation noise and discharged air do not disturb your neighbors.
- A place which is not exposed to a strong wind.
- A place free of a leakage of combustible gases.
- A place which does not block a passage.
- When the outdoor unit is to be installed in an elevated position, be sure to secure its feet.
- An allowable length of the connecting pipe is up to 10 m (RAS-07UA, RAS-10UA) or 15 m (RAS-13UA).
- An allowable height level is up to 5 m (RAS-07UA, RAS-10UA) or 6 m (RAS-13UA).
- A place where the drain water does not raise any problem.

#### CAUTION

1. Install the outdoor unit without anything blocking the air discharging.
2. When the outdoor unit is installed in a place exposed always exposed to strong wind like a coast or on a high storey of a building, secure the normal fan operation using a duct or a wind shield.
3. In particularly windy areas, install the unit such as to avoid admission of wind.
4. Installation in the following places may result in trouble.

Do not install the unit in such places.

- A place full of machine oil.
- A saline-place such as the coast.
- A place full of sulfide gas.
- A place where high-frequency waves are likely to be generated as from audio equipment, welders, and medical equipment.

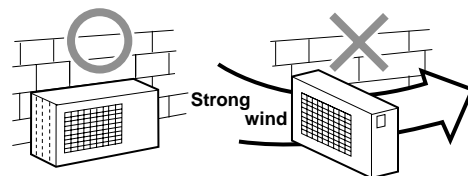


Fig. 8-5-1

**8-5-2. Refrigerant piping connection**

1. Cut the pipe with a pipe cutter.

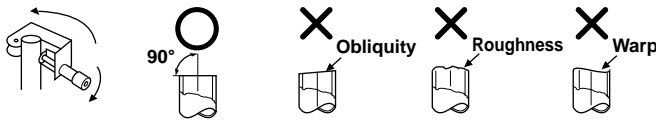


Fig. 8-5-2

2. Insert a flare nut into the pipe, and flare the pipe.

- Projection margin in flaring : A (Unit : mm)

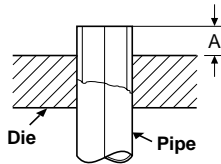


Fig. 8-5-3

Rigid (Clutch type)

Outer dia. of copper pipe	R-410A tool used	Conventional tool used
Ø6.35	0 to 0.5	1.0 to 1.5
Ø9.52	0 to 0.5	1.0 to 1.5

Imperial (wing nut type, conventional tool)

Outer dia. of copper pipe	R-410A
Ø6.35	1.5 to 2.0
Ø9.52	1.5 to 2.0

**<Tightening connection>**

Align the centers of the connecting pipes and tighten the flare nut as far as possible with your fingers. Then tighten the nut with a spanner and torque wrench as shown in the figure.

**CAUTION**

- Do not apply excess torque.
- Otherwise, the nut may crack depending on the conditions.

Outer dia. of copper pipe	Tightening torque
Ø6.35 mm	16 to 18 (1.6 to 1.8 kgf-m)
Ø9.52 mm	33 to 42 (3.3 to 4.2 kgf-m)

**• Tightening torque of flare pipe connections**

The operating pressure of R-410A is higher than that of R-22. (Approx. 1.6 times). It is therefore necessary to firmly tighten the flare pipe connecting sections (which connect the indoor and outdoor units) up to the specified tightening torque. Incorrect connections may cause not only a gas leakage, but also damage to the refrigerant cycle.

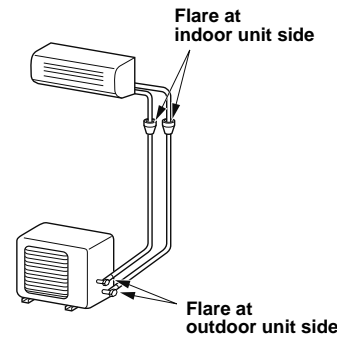
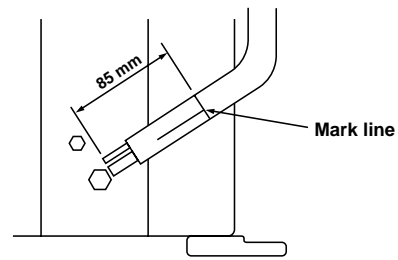


Fig. 8-5-4



For RAS-07UA-ES

Fig. 8-5-5

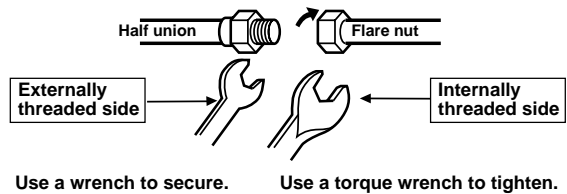


Fig. 8-5-6

**CAUTION**

- **KEEP IMPORTANT 4 POINTS FOR PIPING WORK**
  - (1) Take away dust and moisture (Inside of the connecting pipes.)
  - (2) Tight connection (between pipes and unit)
  - (3) Evacuate the air in the connecting pipes using VACUUM PUMP.
  - (4) Check gas leak (connected points)

**8-5-3. Evacuating**

After the piping has been connected to the indoor unit, you can perform the air purge together at once.

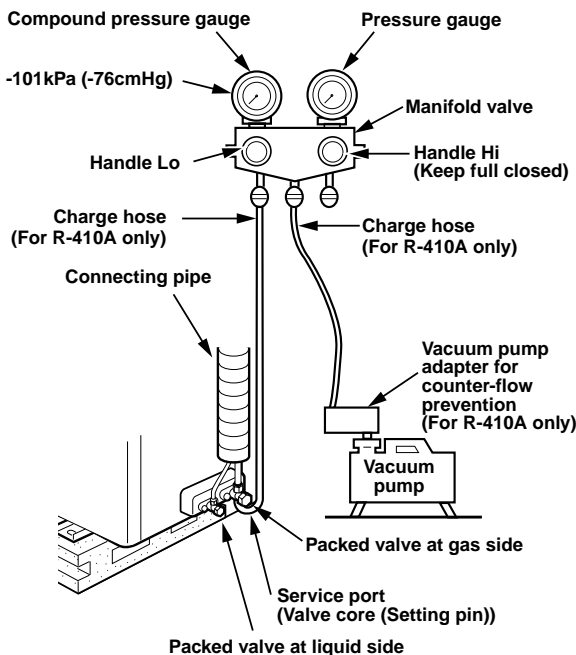
**AIR PURGE**

Evacuate the air in the connecting pipes and in the indoor unit using a vacuum pump. Do not use the refrigerant in the outdoor unit.  
For details, see the manual of the vacuum pump.

**<Using a vacuum pump>**

Be sure to use a vacuum pump with counter-flow prevention function so that inside oil of the pump does not flow backward into pipes of the air conditioner when the pump stops. (If oil inside of the vacuum pump enters into the air conditioner, which use R-410A, refrigeration cycle trouble may result.)

1. Connect the charge hose from the manifold valve to the service port of the gas side packed valve.
2. Connect the charge hose to the port of the vacuum pump.
3. Open fully the low pressure side handle of the gauge manifold valve.
4. Operate the vacuum pump to start evacuating. Perform evacuating for about 15 minutes if the piping length is 20 meters. (15 minutes for 20 meters) (assuming a pump capacity of 27 liters per minute.) Then confirm that the compound pressure gauge reading is  $-101 \text{ kPa}$  ( $-76 \text{ cmHg}$ ).
5. Close the low pressure side valve handle of gauge manifold.
6. Open fully the valve stem of the packed valves (both sides of Gas and Liquid).
7. Remove the charging hose from the service port.
8. Securely tighten the caps on the packed valves.

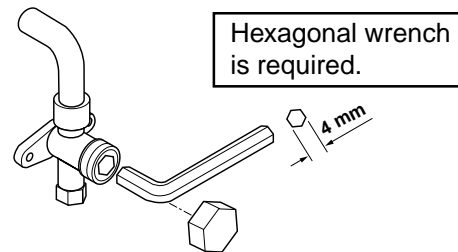


**Fig. 8-5-7**

**<Packed valve handling precautions>**

- Open the valve stem all the way out; but do not try to open it beyond the stopper.
- Securely tighten the valve stem cap with torque in the following table:

Gas side ( $\varnothing 9.52 \text{ mm.}$ )	33 to 42 N·m (3.3 to 4.2 kgf·m)
Liquid side ( $\varnothing 6.35 \text{ mm.}$ )	16 to 18 N·m (1.6 to 1.8 kgf·m)
Service port	9 to 10 N·m (0.9 to 1.0 kgf·m)



**Fig. 8-5-8**

### 8-5-4. Wiring connection

1. Remove the electric parts cover from the outdoor unit.
2. Connect the connecting cable to the terminal as identified with their respective matched numbers on the terminal block of indoor and outdoor unit.
3. When connecting the connecting cable to the outdoor unit terminal, make a loop as shown in the installation diagram of indoor and outdoor unit, to prevent water coming in the outdoor unit.
4. Insulate the unused cords (conductors) from any water coming in the outdoor unit. Proceed them so that they do not touch any electrical or metal parts.

#### <Stripping length of connecting cable>

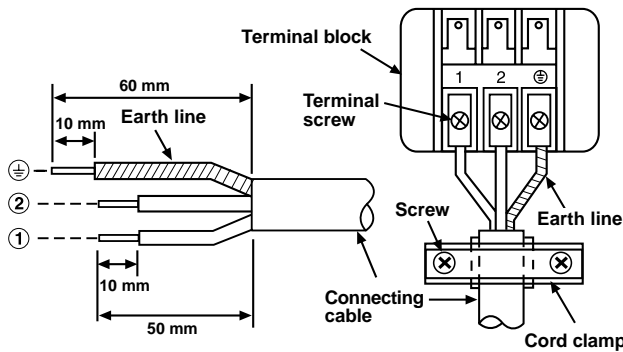


Fig. 8-5-9

### CAUTION

- Wrong wiring connection may cause some electrical parts burn out.
- Be sure to comply with local codes on running the wire from indoor unit to outdoor unit (size of wire and wiring method etc.)
- Every wire must be connected firmly.

### NOTE

- Wire type: H07 RN-F or 245 IEC 66 (2.0 mm<sup>2</sup> or more)

### 8-6. How to Set Remote Control Selector Switch

When two indoor units are installed in separated rooms, there is no need to change the selector switch.

#### <Remote control selector switch>

- When two indoor units are installed in the same room or the adjacent two rooms, they may be controlled simultaneously with a single remote control. To prevent this, set either unit and its remote control to B setting. (Both units are set to A setting before shipment.)
- The remote control signal is not received when the indoor unit setting is different from the remote control one.

#### 1. Set the remote control selector switch with the indoor unit.

- 1) Turn the circuit breaker of the main power switch off before setting the selector switch.
- 2) Remove the Air inlet grille and Front panel. (Refer to page 55, 10-1)
- 3) Select the terminal of selector switch from [A position] to [B position].

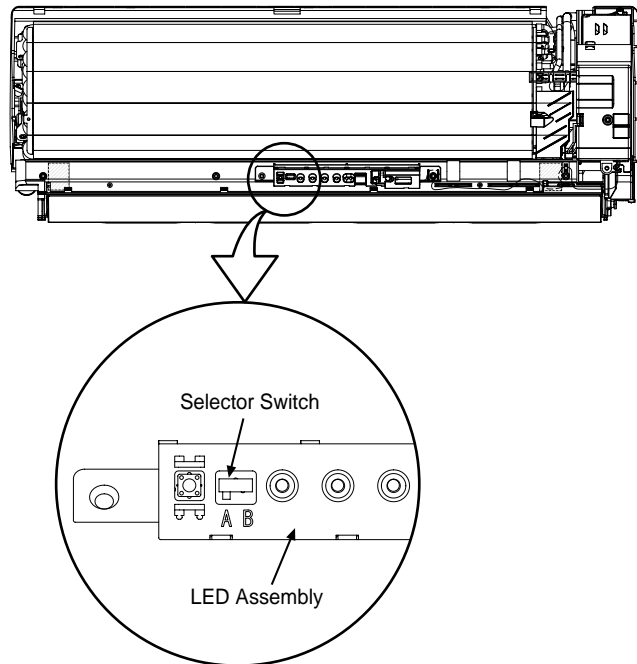


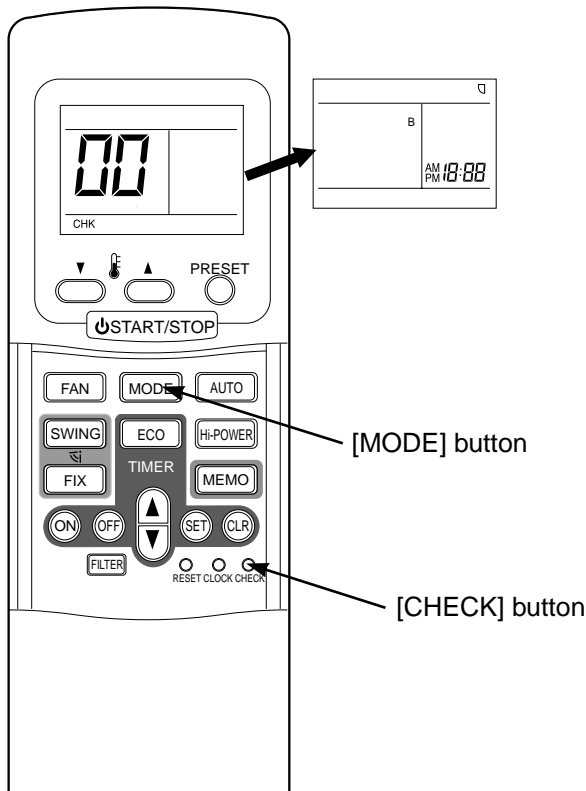
Fig. 8-6-1



**2. Set the remote control selector switch with the remote control**

[B] is indicated on the liquid crystal display when setting remote control selector switch to B. [A] is not indicated on the display even if the selector switch is set to A.

- 1) Load the remote control with the batteries.
  - 2) Press the [CHECK] button using something with sharp point. (The preset temperature on the remote control changes to [00].)
  - 3) Press the [MODE] button while pressing the [CHECK] button, [B] is indicated at the right of the present temperature display.
- To reset the switch to the [A] setting, press the [MODE] button again while pressing the [CHECK] button.



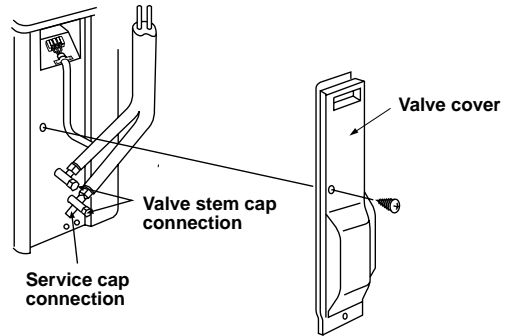
**Fig. 8-6-2**

**3. Confirm that the indoor unit can operate with the new setting.**

**8-7. Others**

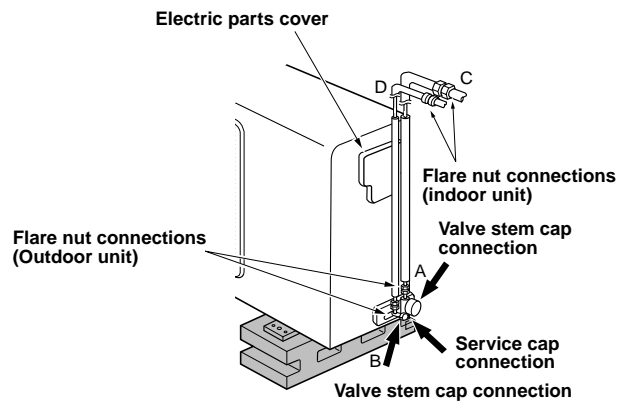
**8-7-1. Gas leak test**

For RAS-07UA-ES



**Fig. 8-7-1**

For RAS-13UA-ES, RAS-10UA-ES

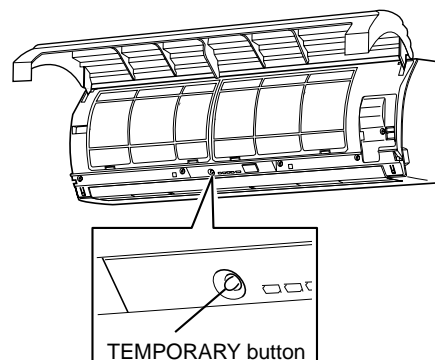


**Fig. 8-7-2**

- Check the flare nut connections, valve stem cap connections and service port cap connections for gas leak with a leak detector or soap water.

**8-7-2. Test operation**

To switch the TEST RUN (COOL) mode, press TEMPORARY button for 10 sec.  
(The beeper will make a short beep.)



**Fig. 8-7-3**

**8-7-3. Auto restart setting**

This product is designed so that, after a power failure, it can restart automatically in the same operating mode as before the power failure.

**Information**

The product was shipped with Auto Restart function in the off position. Turn it on as required.

**<How to set the auto restart>**

- Press and hold the TEMPORARY button for about 3 seconds. After 3 seconds, the electronic beeper makes three short beeps to tell you the Auto Restart has been selected.
- To cancel the Auto Restart, follow the steps described in the section Auto Restart Function of the Owner's Manual.