

(3) Ceiling concealed type (SRR)

Models SRR25ZM-W, 35ZM-W

SRR25ZS-W, 35ZS-W, 50ZS-W, 60ZS-W

<p><b>⚠ CAUTION</b></p>	<p>when carrying the unit by hand. Use gloves to minimize the risk of cuts by the aluminum fins.</p> <ul style="list-style-type: none"> <li>Dispose of <b>any packing materials correctly.</b></li> <li>Any remaining packing materials can cause personal injury as it contains nails and wood. And to avoid danger of suffocation, be sure to keep the plastic wrapper away from children and to dispose after tear it up.</li> <li>For installation work, be careful not to get injured with the heat exchanger, piping flare portion or screws etc.</li> <li>Be sure to insulate the refrigerant pipes so as not to condense the moisture insulation can cause condensation, which can lead to insufficient insulation on the ceiling, floor, furniture and any other valuables.</li> <li>When perform the air-conditioner operation (cooling or drying operation) in which ventilator is installed in the room. In this case, using the air-conditioner in parallel with the ventilator, there is the possibility that drain water may backflow in accordance with the room lapse into the negative pressure status. Therefore, set up the opening port such as incorporate the air into the room that may appropriate to ventilation (For example: Open the door a little). In addition, just as above, so set up the opening port if the room lapse into negative pressure status due to register of the wind for the high rise apartment etc.</li> <li>Be sure to perform air tightness test by pressurizing with nitrogen gas after completed refrigerant piping work.</li> <li>Be careful not to get injured in the event of refrigerant leakage in the small room, leak of oxygen can occur, which can cause serious accidents.</li> </ul>
<p><b>⚠ CAUTION</b></p>	<p>Do not connect the ground lead to the gas line, water line, lightning conductor or telephone line's ground lead. Incorrect grounding can cause unit faults such as electric shocks due to short-circuiting.</p> <ul style="list-style-type: none"> <li>Use the circuit breaker of correct capacity. Circuit breaker should be able to disconnect all poles under over current.</li> <li>Using the incorrect one could cause the system failure and fire.</li> <li>Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.</li> <li>The isolator should be locked in OFF state in accordance with EN60204-1.</li> <li>Be sure to install indoor unit properly according to instruction manual so that drainage can run off smoothly.</li> <li>Be sure to install the drainage pipe to cause dripping water into the room and damaging personal property.</li> <li>Install the drainage pipe to run off drainage securely according to the installation manual.</li> <li>Incorrect installation of the drainage pipe can cause dripping water into the room and damaging personal property.</li> <li>Be sure to install the drainage pipe with descending slope of 1/100 or more, and not to make traps and air-bleedings.</li> <li>Check if the drainage runs off securely during commissioning and ensure the space for inspection and maintenance.</li> <li>After maintenance, all wiring, wiring ties and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.</li> <li>Secure a space for installation, inspection and maintenance specified in the manual.</li> <li>In an accident such as personal injury due to falling from the installation place.</li> <li>Take care when carrying the unit by hand.</li> <li>If the unit weighs more than 20kg, it must be carried by two or more persons. Do not carry by the plastic straps, always use the carry handle</li> </ul>
<p><b>⚠ CAUTION</b></p>	<ul style="list-style-type: none"> <li>Do not install the unit where corrosive gas (such as sulfurous acid gas) or combustible gas (such as volatile and petroleum gases) can accumulate or collect, or where inflammable combustible substances are handled.</li> <li>Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.</li> <li>Do not use the indoor-unit at the place where water splashes may occur such as in laundries.</li> <li>Do not use the unit in the kitchen, as the steam, the heat, the fire, etc. are generated.</li> <li>Do not install near the system close to the equipment that generates electromagnetic fields or high frequency harmonics.</li> <li>Equipment such as inverters, standby generators, medical high frequency equipments and telecommunication equipments can affect the system, and cause malfunctions and breakdowns. The system can also affect medical equipment and telecommunication equipment, and obstruct its function or cause jamming.</li> <li>Do not place any variables which will be damaged by getting wet under the indoor unit.</li> <li>When the relative humidity is higher than 80% or drainage pipe is clogged, condensation or drainage water can drop and it can cause the damage of valuables.</li> <li>Do not install the remote control at the direct sunlight.</li> <li>It can cause malfunction or deformation of the remote control.</li> <li>Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.</li> <li>It can cause the damage of the items.</li> <li>Do not use any materials other than a fuse with the correct rating in the location where fuses are to be used.</li> <li>When wiring the circuit with copper wire or other metal thread can cause unit faults.</li> <li>Do not touch any buttons with wet hands.</li> <li>It can cause electric shocks.</li> <li>Do not touch any refrigerant pipes with your hands when the system is in operation.</li> <li>During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost injury.</li> <li>Do not wash the inside of the air-conditioner.</li> <li>Water leakage and permanent damage may result.</li> <li>Electrical hazard exists.</li> </ul>
<p><b>⚠ CAUTION</b></p>	<ul style="list-style-type: none"> <li>Do not install the unit in the locations listed below.</li> <li>Locations where carbon fiber, metal powder or any powder is floating.</li> <li>Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.</li> <li>Vehicles and ships.</li> <li>Locations where explosive or special sprays are often used.</li> <li>Locations with direct exposure of oil mist and steam such as kitchen and machine plant.</li> <li>Locations where any machines which generate high frequency harmonics are used.</li> <li>Locations with salty atmospheres such as coastlines.</li> <li>Locations with heavy snow (if installed, be sure to provide base frame and snow hood mentioned in the manual).</li> <li>Locations where the unit is exposed to chimney smoke.</li> <li>Locations at high altitude (more than 1000m high).</li> <li>Locations with ammoniac atmospheres (e.g. organic fertilizer).</li> <li>Locations with calcium chloride (e.g. snow melting agent).</li> <li>Locations where heat radiation from other heat source can affect the unit.</li> <li>Locations without good air circulation.</li> <li>Locations with any obstacles which can prevent inlet and outlet air of the unit.</li> <li>Locations where short circuit of air can occur (in case of multiple units installation).</li> <li>Locations where strong air blows against the air outlet of outdoor unit.</li> <li>Locations where something located above the unit could fall.</li> <li>It can cause remarkable decrease in performance, corrosion and damage of components, malfunction and fire.</li> <li>Do not install the indoor unit in the locations listed below (Be sure to install the indoor unit according to the installation manual for each location).</li> <li>Locations with any obstacles which can prevent inlet and outlet air of the unit.</li> <li>Locations where vibration can be amplified due to insufficient strength of structure.</li> <li>Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam (in case of the infrared specification unit).</li> <li>Locations where an equipment affected by high harmonics is placed (TV set or radio receiver is placed within 1m).</li> <li>Locations where drainage cannot run off safely.</li> <li>It can affect performance or function and etc.</li> <li>Do not install the unit near the location where leakage of combustible gases can occur.</li> <li>If leaked gases accumulate around the unit, it can cause fire.</li> </ul>

RJ012A003F

FOR MODEL\_SRR SERIES  
R32/R410A REFRIGERANT USED

- A wired remote control unit is supplied separately as an optional part.
- While installing the unit, be sure to check the selection of installation place, power source specifications, usage limitation (piping length, height differences between indoor and outdoor units, power source voltage etc.) and installation space.

**SAFETY PRECAUTIONS**

- Follow installation, read the "SAFETY PRECAUTIONS" carefully and strictly follow it during the installation work in order to protect yourself.
- The precautionary items mentioned below are distinguished into two levels, **⚠ WARNING** and **⚠ CAUTION**.
- ⚠ WARNING**: Wrong installation would cause serious consequences such as injuries or death.
- ⚠ CAUTION**: Wrong installation might cause serious consequences depending on circumstances.
- Both mention the important items to protect your health and safety so strictly follow them by any means.
- Be sure to confirm no anomaly on the equipment by commissioning after completed installation and explain the operating methods as well as the maintenance methods of this equipment to the user according to the owner's manual.

**⚠ Never do it under any circumstances.**

**⚠ WARNING**

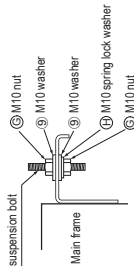
- ⚠ Installation must be carried out by the qualified installer.**
  - If you install the system by yourself, it may cause serious trouble such as fire, electric shocks, fire and personal injury, as a result of a system malfunction. Do not carry out the installation and maintenance work except the by qualified installer.
  - Install the system in full accordance with the installation manual.
  - Incorrect installation may cause bursts, personal injury, water leaks, electric shocks and fire.
  - Be sure to use only for household and residence.
  - If this appliance is installed in interior environment such as machine shop and etc., it can cause malfunction.
  - Use the original accessories and the specified components for installation.
  - If parts other than those prescribed by us are used, it may cause water leaks, electric shocks, fire and personal injury.
  - Install the unit in a location with good support.
  - Unsuitable installation locations can cause the unit to fall resulting in personal injury.
  - Ventilate the working area well in the event of refrigerant leakage during installation.
  - If the refrigerant comes into contact with naked flames, poisonous gas is produced.
  - When installing in small rooms, take prevention measures not to exceed the density limit of refrigerant in the event of leakage, referred by the formula (accordance with ISO5149).
  - If the density of refrigerant exceeds the limit, consult the dealer and install the ventilation system, otherwise lack of oxygen can occur, which can cause serious accident.
  - After completing installation, check that no refrigerant leaks from the system.
  - If refrigerant leaks into the room and comes into contact with an oven or other hot surface, poisonous gas is produced.
  - Use the original accessories and the parts for R32 or R410A.
  - Use the instructions for R22 or R407C. Do not cause the unit failure and serious accidents due to burst of the refrigerant circuit.
- ⚠ Do not put the drainage pipe directly into drainage channels where poisonous gases such as sulphide gas can occur.**
  - Poisonous gases will flow into the room through drainage pipe and seriously affect the user's health and safety. This can also cause the corrosion of the indoor unit and a resultant unit failure or refrigerant leak.
  - Use the original accessories and the parts for R32 or R410A.
  - Install and removed.
  - If air enters in the refrigerant circuit, the pressure in the refrigerant circuit becomes too high, which can cause burst and personal injury.
  - Do not process or splice the power cord, or share the socket with other power plugs.
  - This may cause fire or electric shock due to detecting contact, defacing insulation and over-current etc.
- ⚠ Tighten the flare nut by torque wrench with specified method.**
  - If the flare nuts were tightened with excess torque, this may cause burst.
  - Use the original accessories and the specified components for installation.
  - The electrical installation must be carried out by the qualified electrician in accordance with "the norm for electrical work" and "national wiring regulation", and the system must be connected to the dedicated circuit.
  - Power source with insufficient capacity and incorrect function done by improper work can cause electric shocks and fire.
  - Be sure to shut off the power before starting electrical work.
  - Failure to shut off the power can cause electric shocks, unit failure or incorrect function of equipment.
  - Be sure to use the cables conformed to safety standard and cable ampacity for power distribution work.
  - Unconformable cables can cause electric leak, anomalous heat production or fire.
  - This appliance must be connected to main power source by means of a circuit breaker or switch (fuse:16A) with a contact separation of at least 3mm.
  - When plugging this appliance, a plug conforming to the norm IEC60884-1 must be used.
  - Use the prescribed cables for electrical connection, tighten the cables securely in terminal block and relieve the cables correctly to prevent overloading the terminal blocks.
  - Loose connections or cable mountings can cause anomalous heat production or fire.
  - Arrange the wiring in the control box so that it cannot be pushed up further into the box. Install the service panel correctly.
  - Incorrect installation may result in overheating and fire.
  - Be sure to switch off the power source in the event of installation, inspection or servicing.
  - If the power source is not shut off, there is a risk of electric shocks, unit failure or fire.
  - Be sure to wear protective goggles and gloves while at work.
  - Earth leakage breaker must be installed.
  - If the earth leakage breaker is not installed, it can cause electric shocks.
- ⚠ Do not bundle or wind or process the power cord. Do not deform the power cord by treating it.**
  - This may cause fire or heating.
  - Do not vent R32 or R410A into atmosphere.
  - Use a flamed green hoses gas with a Cold Warning Potential (GWP) = 675.
  - Use a flamed yellow hoses gas with a Cold Warning Potential (GWP) = 2038.
  - Do not run the unit with removed panels or protections.
  - Touching rotating equipments, hot surfaces or high voltage parts can cause personal injury due to entrapment, burn or electric shocks.
  - Do not perform any change of protective device itself or its setup condition.
  - The forced operation by short-circuiting protective device of pressure switch and temperature controller or the use of non specified component can cause fire or burst.



# INSTALLATION OF INDOOR UNIT

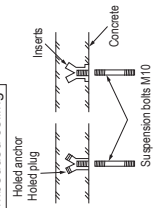
## Installing the main unit

- Attach the washers and nuts to the suspension bolts.
- Attach the hanging tool to the above nuts, and tighten the nuts.

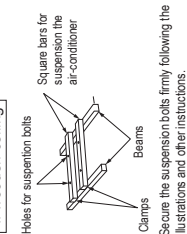


## Securing the suspension bolts

### If steel embedded ceiling



### If wooden ceiling



- Secure the suspension bolts firmly following the illustrations and other instructions.

# CONNECTION OF REFRIGERANT PIPINGS

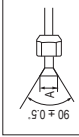
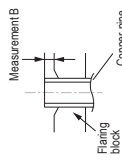
- Preparation Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.

## Indoor



- Remove the tapered nuts. (on both liquid and gas sides)

## Flaring work



- Dimension A  
Liquid side φ6.35; 9.1 (mm)  
Gas side φ9.52; 13.2 (mm)  
φ12.7; 16.6 (mm)

- Install the removed flared nuts to the pipes to be connected, then flare the pipes.

Copper pipe diameter	Measurement B (mm)	
	Conventional (R32) flare tool	Vingnir type
φ6.35	Clutch type	Wingnut type
	R32 or R410A	
0.0-0.5	1.0-1.5	1.5-2.0
0.5-2.0	0.0-0.5	1.0-1.5
0.5-2.0	0.0-0.5	1.0-1.5
φ12.7	1.0-1.5	2.0-2.5

Use a flare tool designed for R32, R410A or a conventional flare tool.  
Note that measurement B (protrusion from the flaring block) will vary depending on the type of a flare tool in use.  
If a conventional flare tool is used, use a copper pipe gauge or a similar instrument to check protrusion so that you can keep measurement B to a correct value.

## CAUTION

Do not apply refrigerating machine oil to the flared surface.

## Connection

### Indoor



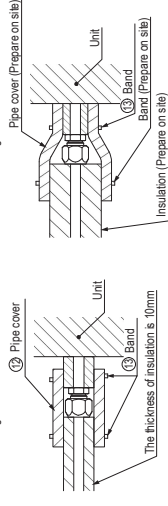
- Liquid side (Do not turn)
- Gas side (Do not turn)
- Connect the pipes on both liquid and gas sides.
- Tighten the nuts to the following torque.  
Liquid side φ6.35: 14.0-18.0 N·m (1.4-1.8 kgf·m)  
Gas side φ9.52: 34.0-42.0 N·m (3.4-4.2 kgf·m)  
φ12.7: 49.0-61.0 N·m (4.9-6.1 kgf·m)

## CAUTION

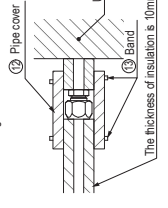
Do not apply excess torque to the flared nuts. Otherwise, the flared nuts may crack.

- Cover the flare connection part of the indoor unit with attached insulation material after a gas leakage inspection, and tighten both ends with attached bands.
- Make sure to insulate both gas pipes and liquid pipes completely.
- Incomplete insulation may cause dew condensation or water dripping.
- Use heat-resistant (120 °C or more) insulations on the gas side pipes.
- In case of using at high humidity condition, reinforce insulation of refrigerant pipes.
- Surface of insulation may cause dew condition or water dripping, if insulations are not reinforced.

<The case of using thickness of insulation is 10mm>



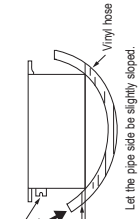
<The case of using reinforced insulation>



## Air inlet and outlet size

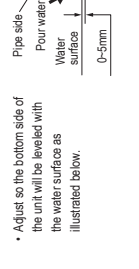
- Size of air inlet and outlet of the plate.

Model	Inlet		Outlet	
	A	B	A	B
25, 35	160	99	660	860
50, 60	160	99	660	860



## Adjustment for horizontality

- Either use a level vial, or adjust the level according to the method below.

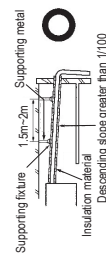


# DRAIN PIPE

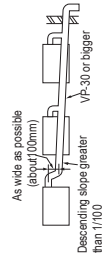
- Impediment in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas is generated. Toxic gas would flow into the room and it would cause serious damage to user's health and safety (some poisoning or deficiency of oxygen). In addition, it may cause corrosion of heat exchanger and bad smell.
- Connect the pipe securely to avoid water leakage from the joint.
- Insulate the pipe properly to avoid condensation drip.
- Check if the water can flow out properly from both the drain outlet on the indoor unit and the end of the drain pipe after installation.

## Work procedure

- Insert the joint to the drain hose on the indoor unit, and fix it securely with the clamp (small).  
• Do not apply adhesives on this end.
- Connect the drain pipe (VP25) to the joint and fix it securely with the clamp (big).
- Make sure to make descending slope of greater than 1/100 and do not make up-down bend and/or trap in the midway.  
• Pay attention not to give stress on the pipe on the indoor unit side, and support and fix the pipe as close place to the unit as possible when connecting the drain pipe.  
• Do not set up air vent.

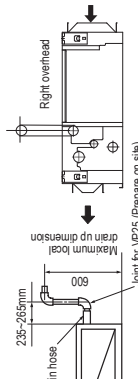


- When steering a drain pipe for more than one unit, lay the main pipe 100mm below the drain outlet of the unit. In addition, select VP-30 or bigger size for main drain pipe.



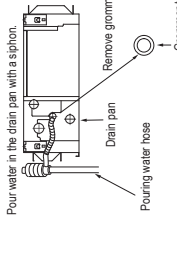
## Drain up

- The position for drain pipe outlet can be raised up to 600mm above the ceiling. Use elbows for installation to avoid obstacles inside ceiling. If the horizontal drain pipe is too long before vertical pipe, the backflow of water will increase when the unit is stopped, and it may cause overflow of water from the drain pan on the indoor unit. In order to avoid overflow, keep the horizontal pipe length and offset of the pipe within the limit shown in the figure below.



## Drain test

- Conduct a drainage test after completion of the electrical work and piping work.
- During the test, make sure that drain flows properly through the piping and that no water leaks from connections.
- In case of a new building, conduct the test before it is furnished with the ceiling.
- Be sure to conduct this test even when the unit is installed in the heating season.

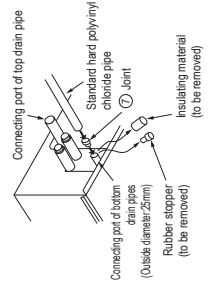


## Procedures of drain test

- Supply about 1,000 cc of water to the unit through the air outlet by using a feed water pump.
- Check the drain while cooling operation.

## Outline of bottom drain piping work

- If the bottom drain piping can be done with a descending gradient (1/50-1/100), it is possible to connect the pipes as shown in the drawing below.

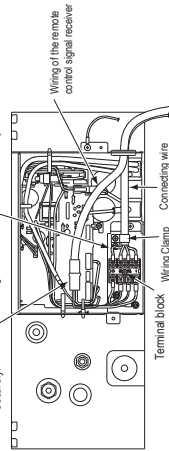


## ELECTRICAL WIRING WORK

**Preparation of indoor unit** ○ In case of faulty wiring connection, indoor unit does not operate. Then, run lamp on and timer lamp blinks.

### Mounting of connecting wires

- Remove the control lid.
  - Remove the wiring clamp.
  - Connect the connecting wire to the terminal block.
    - Connect the connecting wire securely. If the wire is not affixed completely, contact will be poor, and it is dangerous as the terminal block may heat up and catch fire.
    - Take care not to confuse the terminal numbers for indoor and outdoor connectors.
  - Fix the connecting wire by wiring clamp.
  - Connect the connector of the remote control signal receiver to the relay wiring.
  - Attach the control lid.
- Be sure to connect Yellow/Green (Y/G) in color and longer than other AC wires for safety reason.

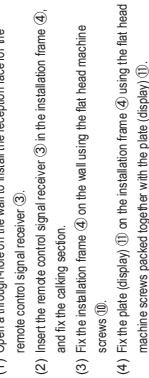


### Securing the remote control signal receiver

○ Cut off this section if it interferes with the wall.

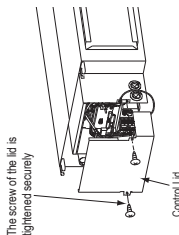
- Installation frame
  - Plate (display)
  - Remote control signal receiver
  - Fix the head machine screw (in the pack of 11)
- 48 x 75mm

- Open a through-hole on the wall to install the reception face for the remote control signal receiver ③.
- Insert the remote control signal receiver ③ in the installation frame ④, and fix the calking section.
- Fix the installation frame ④ on the wall using the flat head machine screws ①.
- Fix the plate (display) ② on the installation frame ④ using the flat head machine screws packed together with the plate (display) ②.



Use cables for interconnection wiring to avoid loosening of the wires. CENELEC code for cables required: field cables.

- H5GRNRG1.5 (example) or 245IEC57
- H Hamamized cable type
- 05 300/500 volts
- R Natural-and/or synth. rubber wire insulation
- N Polychloroprene rubber conductors insulation
- R Stranded core
- 4/05 Number of conductors
- G One conductor of the cable is the earth conductor (in the ground)
- 1.5 Section of copper wire (mm<sup>2</sup>)

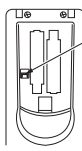


## INSTALLING TWO AIR-CONDITIONERS IN THE SAME ROOM

When two air-conditioners are installed in the same room, use this setting when the two air-conditioners are not operated with one remote control. Set the remote control and indoor unit.

### Setting the remote control

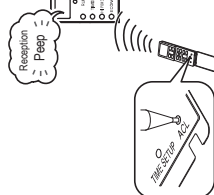
- Pull out the cover and take out batteries.
- Disconnect the switching line next to the battery with wire cutters.



- Insert batteries. Close the cover.

### Setting an indoor unit

- Turn off the power source, and turn it on after 1 minute.
- Point the remote control that was set according to the procedure described on the left side at the unit display section and send a signal by pressing the ACL switch on the remote control. Since the signal is sent in about 6 seconds after the ACL switch is pressed, point the remote control at the unit display section for some time.
- Check that the reception buzzer sound "Peep" is emitted from the indoor unit. At completion of the setting, the indoor unit emits a buzzer sound "Peep." (If no reception tone is emitted, start the setting from the beginning again.)

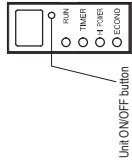


## HOW TO RELOCATE OR DISPOSE OF THE UNIT

- In order to protect the environment, be sure to pump down (recovery of refrigerant).
  - Turn off power source. Turn on power source again after a while. Then, press the ON/OFF button continuously for at least 3 seconds. (The operation will start)

<How to pump down>

- Connect charge hose to check joint of outdoor unit. Gas side: Fully open the gas valve. Carry out cooling operation. (If indoor temperature is low, operate forced cooling operation.)
- After low pressure gauge become 0.01MPa, stop cooling operation and close the gas valve.



## TERMINAL CONNECTION FOR AN INTERFACE

- Remove the control lid. (Remove the screw.)
- There is a terminal (respectively marked with CNS) for the indoor control board. In connecting an interface, connect to the respective terminal securely with the clamp supplied with the kit. SC-BKN2E\* and fasten the connection harness onto the indoor control box with the clamp supplied with the kit. For more details, please refer to the user's manual of your interface connection kit SC-BKN2E\* and SC-BKN2E\*.

## INSTALLATION TEST CHECK POINTS

Check the following points again after completion of the installation, and before turning on the power. Conduct a test run again and ensure that the unit operates properly. Explain to the customer how to use the unit and how to take care of the unit following the installation manual.

### After installation

- Power cables and connecting wires are securely fixed to the terminal block. (Both indoor and outdoor)
- The power source voltage is correct as the rating.
- The drain hose is fixed securely.
- Service valve is fully open.
- No gas leaks from the joints of the service valve.
- The pipe joints for indoor and outdoor pipes have been insulated.
- The screw of the control lid is tightened securely.

### Test run

- Air-conditioning operation is normal.
- No abnormal noise.
- Water drains smoothly.
- Protective functions are not working.
- The remote control is normal.
- Operation of the unit has been explained to the customer. (Three-minutes restart preventive timer) When the air-conditioner is restarted or when changing the operation, the unit will not start operating for approximately 3 minutes. This is to protect the unit and it is not a malfunction.

## INSTALLATION OF WIRELESS REMOTE CONTROL

### Mounting method of battery

- Pull out the cover and mount the batteries (R03 (AAA, Micro) x 2 pieces) in the body regularly. (Fit the poles with the indication marks, ⊕ & ⊖ without fail)
- Do not use new and old batteries together.

### Fixing to pillar or wall

- Conventionally, operate the wireless remote control by holding in your hand.
- Avoid installing it on a day wall etc.

① Wireless remote control

⑤ Wood screws φ3.5 X 16

