

(2) Ceiling concealed type (SRR)

Models SRR25ZM-W, 35ZM-W, 50ZS-W, 60ZS-W, 60ZS-W

RJ012A003F

FOR MODEL SRR SERIES
R32/R410A REFRIGERANT USED

- This installation manual illustrates the method of installing an indoor unit.
- For electrical wiring work, see instructions set out on the backside.
- For outdoor unit installation and refrigerant piping, refer to Page 11.

SAFETY PRECAUTIONS

- Before 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 might cause serious consequences such as injuries or death.

[CAUTION] Wrong installation might cause serious consequences

- 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 under any circumstances.
- Always do it according to the instruction.

WARNING

- **Installation must be carried out by the qualified installer.**
If you install the system by yourself, it may cause serious trouble such as water leaks, 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.

- **Do not install in the vicinity of household and residence.**
If this appliance is installed in inferior 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.**
If the support is not sufficient, it may cause the unit to fall, resulting in material damage and personal injury.

- **Ventilate the working area well in the event of refrigerant leakage.**
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.**
If the density of refrigerant exceeds the limit, it may cause the dealer and the user to lose consciousness.

- **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 prescribed piping and tools for R32 or R410A.**
Use of R32 or R410A requires special tools. Unit failure and serious accidents due to burst of the refrigerant circuit.

- **Do not put the drainage pipe directly into drainage channels where the drain water flows.**
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.

- **Ensure that no air enters in the refrigerant circuit when the unit is installed 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 replace the power cord, or share the socket with other power plugs.**
This may cause fire or electric shock due to deflecting contact, deflection and over-current etc.

- **Do not bundle or wind or process the power cord. Do not deform the power cord.**
This may cause fire or heating.

- **Do not vent R32 or R410A into atmosphere.**
R32 is a fluorinated greenhouse gas with a Global Warming Potential (GWP) = 2088.

- **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 shock.

- **Do not perform any change of protective device (circuit or trip 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.

CAUTION

- **Carry out the electrical work for ground lead with care.**
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.

- **Use the circuit breaker of correct capacity.** Circuit breaker should be able to disconnect all poles under over current.
- **Install isolator or disconnect switch on the power source wiring in accordance with the local codes and regulations.**

- **Be sure to install indoor unit properly according to instruction manual so that drainage can run off smoothly.**
Improper installation of indoor unit can cause dropping water into the room and damaging personal property.

- **Install the drainage pipe to run off drainage securely according to the installation manual.**
Correct installation of the drainage pipe can cause dropping water into the room and damaging personal property.

- **Be sure to install the drainage pipe with descending slope of 1/100 or more, and not to make traps and air-bledings.**
Check if the drainage runs off securely during commissioning and ensure the space for inspection and maintenance.

- **After maintenance, all wiring, wiring tie and the like, should be returned to their original state and wiring route, and the necessary clearance from all metal parts should be secured.**

- **Take care when carrying the unit by hand.**
Insufficient space can result in accident such as personal injury due to falling from the installation place.

- **Do not install the unit in the locations listed below.**
 - Locations where carbon fiber, metal powder or any powder is floating.
 - Locations where any substances that can affect the unit such as sulphide gas, chloride gas, acid and alkaline can occur.
 - Vehicles and ships.
 - Locations where cosmetic or special sprays are often used.
 - Locations with direct exposure of oil mist and steam such as kitchen and machine plant.
 - Locations where any machines which generate high frequency harmonics are used.
 - Locations with salty atmospheres such as coastlines.
 - Locations with heavy snow (if installed, be sure to provide base flame and snow hood mentioned in the manual).
 - Locations where the unit is exposed to chimney smoke.
 - Locations at high altitude (more than 1000m high).
 - Locations with ammoniac atmospheres (e.g. organic fertilizer).
 - Locations with calcium chloride (e.g. snow melting agent).
 - Locations without good air circulation.
 - Locations with any obstacles which can prevent inlet and outlet air of the unit.
 - Locations where short circuit of air can occur (in case of multiple units installation).
 - Locations where strong air blows against the air outlet of outdoor unit.
 - Locations where something located above the unit could fall.
 - It can cause remarkable decrease in performance, corrosion and damage to components, malfunction and fire.

- **Do not install the indoor unit in the locations listed below (Be sure to model because each indoor unit has each limitation).**
 - Locations where vibration can be amplified due to insufficient strength of structure.
 - Locations where the infrared receiver is exposed to the direct sunlight or the strong light beam (in case of the infrared specification unit).
 - Locations where an equipment affected by high harmonics is placed (TV set, etc.)
 - Locations where strong wind can run off safely.
 - It can affect performance or function and etc.

- **Do not install the unit near the location where leakage of combustible gases can occur.**
If leaked gases accumulate around the unit, it can cause fire.

- **Do not install the unit where corrosive gas (such as sulfurous acid gas etc.) or combustible gas (such as thinner and petroleum gases) can accumulate or collect, or where volatile combustible substances are handled.**
Corrosive gas can cause corrosion of heat exchanger, breakage of plastic parts and etc. And combustible gas can cause fire.

- **Do not use the indoor unit at the place where water splashes may occur such as in laundries.**
Water splash may cause electric shocks and fire.

- **Do not install nor use the system close to the equipment that generates electromagnetic fields or high frequency harmonics.**
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.

- **Do not place any variables which will be damaged by getting wet.**
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 variables.

- **Do not install the remote control at the direct sunlight.**
It can cause malfunction or deformation of the remote control.

- **Do not use the unit for special purposes such as storing foods, cooling precision instruments and preservation of animals, plants or art.**
It can cause the damage of the items.

- **Do not install the unit in the location where fuses are to be used.**
Connecting the circuit with copper wire or other metal thread can cause unit failure and fire.

- **Do not touch any buttons with wet hands.**
It can cause electric shocks.

- **Do not touch any refrigerant pipes with your hands when the system is in operation.**
During operation the refrigerant pipes become extremely hot or extremely cold depending the operating condition, and it can cause burn injury or frost bite.

- **Do not wash the inside of the air-conditioner.**
Water leakage and permanent damage may result.

- **Electrical hazard exists.**

Check before installation work

- Model name and power source
- Required tools
- Piping, wiring and miscellaneous small parts

Standard accessories (Installation kit)	
Accessories for indoor unit	
① Wireless remote control	Qty
② Remote control holder	1
③ Remote control signal receiver	1
④ Installation frame (for remote control signal receiver)	1
⑤ Wood screws (for remote control holder ø3.5 X 16mm)	2
⑥ Battery [R03 (AAA, Micro 1.5V)]	2
⑦ Joint (for drain hose)	1
⑧ Clamp (for drain hose) (big: 1, small: 1)	2
⑨ Washer (for suspension bolt M10)	8
⑩ Flat head machine screw (for remote control signal receiver M3.5x10)	2
⑪ Plate (display)	1
⑫ Pipe cover (big: 1, small: 1)	2
⑬ Band	4

Locally procured parts	
① Sealing plate	Qty
② Sleeve	1
③ Inclination plate	1
④ Putty	1
⑤ Drain hose (VP25)	1
⑥ Suspension bolts (M10)	4
⑦ Nuts (M10)	8
⑧ Spring lock washers (M10)	4

Option parts (Separately sold parts)	
Bottom air inlet kit (25, 35 models : UT-BAT1IEF (50, 60 models : UT-BAT2IEF)	Qty
	1

Necessary tools for the installation work

1	Plus headed driver
2	Knife
3	Saw
4	Tape measure
5	Hammer
6	Spanner wrench
7	Torque wrench [14.0-62.0N·m (1.4-6.2kgf·m)]
8	Hole core drill (ø5mm in diameter)
9	Wrench key (Hexagon) [4mm]
10	Flaring tool set (Designed specifically for R32 or R410A)
11	Gas leak detector (Designed specifically for R32 or R410A)
12	Gauge for projection adjustment (Used when flare is made by using conventional flare tool)
13	Pipe bender

SELECTION OF INSTALLATION LOCATION

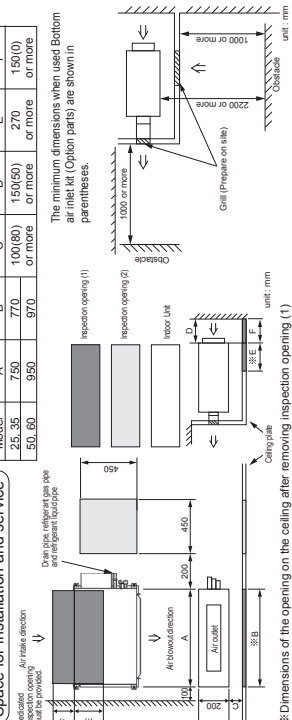
(Install at location that meets the following conditions, after getting approval from the customer)

Indoor unit

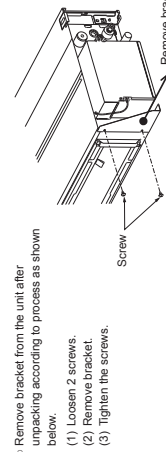
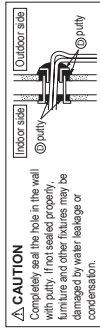
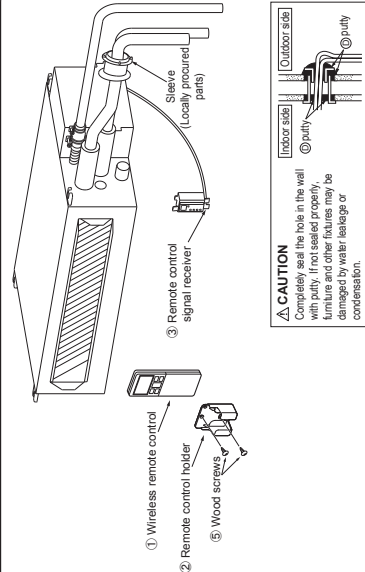
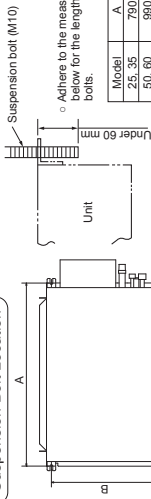
- Where there is no obstruction to the air flow and where the cooled and heated air can be evenly distributed.
- A firm location that may sustain the weight of the unit, and do not cause the unit or the ceiling to vibrate.
- A place where there will be enough space for servicing. (Where space mentioned below can be secured)
- The piping and wiring must be easy to conduct.
- The place where the unit is not exposed to the direct rays of the sun or the strong rays of the street lighting.
- A place where it can be easily drained.
- A place separated at least 1m away from the television or the radio. (To prevent interference to images and sounds.)
- Places where this unit is not affected by the high frequency equipment or electric equipment.
- Places where there is no electric equipment or household under the installing unit.
- Where the suction inlet of the unit is located far from the air inlet on the ceiling, the entire inside of ceiling acts as an air suction duct so that the capacity is reduced at the startup.
- Areas where dew point is lower than around 28 °C and relative humidity is lower than 80%.
- Areas where the indoor unit is not exposed to direct sunlight or heat from other heat sources.
- If there is a possibility to use it under such a condition, attach additional insulation of 10 to 20mm thick for entire surface of indoor unit, refrigeration pipe and drain pipe.
- The product is able to be used with small external static pressure. Excessive static pressure can cause the trouble of insufficient air flow due to static air flow. It is better to use the products with a few meters straight duct connected to either air intake or air blowout port only at maximum. (As for the permitted external static pressure, please confirm the technical manual.)

Wireless remote control

- A place where the air-conditioner can be received the signal surely during operating the wireless remote control.
- Places where there is no affected by the TV and radio etc.
- Do not place where exposed to direct sunlight or near heat devices such as a stove.

Space for installation and service**INSTALLATION OF INDOOR UNIT**

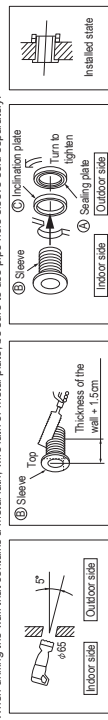
- Remove bracket from the unit after unpacking according to process as shown below.
- (1) Loosen 2 screws.
- (2) Remove bracket.
- (3) Tighten the screws.

**Suspension Bolt Location****Inspection opening for services**

Service	Inspection opening (1)	Inspection opening (2)
Clamping of the flare of required and gas refrigerant pipe	Not Use	Use
Drain pipe connection	Not Use	Use
Installation and removal of blower	Use	Not Use
Control box		
Connecting wire (between indoor and outdoor)	Not Use	Use
Unit display section (Remote control signal receiver)	Not Use	Use
Replace drain pump	Not Use	Use
Replace heat exch sensor	Not Use	Use
Replace air filter	Use	Not Use

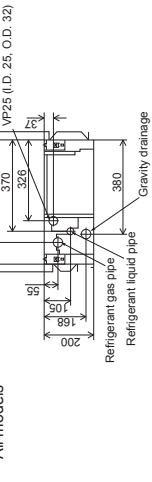
Drilling of hole and fixture of sleeve (Locally procured parts)

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



In case of rear piping draw out, cut off the lower and the right side portions of the sleeve collar.

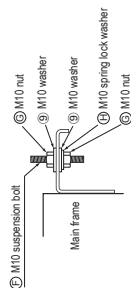
* Sleeve is for use in refrigerant piping work. Please install another pipe separately for drain piping work.

Pipe locations**All models**

INSTALLATION OF INDOOR UNIT

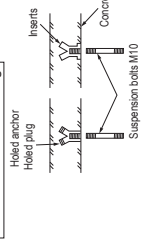
Installing the main unit

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

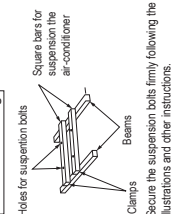


Securing the suspension bolts

If steel embedded ceiling



If wooden ceiling



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

CONNECTION OF REFRIGERANT PIPES

Preparation

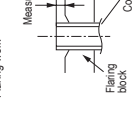
- Keep the openings of the pipes covered with tapes etc. to prevent dust, sand, etc. from entering them.

Indoor

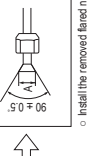


- Remove the flared nuts (on both liquid and gas sides)

Flaring work

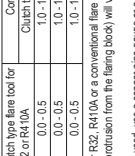


Indoor



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

Flaring work



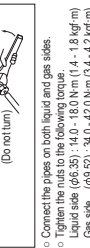
CAUTION

- Do not apply refrigerating machine oil to the flared surface.

CAUTION

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

Indoor



- Connect the pipes on both liquid and gas sides.

CAUTION

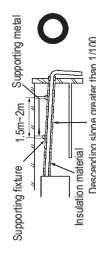
- Do not apply torque to the flared nuts. Otherwise, the flared nuts may crack.

DRAIN PIPE

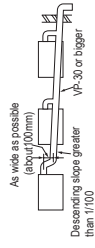
- Install the drain pipe according to the installation manual in order to drain properly.
- Imperfection in draining may cause flood indoors and wetting the household goods, etc.
- Do not put the drain pipe directly into the ditch where toxic gas such as sulfur, the other harmful and inflammable gas 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 drop.
- 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 sharing 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.

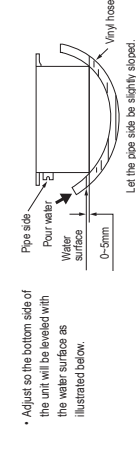


Insulate the drain pipe

- Be sure to insulate the joint and the drain pipe installed indoor otherwise it may cause dew condensation and water leakage.

Adjustment for horizontality

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



- Adjust so the bottom side of the unit will be leveled with the water surface as illustrated below.

- If the unit is not leveled, it may cause malfunctions or inoperation of the float switch.

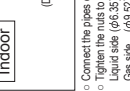
Air inlet and outlet size

- Size of air inlet and outlet of the plate.

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

Connection

Indoor



- Connect the pipes on both liquid and gas sides.

CAUTION

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

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

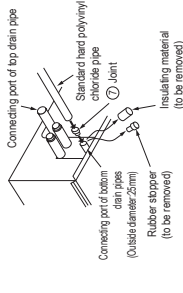
- Conduct a drainage test after completion of the electrical work and piping work.
- During the trial, make sure that drain flows properly through the piping and that no water leaks from connections.
- In case of a new building, conduct the test before it is furnished with the ceiling.
- Be sure to conduct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

Procedures of drain test

- Supply about 1000 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

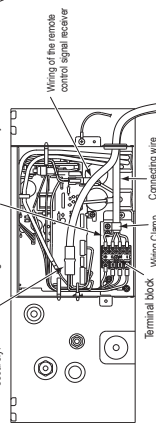
Preparation of indoor unit

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

Mounting of connecting wires

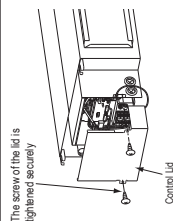
- (1) Remove the control lid.
- (2) Remove the wiring clamp.
- (3) Connect the connecting wire to the terminal block.
 - Connect the connection wire accurately. If the wire is not affixed completely, contact will be poor, and it is dangerous as the terminal block may heat up and catch fire.
- (4) Fix the connecting wire by wiring clamp.
- (5) Connect the connector of the remote control signal receiver to the relay wiring.
- (6) Attach the control lid.

Be sure to connect earth wire shall be Yellow/Green (Y/G) in color and longer than other AC wires for safety reason.



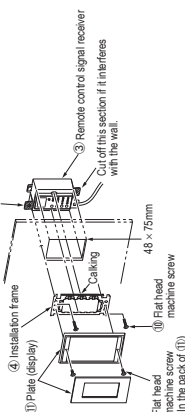
Use cables for interconnection wiring to avoid loosening of the wires.
CENELEC code for cables Required field cables.

- H59NR4G1.5 (example) or 245EC57
- H Harmonized cable type
- 05 300/500 volts
- R Natural-and/or synth. rubber wire insulation
- R Polythene rubber conductors insulation
- R Number of conductors
- 4x05
- G One conductor of the cable is the earth conductor (yellow/green)
- 1.5 Section of copper wire (mm²)



Securing the remote control signal receiver

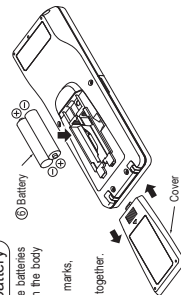
- (1) Open a through-hole on the wall to install the reception face for the remote control signal receiver (3).
- (2) Insert the remote control signal receiver (3) in the installation frame (4), and fix the cabling section.
- (3) Fix the installation frame (4) on the wall using the flat head machine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



INSTALLATION OF WIRELESS REMOTE CONTROL

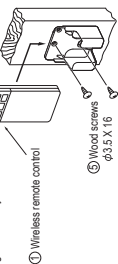
Mounting method of battery

- Pull out the cover and mount the batteries [R03 (AAA, Micro, -X2 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 clay wall etc.

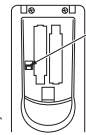


INSTALLING TWO AIR-CONDITIONERS IN THE SAME ROOM

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

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

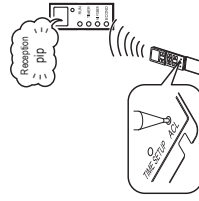


Disconnect

- (3) Insert batteries. Close the cover.

Setting an indoor unit

- (1) Turn off the power source, and turn it on after 1 minute.
- (2) 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. When a signal is sent is about 6 seconds after the ACL switch is pressed, point the remote control at the unit display section for some time.
- (3) Check that the reception buzzer sound "pip" is emitted from the indoor unit.
 - At completion of the setting, the indoor unit emits a buzzer sound "pip". (If no reception tone is emitted, start the setting from the beginning again.)

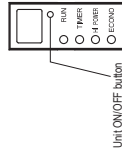


HOW TO RELOCATE OR DISPOSE OF THE UNIT

- Pump down is the method of recovering refrigerant from the indoor unit to the outdoor unit when the pipes are removed from the unit.
- Forced cooling operation: Turn off power source. Turn on power source again after a while. Then, press the ON/OFF button continuously for at least 5 seconds. (The operation will start.)

<How to pump down>

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



TERMINAL CONNECTION FOR AN INTERFACE

- (1) Remove the control lid. (Remove the screw.)
- (2) There is a terminal (respectively marked with CNS) for the indoor control board. (If not working and interface, connect to the respective terminal and securely with the inspection harness supplied with an optional "Interface connection kit (SC-BIKME and SC-BIKNE). If the terminal is not connected, the control board will be connected with the kit SC-BIKNE-E and SC-BIKNE-E. For more details, please refer to the user's manual of your "Interface connection kit SC-BIKNE-E and SC-BIKNE-E".

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.
- ☐ Operation valve is fully open.
- ☐ No gas leaks from the joints of the operation valve.
- ☐ The pipe joints for indoor and outdoor pipes have been installed.
- ☐ 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 after 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.