



### 1 SELECT THE BEST LOCATION (Refer to "Select the best location" section)

### 2 HOW TO FIX INSTALLATION PLATE

The mounting wall shall be strong and solid enough to prevent it from vibration.

Dimension					
1	2	3	4	5	6
465 mm	70 mm (+)	365 mm	415 mm	10 mm	70 mm

- The center of installation plate should be at more than ① at right and left of the wall.
- The distance from installation plate edge to ceiling should more than ②.
- From installation plate center to unit's left side is ③.
- From installation plate center to unit's right side is ④.

### 3 TO DRILL A HOLE IN THE WALL AND INSTALL A SLEEVE OF PIPING

- Insert the piping sleeve to the hole.
- Fix the bushing to the sleeve.
- Cut the sleeve until it extrudes about 15 mm from the wall.
- Finish by sealing the sleeve with putty or caulking compound at the final stage.

**CAUTION**

When the wall is hollow, please be sure to use the sleeve for tube assembly to prevent dangers caused by mice biting the connection cable.

### 1 SELECT THE BEST LOCATION (Refer to "Select the best location" section)

### 2 INSTALL THE OUTDOOR UNIT

After selecting the best location, start installation to Indoor/Outdoor Unit Installation Diagram.

- Fix the unit on concrete or rigid frame firmly and horizontally by bolt (ø10 mm). Make sure unit install in balance level to ensure that water flow out from unit drainage hole.
- When installing at roof, please consider strong wind and earthquake. Please fasten the installation stand firmly with bolt, screws or nails.

Model	A	B	C	D
1.0HP	474 mm	87 mm	18.5 mm	261 mm
1.5HP	570 mm	105 mm	18.5 mm	320 mm

### 3 CONNECT THE PIPING

**Connecting The Piping to Indoor**

For connection joint of all models Please make flare after inserting (locate at joint portion of tube assembly) onto the copper pipe. (In case of using long piping)

**Additional Precautions For R32 Models when connecting by flaring at indoor side**

- Ensure to do re-flaring of pipes before connecting to units to avoid leaking
- Seal sufficiently the flare nut (both gas and liquid sides) with neutral cure (Alkoxy type) & ammonia-free silicone sealant and insulation material to avoid the gas leak caused by freezing.
- Neutral cure (Alkoxy type) & ammonia-free silicone sealant is only to be applied after pressure testing and cleaning up by following instructions of sealant, only to the outside of the connection.
- The aim is to prevent moisture from entering the connection joint and possible occurrence of freezing. Curing sealant will take some time. Make sure sealant will not peel off when wrapping the insulation.

**Connecting The Piping to Outdoor**

Decide piping length and then cut by using pipe cutter. Remove burrs from cut edge. Make flare after inserting the flare nut (locate at valve) onto the copper pipe. Align center of piping to valve and then tighten with torque wrench to the specified torque as stated in the table.

Piping size	Torque
6.35 mm (1/4")	18 Nm (1.8 kgf·m)
9.52 mm (3/8")	42 Nm (4.3 kgf·m)
12.7 mm (1/2")	55 Nm (5.6 kgf·m)
15.88 mm (5/8")	85 Nm (8.6 kgf·m)
19.05 mm (3/4")	100 Nm (10.2 kgf·m)

### 5 CONNECT THE CABLE TO THE OUTDOOR UNIT

- Remove the control board cover from the unit by loosening the screw.
- Connection cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed 4 x 1.5 mm<sup>2</sup> (1.0 - 1.5HP) flexible cord, type designation 60245 IEC 57 or heavier cord. Do not use joint connection cable. Replace the wire if the existing wire (from concealed wiring, or otherwise) is too short.
- Secure the cable onto the control board with the holder (clammer).
- Attach the control board cover back to the original position with screw.
- For wire stripping and connection requirement, refer to instruction ⑤ of indoor unit.

**WARNING**

Earth wire shall be Yellow/Green (Y/G) in colour and longer than other AC wires for safety reason.

### 6 PIPING INSULATION

- Please carry out insulation at pipe connection portion as mentioned in Indoor/Outdoor Unit Installation Diagram. Please wrap the insulated piping end to prevent water from going inside the piping.
- If drain hose or connecting piping is in the room (where dew may form), please increase the insulation by using POLY-E FOAM with thickness 6 mm or above.

### 4 INDOOR UNIT INSTALLATION

- FOR THE RIGHT REAR PIPING
  - Pull out the Indoor piping
  - Install the Indoor Unit
  - Secure the Indoor Unit
  - Insert the connection cable
- FOR THE RIGHT AND RIGHT BOTTOM PIPING
  - Pull out the Indoor piping
  - Install the Indoor Unit
  - Insert the connection cable
  - Secure the Indoor Unit

**Secure the Indoor Unit**

- Power supply cord arrangement
- Press the lower left and right side of the unit against the installation plate until hooks engages with their slot (sound click).

**Insert the connection cable**

About 70 - 80 mm

**CUTTING AND FLARING THE PIPING**

- Please cut using pipe cutter and then remove the burrs.
- Remove the burrs by using reamer. If burrs is not removed, gas leakage may be caused. Turn the piping end down to avoid the metal powder entering the pipe.
- Please make flare after inserting the flare nut onto the copper pipes.

### 3. FOR THE EMBEDDED PIPING

- Change the drain hose position
- Bend the embedded piping
- Pull the connection cable into Indoor Unit
- Cut and flare the embedded piping
- Install the Indoor Unit
- Connect the piping
- Insulate and finish the piping
- Secure the Indoor Unit

**5 CONNECT THE CABLE TO THE INDOOR UNIT**

The indoor and outdoor unit connection cable can be connected without removing the front grille.

- Install the indoor unit on the installing holder that mounted on the wall.
- Open the front panel and grille door by loosening the screw.
- Bind all the indoor and outdoor Connection cable with tape and route the connection cable via the right side escapement.

**HOW TO TAKE OUT FRONT GRILLE**

- Open front panel.
- Remove the 3 mounting screws on the front grille as shown in the illustration below.
- Slide the 3 lock knobs on the upside of front grille to unlock position.
- Pull the front grille towards you to remove the front grille.

**FRONT GRILLE**

**AUTO SWITCH**

The below operations will be performed by pressing the "AUTO" switch.

- AUTO OPERATION MODE**  
The Auto operation will be activated immediately once the Auto Switch is pressed and release within 5 sec..
- TEST RUN OPERATION (FOR PUMP DOWN/SERVICING PURPOSE)**  
The Test Run operation will be activated if the Auto Switch is pressed continuously for more than 5 sec. to below 8 sec.. A "pep" sound will occur at the fifth sec. in order to identify the starting of Test Run operation.
- REMOTE CONTROLLER RECEIVING SOUND ON/OFF**  
The ON/OFF of Remote controller receiving sound can be change over by the following steps:  
a) Press "AUTO" switch continuously for more than 16 sec. to below 21 sec.. A "pep", "pep", "pep", "pep" sound will occur at the sixteenth sec..  
b) Press the "AC Reset" button once, "pep" sound will occur indicates that Remote controller receiving sound setting mode is activated.  
c) Press "AUTO" switch again. Everytime "AUTO" switch is pressed (within 60 sec. interval), Remote controller receiving sound status will be reversed between ON and OFF. Long "peep" sound indicates that Remote controller receiving sound is ON. Short "pep" sound indicates that Remote controller receiving sound is OFF.

**DISPOSAL OF OUTDOOR UNIT DRAIN WATER**

If a drain elbow is used, the unit should be placed on a stand which is taller than 5 cm.

If the unit is used in an area where temperature falls below 0°C for 2 or 3 days in succession, it is recommended not to use a drain elbow, for the drain water freezes and the fan will not rotate.

### 5 REMOVE THE TAPES AND CONNECT THE CONNECTION CABLE BETWEEN INDOOR UNIT AND OUTDOOR UNIT ACCORDING TO THE DIAGRAM BELOW.

Terminals on the indoor unit: 1 2 3  
Colour of wires (connection cable): 1 2 3  
Terminals on the outdoor unit: 1 2 3

**WARNING**

This equipment must be properly earthed.

### 6 SECURE FIRMLY THE CONNECTING CABLE ONTO THE CONTROL BOARD WITH THE HOLDER. DO NOT OVERTIGHTEN HOLDER SCREW, AS THIS MAY DAMAGE THE HOLDER.

### 7 CLOSE GRILLE DOOR BY TIGHTEN WITH SCREW AND CLOSE THE FRONT PANEL.

**WIRE STRIPPING, CONNECTING REQUIREMENT**

Wire stripping: No loose strand when inserted.

**RISK OF FIRE**

JOINING OF WIRES MAY CAUSE OVERHEATING AND FIRE.

Do not joint wires.

Use complete wire without jointing.

Use approved socket and plug with earth pin.

Wire connection in this area must follow to national wiring rules.

**AIR PURGING METHOD IS PROHIBITED FOR R32 SYSTEM**

### 4 AIR TIGHTNESS TEST ON THE REFRIGERATING SYSTEM

Do not purge the air with refrigerants but use a vacuum pump to vacuum the installation.

There is no extra refrigerant in the outdoor unit for air purging.

- Before system is charged with refrigerant and before the refrigerating system is put into operation, below site test procedure and acceptance criteria shall be verified by the certified technicians, and/or the installer.
- Be sure to check whole system for gas leakage.

**Preparation (Step 1-2)**

- Connect a charging hose with a push pin to the Low side of a charging set and the service port of the 3-way valve. During extremely cold winter, material contraction might happened, try to further tighten the 2-way, 3-way valve to ensure they are fully closed.
- Attach the gauge manifold set correctly and tightly. Make sure that both valves of the manifold gauge (low pressure and high pressure) is in close position.

**Evacuation (Step 3-4)**

- Connect the center hose of the manifold gauge to a vacuum pump.
- Turn on the power switch of the vacuum pump, then turn open the low side manifold gauge valve and make sure that the needle in the gauge moves from 0cmHg (0 MPa) to -76 cmHg (-0.1 MPa) or vacuum until 500 microns is achieved. This process continues for approximately ten minutes.

**Tightness Test with Inert Gas (Step 5-7)**

- Remove the vacuum pump from the centre hose and connect the center hose to cylinder of any applicable inert gas as test gas.
- Charge test gas into the system and wait until the pressure within the system to reach min. 1.04MPa (10.4bar).
- Wait and monitor the pressure reading on the gauges. Check if there is any pressure drop. Waiting time depends on the size of the system.

**Pressure drop? (Step 8)**

- If there is any pressure drop, perform step 9-12. If there is no pressure drop, perform step 13.
- Use Gas Leak Detector to check for leaks. Must use the detection equipment with a sensitivity of 5 grams per year of test gas or better.
- Move the probe along the air conditioning system to check for leaks, and mark for repair.
- Any leak detected and marked shall be repaired.
- After repair, repeat evacuation steps 3-4 and tightness test steps 5-7. Check the pressure drop as in step 8.

**Recovery of Test Gas (Step 13)**

- If no leak, Recover the test gas. Perform evacuation of steps 3-4. Then proceed to step 14.

**Evacuation (Step 3-4)**

- Disconnect the charging hose from the service port of the 3-way valve.
- Tighten the service port caps of the 3-way valve at a torque of 18 Nm with a torque wrench.
- Remove the valve caps of both of the 2-way valve and 3-way valve, using a hexagonal wrench (4 mm). It is recommended to allow refrigerant slowly flow into the refrigerant system to prevent refrigerant freezing. Slightly open 2-way valve for 5 seconds then close the valve. Repeat this action for 3 cycles then fully open the valve.
- Mount back the valve caps onto the 2-way valve and the 3-way valve to complete this process.

**Notes:** Recommended use of any of the following leak detector:  
I) Universal Sniffer leak detector  
II) Electronic halogen leak detector  
III) Ultrasonic Leak Detector

### HOW TO TAKE OUT FRONT GRILLE

Please follow the steps below to take out front grille if necessary such as when installing or servicing.

- Open front panel.
- Remove the 3 mounting screws on the front grille as shown in the illustration below.
- Slide the 3 lock knobs on the upside of front grille to unlock position.
- Pull the front grille towards you to remove the front grille.

**FRONT GRILLE**

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If a drain elbow is used, the unit should be placed on a stand which is taller than 5 cm.

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### CHECK THE DRAINAGE

- Operate front panel and remove air filters. (Drainage checking can be carried out without removing the front grille.)
- Pour a glass of water into the drain tray-styrofoam.
- Ensure that water flows out from drain hose of the indoor unit.

### EVALUATION OF THE PERFORMANCE

- Operate the unit at cooling/heating operation mode for fifteen minutes or more.
- Measure the temperature of the intake and discharge air.
- Ensure the difference between the intake temperature and the discharge is more than 8 °C during Cooling operation or more than 14 °C during Heating operation.

**IN CASE OF REUSING EXISTING REFRIGERANT PIPING**

Observe the followings to decide reusing the existing refrigerant piping.

- Poor refrigerant piping could result in product failure.
- In the circumstances listed below, do not reuse any refrigerant piping. Instead, make sure to install a new piping.
  - Heat insulation is not provided for either liquid-side or gas-side piping or both.
  - The existing refrigerant pipe has been left in an open condition.
  - The diameter and thickness of the existing refrigerant piping does not meet the requirement.
  - The piping length and elevation does not meet the requirement.
- Perform proper pump down before reuse piping.
- In the circumstances listed below, clean it thoroughly before reuse.
  - Pump down operation cannot be performed for the existing air-conditioner.
  - The compressor has a failure history.
  - Oil color is darken. (ASTM 4.0 and above).
  - The existing air-conditioner is gas/oil heat pump type.
- Do not reuse the flare to prevent gas leak. Make sure to install a new flare.
- If there is a welded part on the existing refrigerant piping, conduct a gas leak check on the welded part.
- Replace deteriorated heat insulating material with a new one. Heat insulating material is required for both liquid-side and gas-side piping.

### Proper Pump Down Method

- Operate air conditioner at cooling mode for 10 - 15 minutes.
- After 10 - 15 minutes of pre operation, close 2 way valve. After 3 minutes, close 3 way valve.
- Take out air conditioner unit.
- Install New Refrigerant air conditioner.

**Most Important Process Purpose:** To make the oil & refrigerant mix together. They are in separated condition when air conditioner is stopped.

Mixed refrigerant & oil will be collected into outdoor unit.

Only very small amount of oil remain inside piping, which is acceptable.

### CHECK ITEMS

- Is there any gas leakage at flare nut connections?
- Is the indoor unit properly hooked to the installation plate?
- Has the heat insulation been carried out at flare nut connection?
- Is the power supply voltage complied with rated value?
- Is there any abnormal sound?
- Is the connection cable being fixed to terminal board firmly?
- Is the cooling/heating operation normal?
- Is the thermostat operation normal?
- Is the drainage ok? (Refer to "Check the drainage" section)
- Is the remote controller's LCD operation normal?
- Is the earth wire connection properly done?