

Installation Manual of Room Air Conditioner

Preparation

Necessary Tools for Installation

- Hammer
- Nipper
- Hacksaw
- Hole core drill
- Spanner wrench(17,19 and 26mm)
- Gas leakage detector or soap-and-water solution
- Torque wrench (17mm,22mm,26mm)
- Pipe cutter
- Flaring tool
- Knife
- Measuring tape
- Reamer

Power Source

- All wiring to the unit must be in accordance with the National Electric code and local ordinances.

Selection of Installation Place

Indoor Unit - Select a location that is

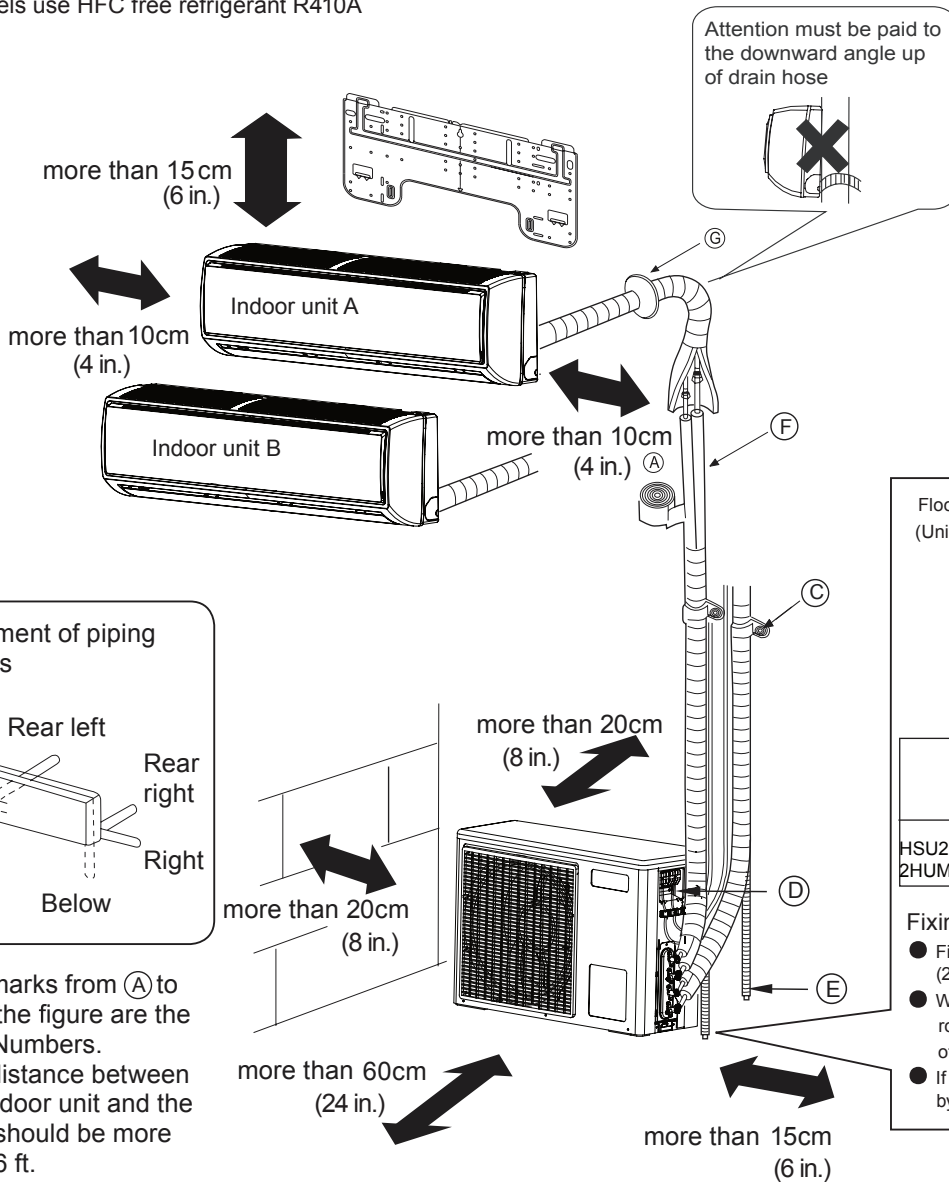
- Robust not causing vibration, where the unit can be supported satisfactorily.
- Not affected by heat or steam generated in the vicinity, and where the inlet and outlet of the unit are not disturbed.
- Possible to drain easily, and where piping can be connected with the outdoor unit.
- Where conditioned air can be spread in a room evenly.
- Place where the distance of more than 3 ft from televisions, radios, wireless apparatuses and fluorescent lamps 3 feet or approximately.
- In the case of fixing the remote controller on a wall, place where the indoor unit can receive signals when the fluorescent lamps in the room are in use.

Outdoor Unit - Select a location that is

- Less affected by rain or direct sunlight and is sufficiently ventilated.
- Strong enough base to bear the unit, where vibration and noise are not increased.
- That is easily accessible for maintenance or service.
- A distance marked ↔ is available as illustrated in the below figure.

Drawing for the installation of indoor and outdoor units

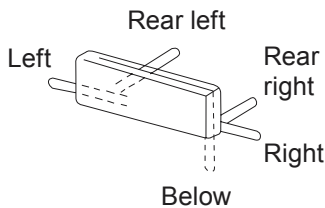
The models use HFC free refrigerant R410A



Optional parts for piping

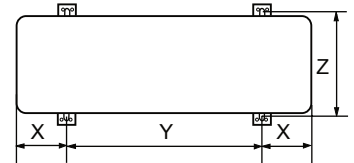
- (A) Non-adhesive tape
- (B) Adhesive tape
- (C) Saddle (L.S) with screws
- (D) Connecting electric cable for indoor and outdoor
- (E) Drain hose
- (F) Insulating material
- (G) Piping hole cover

Arrangement of piping directions



- The marks from (A) to (G) in the figure are the Part Numbers.
- The distance between the indoor unit and the floor should be more than 6 ft.

Floor fixing dimensions of the outdoor unit (Unit:mm / inch)



Model	Dimensions(mm/inches)		
	x	y	z
HSU218VHG-W 2HUM18HC03/R2(DB)	113.5 (4 1/2)	583 (23)	319.5 (12 5/8)

Fixing of outdoor unit

- Fix the unit to concrete or block with bolts (2/5 in.) securely.
- When fitting the unit to wall surface, roof or rooftop, fix the unit securely in consideration of earthquake and strong wind.
- If vibration may affect the house, fix the unit by attaching a vibration-proof mat.

The above picture is for reference only. Your product may look different.

Read this manual before installation

Explain the operation of the unit to the user according to this manual

NO.0010564641

Accessory parts

Remote controller (1)	Drain hose (1)
AAA dry battery (2)	Cushion (4)
Mounting plate (1)	Drain-elbow (1)
Plastic cap (4) Ø4X25 Screw (4)	Pipe supporting plate (1)

Selection of pipe

Model	Liquid pipe (Ø)	Gas pipe (Ø)
HSU218VHG-W 2HUM18HC03/R2(DB)	6.35mm (1/4")	9.52mm (3/8")

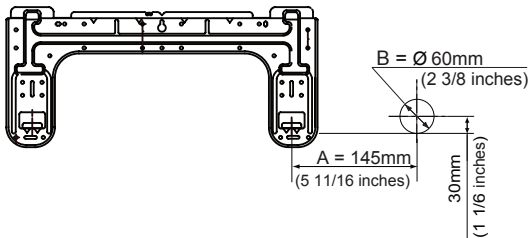
NOTE: The thickness of the pipe must be 0.8mm(1/16") at least.

Indoor unit

1 Fitting of the Mounting Plate and Locating of the Wall Hole

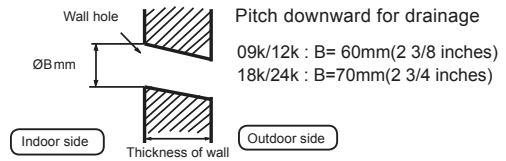
When the mounting plate is first fixed

- Carry out, based on the wall studs or lintels, proper leveling for the plate to be fixed against the wall, then temporarily fasten the plate with one nail.
- Assure that the mounting plate is level horizontal and vertical then fasten the plate.
- Find the wall hole location A using a measuring tape



2 Making a Hole on the Wall and Fitting the Piping Hole Cover

- Make a hole of B mm / inches in diameter, slightly descending to outside the wall.
- Install piping hole cover and seal it off with putty after installation



(Section of wall hole) (C) Piping hole pipe

3 Installation of the Indoor Unit

Drawing of pipe

[Rear piping]

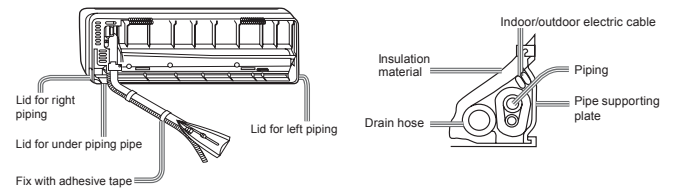
- Pull the pipes and the drain hose through, then fasten them with the adhesive tape

[Left · Left-rear piping]

- In case of left side piping, cut away, with a nipper, the lid for left piping.
- In case of left-rear piping, bend the pipes according to the piping direction to the mark of hole for left-rear piping which is marked on insulation materials.

- Insert the drain hose into the cavity of heat insulation materials of indoor unit.
- Insert the indoor/outdoor electric cable from backside of the indoor unit, and pull it out on the front side, then connect them.
- Coat the flaring seal face with refrigerant oil and connect pipes.

Cover the tubing connection with insulation materials closely, and with adhesive tape.



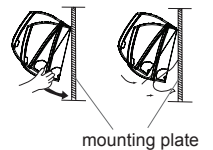
- Indoor/outdoor electric cable and drain hose must be bound with refrigerant piping with adhesive.

[Other direction piping]

- Cut away, with a nipper, the lid for piping according to the piping direction and then bend the pipe according to the position of wall hole. When bending, be careful not to crush pipes.
- Make sure that the wires connecting the indoor and outdoor units are not covered by the refrigeration piping insulation and are long enough to connect to the terminal block on the indoor unit.

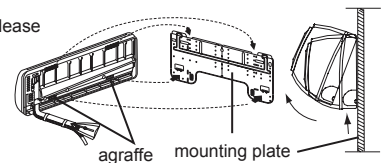
Attaching the indoor unit body

- Hang the indoor unit body onto the upper notches of the mounting plate. Move the unit in all places from side to side to verify its secure fixing.
- In order to fix the body onto the mounting plate, hold up the body from the underside and then put it down perpendicularly.



Removing of indoor unit body

- When you remove the indoor unit, please use your hand to raise the unit, then lift the bottom of the unit outward slightly and lift the unit until it leaves the mounting plate.



4 Connecting the indoor/outdoor electric Cable

Removing the wiring cover

- Remove terminal cover at right bottom corner of indoor unit, then take off wiring cover by removing its screws.



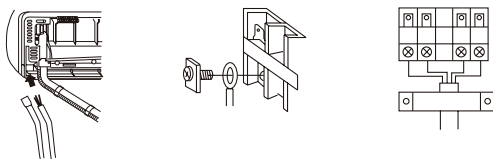
When connecting the cable after installing the indoor unit

- Insert the cable from the outside into the unit through the same hole that has the interconnecting tubing.
- Pull out the cable on the front side, and connect the cable making a loop.

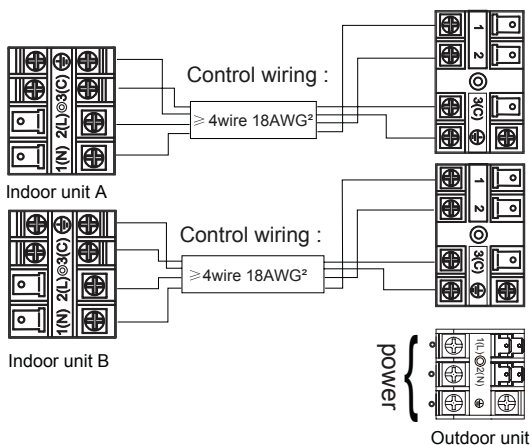


When connecting the cable before installing the indoor unit

- Insert the cord from the back side of the unit, then pull it out on the front side.
- Fasten the unit wire harness to the conduit holder using the lock nut.
- Position the conduit holder to its original state using screw.



Note When connecting the cable, confirm the terminal number of indoor and outdoor units carefully. If wiring is not correct, the unit will not operate properly and could cause a defect.



HSU218VHG-W
2HUM18HC03/R2(DB)

Power cable: \geq 3 Wire with ground 12AWG

- If the supply cord is damaged, it must be replaced by the manufacturer or its service agent. The type of connecting wire is H05RN-For H07RN-F.
- If the fuse on PC board is broken please change it with the type of T.3.15A/250VAC (Indoor), T.25A/250VAC (Outdoor), the fuse must be changed by an authorized servicer.
- The wiring method should confirm to local electrical codes.
- Use an HVACR circuit breaker or time delay fuse.

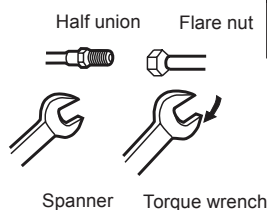
Outdoor unit

1 Installation of Outdoor Unit

Install according to the instructions on the 1st page of this manual

2 Connection of pipes

- When bending the interconnect tubing, ensure the radius is at least 1 1/4" to 1 3/4", 30mm to 40mm to ensure against crushing the tubing.
- Connecting the pipe of gas side first makes working easier.
- Ensure the interconnecting tubing is approved for R410A.

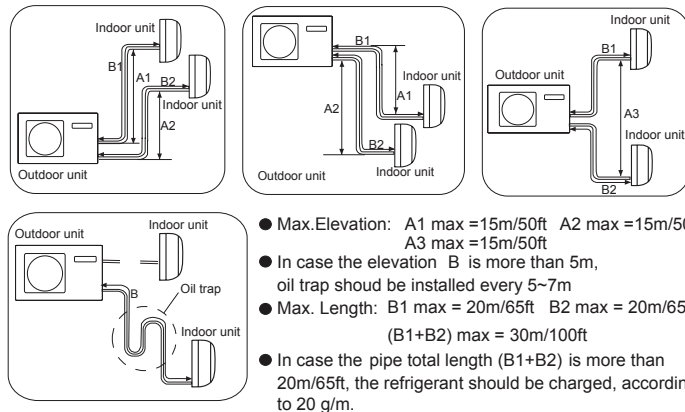


Forced fastening without careful centering may damage the threads and cause a leakage of gas.

Pipe Diameter(ϕ)	Fastening torque
Liquid side 6.35mm(1/4")	18N.m/13.3Ft.lbs
Liquid/Gas side 9.52mm(3/8")	42 N.m/30.1Ft.lbs
Gas side 12.7mm(1/2")	55N.m/40.6Ft.lbs
Gas side 15.88mm(5/8")	60 N.m/44.3Ft.lbs

Ensure that no dirt or debris enters the tubing. The standard tubing length is 25ft/7.6m. If a different length is required, adjust the refrigerant amount by 1/4 oz/ft, 20 g/M for the 9k, 12k and 18k models. For the 24k model, adjust by 1/2 oz/ft, 40 g/M. Before opening the service valves, evacuate the interconnecting tubing and indoor unit. Follow the instruction in section 5 on page 4.

CAUTION

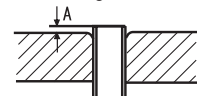


Cutting and Flaring Work of Piping

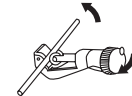
- Pipe cutting is carried out with a pipe cutter and burs must be removed.
- After inserting the flare nut, flaring work is carried out.

Flare tool for R410A	Conventional flare tool	
	Clutch-type	clutch-type(Rigid-type) Wing-nut type (Imperial-type)
A	0~0.5mm 0~1/51 inch	1.0~1.5mm 3/76~1/17 inch 1.5~2.0mm 1/17~1/8 inch

Flare tooling die



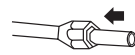
1. Cut pipe



2. Remove burs



3. Insert the flare nut



4. Flare pipe



Correct	Incorrect				
	Lean	Damage of flare	Crack	Partial	Too outside

3 Connection

- Loosen the screws on terminal block and insert the wires fully into terminal block, then tighten the screws.
- If wiring is not correct, the unit will not operate properly and it could cause a defect in the unit.
- Fix the cable with a clamp.

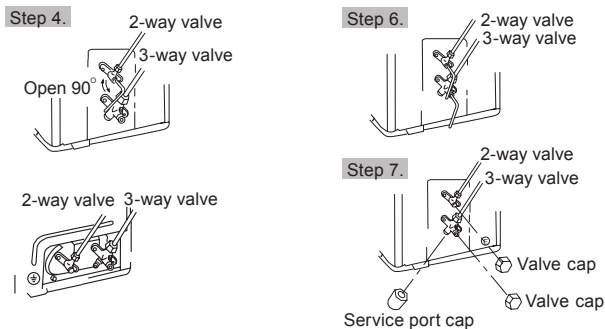
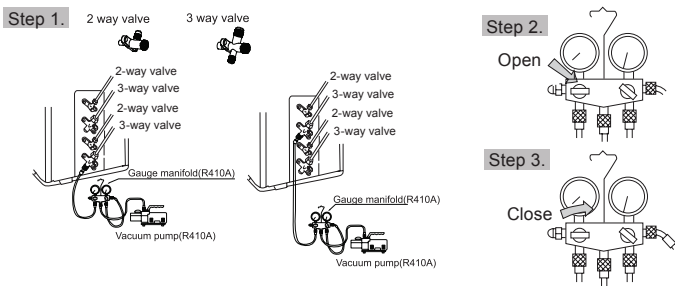
4 Attaching Drain-Elbow

- If the drain-elbow is used, please attach as shown in figure. (Note: Only for heat pump unit.)



5 Purging Method: To use vacuum pump

1. Detach the service port's cap of 3-way valve, and the valve cap for 2-way valve and 3-way valve. Connect the service port to the low side of the gauge manifold and connect the vacuum pump to the center port of the manifold.
 2. Open the handle on the low side of the gauge manifold and operate vacuum pump.
 3. Vacuum the tubing for at least 15 minutes. The vacuum level on the low side gauge should be 29.9 in of Hg, 76 cm of Hg, 0.1 MPa. when vacuuming is complete, close the valve on the manifold and turn off the vacuum pump. The vacuum level should hold for 1-2 minutes. If the vacuum level does not hold, check the flared connections and repeat this step.
 4. Open the 2-way valve 1/4 turn. After 5-6 seconds, close the valve and inspect for leaks with a leak detector or soap solution.
 5. No gas leakage? Go to step 6.
- In case of a leak, try tightening the flare connections to fix the leak. If the leak stops, go to step 6. If the leak continues, check the flare connections and repair as needed, then go back to step 3. If leak continues, remove the refrigerant used for the leakage check and flare tubes again. Repeat vacuum and leak and if no leakage, proceed to step 6.
6. Detach the charge hose from the service port, open 2-way valve and 3-way valve completely.
 7. To prevent the gas leakage, replace the service port and valve caps.
 8. After attaching the caps, check for leakage around the caps.



CAUTION

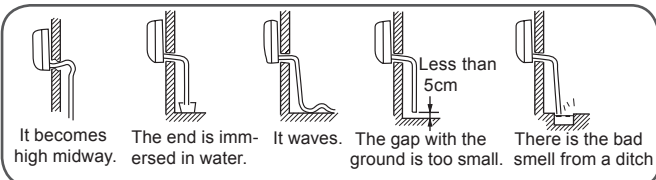
- If the refrigerant of the air conditioner leaks, it is necessary to discharge all the refrigerant. Repair the leak, vacuum the unit then charge the liquid refrigerant into air conditioner according to the amount marked on the name plate.
- Please do not let other cooling medium, except specified one (R410A), or air enter into the cooling circulation system. This could cause high pressure and could cause a leak and lead to personal injuries.

1 Power Source Installation

- The power source must be exclusively used for air conditioner.
- In the case of installing an air conditioner in a moist place, please install an earth leakage breaker.(GFCI)
- For installation in other places, use an HVACR circuit breaker or time delay fuse.

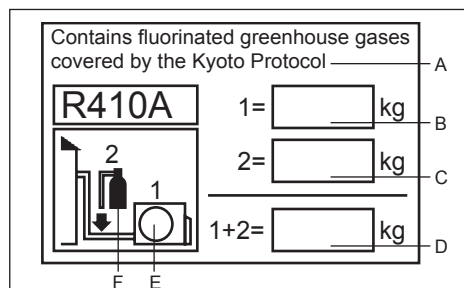
2 On Drainage

- Install the drain hose and ensure downward flow.
- Do not run the drain hose as shown below.



- Pour water in the drain pan of the indoor unit, and confirm that drainage is proper.
- In case that the attached drain hose is in a room, apply insulation to the hose to prevent condensation.

Refrigerant charge label



This product contains fluorinated greenhouse gases covered by the Kyoto Protocol. Do not vent into the atmosphere. Refrigerant type:R410A

GWP* value:1975
GWP=global warming potential

Please fill in with indelible ink,

- 1 the factory refrigerant charge of the product
- 2 the additional refrigerant amount charged in the field and
- 1+2 the total refrigerant charge

on the refrigerant charge label supplied with the product. The filled out label must be adhered in the proximity of the product charging port (e.g. onto the inside of the stop valve cover).

- A contains fluorinated greenhouse gases covered by the Kyoto Protocol
- B factory refrigerant charge of the product: see unit name plate
- C additional refrigerant amount charged in the field
- D total refrigerant charge
- E outdoor unit
- F refrigerant cylinder and manifold for charging

Check for Installation and Test Run

- Please kindly explain to our customers how to operate through the instruction manual.

Check Items for Test Run Put check mark ✓ in boxes

- Gas leak from interconnecting tubing?
- Installation is on the interconnecting tubing?
- Are the connecting wirings of indoor and outdoor firmly inserted to the terminal block?
- Is the connecting wiring of indoor and outdoor firmly fixed?
- Is drainage securely carried out?
- Is the ground wire securely connected?
- Is the indoor unit securely fixed?
- Is power source voltage the local codes?
- Is there any noise?
- Are the lights near the unit working normally?
- Are cooling and heating (when in heat pump) performing normally?
- Is the operation of room temperature control normal?