

Inverter One-two/ One-three Split Wall-mounted Type

AIR CONDITIONER

(Installation Manual)

- For correct installation, read this manual before starting installation and save this manual in a safe place for future reference.
- Only trained and qualified service personnel should install, repair or service air conditioning equipment. Users should not install the air conditioner by themselves.
- All pictures are only sketches. If there is any difference between pictures in this manual and the actual shape of the air conditioner you purchased, the actual shape shall prevail.

INSTALLATION PRECAUTION

Installation in the following places may cause trouble. If it is unavoidable, please consult with the local dealer.

- A place full of machine oil.
- A saline place such as coast.
- A place full of sulfide gas such as hot-spring resort.
- Places where there are high frequency machines such as wireless equipment, welding machine, and medical facility.
- A place there is no combustive gases and volatile matter.
- A place of special environmental conditions.

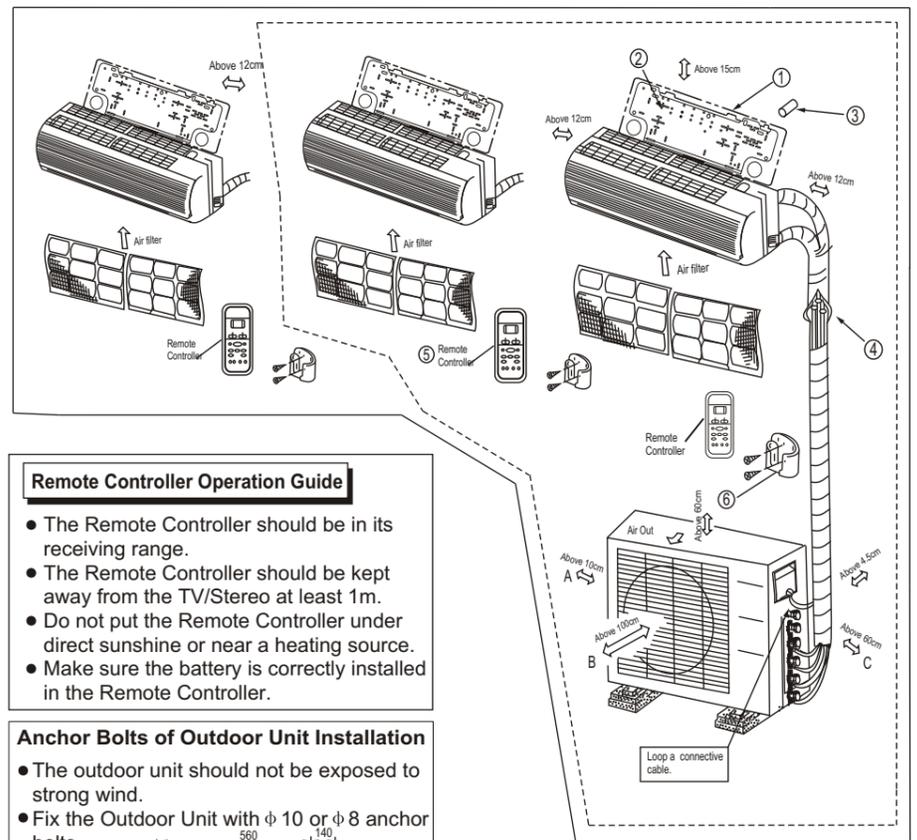
Indoor Unit

- A place where is no obstacle near the inlet and outlet area.
- A place which can bear the weight of the indoor unit.
- A place which is convenient to maintenance.
- A place which provides the space around the indoor unit as required right in the diagram.
- There is strong electromagnetic wave existing.
- A place which is far from heat, steam and inflammable gas.

Outdoor Unit

- A place, which is convenient to installation and not exposed to a strong wind. A place that is dry and ventilated.
- A place can bear the weight of the outdoor unit and where the outdoor unit can be held in the horizontal position.
- A place which does not allow an increase in noise level and vibration.
- A place where the operation noise and discharge air do not disturb your neighbor.
- A place free of a leakage of combustible gases.
- An allowable head level at the connective piping is less than 10m and length of the connective piping is up less than 15m.
- No any obstacle which block radiating air.
- Unavailable to children.
- A place, which provides the space around the outdoor unit as required right in the diagram.

Indoor/Outdoor Unit Installation Illustration

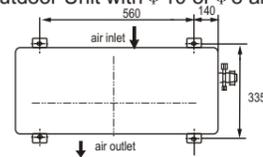


Remote Controller Operation Guide

- The Remote Controller should be in its receiving range.
- The Remote Controller should be kept away from the TV/Stereo at least 1m.
- Do not put the Remote Controller under direct sunshine or near a heating source.
- Make sure the battery is correctly installed in the Remote Controller.

Anchor Bolts of Outdoor Unit Installation

- The outdoor unit should not be exposed to strong wind.
- Fix the Outdoor Unit with $\phi 10$ or $\phi 8$ anchor bolts.



- If need suspending installation, consults the corresponding requirement.

Accessories

Please install the accessories attached with unit correctly according to this installation manual.

Note: 1. At least two of A, B, C

aspects are free from blocking.

2. When the Outdoor Unit is higher than the

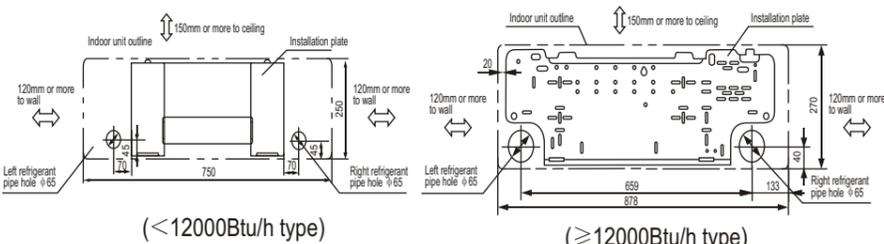
Indoor Units, to prevent the rain from flowing into the indoor along the connection pipe, a downward tipping arc should be made before the connection pipe entering the wall to indoor to ensure the lowest point on the connection pipe is at outdoor.

Number	Name	
1	Installation plate	
2	Self-tapping screw ST3.9×25	
3	Plastic Expansion Pipe	
4	Connection Pipe Ass.	Liquid side $\phi 6.35$
		Gas side $\phi 9.53/\phi 12.7$
5	Remote controller	
6	Remote controller holder	

① INDOOR UNIT INSTALLATION

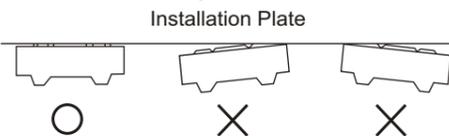
1. Drilling A Hole and Mounting Installation Plate

Installation Plate and Its Direction (unit: mm)



1. Fix the installation plate.

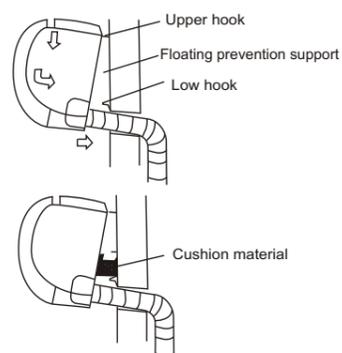
1. Install the installation plate horizontally on structural parts in the wall with the spaces provided around the plate.
2. In case of brick, concrete or similar type walls, make 5mm dia. holes in the wall. Insert clip anchors for appropriate mounting screws.
3. Fix the installation plate on the wall.



2. Drill a hole.

As diagram above determine the pipe hole position using the installation plate, drill the pipe hole ($\phi 65$ mm) so it slants slightly downward.

3. Indoor Unit Installation

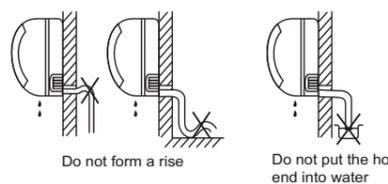


1. Pass the piping through the hole in the wall.
2. Put the upper claw at the back of the indoor unit on the Upper Hook of the installation plate, move the Indoor Unit from side to side to see that it is securely hooked.
3. Piping can easily be made by lifting the indoor unit with a cushion material between the indoor unit and the wall. Get it out after finish piping.
4. Push the lower part of the Indoor Unit up to the wall, Then move the Indoor Unit from side to side, up and down to check if it is hooked securely.

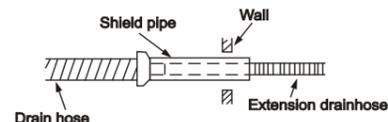
2. Connection Pipe and Drainage Installation

1. Drainage

1. Run the drain hose sloping downward. Do not install the drain hose as illustrated below.



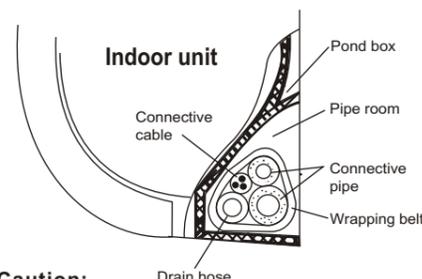
2. When connecting extension drain hose, insulate the connecting part of extension drain hose with a shield pipe



3. Piping and bandaging

Wind the connective cable, drain hose and wiring with tape securely, evenly as shown below.

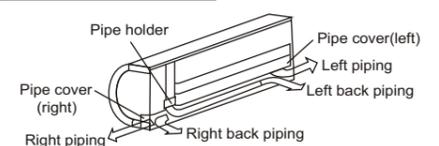
- Because the condensed water from rear of the indoor unit is gathered in Pond Box and is piped out of room. Do not put anything else in the box.



Caution:

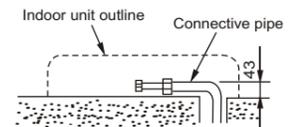
The max. quantity of bend of 90° on the piping between 1 single indoor unit and outdoor units 2. The equivalent of one bend is 1.2m's piping.

2. Connection pipe



1. For the left-hand and right-hand piping, remove the pipe cover from the panel side.
- Explain to clients that the pipe cover must be kept as it may be used when relocate the air conditioner to any other place.

2. For the left-hand and rear-left-hand piping, install the piping as shown. Bend the connective pipe to be laid at 43mm height or less from the wall.



3. Fix the end of the connective pipe. (Refer to Tightening Connection in REFRIGERANT PIPING CONNECTION)

CAUTION

- Connect the indoor unit first then the outdoor unit and bend and arrange the pipe carefully.

Indoor units that can be used in combination	Number of connected units	2-3units
	Total of indoor units class kW	7.8kW
Total length for all rooms		Max. 45m
Length for one indoor unit		Max. 15m
	Difference in height between indoor and outdoor units	When above outdoor unit (B) Max. 10m When below outdoor unit (A) Max. 10m
Difference in height between indoor units		Max. 10m
	Compressor stop/start frequency	1 cycle time 6 min or more (from stop to stop or from start to start) Stop time 3 min or more
Power source voltage	Voltage fluctuation	within ±10% of rated voltage
	Voltage drop during start	within ±15% of rated voltage
	Interval unbalance	within ±3% of rated voltage

INDOOR UNIT INSTALLATION

4. Wiring

Prepare the power source for exclusive with the air conditioner.
The supply voltage must comply with the rated voltage of the air conditioner:
For electrical work, follow the local national wiring standard, regulation and this installation instructions.

Power Source	Power switch and Fuse rating	Wire Specification
50Hz 220-240V ~	30A	≥2.5mm ²

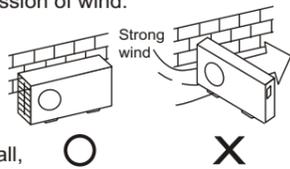
CAUTION

- Perform the wiring with sufficient capacity. Installation places legally require a short circuit isolator to be attached to prevent electrical shock.
- Do not extend the power cable code by cutting.
- Power voltage should be in the range of 90%~110% of rated voltage.
- The plug of the air conditioner takes a grounding leg, so clients should use a grounding socket so that the air conditioner can be grounded efficiently.
- The power cord must be earthed reliably.

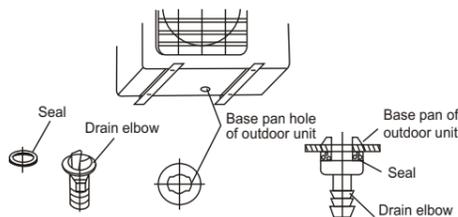
② OUTDOOR UNIT INSTALLATION

1. OUTDOOR INSTALLATION PRECAUTION

- Install the outdoor unit on a **solid** base to prevent increasing noise level and vibration.
- Determine the air outlet direction where the discharged air is not blocked.
- In the case that the installation place is exposed to strong wind such as a seaside operation by putting the unit lengthwise along the wall or using a dust or shield plates.
- Specially in windy area, install the unit to prevent the admission of wind.
- If need suspending installation, the installation bracket should accord with technique **requirement** in the installation bracket diagram. The installation wall should be solid brick, concrete or the same intensity construction, or actions to reinforce, damping, supporting should be taken. The connection between bracket and wall, bracket and the air conditioner should be firm, stable and reliable.

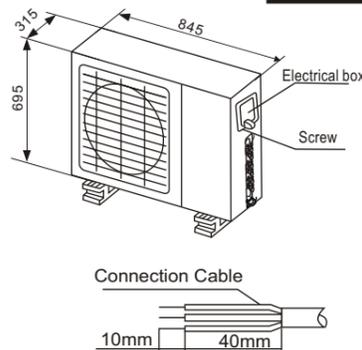


2. DRAIN ELBOW INSTALLATION



Fit the seal into the drain elbow, then insert the drain elbow into the base pan hole of outdoor unit, rotate 90° to securely assemble them. Connecting the drain elbow with an extension drain hose (Locally purchased), in case of the water draining off the outdoor unit during the heating mode.

4. WIRING CONNECTION



CAUTION

1. Do not touch the capacitor even if you have disconnected the power for there is still high voltage power on it, or electric shock hazard may occur. For your safety, you should start repairing at least 5 minutes later after the power is disconnected.
2. The power is supplied from the Outdoor Unit. The two/three Indoor Unit are connected with a signal wire with the Outdoor Unit. Please make sure that the signal wires or power cords are connected reliably and correctly, or the air conditioner could not run normally.

1. Remove the electric parts cover from the outdoor unit.
2. Connect the connection cables to the terminals as identified with their respective matched numbers on the terminal block of indoor and outdoor units.
3. To prevent the ingress of water, make a loop of the connection cable as illustrated in the installation diagram of indoor and outdoor units.
4. Insulate unused cords (conductors) with PVC-tape. Process them so they do not touch any electrical or metal parts.

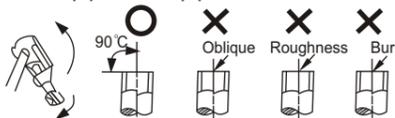
CAUTION

Make sure to connect the indoor unit(A,B,C) to the Hi and Lo valve and terminals of signal wires(A,B,C) of outdoor unit as identified with their respective matched connection. Wrong wiring connections may cause some electrical parts to malfunction.

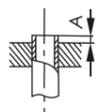
3. REFRIGERANT PIPING CONNECTION

1. Flaring

1. Cut a pipe with a pipe cutter.

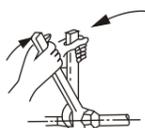


2. Insert a flare nut into a pipe and flare the pipe.



2. Tightening Connection

- Align pipes to be connected.
- Sufficiently tighten the flare nut with fingers, and then tighten it with a spanner and torque wrench as shown.



CAUTION

- Excessive torque can break nut depending on installation conditions.

Outer diam. (mm)	A(mm)	
	Max.	Min.
φ 6.35	1.3	0.7
φ 9.53	1.6	1.0
φ 12.7	1.8	1.0

Outer diam.	Tightening torque(N.cm)	Additional tightening torque(N.cm)
φ 6.35mm	1570 (160kgf.cm)	1960 (200kgf.cm)
φ 9.53mm	2940 (300kgf.cm)	3430 (350kgf.cm)
φ 12.7mm	3500 (400kgf.cm)	4410 (450kgf.cm)

③ AIR PURGE AND TEST OPERATION

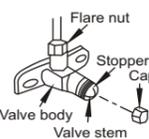
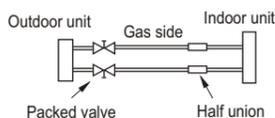
1. AIR PURGE

Choose purge method from the table:

Connective pipe length	Air purging method	Additional amount of refrigerant to be charged
Less than 5m	Use vacuum pump	—
5~15m	Use vacuum pump	(L-5m) × 30g

CAUTION IN HANDLING THE STOP VALVE

- Open the valve stem until it hits against the stopper. Do not try to open it further.
- Securely tighten the valve stem cap with a spanner or the like.
- Valve stem cap tightening torque.
- When relocate the unit to an other place, perform evacuation using vacuum pump.
- Perform evacuation of the two indoor units according to the following methods.



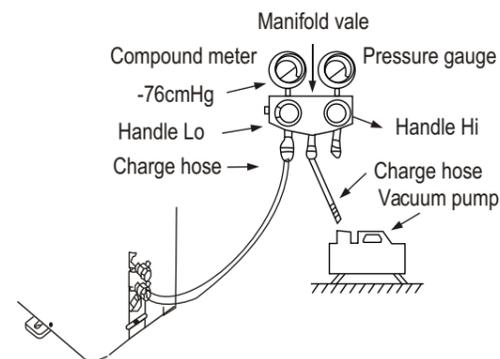
When Using the Vacuum Pump

(For how to use a manifold valve, refer to its Owner's Manual)

1. Connect the Manifold Valve Charge Hose to the Low Pressure Valve Charge Hole (With all the Low/High Pressure Valves tightened)
2. Connect the Charge Hose to the Vacuum Pump.
3. Fully open the Handle Lo of the Manifold Valve.
4. Start the Vacuum pump. Slightly loose the Flare Nut the Low Pressure Valve to check if there is any air leakage. (Sound of the Vacuum Pump changed and the Compound Meter indicates "o" instead of minus. Then tighten the Flare Nut.
5. After the evacuation is complete, full close the hand Lo of the manifold valve and stop the operation of the vacuum pump.

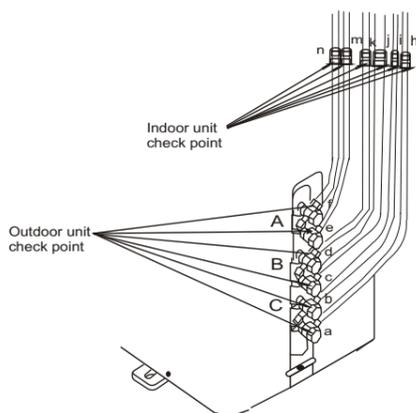
- Make evacuation for 15 minutes and more and check that the compound meter indicates -76cmHg (-1.0x10⁵Pa).

6. Turn the stem of the **stop valve** about 45° counterclockwise for 6~7 seconds after the gas coming out, then tighten the flare nut again. Make sure the pressure display in the pressure indicator is a little higher than the atmosphere pressure.
7. Remove the Charge Hose from the Low Pressure Charge Hose.
8. Tighten the cap of the **stop valve**.



2. GAS LEAK CHECK

Make sure no gas come out from connections with leak detector or soap water.



3. TEST OPERATION

Perform test operation after completing gas leak check at the flare nut connections and electrical safety check.

1. Connect the unit to power, then push the ON/OFF button on the Remote controller to start the test operation.
2. Press the MODE button to check if the unit runs normally on every mode.
3. Test operation according to the following procedure when you could not find the Remote Controller.
 - Open the panel, move the Manual switch on the control panel to COOL.
4. Press COOL again after test operation. Then installer should explain how to manipulate, fix and maintain their air conditioner. Also tell the clients that regular check of the installation bracket and maintenance are necessary.

