

4 CONNECT THE CABLE TO THE INDOOR UNIT

Electrical work

Electric safety regulations for the initial installation

- If there is serious safety problem about the power supply, the technicians should refuse to install the air conditioner and explain to the client until the problem is solved.
- Power voltage should be in the range of 90%~110% of rated voltage.
- The surge protector and main power switch with a 1.5 times capacity of Max. Current of the unit should be installed in power circuit. Ensure the air conditioner is grounded well.
- The appliance shall be installed in accordance with national wiring regulations. Do not operate your air conditioner in a wet room such as a bathroom or laundry room.
- An all-pole disconnection device which has at least 3mm clearances in all poles, and have a leakage current that may exceed 10mA, the residual current device(RCD) having a rated residual operating current not exceeding 30mA, and disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- For the unit adopts auxiliary electric heater, keep at least 1 meter away from the nearest combustible materials.
- According to the attached Electrical Connection Diagram located on the panel of the indoor & outdoor unit to connect the wire. All wiring must comply with local and national electrical codes and be installed by qualified and skilled electricians.
- An individual branch circuit and single receptacle used only for this air conditioner must be available. See the following table for suggested wire sizes and fuse specifications:

Suggest Minimum Wire Size(AWG:American Wire Gage):

Appliance Amps	AWG Wire Size
10	18
13	16
18	14
25	12
30	10
40	8

NOTE:

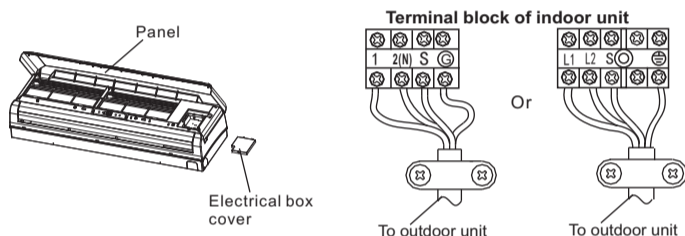
- The wire size of power supply cord and interconnected wire and the current of the fuse or switch are determined by the maximum current indicated on the nameplate which located on the side panel of the unit. Please refer to the nameplate before selecting the wire size, fuse or switch.
- The controller of the air conditioner designed with a fuse protection function under abnormal conditions, the specifications of the fuse have printed on the circuit board, such as: T3.15A/250VAC, T5A/250VAC, etc.

NOTE: The air conditioner can be connected only to a supply with system impedance no more than 0.0538 ohm. In case necessary, please consult your supply authority for system impedance information.

Connect the cable to the indoor unit

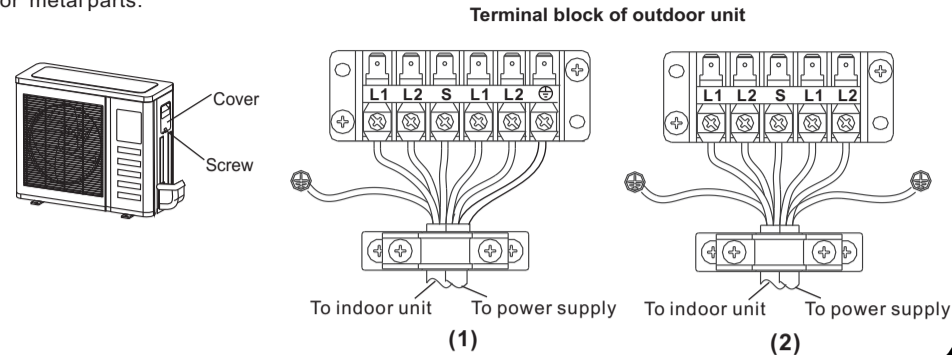
NOTE: Before performing any electrical work, turn off the main power to the system.

- The inside and outside connecting cable can be connected without removing the front grille.
- The indoor power cord type is H05VV-F or H05V2V2-F, the outdoor power cord and interconnected cord type is H07RN-F.
- Lift the indoor unit panel up, remove the electrical box cover by loosening the screw.
- Ensure the wires colour of outdoor unit and the terminal Nos. are the same to the indoor's respectively.
- Wrap those cables not connected with terminals with insulation tapes, so that they will not touch any electrical components. Secure the cable onto the control board with the cord clamp.



4 CONNECT THE CABLE TO THE OUTDOOR UNIT

- Remove the electrical control board cover from the outdoor unit by loosening the screw.
- Connect the connective cables to the terminals as identified with their respective matched numbers on the terminal block of indoor and outdoor units.
- Secure the cable onto the control board with the cord clamp.
- To prevent the ingress of water, form a loop of the connective cable as illustrated in the installation diagram of indoor and outdoor units.
- Insulate unused cords (conductors) with PVC-tape. Process them so they do not touch any electrical or metal parts.



5 AIR PURGING AND TEST OPERATION

1. Air purging

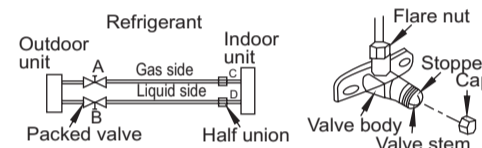
- Air and moisture in the refrigerant system have undesirable effects. Therefore, the indoor unit and tubing between the indoor and outdoor unit must be leak tested and evacuated to remove any noncondensables and moisture from the system.
- Check that each tube(both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed.
- Pipe length and refrigerant amount:

Connective pipe length	Air purging method	Additional amount of refrigerant to be charged	
Less than 7.5m	Use vacuum pump	---	
More than 7.5m	Use vacuum pump	Liquid side: ϕ 6.35mm	Liquid side: ϕ 9.52mm:
		R22: (Pipe length-7.5)x30g/m	R22: (Pipe length-7.5)x60g/m
		R410A: (Pipe length-7.5)x15g/m	R410A: (Pipe length-7.5)x30g/m

- For the R407C refrigerant model, make sure the refrigerant added into air conditioner is liquid form in any cases.
- When relocate the unit to another place, using vacuum pump to perform evacuation.

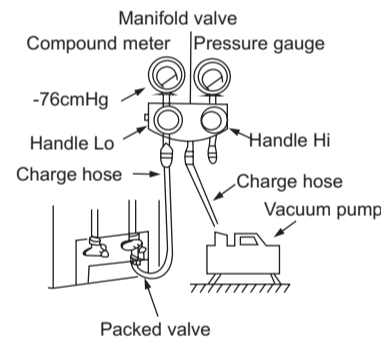
CAUTION

- 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. See Tightening torque table.



2. When using the Vacuum Pump

- Completely tighten the flare nuts, A, B, C, D, connect the manifold valve charge hose to a charge port of the packed valve on the gas pipe side.
- Connect the charge hose connection to the vacuum pump.
- Fully open the handle Lo of the manifold valve.
- Operate the vacuum pump to evacuate. After starting evacuation, slightly loose the flare nut of the packed valve on the gas pipe side and check that the air is entering. (Operation noise of the vacuum pump changes and a compound meter indicates 0 instead of minus)
- After the evacuation is complete, fully close the handle 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 $-76\text{cmHg}(-1.0 \times 10^5\text{Pa})$.
- Turn the stem of the packed valve B about 45° counter-clockwise 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.
- Remove the charge hose from the Low pressure charge hose.
- Fully open the packed valve stems B and A.
- Securely tighten the cap of the packed valve.

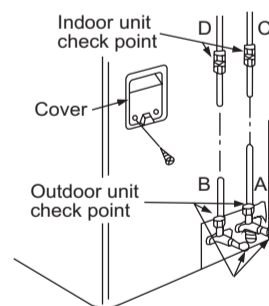


3. Safety and leakage check

- Soap water method:
Apply a soap water or a liquid neutral detergent on the indoor unit connections and outdoor unit connections by a soft brush to check for leakage of the connecting points of the piping. If bubbles come out, it indicates that the pipes have leakage.
- Leak detector
Use the leak detector to check for leakage.

CAUTION

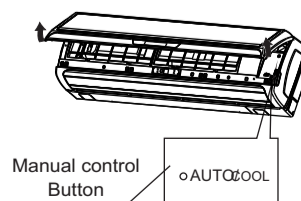
- A: Lo packed valve B: Hi packed valve
C and D are ends of indoor unit connection.



4. Test running

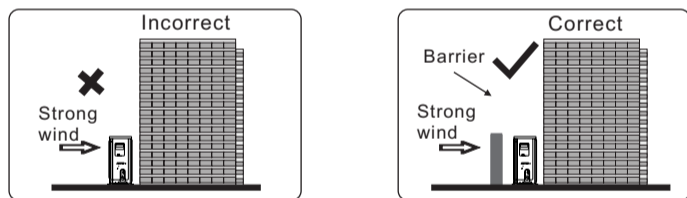
Perform test operation after completing gas leak check at the flare nut connections and electrical safety check.

- Check that all tubing and wiring have been properly connected.
 - Check that the gas and liquid side service valves are fully open.
- Connect the power, press the ON/OFF button on the remote controller to turn the unit on.
 - Use the MODE button to select COOL, HEAT, AUTO and FAN to check if all the functions works well.
 - When the ambient temperature is too low(lower than $17^\circ\text{C}/62^\circ\text{F}$), the unit cannot be controlled by the remote controller to run at cooling mode, manual operation can be taken. Manual operation is used only when the remote controller is disable or maintenance necessary.
 - Hold the panel sides and lift the panel up to an angle until it remains fixed with a clicking sound.
 - Press the Manual control button to select the AUTO or COOL, the unit will operate under Forced AUTO or COOL mode(see User Manual for details).
 - The test operation should last about 30 minutes.



1 OUTDOOR INSTALLATION PRECAUTION

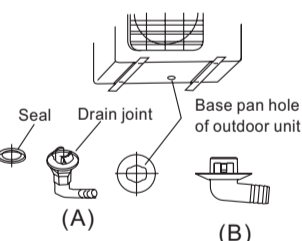
- Install the outdoor unit on a rigid base to prevent increasing noise level and vibration.
- Determine the air outlet direction where the discharged air is not blocked.
- In the case that the installation place is exposed to strong wind such as a seaside, make sure the fan operating properly by putting 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.
- Be sure there is no obstacle which block radiating air.



2 DRAIN JOINT INSTALLATION

NOTE: The drain joint is slightly different according to the different outdoor unit.

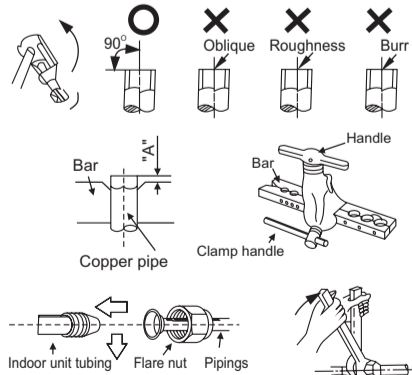
For the drain joint with the seal(Fig.A), first fit the seal onto the drain joint, then insert the drain joint into the base pan hole of outdoor unit, rotate 90° to securely assemble them. To install drain joint as shown in Fig.B, insert the drain joint into the base pan hole of outdoor unit until it remains fixed with a clicking sound. Connecting the drain joint with an extension drain hose (Locally purchased), in case of the water draining off the outdoor unit during the heating mode.



3 REFRIGERANT PIPE CONNECTION

Flaring

- Cut a pipe with a pipe cutter.
- Remove flare nuts attached to indoor and outdoor unit, then put them on pipe/tube having completed burr removal and flare the pipe.
- Firmly hold copper pipe in a die in the dimension shown in the table below.



Outer diam. (mm)	A(mm)	
	Max.	Min.
ϕ 6.35	1.3	0.7
ϕ 9.52	1.6	1.0
ϕ 12.7	1.8	1.0
ϕ 16	2.2	2.0
ϕ 19	2.4	2.0

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.
- Excessive torque can break nut depending on installation conditions.

Outer diam.	Tightening torque(N.cm)	Additional tightening torque(N.cm)
ϕ 6.35mm	1500 (153kgf.cm)	1600 (163kgf.cm)
ϕ 9.52mm	2500 (255kgf.cm)	2600 (265kgf.cm)
ϕ 12.7mm	3500 (357kgf.cm)	3600 (367kgf.cm)
ϕ 16mm	4500 (459kgf.cm)	4700 (479kgf.cm)
ϕ 19mm	6500 (663kgf.cm)	6700 (683kgf.cm)