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# Installation of Split Units

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Technical Support Department

December 25





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## Frequently used Tools

<i>Outlook</i>	<i>Name</i>	<i>Outlook</i>	<i>Name</i>
	<i>Copper pipe cutter</i>		<i>Expander</i>
	<i>Copper pipe bender</i>		<i>Pressure gauge</i>
	<i>Flaring tool</i>		<i>Vacuum pump</i>

## Frequently used Tools

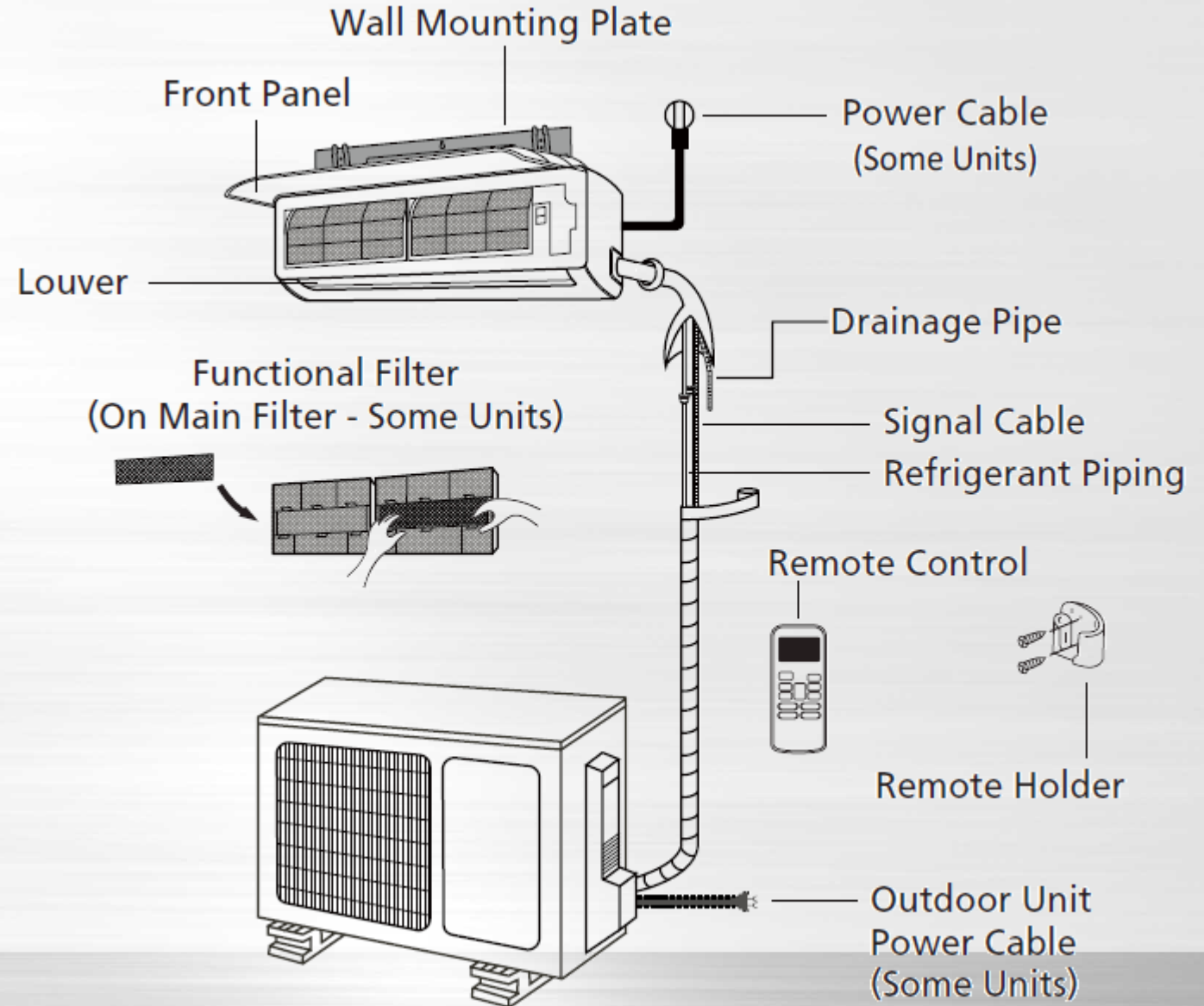
<i>Outlook</i>	<i>Name</i>	<i>Outlook</i>	<i>Name</i>
	<i>Anemometer</i>		<i>Clamp meter</i>
	<i>Acoustimeter</i>		<i>Electric drill</i>
	<i>Infrared thermometer</i>		

## Accessories

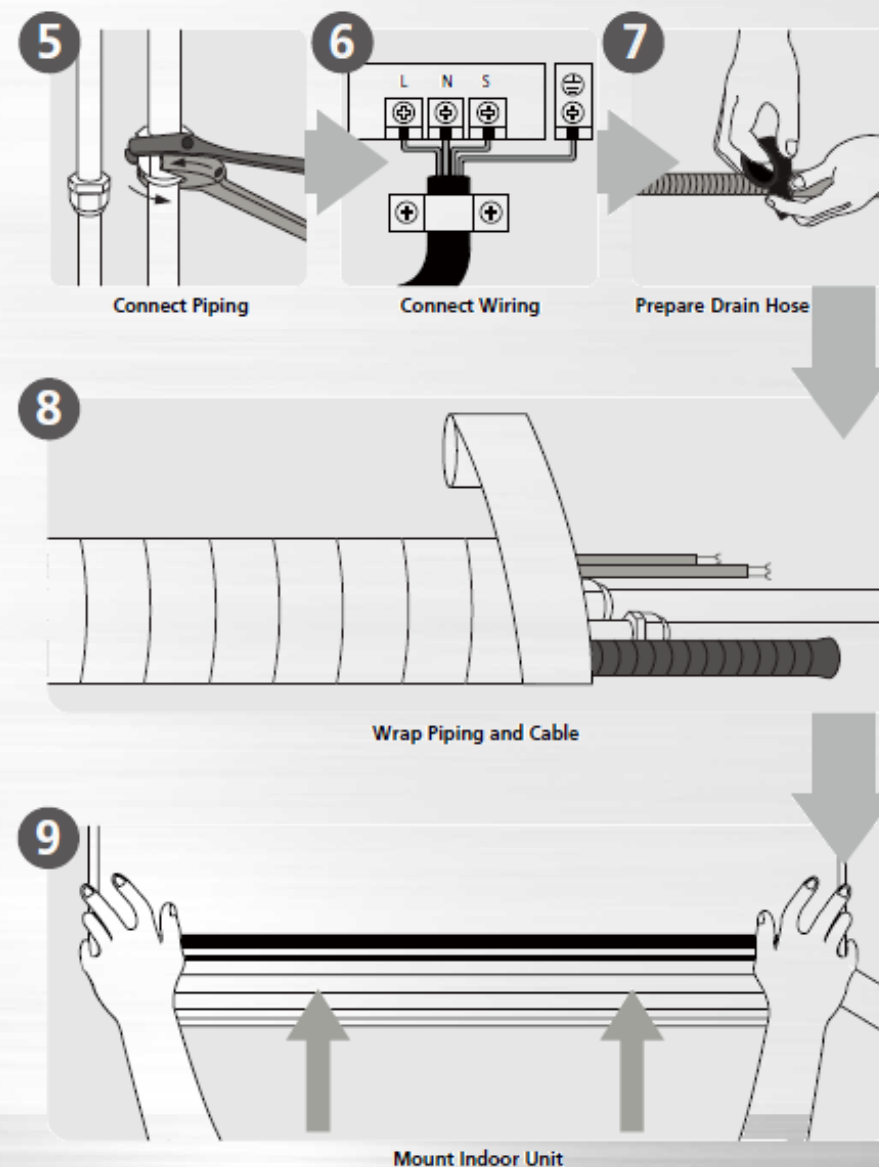
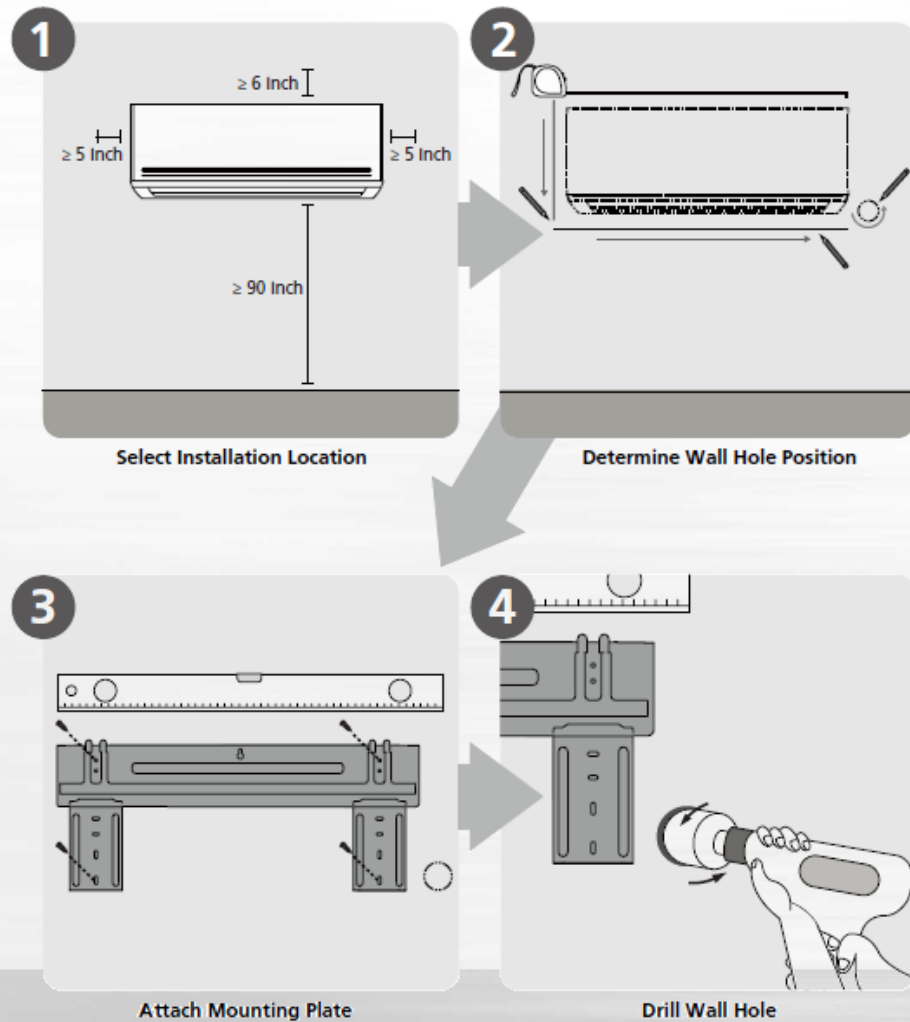
No.	Name of Accessories	Q'ty
1	Installation Plate	1
2	Clip Anchor (expansible hook)	8
3	Self-tapping Screw ST3.9x25 (Type "A")	8
4	Seal	1
5	Drain Joint	1
6	Remote controller	1
7	Connecting pipe Assembly	Parts you must purchase (a minimum pipe wall-thickness of 0.7mm is required.)
8	Wrapping Tape	Parts Purchased separately
9	Connecting Cable	
10	Additional Drain Pipe (Outer Diameter 15.5mm)	
11	Insulation Materials	
12	Cable Tie (5~10 pcs)	

## Typical installation

- Use a stud finder to locate studs to prevent unnecessary damage to the wall.
- A minimum pipe run of 3 meters is required to minimize vibration & excessive noise.
- Copper lines must be insulated independently



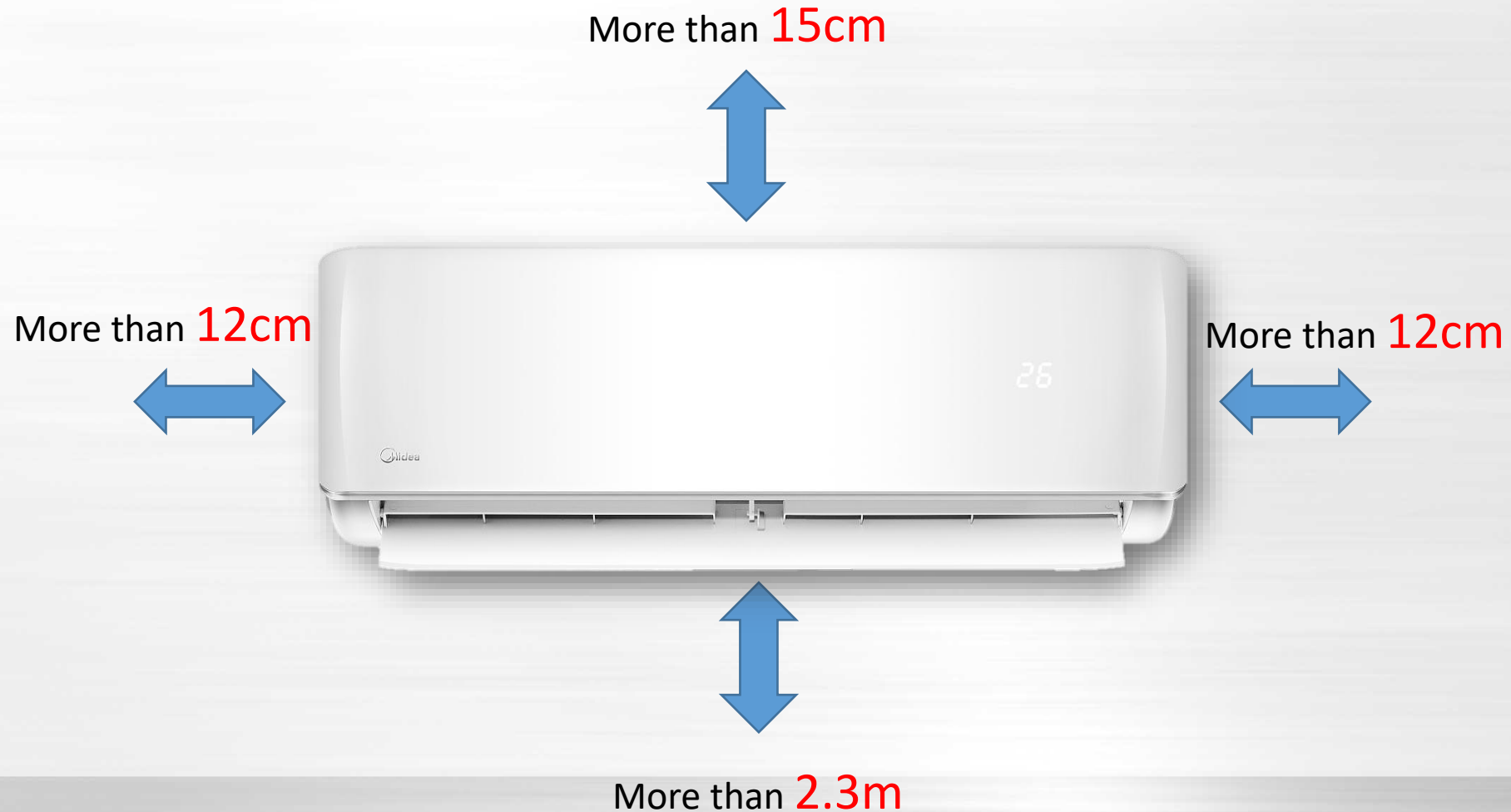
## General Installation Procedure



### Select Location



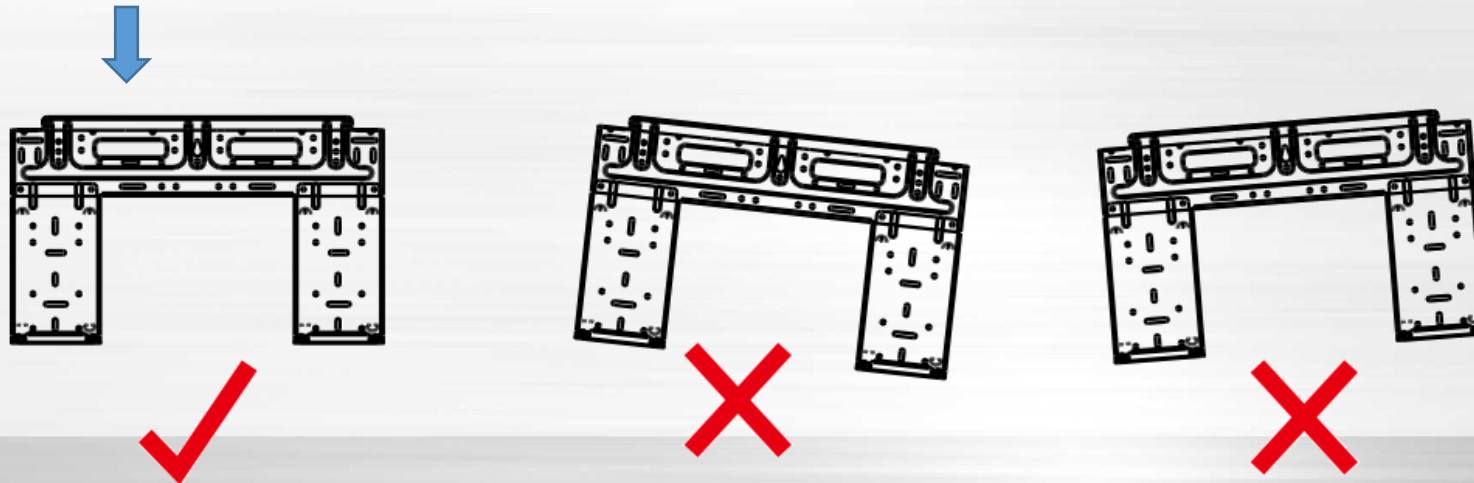
## Installation Space of Indoor Unit



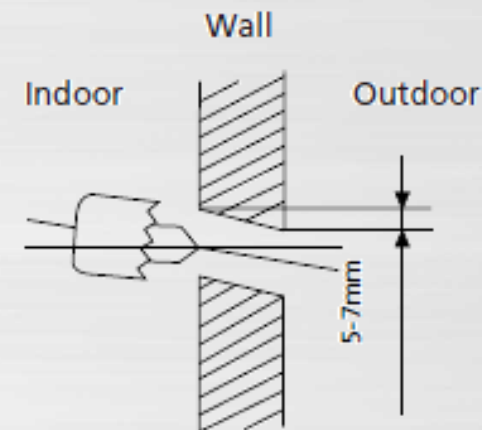
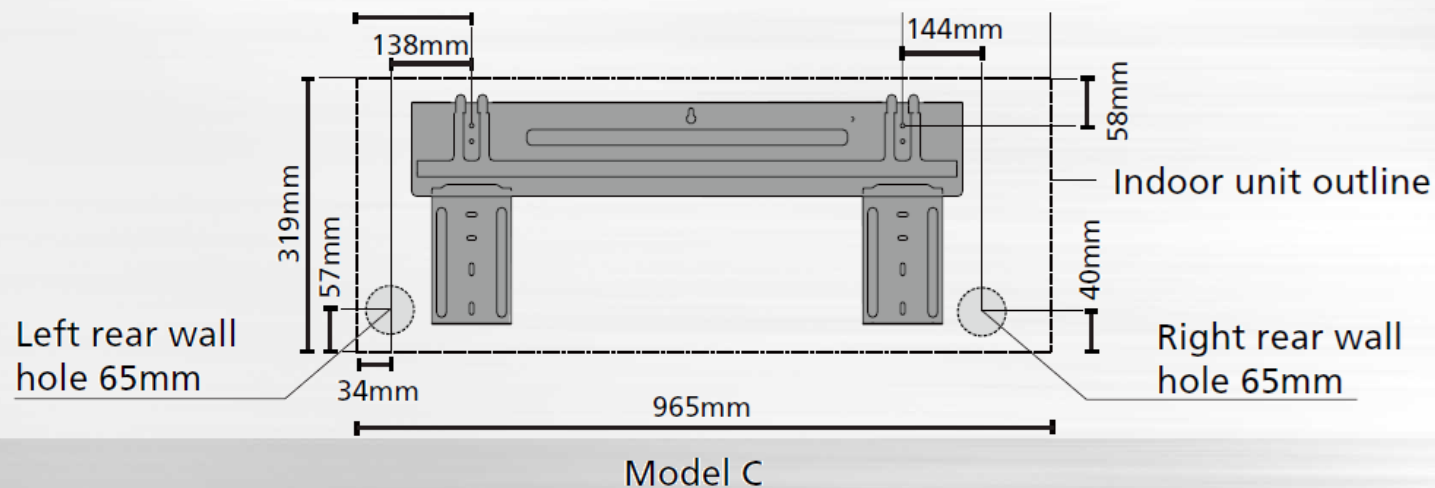
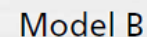
## Fit the Installation Plate

- ① Fit the installation plate horizontally on the wall with level gauge around the installation plate.
- ② If the wall is made of brick, concrete or the like, drill eight (8) 5mm diameter holes in the wall. Insert clip anchor for appropriate mounting screws.
- ③ Fit the installation plate on the wall with eight (8) type “A” screws.

Correct orientation (should be level to prevent water drop from indoor unit)  
of Installation Plate

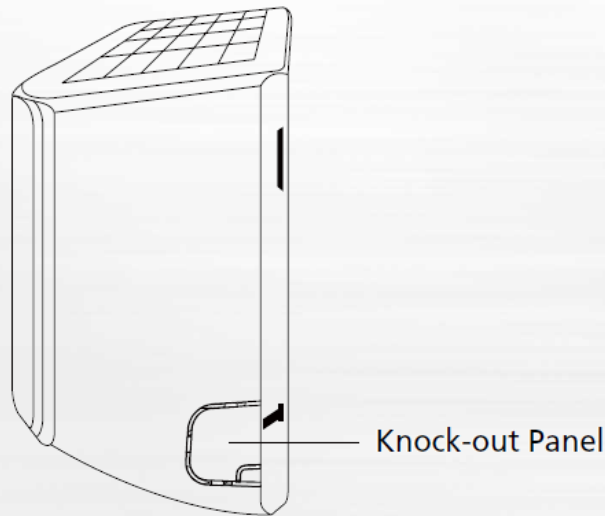


Determine the location of the wall hole based on the position of the mounting plate. Refer to **Mounting Plate Dimensions in the instructions** to help you determine the optimal position. The wall hole should be at least 65cm (25.5") from the side of the unit, and at a slightly lower angle to facilitate drainage.

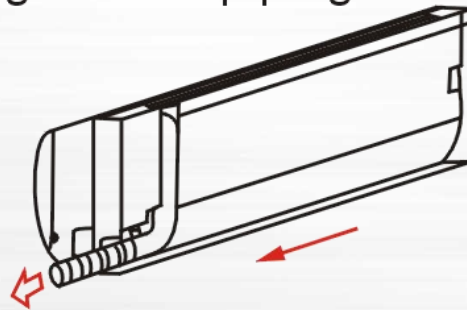


## Connective Pipe Installation

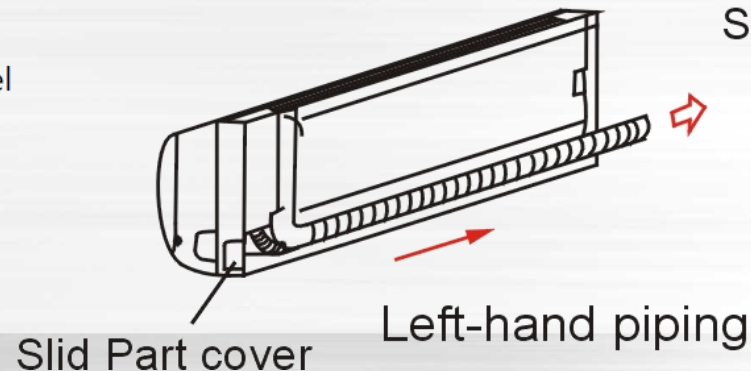
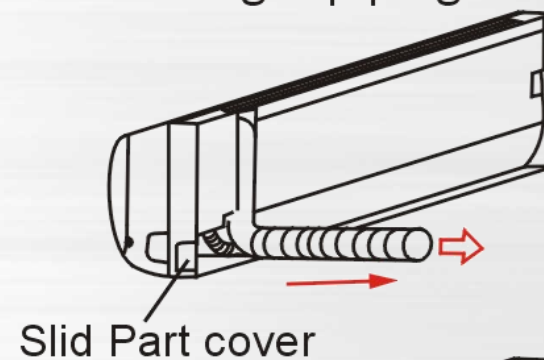
- ① For the left-hand and right-hand piping, remove the pipe cover from the side panel.
- ② For the rear-right-hand and rear-left-hand piping, install the piping as shown below.



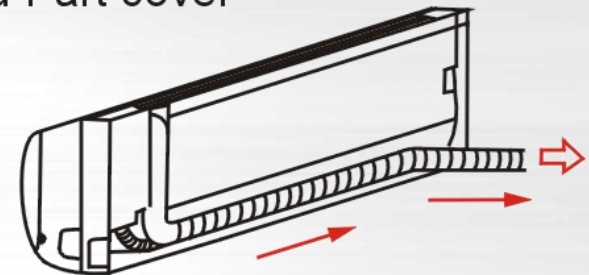
Right-hand piping



Rear-right piping



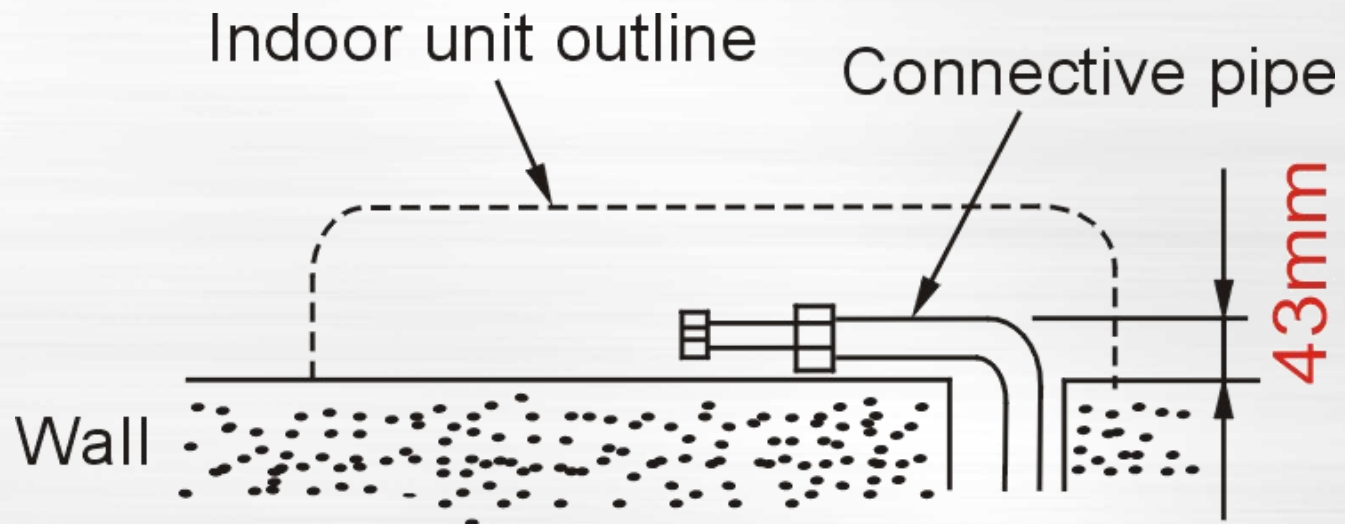
Left-hand piping



Rear-left piping

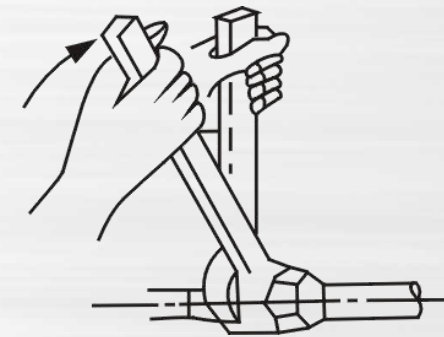
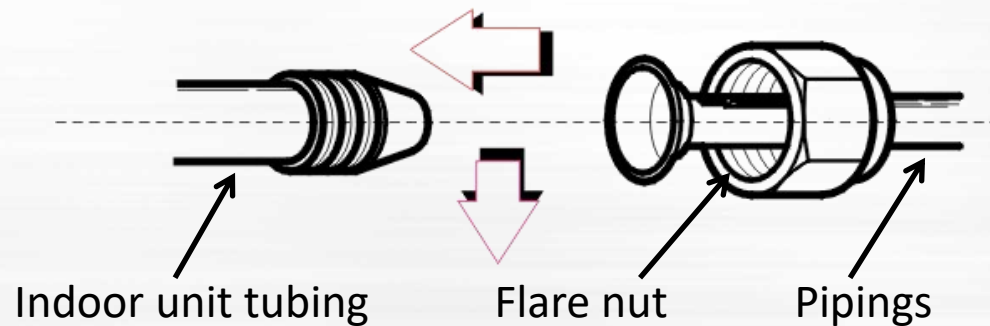
## Connective Pipe Installation

- ① Bend the connective pipe to be laid at 43mm height or less from the wall.
- ② Fix the end of the connective pipe. (Refer to Tightening Connection in REFRIGERANT PIPING CONNECTION)



## Connect refrigerant pipe to indoor unit

- ① Align the center of the pipes.
- ② Sufficiently tighten the flare nut with hands, and then tighten it with a spanner and torque wrench as shown below.



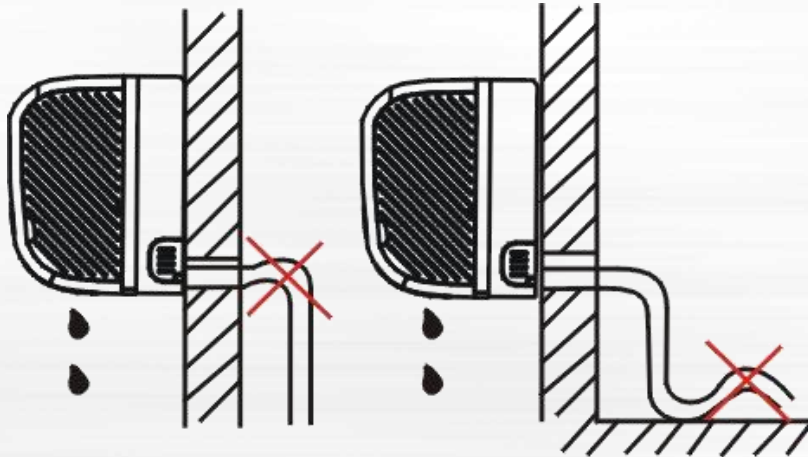
### Caution:

Excessive torque can break nut depending on installation conditions.

Outer Diam.	Tightening torque(N.cm)	Additional tightening torque(N.cm)
Φ6.35	1570 (160kgf.cm)	1960 (200kgf.cm)
Φ9.52	2940 (300kgf.cm)	3430 (350kgf.cm)
Φ12.7	4900 (500kgf.cm)	5390 (550kgf.cm)

## Drainage Installation

- ① Run the drain hose downward slantly. 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.



Do not block water flow by a rise.



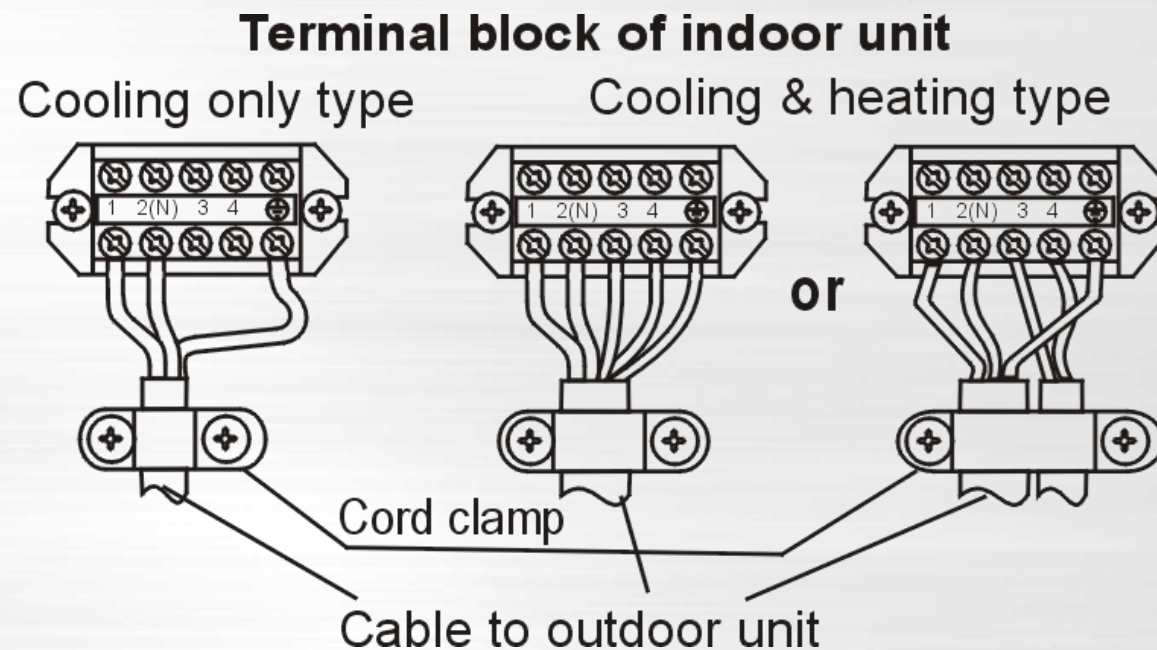
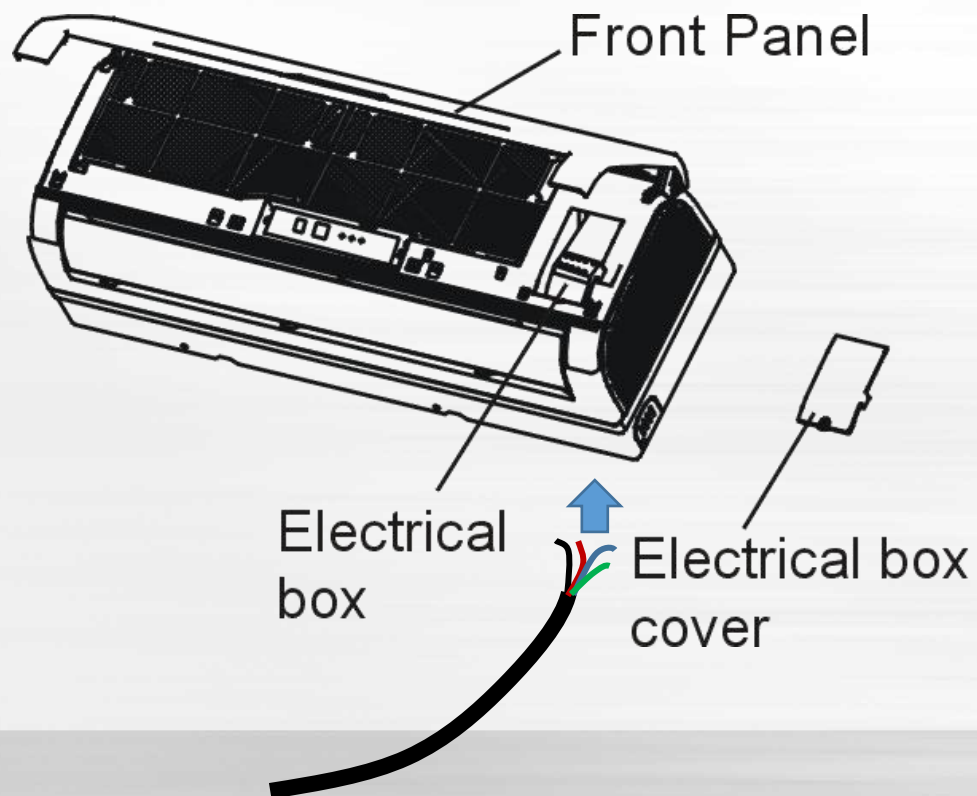
Do not put the end of drain hose into water.

## Connect the cable to the indoor unit

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

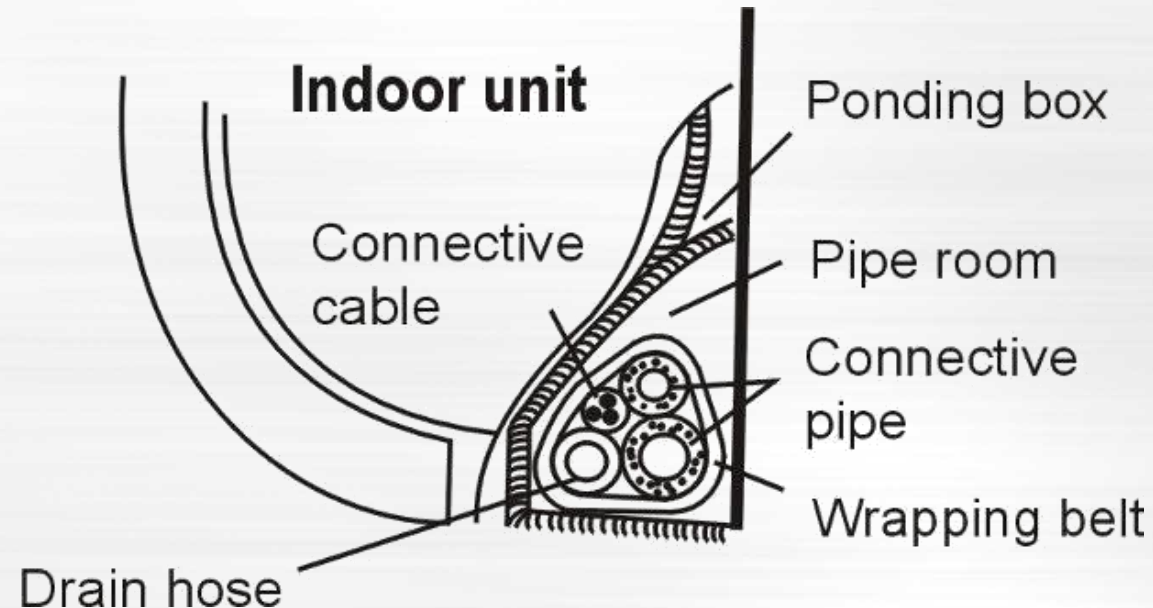
- ① The inside and outside connecting cable can be connected without removing the front grille.
- ② Connecting cable between indoor unit and outdoor unit shall be approved polychloroprene sheathed flexible cord, type designation H07RN-F or heavier cord.
- ③ Lift the indoor unit panel up, remove the electrical box cover by loosening the screw.
- ④ Ensure the color of wires of outdoor unit and the terminal Nos. are the same to the indoor's respectively.
- ⑤ Wrap those cables with insulation tapes, so that they will not touch any electrical components. Secure the cable onto the control board with the wire clamp.

## Connect the cable to the indoor unit



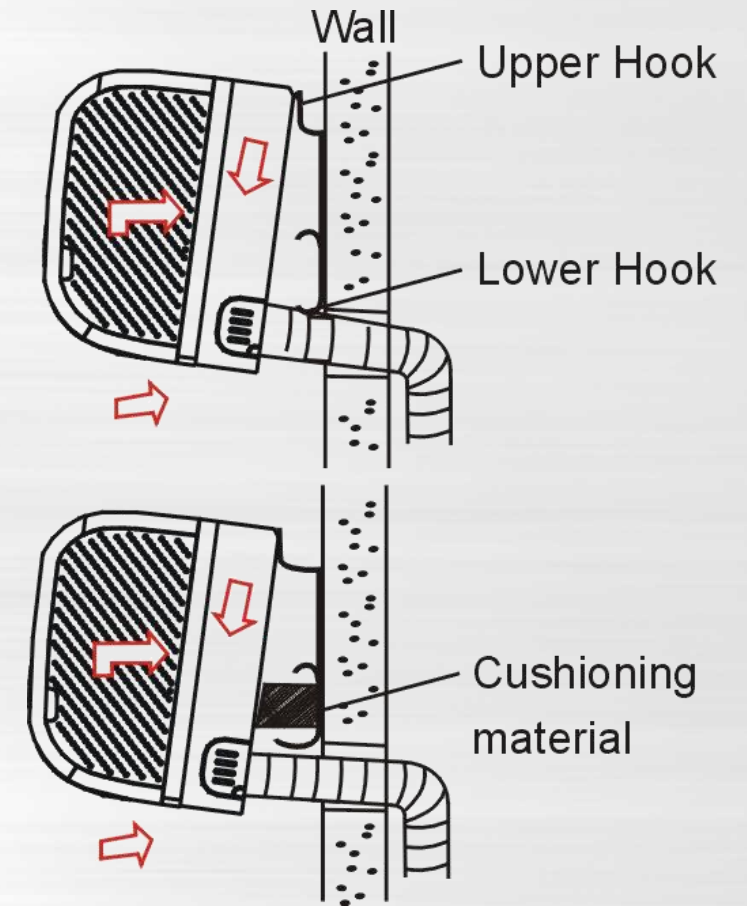
## Wrapping

- ① Bundle the tubing, connecting cable, and drain hose with tape securely, evenly as shown below.
- ② Because the condensed water from rear of the indoor unit is gathered in ponding box and is piped out of room. Do not put anything else in the box.



## Mount Indoor unit

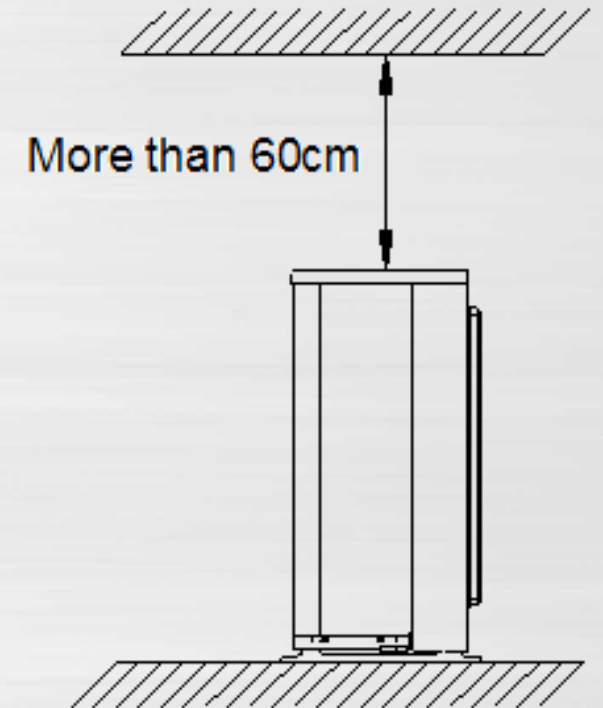
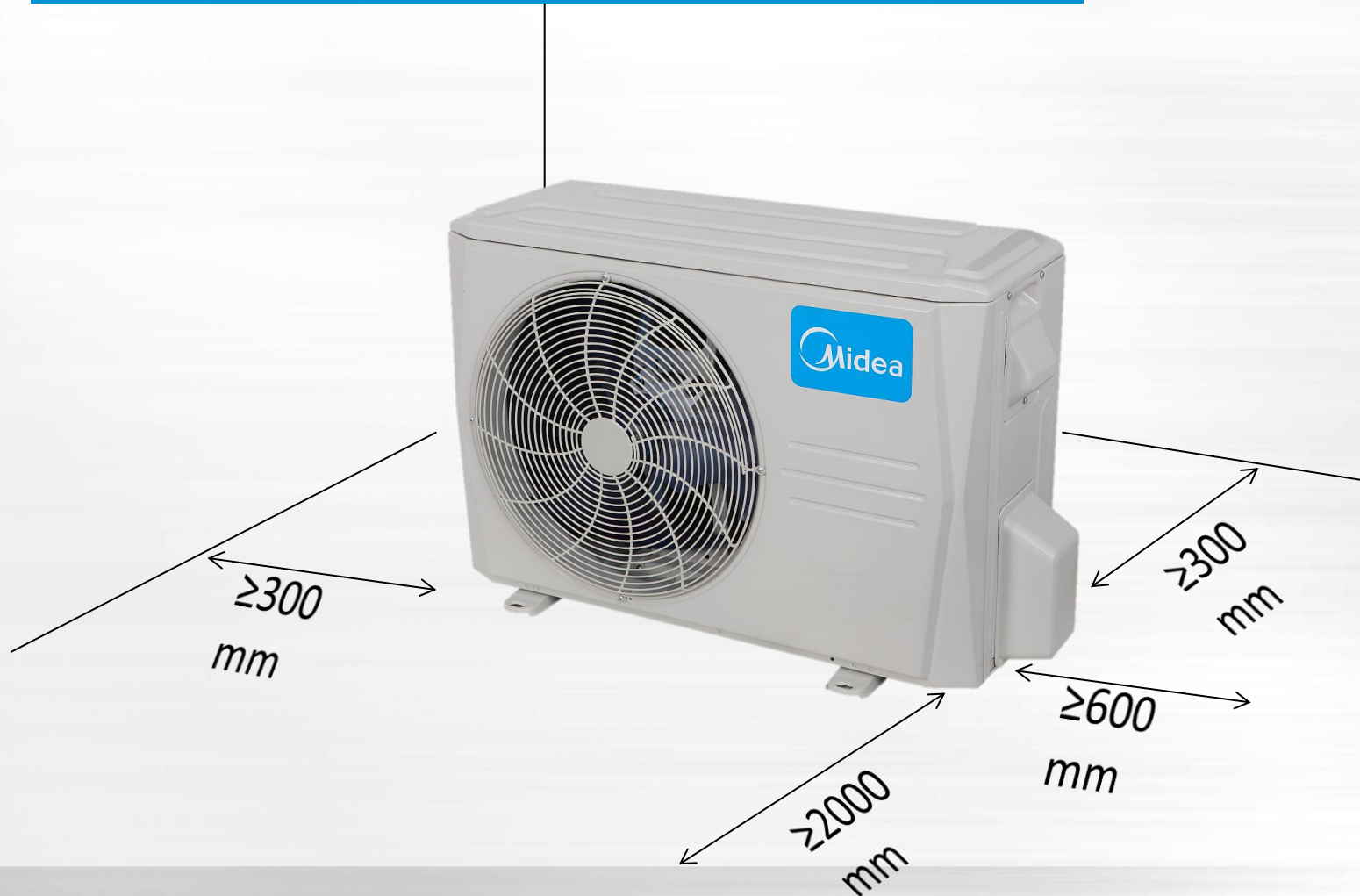
- ① Pass the piping through the hole in the wall.
- ② Put the upper claw at the back of the indoor unit on the upper hook of the installation plate, move the indoor unit from side to side to see that it is securely hooked.
- ③ Piping can easily be operated by lifting the indoor unit with a cushioning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



## Caution

- ① Connect the indoor unit first, then the outdoor unit.
- ② Be careful not to let the drain hose slack.
- ③ Heat insulated for pipe (even extension pipe).
- ④ Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause condensate water in drain pan to overflow to room.
- ⑤ Never intercross nor intertwist the power wire with other wires.
- ⑥ Make the drain hose sloped downward to drain out the condensed water smoothly.

## Installation Space of Outdoor Unit



## Not suitable locations

Oil's contaminant



Sulfide gas (e.g. Natural hot spring)



Fields with EMI



Coastal saline areas



Dusty field



If you have to install the outdoor unit in above locations, please ask for customization of special treatment.

### Rooftop installation

- If the outdoor unit is installed on a roof structure, be sure to level the unit.
- Ensure the roof structure and anchoring method are adequate for the unit location.
- Consult local codes regarding rooftop mounting.
- If the outdoor unit is installed on roof structures or external walls, this may result in excessive noise and vibration, and may also be classed as a non serviceable installation.

## Necessary Protections



Built a shell where always  
heavily rains and snows



Built a wall where is  
always strong wind



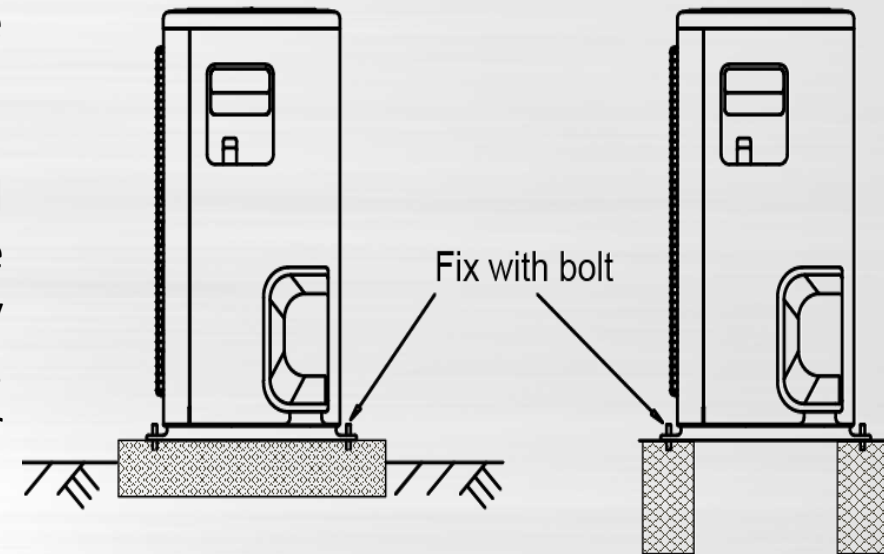
Make a simple shell  
where is direct sunshine



Take good care of the  
exhausted air if it stand  
toward the street

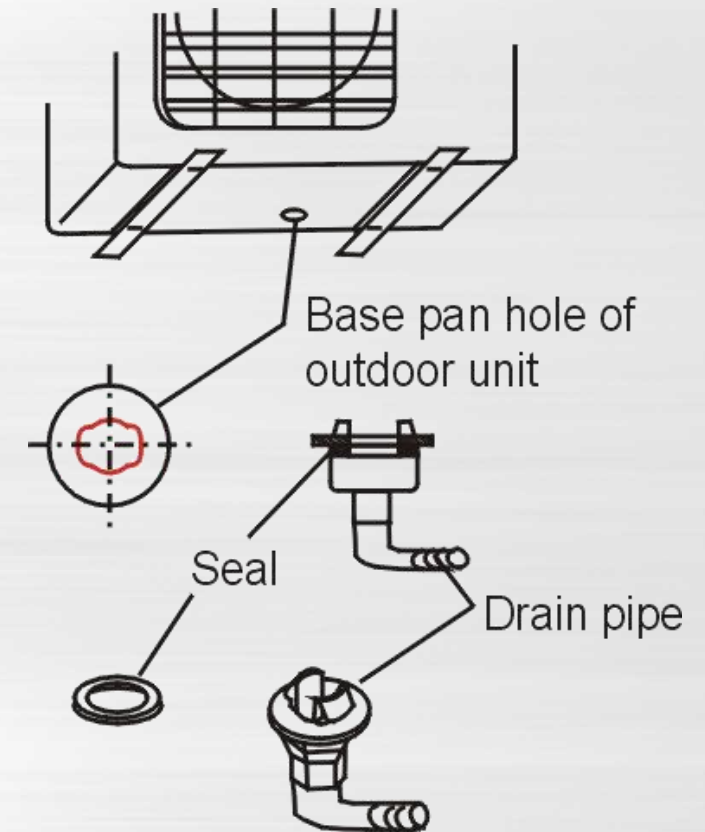
## Outdoor installation

- 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.



## Drain joint installation

- If a drain elbow (block drainage, only used on cooling only AC) is used, the unit should be placed on a bracket which is taller than 3cm.
- If the unit (cooling and heating AC) 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 be broken down.
- Fit the seal into the drain hole, then insert the drain joint into the base pan hole of outdoor unit, rotate 90° to securely assemble them. 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.



## Pipe length and the elevation

### R22 Units

Capacity	Pipe size		Standard Length (m)	Max. Length A (m)	Max. difference in height B (m)	Additional refrigerant (g/m)
	Gas Side	Liquid Side				R22
<18K		φ6.35	5	10	5	30
18≤ C <21K		φ6.35	5	15	8	30
21≤ C <35K		φ9.52	5	20	10	60
35≤ C <41K		φ9.52	5	25	10	60
41≤ C <60K		φ9.52	5	30	15	60
60K		φ9.52	5	30	20	60

**Caution:** Capacity is base on standard length and maximum allowance length is base of reliability;

## Pipe length and the elevation

### R410a ON/OFF Units

Capacity	Pipe size		Standard Length (m)	Max. Length A (m)	Max. difference in height B (m)	Additional refrigerant (g/m)
	Gas Side	Liquid Side				R410A
<18K		φ6.35	5	20	8	20
18 ≤ C < 36K		φ9.52	5	25	10	40
36 ≤ C < 60K		φ9.52	5	30	15	40
60K		φ9.52	5	30	20	40

**Caution:** Capacity is base on standard length and maximum allowance length is base of reliability;

## Pipe length and the elevation

### R410a Inverter Units (Except for EU, NA and AU)

Capacity	Pipe size		Standard Length (m)	Max. Length A (m)	Max. difference in height B (m)	Additional refrigerant (g/m)
	Gas Side	Liquid Side				R410A
≤15K		φ6.35	5	15	8	15
15< C ≤24K		φ9.52	5	25	15	30
24< C ≤36K		φ9.52	5	30	20	30
36< C ≤60K		φ9.52	5	50	30	30

**Caution:** Capacity is base on standard length and maximum allowance length is base of reliability;

## Pipe length and the elevation

### R410a Inverter Units (EU, NA and AU)

Capacity	Pipe size		Standard Length (m)	Max. Length A (m)	Max. difference in height B (m)	Additional refrigerant (g/m)
	Gas Side	Liquid Side				R410A
<15K		φ6.35	5	25	10	15
15≤ C <24K		φ9.52	5	30	20	30
24≤ C <36K		φ9.52	5	50	25	30
36≤ C <60K		φ9.52	5	65	30	30

**Caution:** Capacity is base on standard length and maximum allowance length is base of reliability;

## Pipe length and the elevation

### R32 ON/OFF Units

Capacity	Pipe size		Standard Length (m)	Max. Length A (m)	Max. difference in height B (m)	Additional refrigerant (g/m)
	Gas Side	Liquid Side				R410A
<18K		φ6.35	5	20	8	12
18 ≤ C < 36K		φ9.52	5	25	10	24
36 ≤ C < 60K		φ9.52	5	30	15	24
60K		φ9.52	5	30	20	24

**Caution:** Capacity is base on standard length and maximum allowance length is base of reliability;

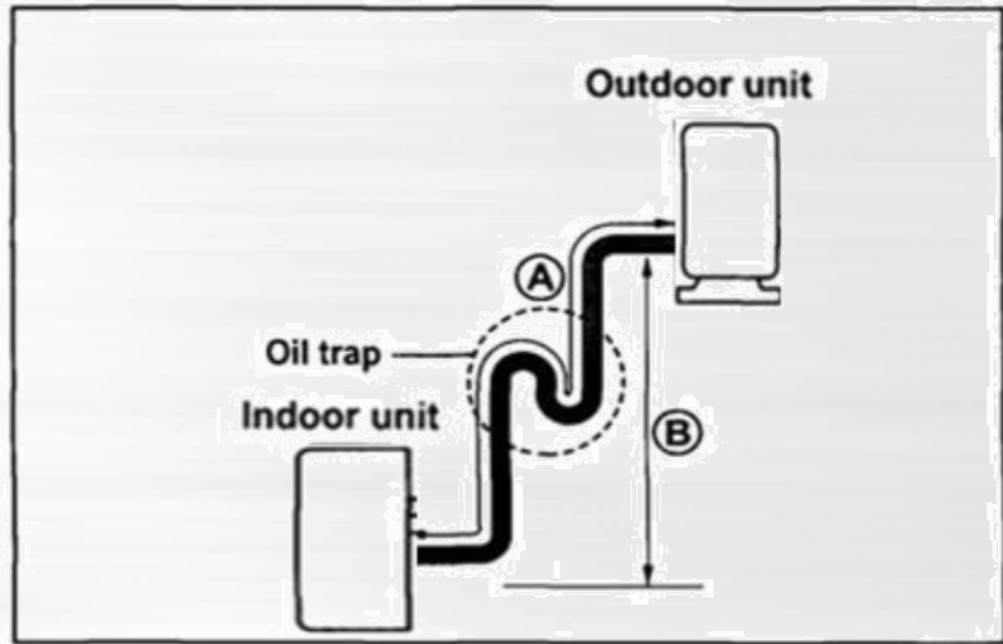
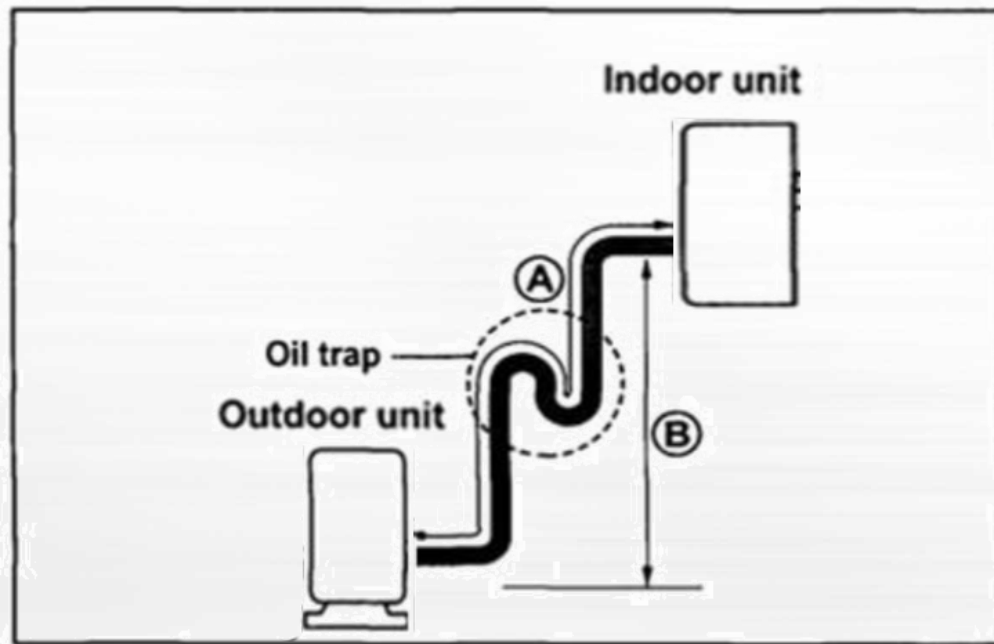
## Pipe length and the elevation

### R32 Inverter Units

Capacity	Pipe size		Standard Length (m)	Max. Length A (m)	Max. difference in height B (m)	Additional refrigerant (g/m)
	Gas Side	Liquid Side				R410A
<15K		φ6.35	5	25	10	12
15≤ C <24K		φ9.52	5	30	20	24
24≤ C <36K		φ9.52	5	50	25	24
36≤ C <60K		φ9.52	5	65	30	24

**Caution:** Capacity is base on standard length and maximum allowance length is base of reliability;

## Oil Trap



Note: The oil trap should be installed per 8-10 meters.

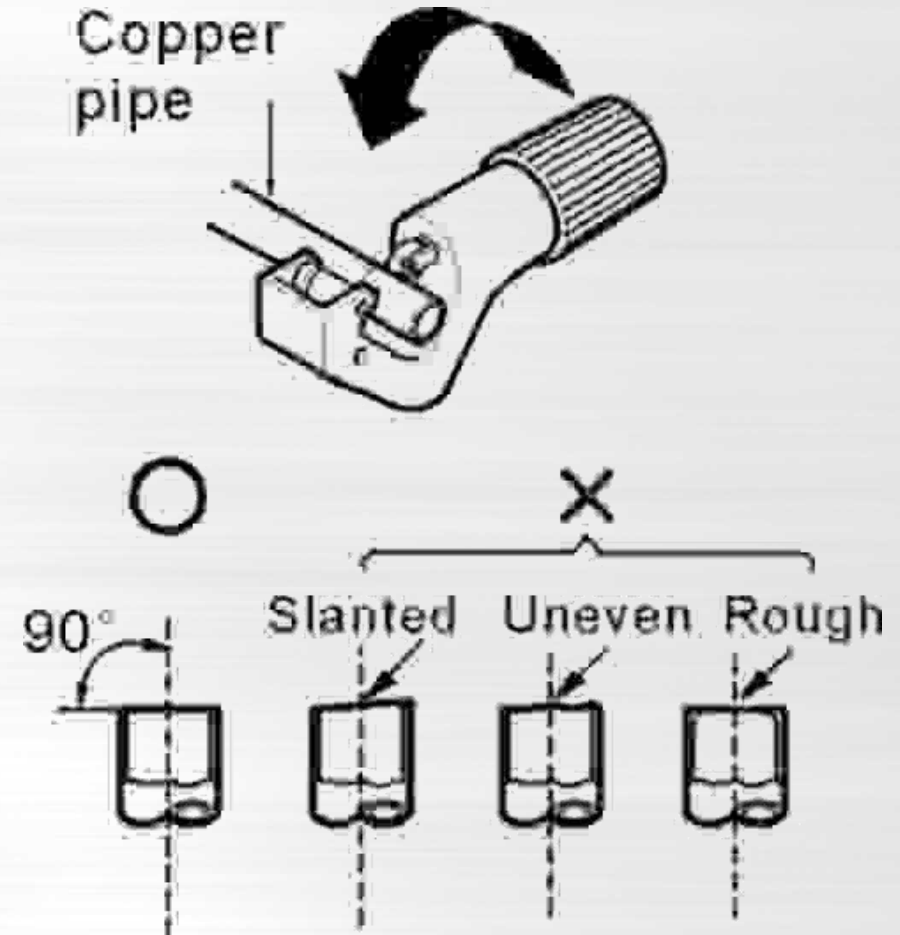
## Flaring work

Main cause for refrigerant leakage is due to defect in the flaring work.

Carry out correct flaring work using the following procedure:

### A、Cut the pipes and the cable.

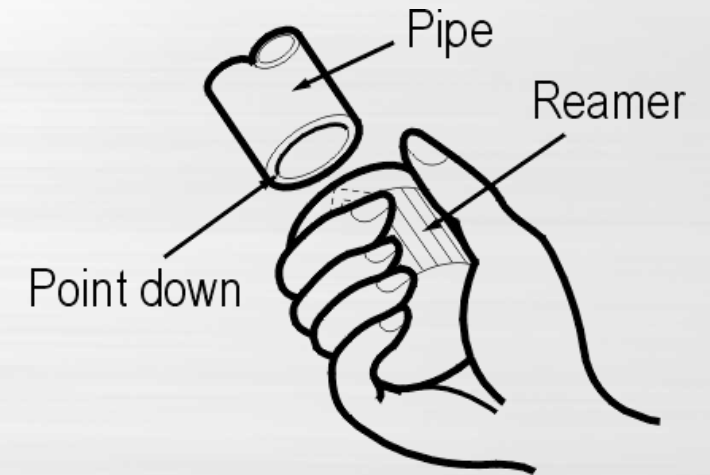
- ① Use the piping kit accessory or pipes purchased locally.
- ② Measure the distance between the indoor and the outdoor unit.
- ③ Cut the pipes a little longer than the measured distance.
- ④ Cut the cable 1.5m longer than the pipe length.



## Flaring work

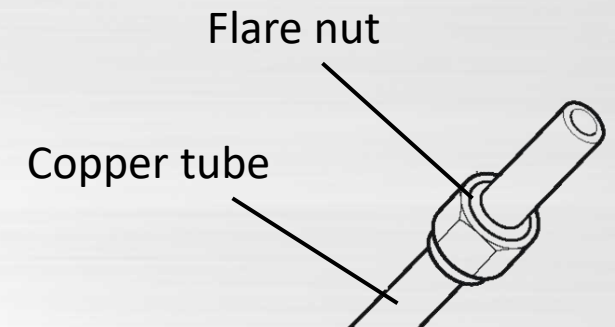
### B、Burr removal.

- ① Completely remove all burrs from the cut cross section of pipe/tube.
- ② Put the end of the copper tube/pipe in a downward direction as you remove burrs in order to avoid dropping burrs into the tubing.



### C、Putting flare nut on.

- Remove flare nuts installed on indoor and outdoor unit, then put them on pipe/tube having completed burr removal. (not possible to put them on after flaring work)

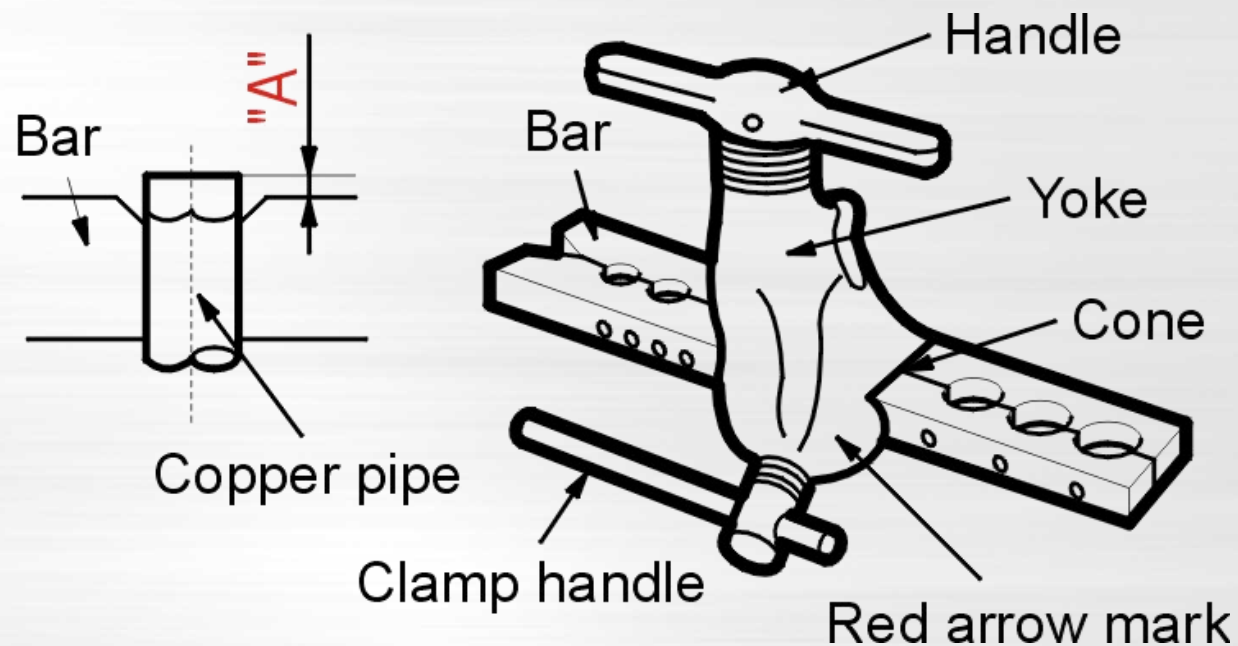


## Flaring work

### D、Flaring

Firmly hold copper pipe in a die in the dimension shown in the table below.

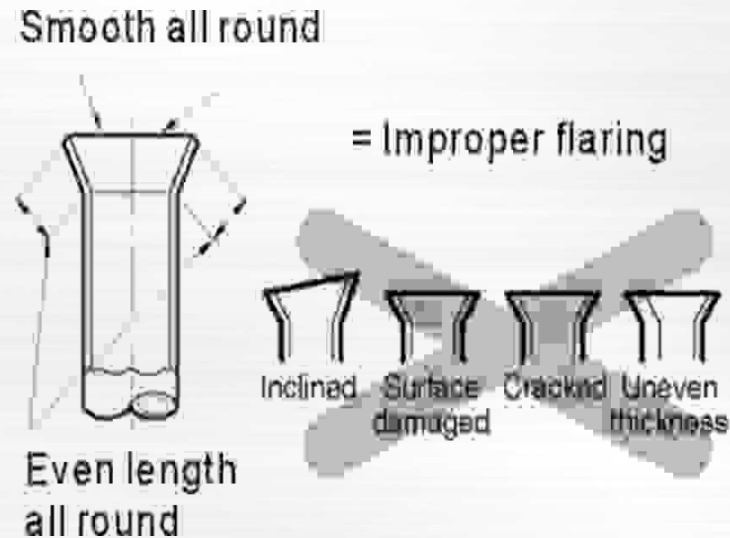
Outer diam. (mm)	A(mm)	
	Max.	Min.
Φ6.35	1.3	0.7
Φ9.52	1.6	1.0
Φ12.7	1.8	1.0



## Flaring work

### E、Check.

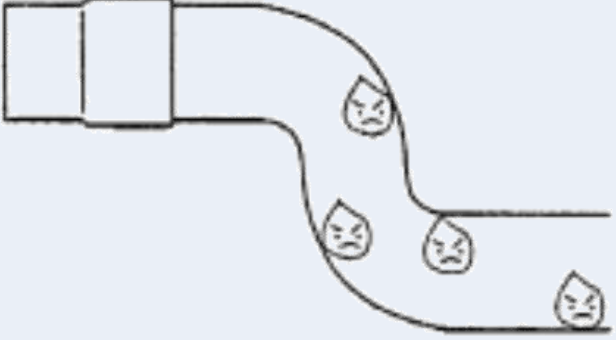
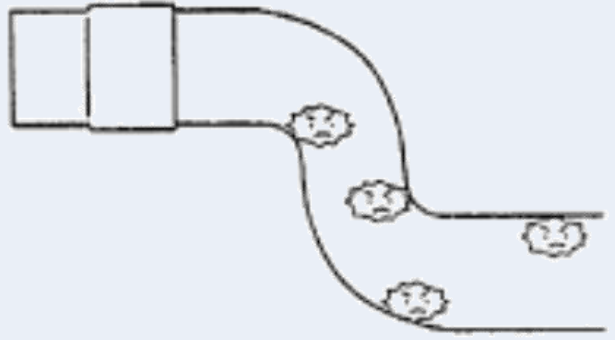
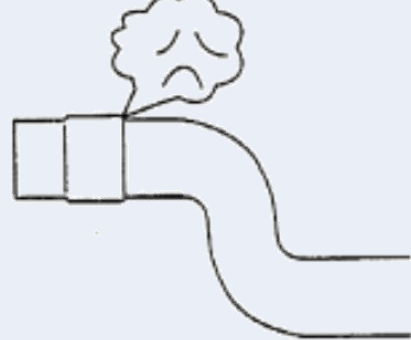
- Compare the flared work with the below diagram.
- If flare is found to be defective, cut off the flared section and do flaring work again.



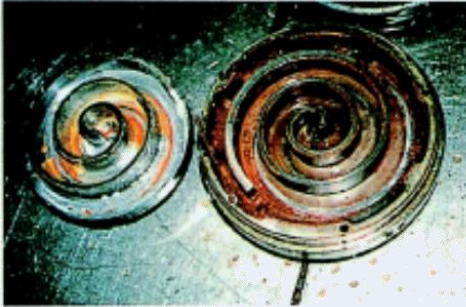

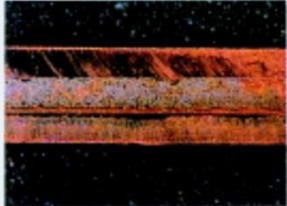
Show movie

## Pipe work

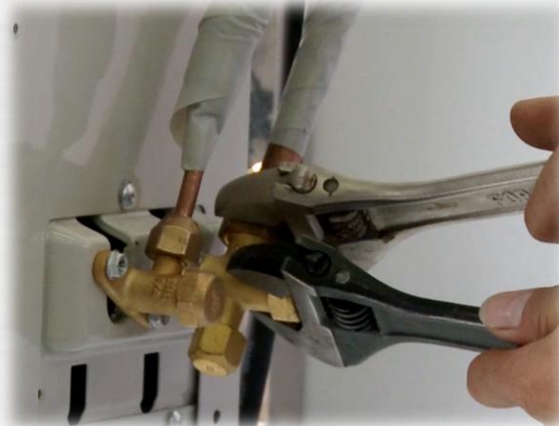
Following the **Three Basic Rules of Refrigerant Piping.**

	(1) Drying (no moisture)	(2) Cleaning (free of contamination)	(3) Tightening (air-tightness)
	There shall be no moisture in the pipe.	There shall be no dust in the pipe.	There shall be no refrigerant leak.
Item			
Cause	<ul style="list-style-type: none"> <li>Water entering from outside, such as rain.</li> <li>Moisture due to dew condensation occurring inside the pipe.</li> </ul>	<ul style="list-style-type: none"> <li>Oxidized film generated during brazing.</li> <li>Entering of foreign items such as dust, particles and oil from outside.</li> </ul>	<ul style="list-style-type: none"> <li>Insufficient brazing Inadequate flaring or insufficient tightening torque.</li> <li>Inadequate tightening of flange connection.</li> </ul>

### Pipe work

	(1) Drying (no moisture)	(2) Cleaning (free of contamination)	(3) Tightening (air-tightness)
Problem	<ul style="list-style-type: none"> <li>Clogging of expansion valve, capillary tube, etc.</li> <li>Insufficient cooling or heating.</li> <li>Degradation of refrigerant oil.</li> <li>Malfunction of compressor.</li> </ul>	<ul style="list-style-type: none"> <li>Clogging of expansion valve, capillary tube, etc.</li> <li>Insufficient cooling or heating.</li> <li>Degradation of refrigerant oil.</li> <li>Malfunction of compressor.</li> </ul>	<ul style="list-style-type: none"> <li>Gas shortage</li> <li>Insufficient cooling or heating.</li> <li>Temperature increasing of discharge gas.</li> <li>Degradation of refrigerant oil.</li> <li>Malfunction of compressor.</li> </ul>
	<p>For reference</p>  <p>Compressor is corroded due to moisture.</p>	 <p>Not clogged</p>  <p>Clogged</p> <p>Capillary is clogged with dust.</p>	
Preventive measure	<pre> graph TD     A[Pipe preparation] --&gt; B[Flushing]     B --&gt; C[Vacuum drying]         </pre>	<ul style="list-style-type: none"> <li>Same as the items on the left.</li> <li>Do not use tools or devices previously used with a different type of refrigerant.</li> </ul>	<ul style="list-style-type: none"> <li>Follow the basic brazing procedure</li> <li>Follow the basic flaring procedure.</li> <li>Follow the basic flange connection procedure.</li> <li>Conduct an air-tightness test (gas leak check).</li> </ul>

## Tightening Connection



## Electric safety

Electric safety regulations for the initial Installation

- ① 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.
- ② Power voltage should be in the range of 90%~110% of rated voltage.
- ③ The electrical leakage protector and main power switch with a 1.5 times capacity of Max. Current of the unit are recommended to be installed in power circuit.
- ④ Ensure the air conditioner is grounded well.
- ⑤ According to the attached Wiring Diagram located on the panel of the outdoor unit to connect the wire.
- ⑥ All wiring must comply with local and national electrical codes and be installed by qualified and skilled electricians.

## Electric safety

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:

Model	Power supply	Input Rated Amp(Switch/Fuse)
12K	220-240V~, 50/60Hz	16A
18K		20A
24K		30A
30k		30A

**NOTE:** The supply voltage must be consistent with the rate voltage of the air conditioner.

Minimum nominal cross-sectional area of conductors:

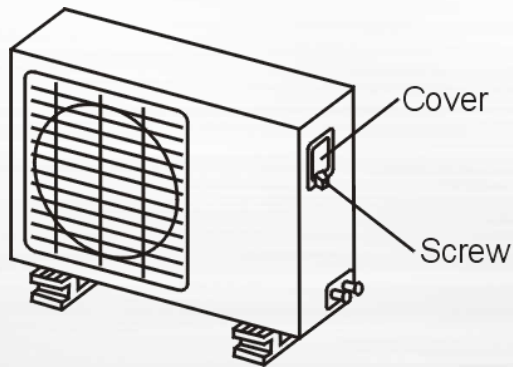
Rated current of appliance (A)	Nominal cross-sectional area(mm <sup>2</sup> )
>3 and <6	0.75
>6 and <10	1.0
>10 and <16	1.5
>16 and <25	2.5

## Connect the cable to the outdoor unit

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

- ① Remove the electrical control board cover from the outdoor unit by loosening the screw.
- ② Connect the connective cables to the terminals as identified with their respective matched numbers on the terminal block of indoor and outdoor units.
- ③ Secure the cable onto the control board with the cord clamp.
- ④ To prevent the ingress of water, form a loop of the connective cable as illustrated in the installation diagram of indoor and outdoor units.
- ⑤ Insulate unused cords (conductors) with PVC-tape. Process them so they do not touch any electrical or metal parts.

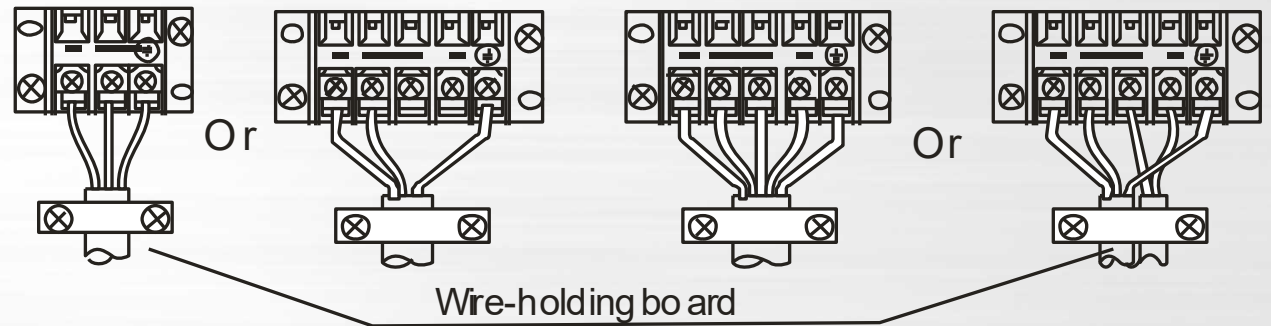
## Connect the cable to the outdoor unit



### Terminal block of outdoor unit

Cooling only type.

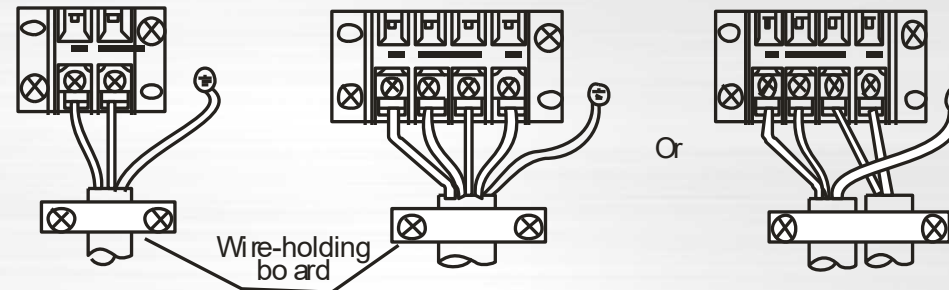
Cooling & heating type.



(1)

Cooling only type.

Cooling & heating type.



(2)

## Caution

After the confirmation of the above conditions, prepare the wiring as follows:

- Never fail to have an individual power circuit specifically for the air conditioner. As for the method of wiring, be guided by the wiring diagram posted on the inside of control cover.
- The screw which fasten the wiring in the casing of electrical fittings are liable to come loose from vibrations to which the unit is subjected during the course of transportation. Check them and make sure that they are all tightly fastened. (If they are loose, it could cause burn-out of the wires.)
- Specification of power source.
- Confirm that electrical capacity is sufficient.
- See to that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
- Confirm that the cable thickness is as specified in the power source specification.
- Always install an earth leakage circuit breaker in a wet or moist area.
- The following would be caused by voltage drop. Vibration of a magnetic switch, which will damage the contact point, fuse breaking, disturbance of the normal function of the overload.

### Why air purging

**Reason: If the compressor run with air inside for a long time and the discharge pipe is blocked, it may cause explosive.**

- 1) The compressor is overheat and oil is boiled away.
- 2) The temperature and pressure of oil-air mixture arise continuously and reach the burning point of oil.
- 3) The oil-air mixture burns up, the temperature and pressure arise quickly.
- 4) When the pressure is over the limited pressure of compressor body (15.7~19.6MPa), the blast and danger happen.

## Why air purging

### **Water inside will cause,**

- Ice block happens in the capillary or at the filter of the accumulator.
- Oil is turned bad.
- Casting parts will be rusted.

### **Particle will cause,**

- The compressor will be blocked or locked
- Metal particle will cause the insulation bad, maybe burn the terminals of compressor.

**Therefore, the indoor unit and tubing between the indoor and outdoor unit must be do leakage test and evacuated to remove any non-condensable air and moisture from the system.**

## Air purging with vacuum pump

### Preparation:

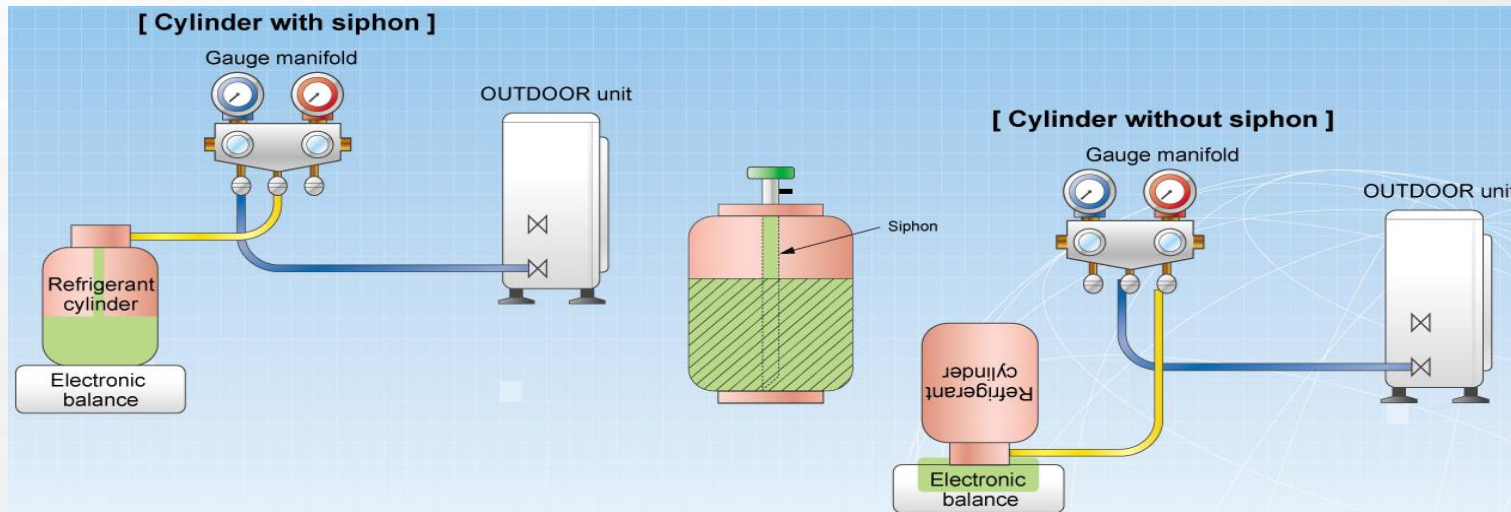
- Check that each tube (both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Remove the service valve caps from both the gas and the liquid side on the outdoor unit.
- Note that both the liquid and the gas side service valves on the outdoor unit are kept closed at this stage.

Connective pipe length	Air purging Method	Time required for evacuation
Less than 5m	Use vacuum pump.	10 min
More than 5m	Use vacuum pump.	15-30min

## Air purging with vacuum pump

- When relocate the unit to another place, do air purging with vacuum pump again.
- Make sure the refrigerant added into the air conditioner is liquid form in any case. (Especially R410A)

Ps: R410A is composed of liquid  $\text{CH}_2\text{F}_2$  (R32 50%) and liquid  $\text{CHF}_2\text{CF}_3$  (R125 50%). But gas R410A has different ratio of R32 and R125, so gas R410A doesn't have R410A's performance. In order to make sure liquid R410A charging, we should inverse refrigerant cylinder without siphon.

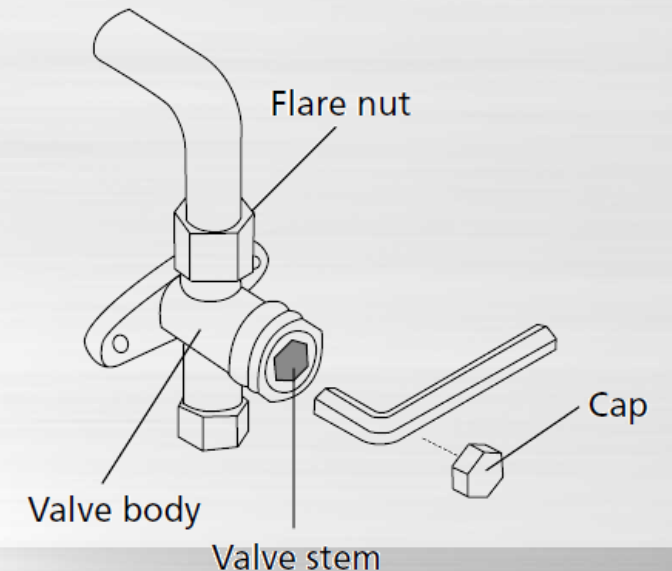
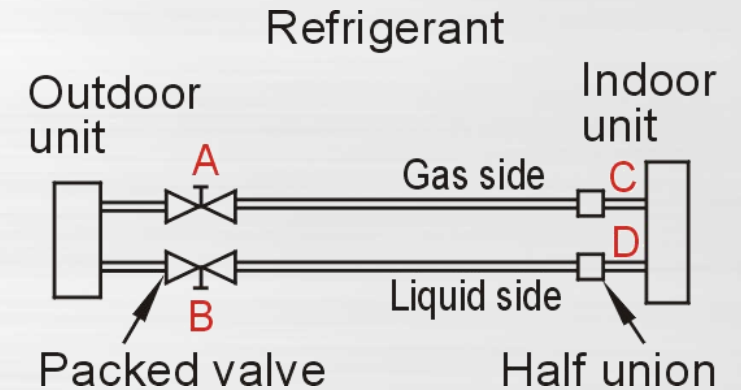


Note: For the R32 refrigerant model, make sure the conditions within the area have been made the safe by control of flammable material when the refrigerant added into air conditioner.

## Operation of vacuum pump

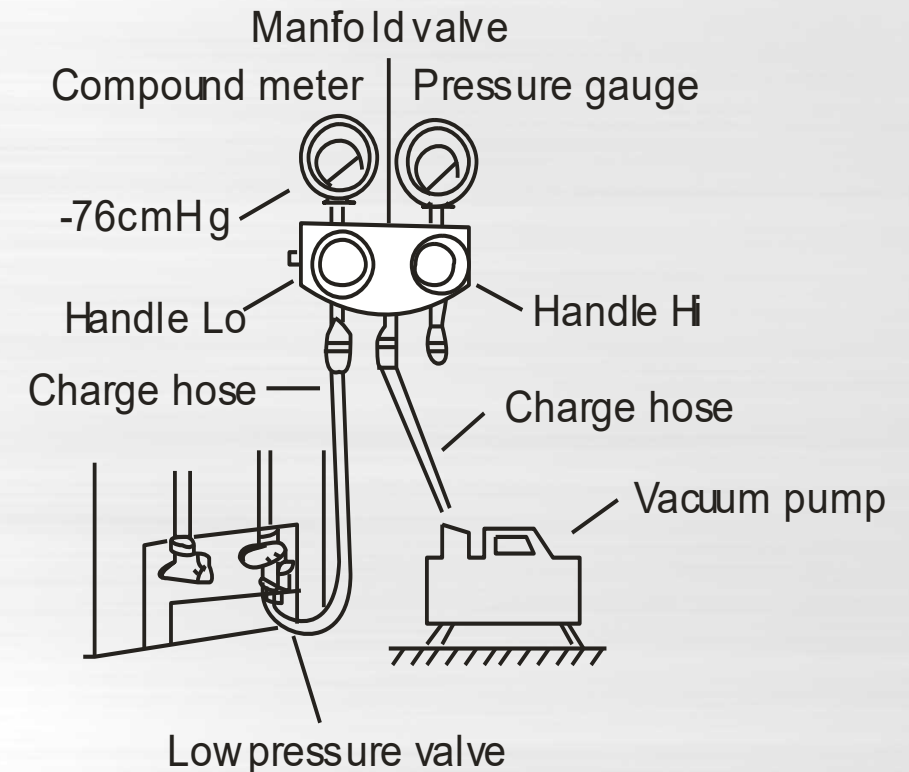
For method of using a manifold valve, refer to its operation manual.

- ① Completely tighten the flare nuts, A, B, C, D, connect the manifold valve charge hose to a charge port of the low-pressure valve on the gas pipe side.
- ② Connect the charge hose connection to the vacuum pump.
- ③ Fully open the handle Lo of the manifold valve.
- ④ Operate the vacuum pump to evacuate. After starting evacuation, slightly loose the flare nut of the Lo 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)



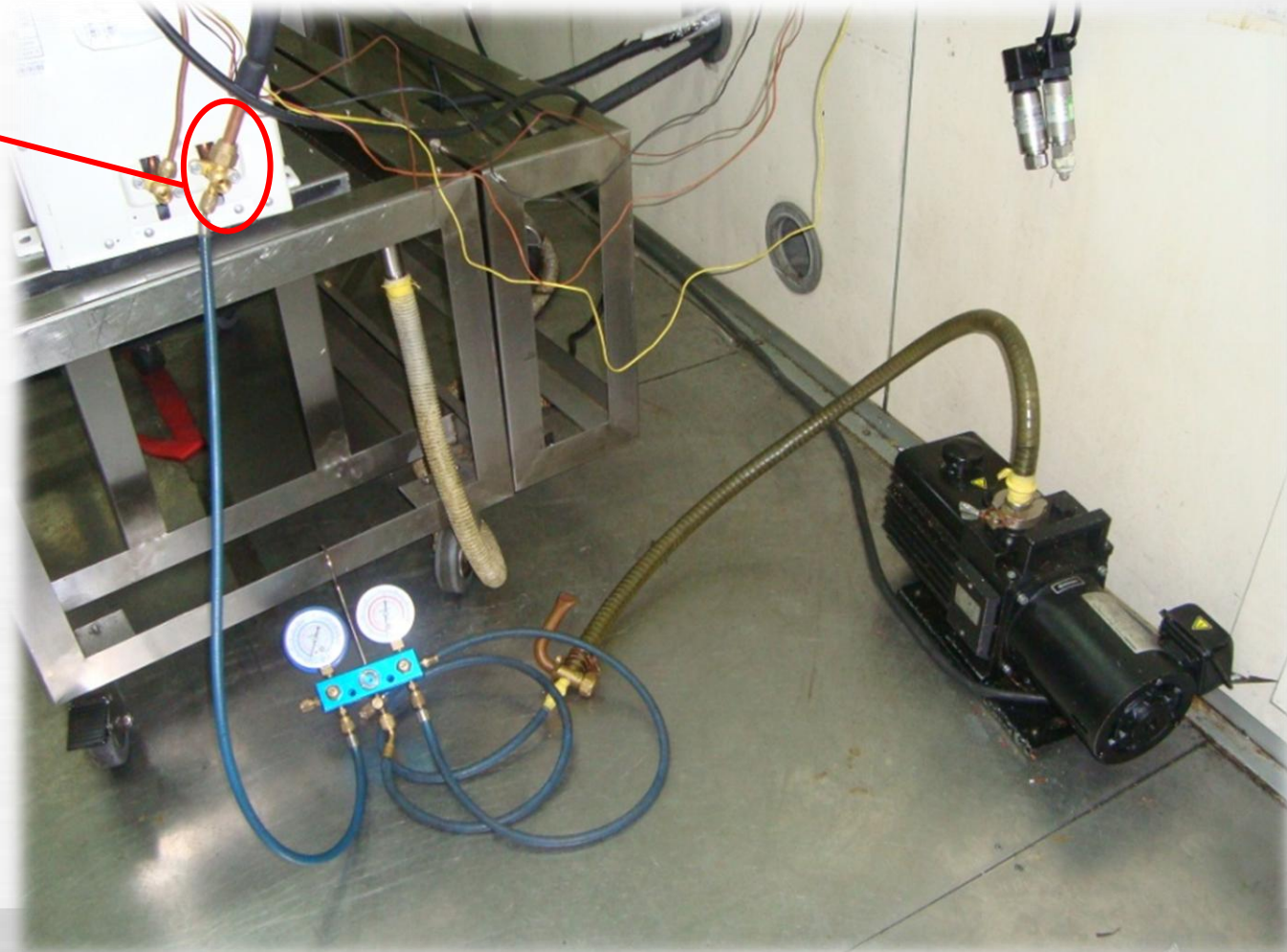
## Operation of vacuum pump

- ⑤ Turn the stem of the packed valve B 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.
- ⑥ Remove the charge hose from the Low pressure charge hose.
- ⑦ Fully open the packed valve stems B and A.
- ⑧ Securely tighten the cap of the packed valve.



## Operation of vacuum pump

Low pressure side



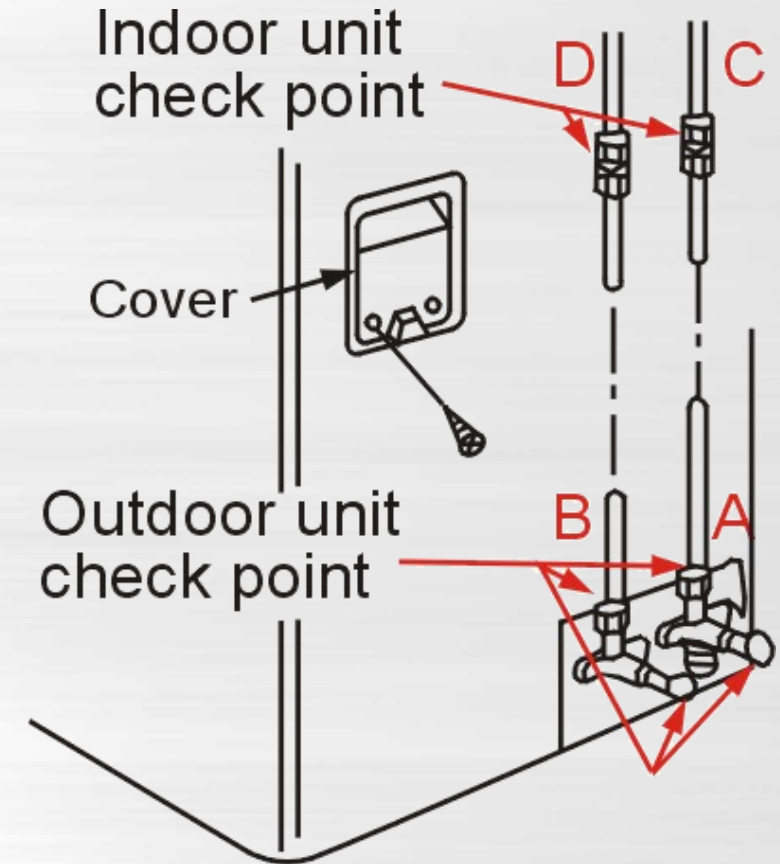
## Gas leakage check method

### 1. Soap water

Apply a soap water or a liquid neutral detergent on the indoor unit connection and outdoor unit connections by a soft brush to check for leakage of the connecting points of the piping. If bubbles come out, the pipes have leakage.

### 2. 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.

## Drainage check

- ① Open the front panel from the indoor unit.
- ② To check the drainage.
  - Pour a glass of water on the evaporator.
  - Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

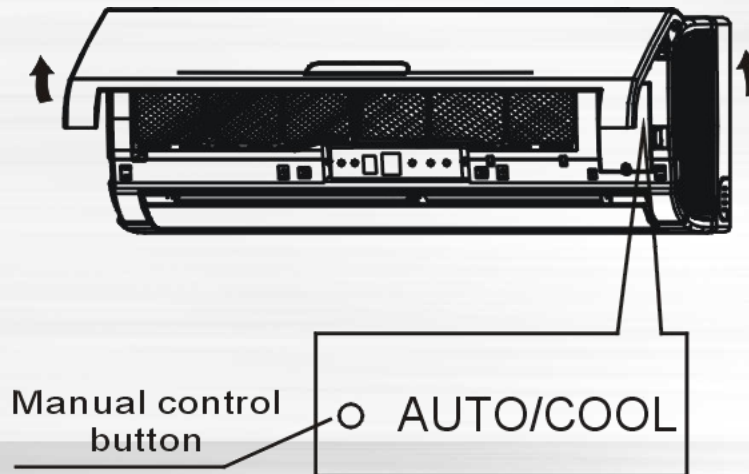


Perform test operation after completing gas leak check at the flare nut connections and electrical safety check.

- Check that all tubing and wiring have been properly connected.
- Check that the gas and liquid side service valves are fully open.

1. Connect the power, press the ON/OFF button on the remote controller to turn the unit on.
2. Use the MODE button to select COOL, HEAT, AUTO and FAN to check if all the functions works well.

3. When the ambient temperature is too low (lower than 17°C), 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 disabled or maintenance is 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.
4. The test operation should last about 30 minutes.



To judge whether the system is operating well, we normally test the low pressure of the system and the current of the compressor. When the following phenomena happen, we can fix the most possible reasons.

Phenomena		The most possible reason
Low pressure	Compressor current	
Higher	Lower	The gas in the compressor or 4-way valve is leaked from high pressure side to low pressure side.
Higher	Higher	The refrigerant is over charge. The ambient temperature is too high.
Lower	Lower	The refrigerant is not enough. The ambient temperature is too low.
Lower	Higher	The refrigeration system is blocked.
Normal	Higher	Low voltage

## Type 1. Installation location



Slantwise-installed indoor unit is not good for drainage

### Installation Tips:

Install the indoor units level is quite important, which will help to facilitate drainage.

## Type 1. Installation location



The space for the outlet is apparently not adequate.

**Installation Tips:** Basic requirements of location and spaces for outdoor installation: to ensure the outdoor unit Smooth in/out the wind, the left side should  $\geq 30\text{cm}$ , to the right  $\geq 60\text{cm}$ , to the up  $\geq 30\text{cm}$ , above  $\geq 30\text{cm}$ , in front  $\geq 200\text{cm}$

## Type 1. Installation location



The ventilation of the outdoor unit is very bad.

**Installation Tips:** Basic requirements of location and spaces for outdoor installation: to ensure the outdoor unit Smooth in/out the wind, the left side should  $\geq 30\text{cm}$ , to the right  $\geq 60\text{cm}$ , to the up  $\geq 30\text{cm}$ , above  $\geq 30\text{cm}$ , in front  $\geq 200\text{cm}$

## Type 2. Connecting pipe/Wall hole



Not well-arranged indoor piping

**Installation Tips:** The air-conditioner piping and wiring connections should be correct, solid, and to a reasonable degree of bending

## Type 2. Connecting pipe/Wall hole



**no blocking for the wall hole**

### Installation Tips:

Wall-off hole should be neat, installed after the sealed-off block wall of mud hole to prevent foreign matter into the indoor air.

## Type 2. Connecting pipe/Wall hole



The indoor piping is not well organized, which will affect air-in, and the pipe connection is left not wrapped

### Installation Tips:

For the connection of pipes and wire, make sure to wrap the connecting wire, connection pipe and drain pipe together with wrapping belt, taking the direction from outdoor side to indoor side while wrapping, which will prevent the system from rain. In order to not affect the air-in of indoor piping, also make sure the right distances between indoor and outdoor connection.

## Type 2. Connecting pipe/Wall hole



Messy wires

### Installation Tips:

The connection wires have to be wrapped with piping together, they are not allowed to be exposed outside, in case of any danger that may be caused.

## Type 2. Connecting pipe/Wall hole



No drainage bending.

### Installation Tips:

When the wrapped piping and wires have been put into the room through the wall hole, you have to bend the part of piping and wires near the wall hole, preventing rains from coming into the indoor units.

## Type 2. Connecting pipe/Wall hole



No heat preservation  
on the piping.

### Installation Tips:

The connecting parts of the outdoor units and piping have to be protected with the black insulation foam, then using the wrap belt to wrap together with wire. The exposed parts of piping without black insulation foam can't be more than 10CM, or the cooling/heating performance of the unit may be reduced.

## Type 2. Connecting pipe/Wall hole



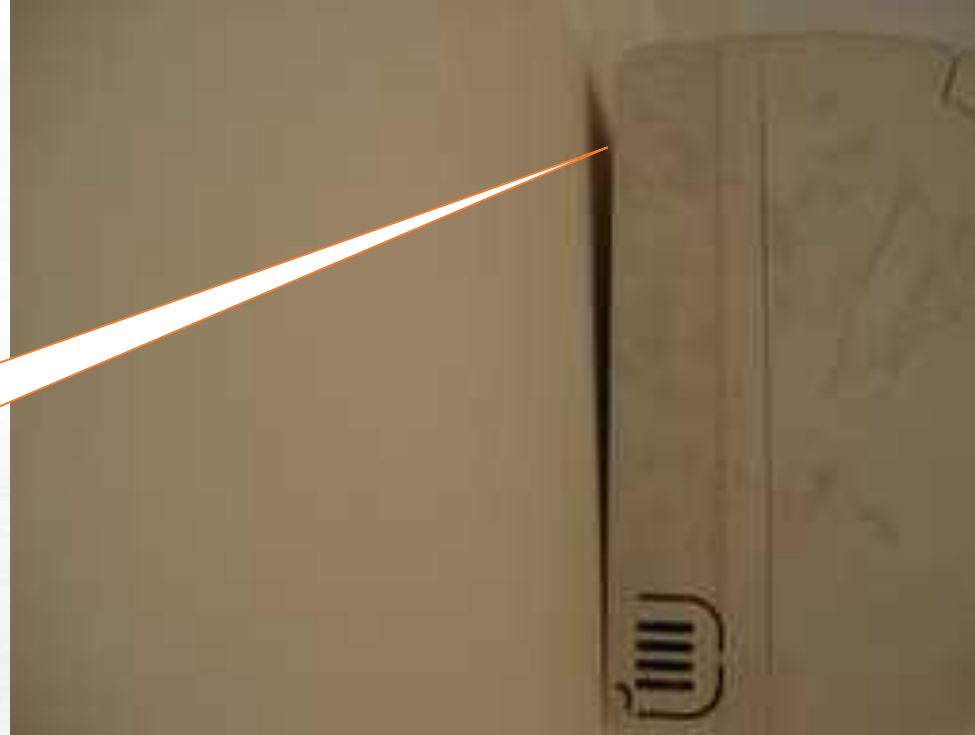
The flattened or damaged piping will greatly influence the cooling/heating performance.

### Installation Tips:

The connection pipe need to be vertically or horizontally organized, when bending the pipe, make sure bending radius is no bigger than 10CM, and when bending, the pipes must not be flattened.

## Type 2. Connecting pipe/Wall hole

Indoor installation plate is not well installed, unit may drop from the wall.



### Installation Tips:

Indoor unit installation plate have to be evenly attached to the unit and leaned to the wall closely.

## Type 3. Installation structure and safety



Outdoor unit is not horizontally placed, the unit is possibly to move and may have leakage.

### Installation Tips:

When outdoor unit is installed on a platform, the drainage of outdoor unit have to be more care-taken, and the unit need to be fixed to avoid moving when units vibrate.

## Type 3. Installation structure and safety



Not enough screws is used.

### Installation Tips:

When installing the first bracket (outdoor), at least 6 screws need to be used, and the diameter for each one shall not be less than  $\phi 10\text{mm}$ . And the bracket need to be horizontally installed.

## Type 3. Installation structure and safety



The mounted bolt  
is not fastened.

### Installation Tips:

4 bolts (diameter bigger than  $\Phi 10\text{mm}$ ) on the bottom bracket need to be well fastened.

## Type 3. Installation structure and safety



Potential risks caused by messy power wire arrangement.

### Installation Tips:

The long power cord should be well arranged, and put into the vacant spaces in the indoor unit or fix it beside the unit; it is not allowed to wind the wire to little circles which may cause heat.

## Type 4. Electrical Safety



Wire clip is not used Wire is disjoined easily when it is dragged.

### Installation Tips:

It is highly suggested to use wire clip to fix the wire.

## Type 4. Electrical Safety

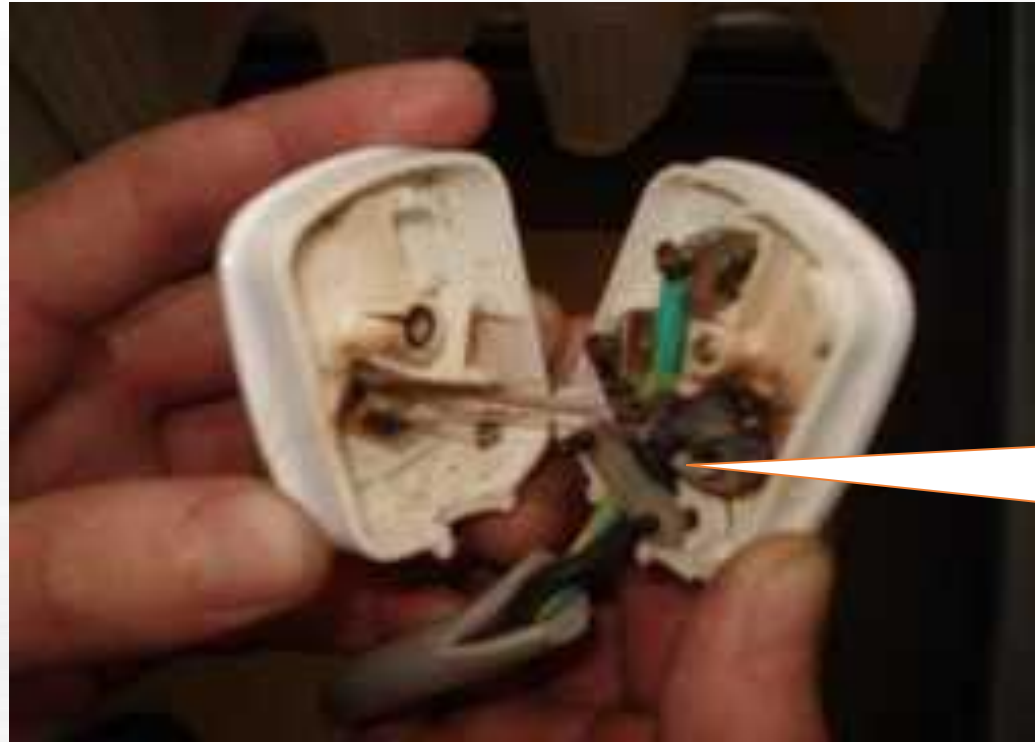


Using nonstandard  
connection wire

### Installation Tips:

The indoor-outdoor connection wire must be neoprene wire, PVC wire can't be used.

## Type 4. Electrical Safety



For big capacity unit, if power plug is used, it is very dangerous.

### Installation Tips:

Usually, only single phase air conditioner with rated current which isn't bigger than 16A is suggest to use power plug, while other A/C is usually connected to the wire connector. If use power plug on these units, it has big potential to cause heat or even fire.

## Type 4. Electrical Safety



Grounding is not well fixed.

### Installation Tips:

Grounding wire or grounding end must be well connected or fastened. If you want to loosen it, you have to use tools to do that. And the green-yellow wire can only be used for grounding.

## Type 4. Electrical Safety



Using power plug for unit whose rated current is bigger than 16A, and grounding wire is not connected.

### Installation Tips:

If the unit don't have grounding wire or leakage protection switch, when the unit work abnormally or short circuit or leakage happen, the unit can't be grounded, thus it may cause fire or casualties.

## Type 4. Electrical Safety



Extra wires are all placed in the outdoor unit, thus it is possible that the connection wires can abrade or overheat with each other

Installation Tips for indoor/outdoor low-tension signal wire:

Long signal wire / power cord is not allowed to be stuffed into the outdoor unit.

## Type 4. Electrical Safety



Nonstandard connection

### Installation Tips for wire connection:

To connect wires, you must use proper connecting terminal, and the connected wires must be sealed with proper glue to prevent water.

THANKS  
FOR YOUR ATTENTION



Midea Strategic Partners:

