

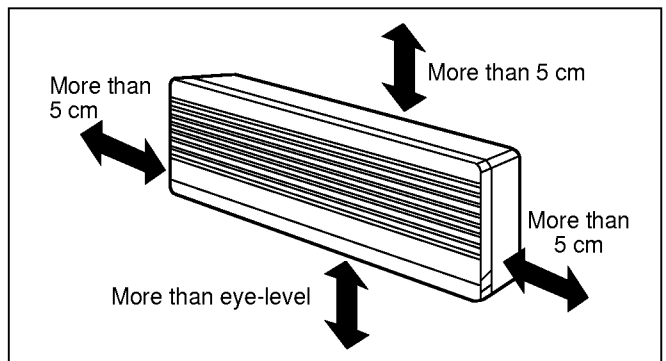
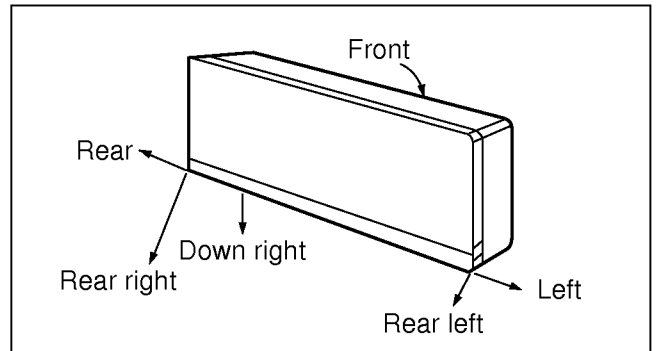
Installation

1. Installation of Indoor, Outdoor unit

1) Selection of the best location

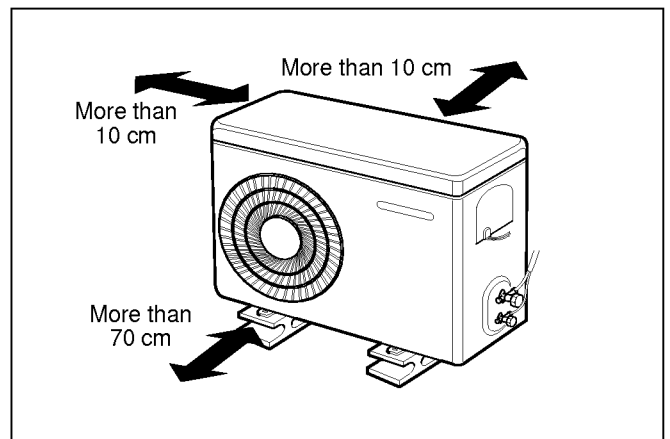
1. Indoor unit.

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulation.
- A place where air circulation in the room will be good.
- A place where drainage can be easily obtained.
- A place where noise prevention is taken into consideration.
- Do not install the unit near the door way.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.



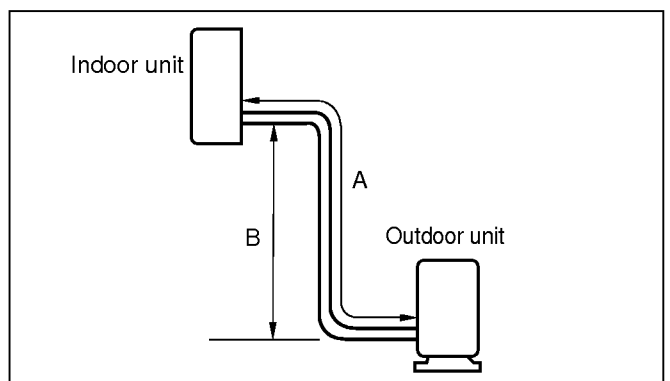
2. Outdoor unit.

- If an awning is built over the unit to prevent direct sunlight or rain exposure, be careful that heat radiation from the condenser is not restricted.
- There should not be any animals or plants which could be affected by hot air discharged.
- Ensure the spaces indicated by arrows from the wall, ceiling, fence, or other obstacles.



3. Piping length and the elevation

| MODEL | Pipe Size | | Max. piping length A (m) | Max. Elevation B (m) |
|-------------------|-----------|--------|--------------------------|----------------------|
| | GAS | LIQUID | | |
| 7K, 9K BTU | 3/8" | 1/4" | 7 | 5 |
| 11K, 12K, 13K BTU | 1/2" | 1/4" | 7 | 5 |

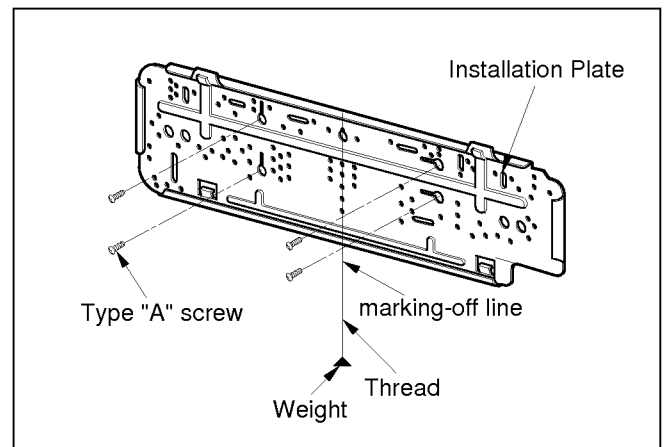


2) Indoor Unit Installation

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

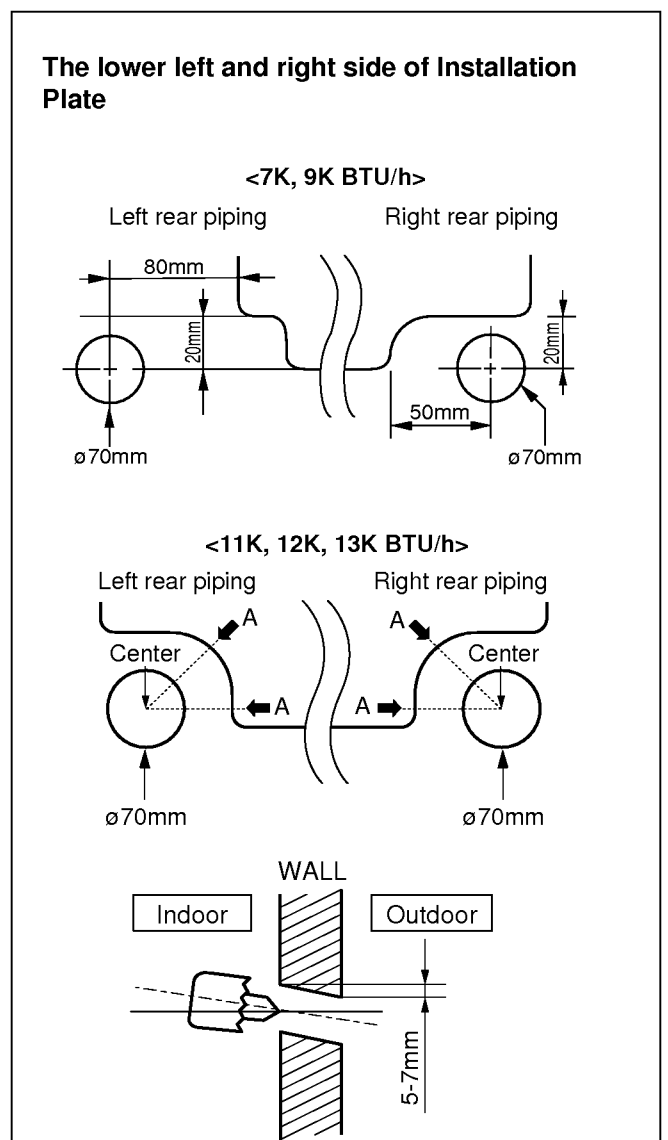
1. Mount the installation plate on the wall with four Type "A" screws.

- Always mount the Installation plate horizontally by aligning the marking-off line with using the thread and a level.



2. Drill the piping hole with 70mm dia. holecore drill.

- Drill the piping hole at either the right or the left and the hole should be slightly slant to the outdoor side.

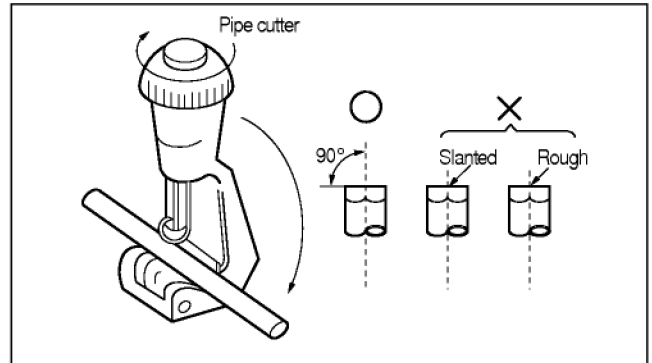


2. Piping and Drainage of Indoor Unit

1) Preparation of pipings

1. Cut the pipes and the cable.

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

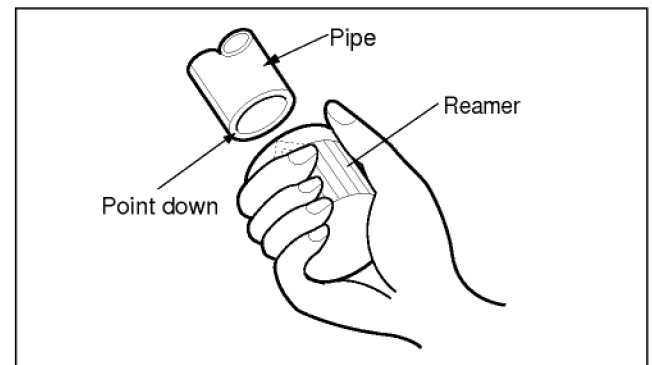


2. Remove burrs.

- Remove burrs from cut edges of pipes.
- Turn the pipe end toward down to avoid the metal powder entering the pipe.

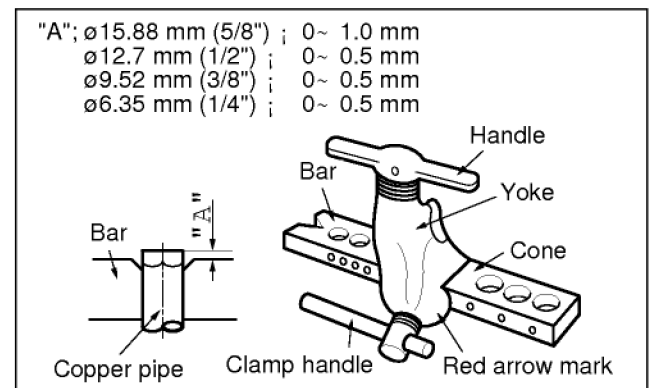
Caution:

If burrs are not removed, they may cause a gas leakage.

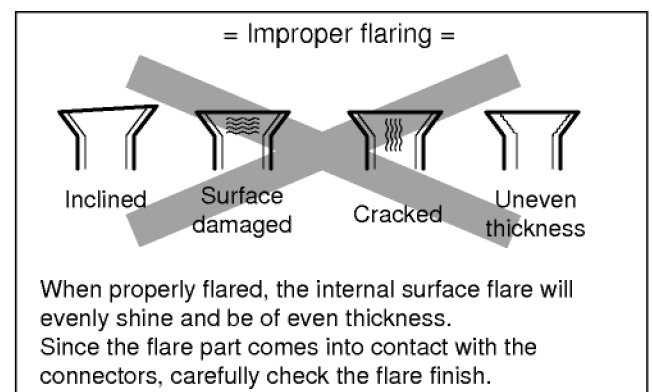


3. Flaring the pipes.

- Insert the flare nuts, mounted on the connection ports of both indoor and outdoor unit, onto the copper pipes. Some refrigerant gas may leak, when the flare nuts are removed from the indoor unit, as some gas is charged to prevent the inside of the pipe from rusting.
- Fit the copper pipe end into the Bar of flare tool about 0.5~1.0mm higher. (See illustration)
- Flare the pipe ends.



4. Tape the flaring portion to protect it from the dust or damages.

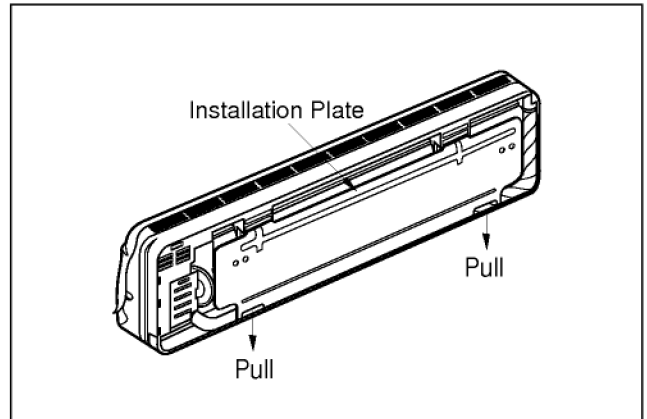


2) Connection of Pipings (7K,9K BTU)

1. Remove the installation plate.

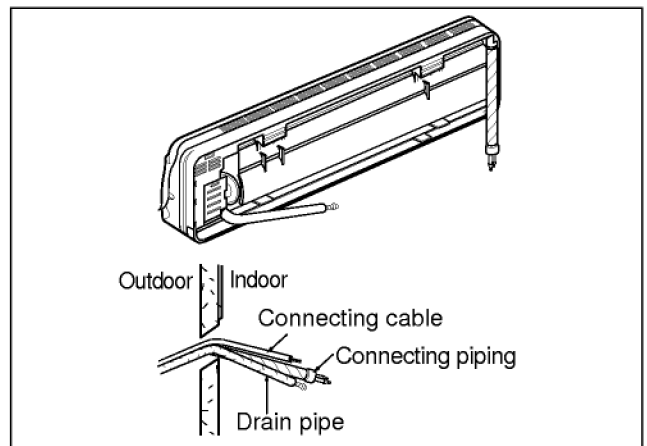
- Pull the two 'S' marked portion of bottom of the chassis and pull the installation plate out of chassis.

2. Route the drain hose and the indoor tubing.



For right rear piping

3. Insert the pipings, the connecting cables and the drain pipe through the piping hole on the wall.

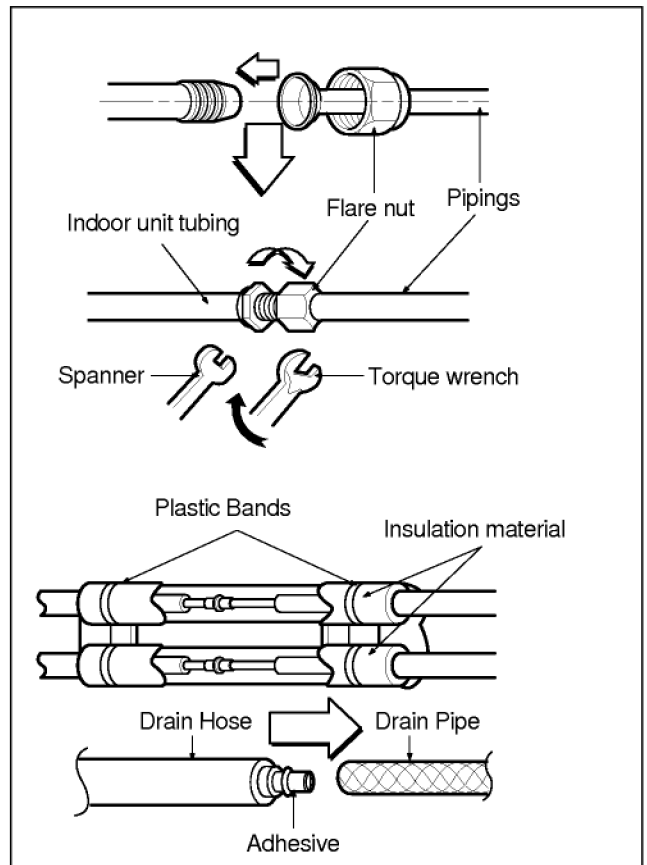


4. Connect the pipings and the indoor tubing, and drain hose and drain pipe.

- Do not connect the cable to the indoor unit.

| Pipe Size | Torque |
|--------------------|---------|
| Liquid Side (1/4") | 1.8kg.m |
| Gas Side (3/8") | 4.2kg.m |

- Wrap the insulation material around the connecting portion.

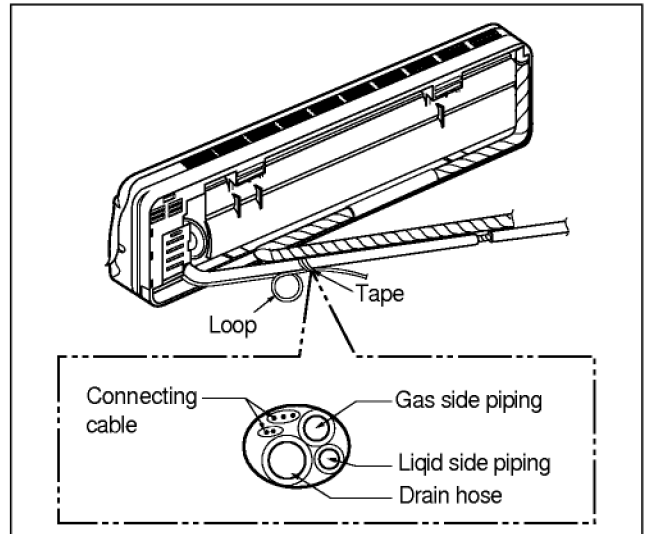


- Glue up the connection portion of drain hose and drain pipe.

5. Bend the tubing as shown in the figure and bind the pipings, the connecting cables and the drain hose altogether.

- Make a small loop for easy connection later.

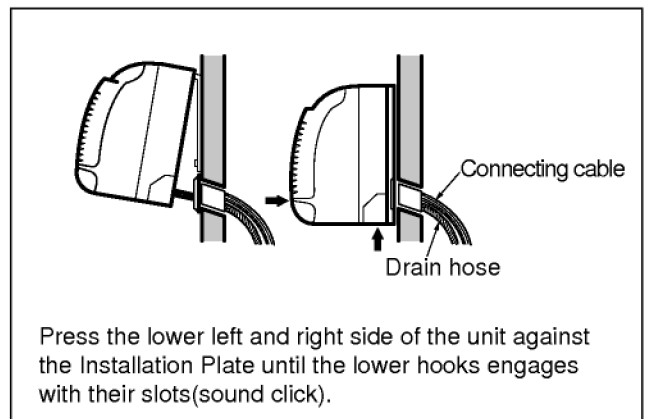
6. Wrap the tubing, the drain hose and the connecting cable.



7. Indoor unit installation

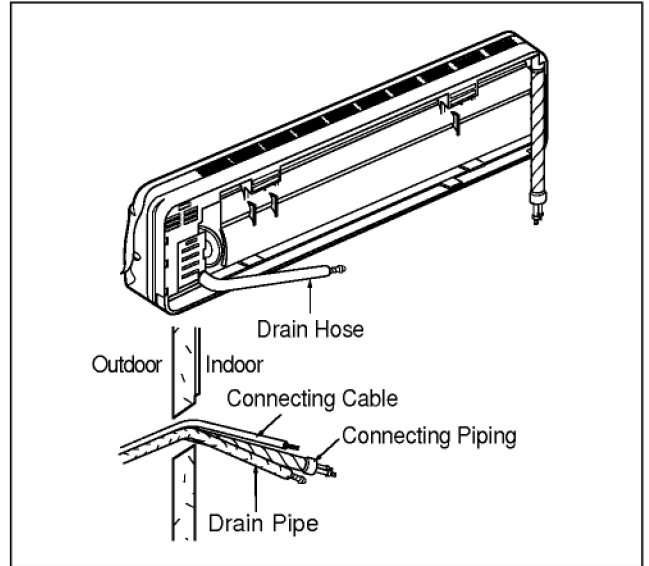
- Hook the indoor unit onto the upper position of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)
Ensure the hooks are properly seated on the installation plate by moving it in left and right.

CAUTION: Take care to arrange the pipings, drain hose and cables as the feature 6 page for inserting it into the indoor unit and mount the indoor unit on the installation plate.



For left rear pipings

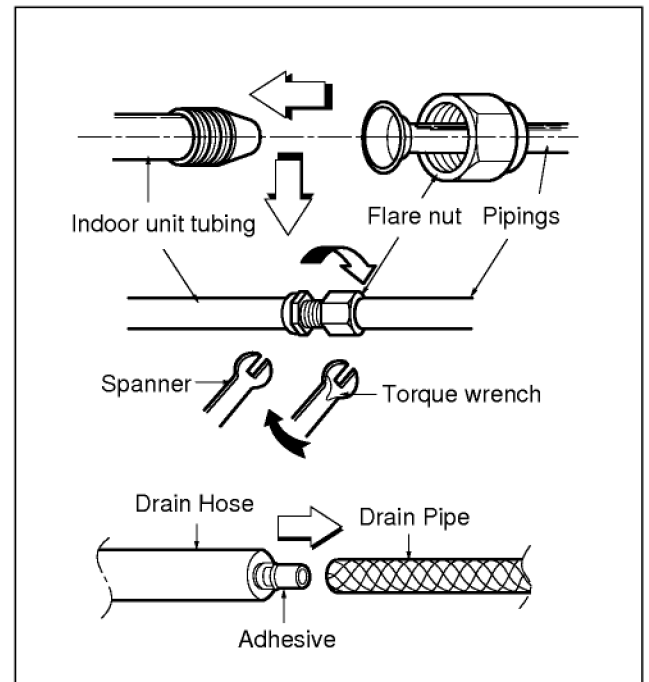
3. Insert the connecting cables, the drain pipe and connecting pipings through the piping hole on the wall.



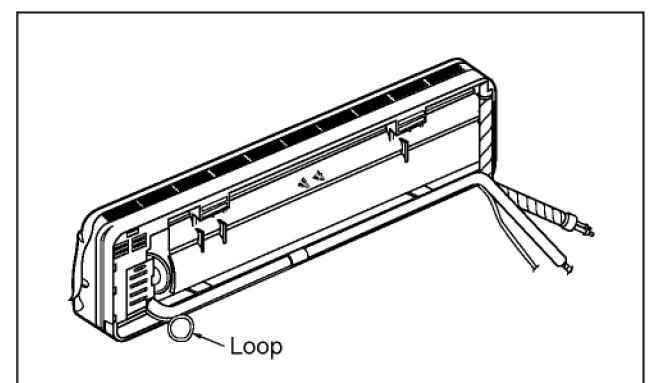
4. Connect connecting pipings and indoor tubing, and the drain hose and the drain pipe and place the drain pipe into the chassis.

- Don't connect the cable to the indoor unit.
- Make a small loop for easy connection later.
- Glue up the connection portion of drain hose and drain pipe.

| Pipe Size | Torque |
|--------------------|---------|
| Liquid Side (1/4") | 1.8kg.m |
| Gas Side (3/8") | 4.2kg.m |

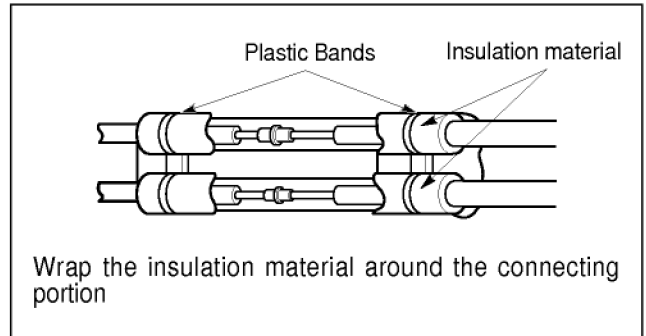


5. Bend the drain hose as shown in the figure and bind the drain hose, the pipings and the connecting cables altogether.

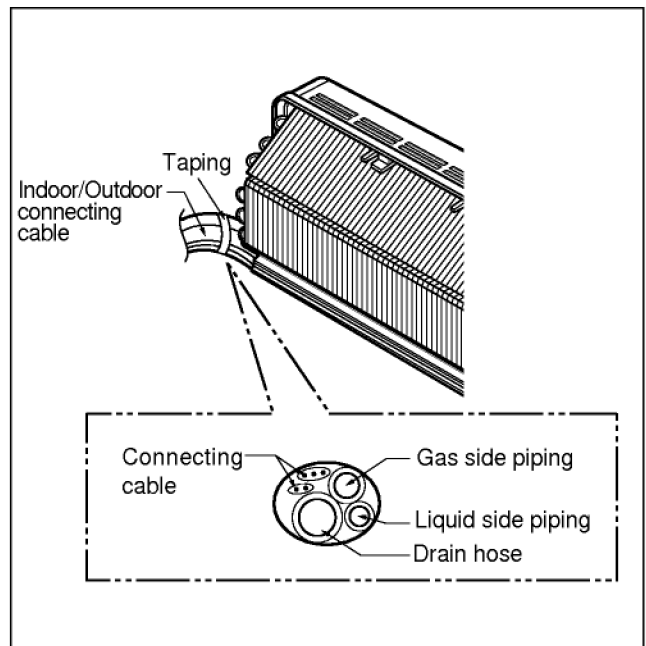


6. Wrap the insulation material around the connecting portion.

CAUTION: Take care to arrange the pipings, drain hose and cables as the feature on page 6 for inserting it into the indoor unit and mount the indoor unit on the installation plate.



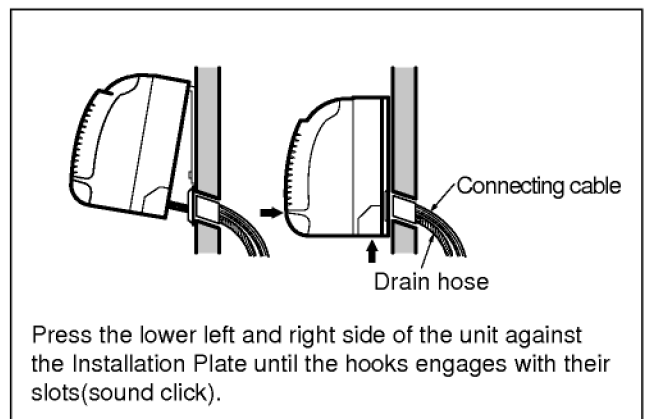
7. Wrap the tubing, the drain hose and the connecting cable with tape.



8. Indoor unit installation.

- Hook the indoor unit onto the upper position of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)

Insure the hooks are properly seated on the installation plate by moving it in left and right.

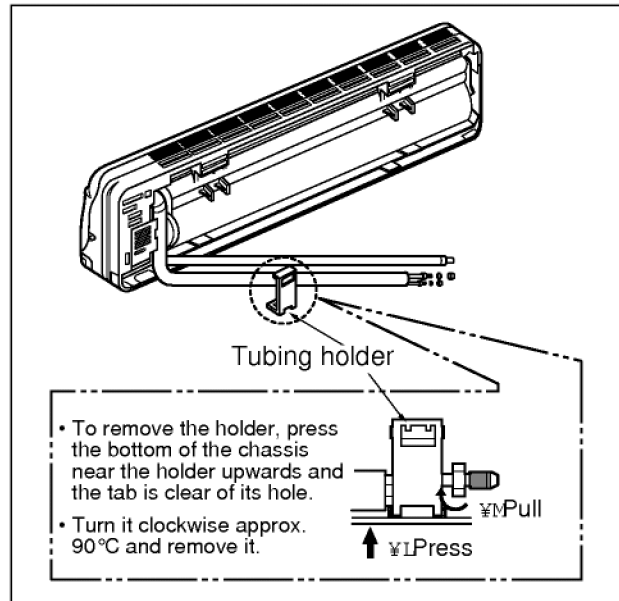


3) Connection of Pipings(11K,12K, 13K BTU)

1. Remove the indoor tubing with Drain hose to the hole

- Remove tubing holder and pull the tubing out of the chassis.

2. Refix the tubing holder into original position.



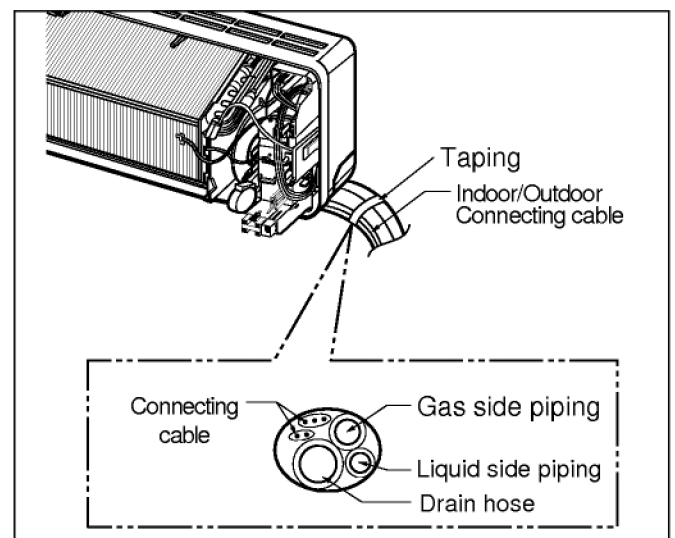
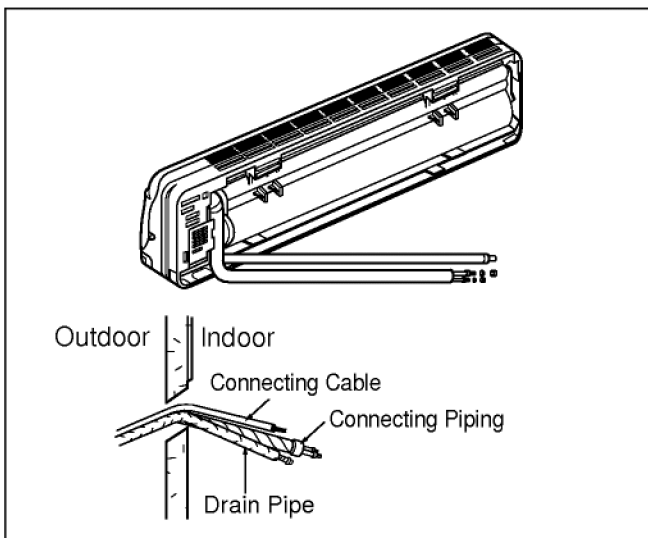
For right rear piping

3. Route the tubing and the drain hose straight backwards(see figure).

4. Insert the connecting cable into the indoor unit through the piping hole.

- Do not connect the cable to the indoor unit.
- Make a small loop with the cable for easy connection later.

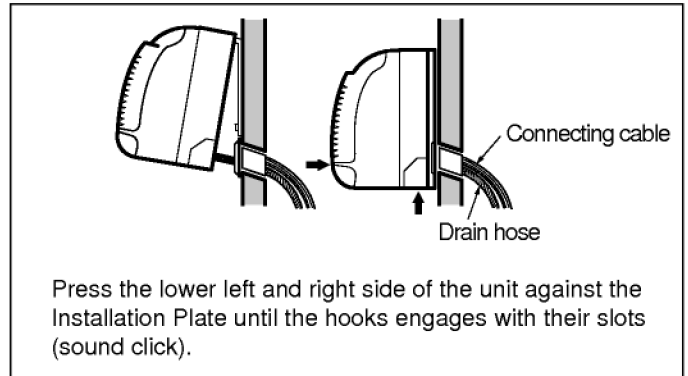
5. Tape the tubing, drain hose and the connecting cable.



6. Indoor unit installation.

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)

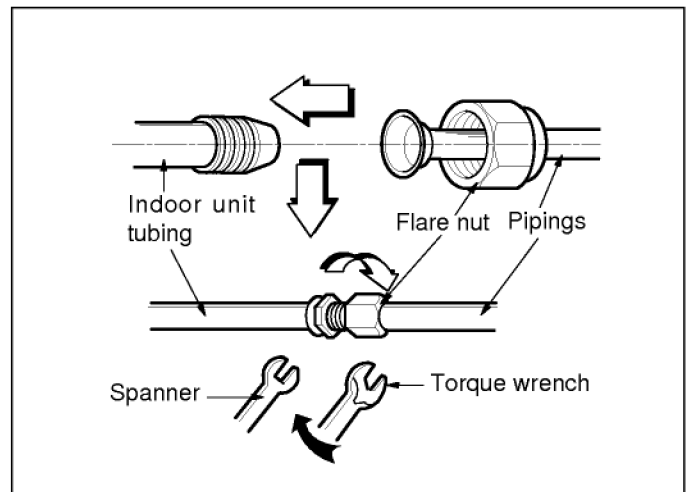
Ensure the hooks are properly seated on the installation plate by moving it in left and right.



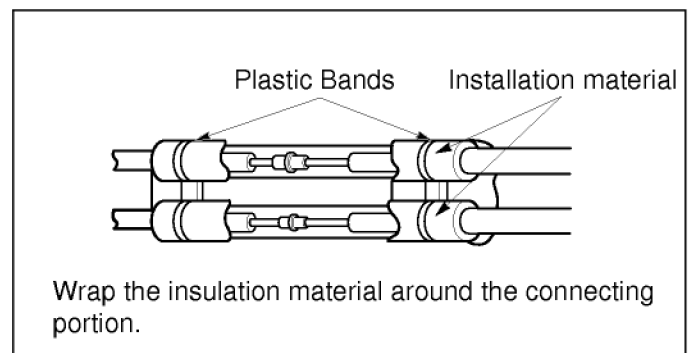
7. Connecting the pipings to the indoor unit.

- Align the center of the pipings and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench until the wrench clicks. Wrench tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrows on the wrench.

| Pipe Size | Torque |
|--------------------|---------|
| Liquid Side (1/4") | 1.8kg.m |
| Gas Side (3/8") | 4.2kg.m |
| Gas Side (1/2") | 5.5kg.m |

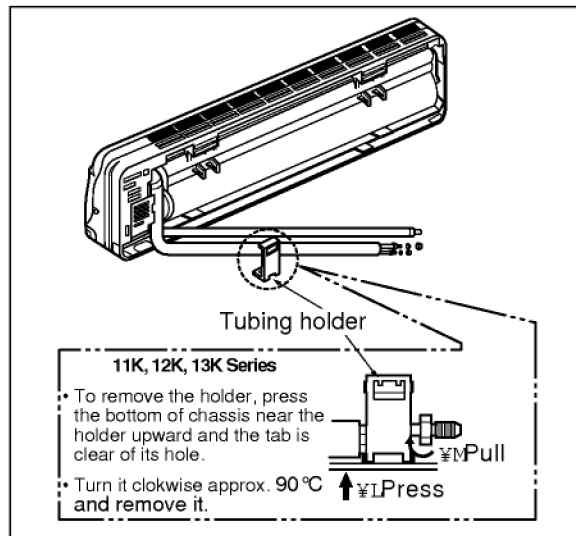


8. Wrap the insulation material around the connecting portion.



For the left pipings

3. Route the indoor tubing with the drain hose to the piping hole as desired position.

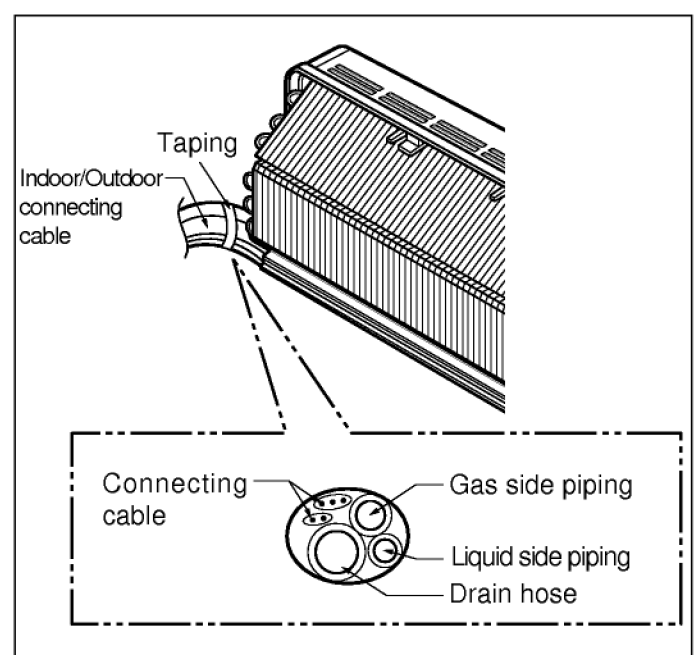
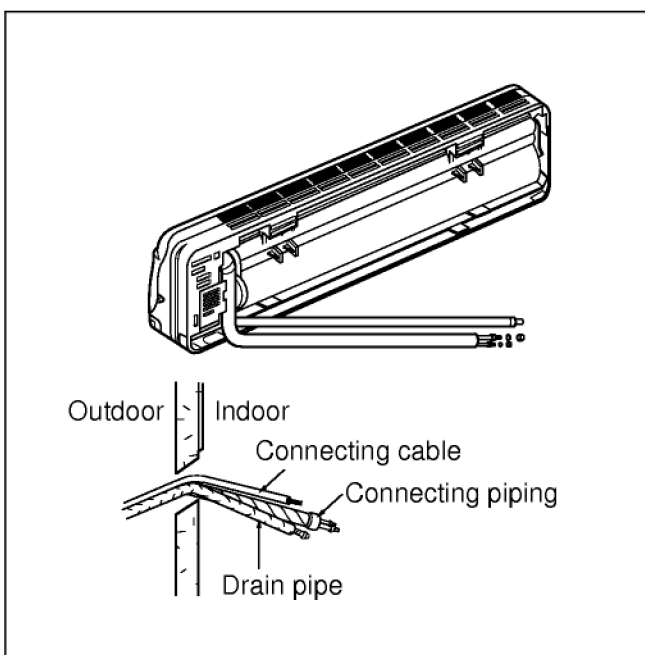


4. Insert the pipings and the connecting cable into the piping hole.

5. Insert the connecting cable into the indoor unit.

- Do not connect the cable to the indoor unit.
- Make a small loop with the cable for easy connection later.

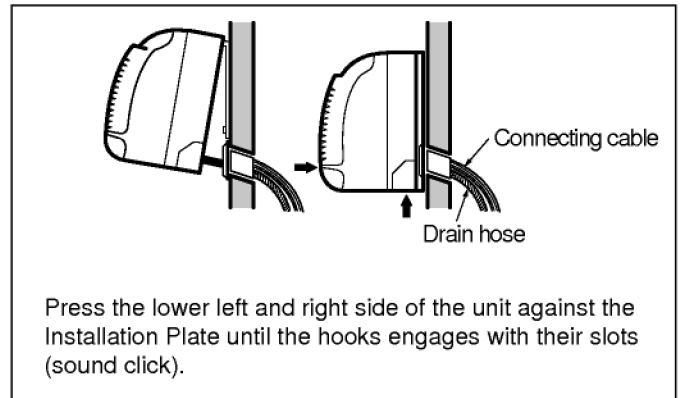
6. Tape the tubing, drain hose and the connecting cable.



7. Indoor unit installation.

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)

Ensure the hooks are properly seated on the installation plate by moving it in left and right.

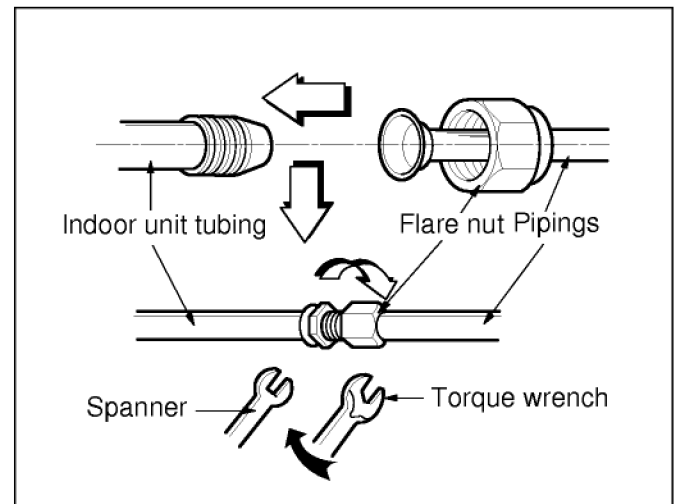


8. Connecting the pipings to the indoor unit.

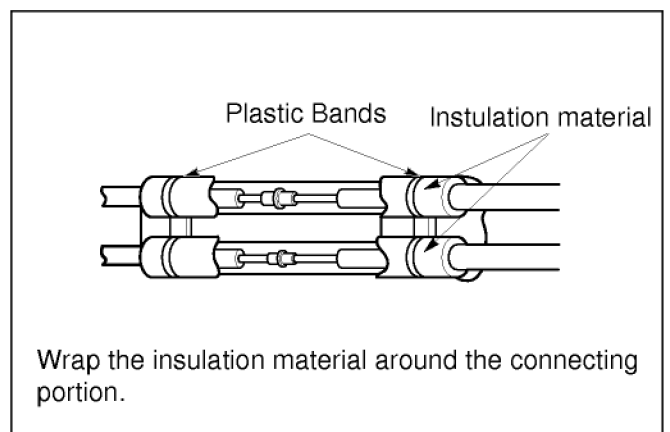
- Align the center of the pipings and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench until the wrench clicks.

Wrench tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrows on the wrench.

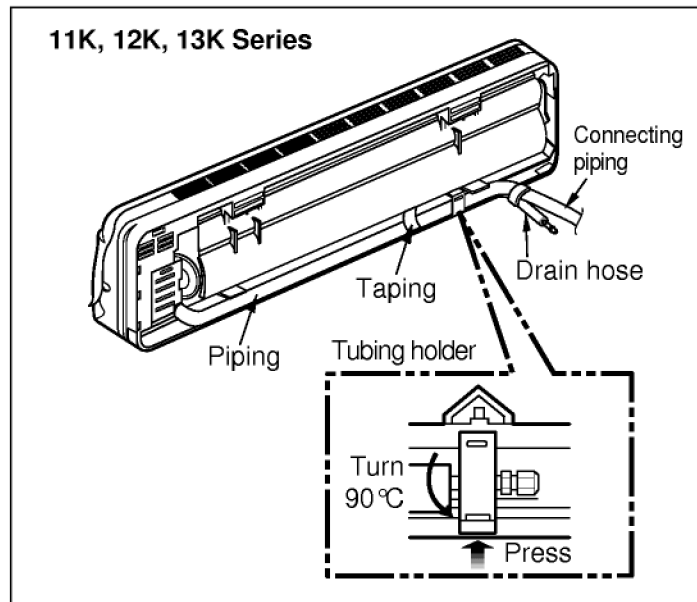
| Pipe Size | Torque |
|--------------------|---------|
| Liquid Side (1/4") | 1.8kg.m |
| Gas Side (3/8") | 4.2kg.m |
| Gas Side (1/2") | 5.5kg.m |



9. Wrap the insulation material around the connecting portion.



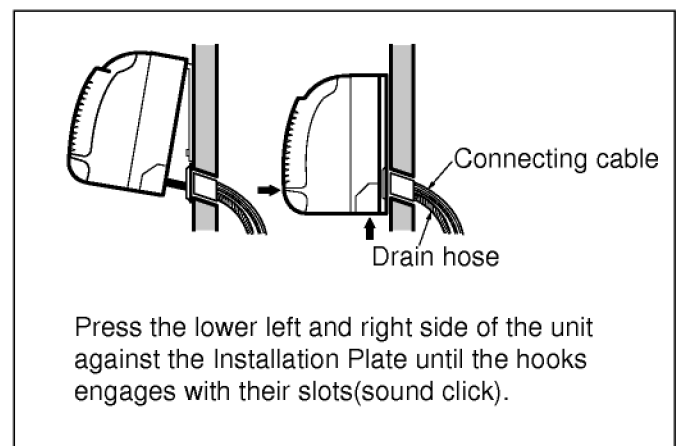
10. Set the pipings and the connecting cable to the back of the chassis with the tubing holder.



11. Indoor unit installation.

- Hook the indoor unit onto the upper portion of installation plate. (Engage the two hooks of the rear top of the indoor unit with the upper edge of the installation plate.)

Ensure the hooks are properly seated on the installation plate by moving it in left and right.



3. Connecting Pipings and the cable to Outdoor unit

1) Connecting the piping to the Outdoor unit

1. Align the center of the pipings and sufficiently tighten the flare nut with fingers.
2. Finally, tighten the flare nut with torque wrench until the wrench clicks.
 - When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

| Pipe Size | Torque |
|--------------------|-----------------------|
| Liquid Side (1/4") | 1.8kg _i ·m |
| Gas Side (3/8") | 4.2kg _i ·m |
| Gas Side (1/2") | 5.5kg _i ·m |

2) Connecting of the cable

1. Remove the cover control from the unit by loosening the screw.
2. Check the connection of each wiring of the outdoor and the indoor unit having the same number (1(L), 2(L), ⊕, 3, 4,) on pillar terminal label. Connect the wires to the terminals on the control board individually as the following.

1) Cooling only type

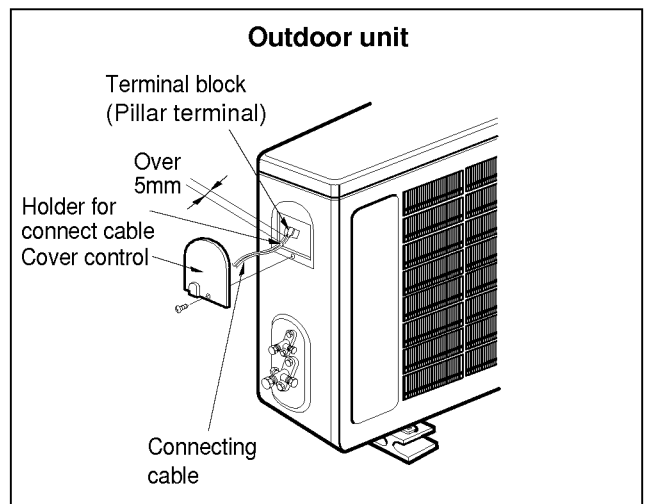
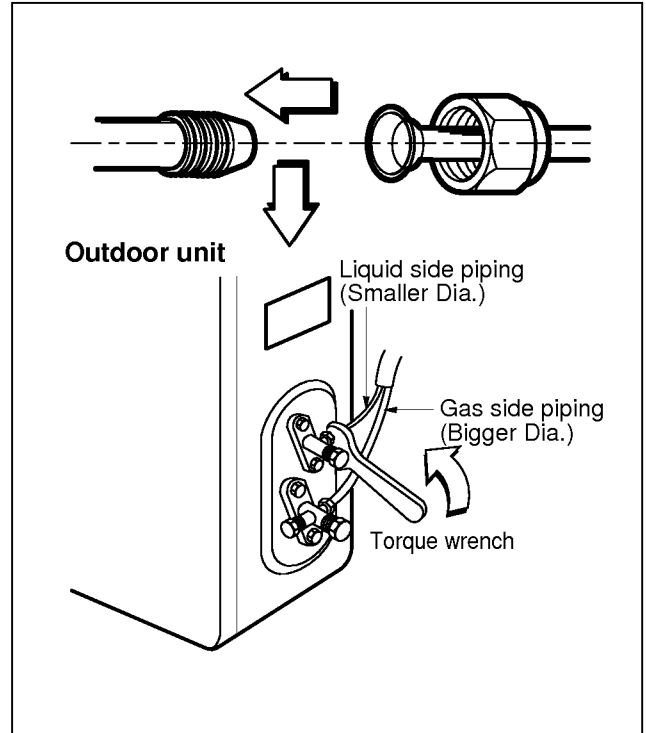
| | | | |
|-------------------------------|-------|------|--------------|
| Terminals on the outdoor unit | 1(L) | 2(N) | ⊕ |
| Color of Wires (Recommend) | BROWN | BLUE | GREEN/YELLOW |
| Terminals on the indoor unit | 1(L) | 2(N) | ⊕ |

2) Cooling & Heating type

| | | | | | |
|-------------------------------|-------|------|-----|-------|-----|
| Terminals on the outdoor unit | 1(L) | 2(N) | ⊕ | 3 | 4 |
| Color of Wires (Recommend) | BROWN | BLUE | G/Y | BLACK | RED |
| Color of Wires | BROWN | BLUE | G/Y | BLACK | RED |
| Terminals on the indoor unit | 1(L) | 2(N) | ⊕ | 3 | 4 |

3. Secure the cable onto the control board with the holder (clammer).
4. Refix the cover control to the original position with the screw.

*The connecting cable for installation of indoor and outdoor unit must be approved by TÜV standard or equivalent.

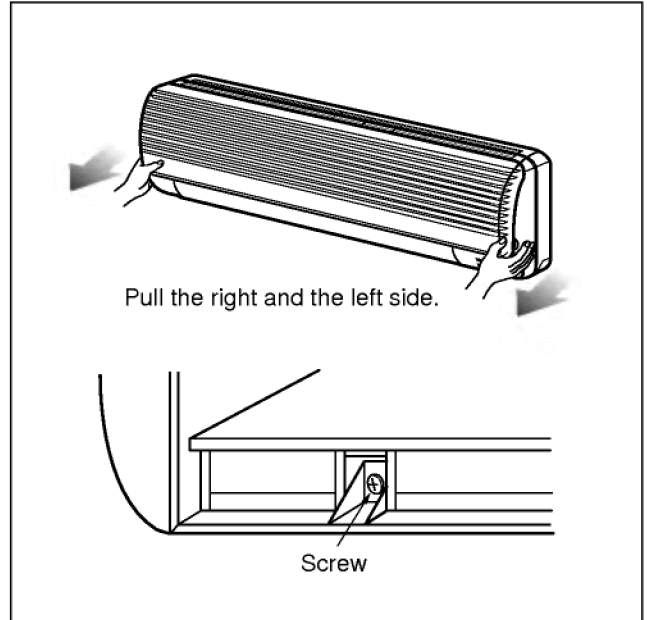


4. Checking the Drainage and Pipe forming

1) Checking the Drainage

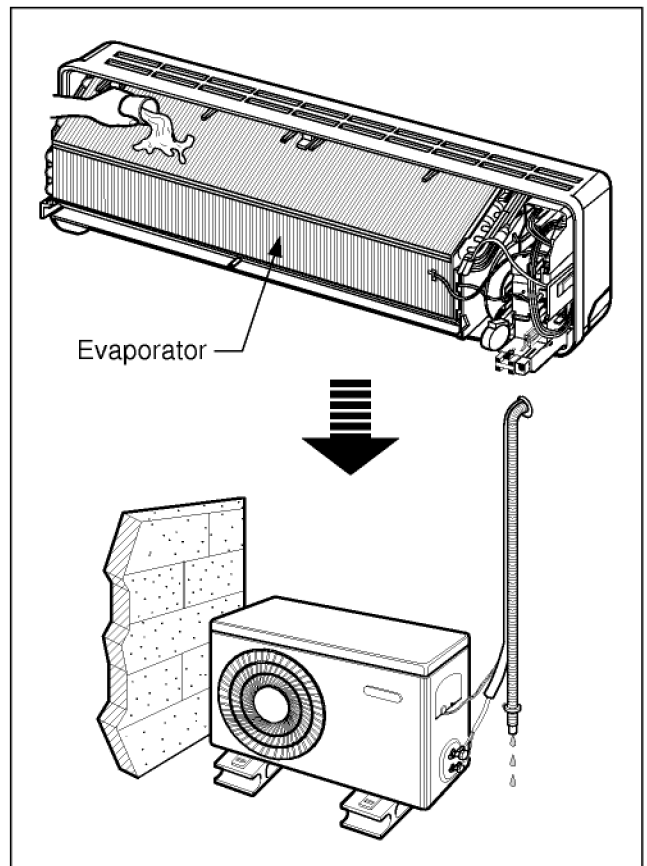
1. Remove the Grille from the cabinet.

- Set the up-and-down air direction louver to open position (horizontally) by finger pressure.
- Remove the securing screws.
- To remove the Grille, pull lower the left and right side of the grille toward you (slightly tilted) and lift it straight upward.



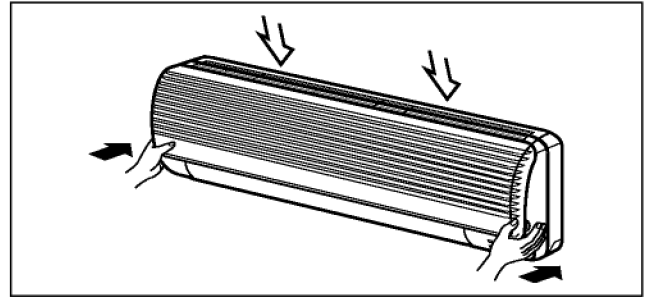
2. Check the drainage.

- Pour a glass of water on the evaporator.
- Ensure if water flows drain hose of indoor unit.



3. Attach the Grille onto the cabinet.

- Grasp lower the left and right side of the Grille and engage two tabs on the top in side edge of the grille with two slots on the cabinet's top front edge.
- Press the grille toward the cabinet until it will be back into place.
- Secure the grille to the cabinet with two screws.



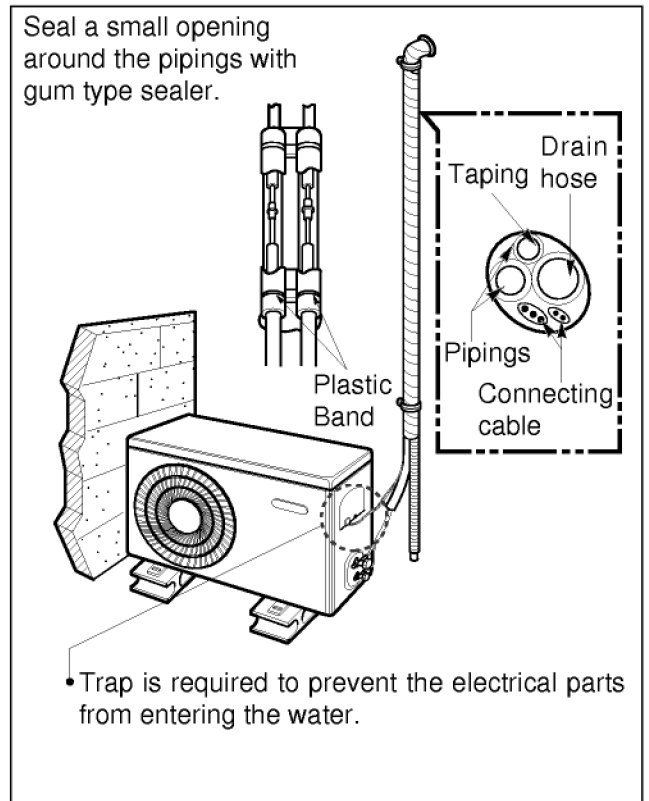
2)Form the pipings

1. Wrap the connecting portion of indoor unit with the Insulation material and secure it with two plastic Bands (for the right pipings)

- If you want to connect an additional drain hose, the end of the drain-outlet should keep distance from the ground. (Do not dip it into water, and fix it on the wall to avoid swinging in the wind).

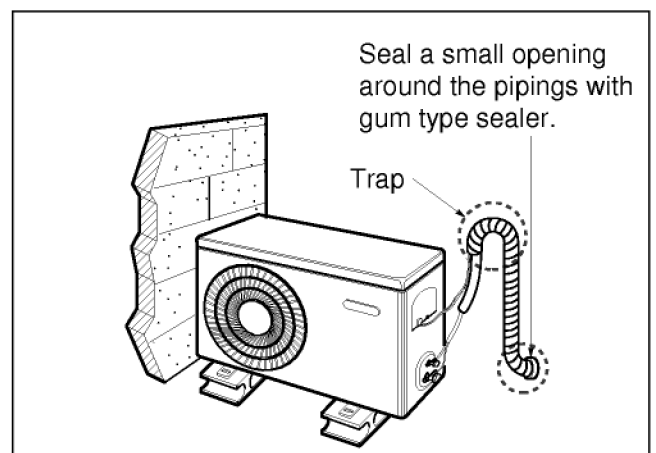
In case of the Outdoor unit to be installed below the Indoor unit

2. Tape the pipings, drain hose and connecting cable from down to up.
3. Form the pipings gathered by taping along the exterior wall and fix it onto the wall by saddle of equivalent.



In case of the Outdoor unit to be installed upper position of the indoor unit.

2. Tape the pipings and Connecting Cable from down to up.
3. Form the pipings gathered by taping along the exterior wall and the Trap is required to prevent the room from entering the water.
4. Fix the pipings onto the wall by saddle or equivalent.



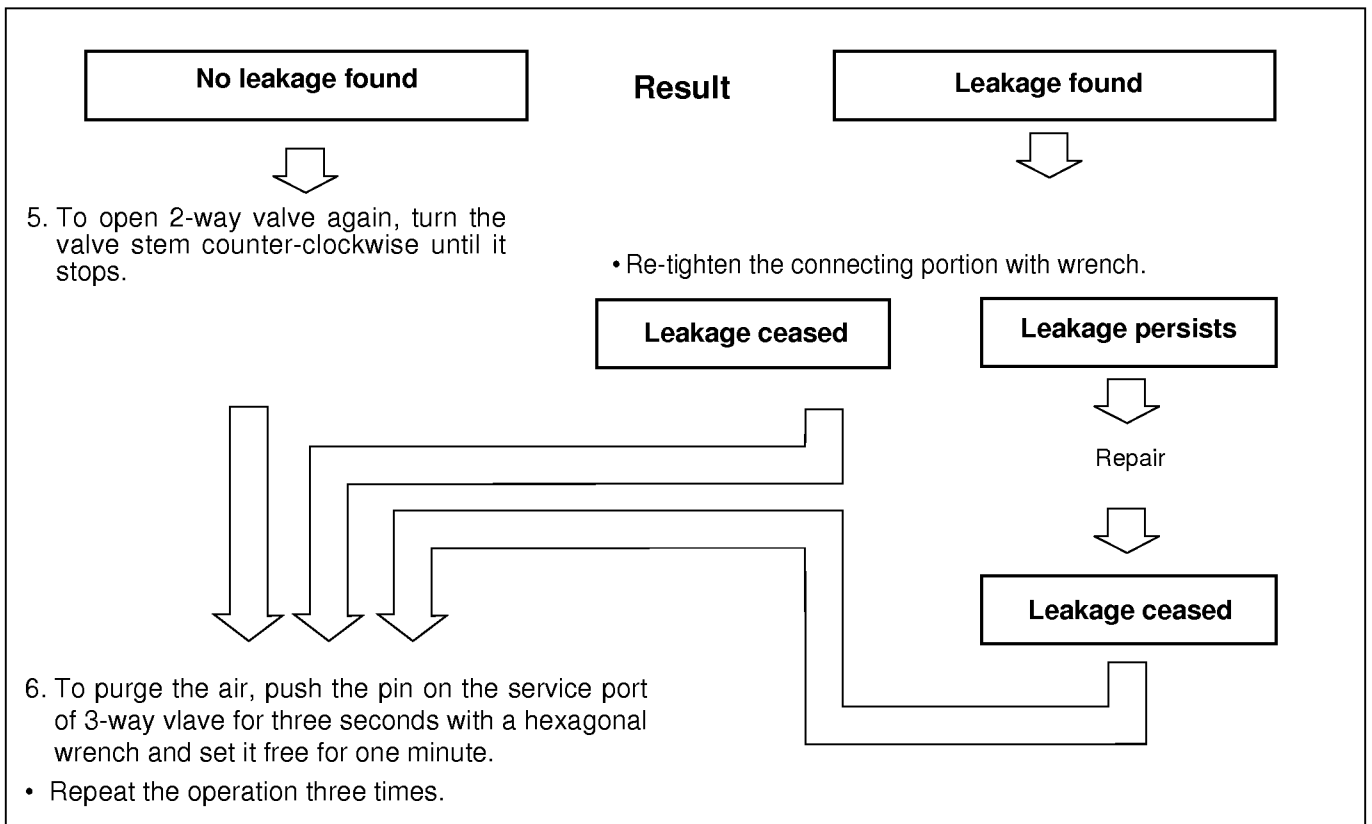
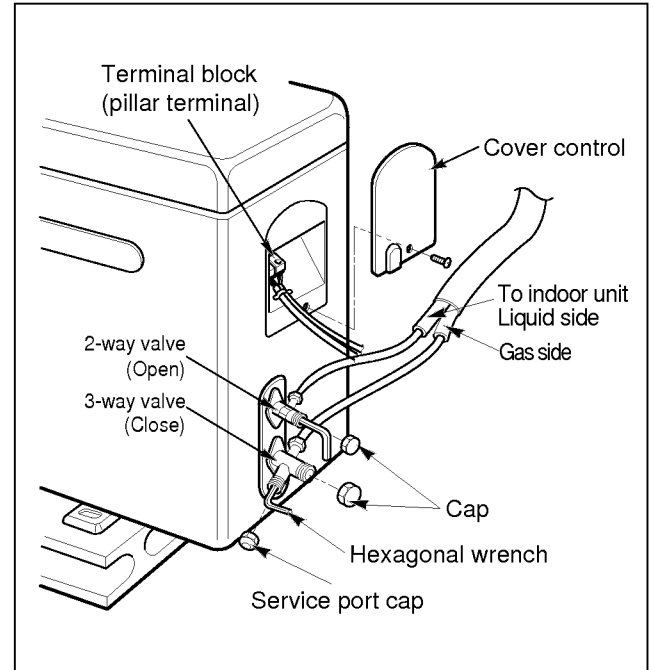
5. Air Purging

1) Air purging

The air which contains a moisture is remaining in the refrigeration cycle may cause a malfunction on the compressor.

1. Remove the caps from the 2-way and 3-way valves.
2. Remove the service-port cap from 3-way valve.
3. To open the valve, turn the valve stem of 2-way valve counter-clockwise approx. 90°; and hold it there for five seconds, then close it.
4. Check a gas-leakage of the connecting portion of the pipings.
 - For the left pipings, refer page 25.
 - For more details, refer page 50(2-way 3-way valve)

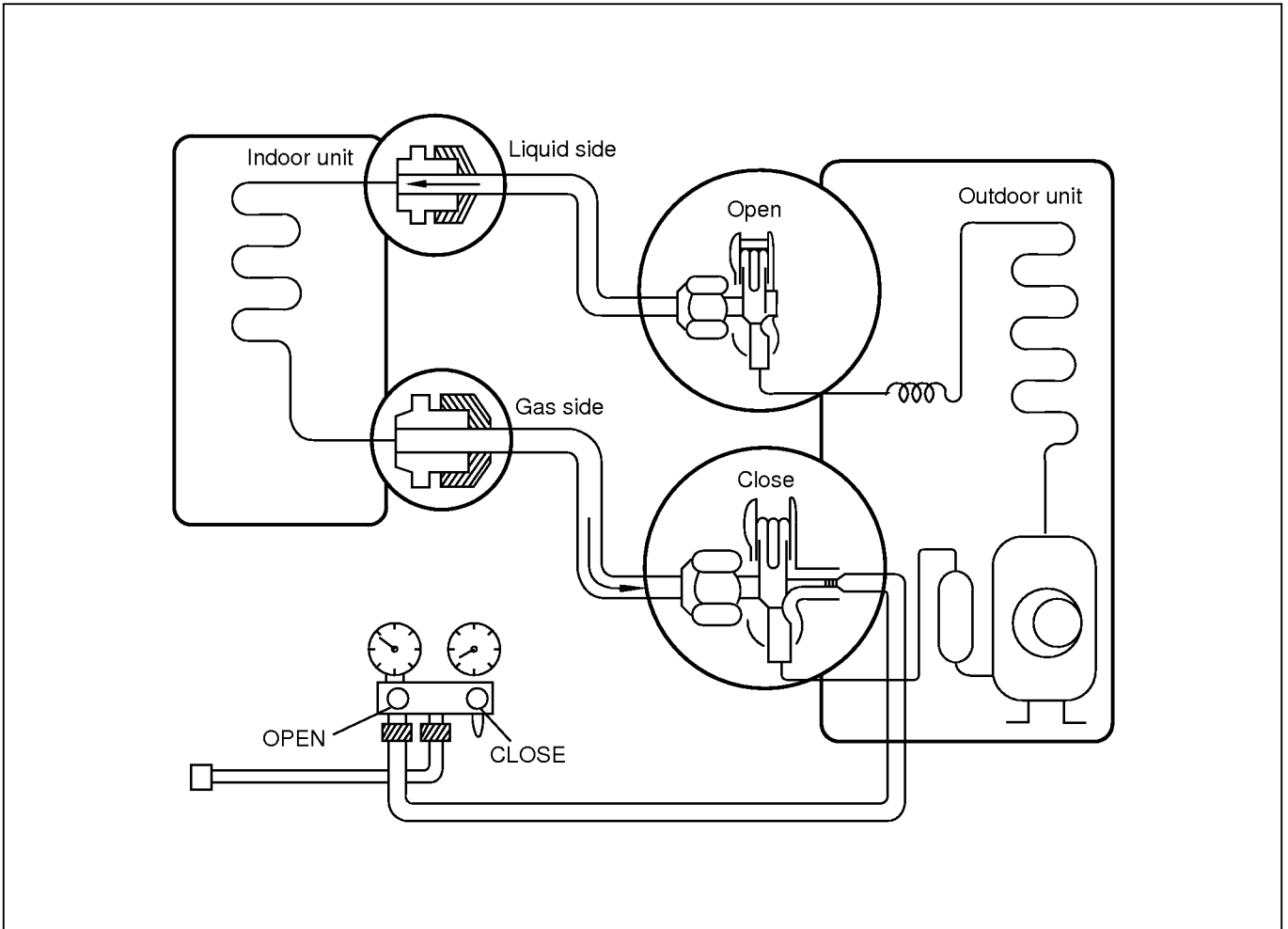
CAUTION: Do not leak the gas in the air during Air purging with vacuum pump as possible as you can.



7. Set the both 2-way and 3-way valves to open position with the Hexagonal wrench for the unit operation.

8. Checking a gas leakage

- (1) Connect the manifold gauge to the service port of 3-way valve.
Measure the pressure.
- (2) Keep it for 5-10 minutes.
Ensure if the pressure indicated on the gauge is as same as that of measured at first time.



NOTE:

The additional gas for air purging has been charged in the outdoor unit. However, if the flare connections have not been done correctly and there gas leaks, a gas cylinder and the charge set will be needed.

CAUTION : Do not leak the gas in the air during Air purging with vacuum pump as possible as you can.

6. Test running

1) Connection of power supply

1. Connect the power supply cord to the independent power supply.

- Circuitbreaker is required.

2. Prepare the remote controller.

- Insert two batteries provided.
Remove the battery cover from the back of the remote controller.
- Slide the cover according to the arrow direction.
Insert the two batteries.
(Two "R03" or "AAA" dry-cell batteries or equivalent.)
- Be sure that the (+) and (-) directions are correct.
- Be sure that both batteries are new.
Re-attach the cover.
- Slide it back into position.

3. Operate the unit for fifteen minutes or more.

CAUTION:

This appliance must be installed in accordance with current National Wiring Regulations. Connecting cable between indoor unit and outdoor unit shall be approved and the size of conductor shall be in accordance with local law.

Settlement of Outdoor Unit

- Anchor the outdoor unit with a bolt and nut ($\varnothing 10\text{cm}$) tightly and horizontally on a concrete or rigid mount.
- When installing on the wall, roof or rooftop, anchor the mounting base securely with a nail or wire assuming the influence of wind and earthquake.
- In the case when the vibration of the unit is conveyed to the house, settle the unit with an anti-vibration rubber.

2) Evaluation of the performance

1. Measure the temperature of the intake and discharge air.
2. Ensure the difference between the intake temperature and the discharge one is more than $8\text{ }^{\circ}\text{C}$.

