

## INSTALLATION MANUAL AIR CONDITIONER

Please read this installation manual completely before installing the product.  
Installation work must be performed in accordance with the national wiring standards by authorized personnel only.  
Please retain this installation manual for future reference after reading it thoroughly.

TYPE : WALL MOUNTED



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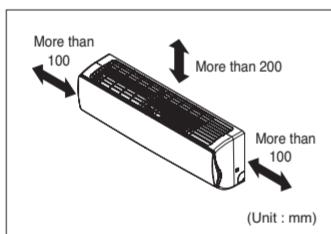
Air Conditioner Installation Manual

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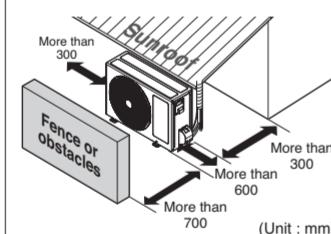
### 4. Select the best Location

- There should not be any heat or steam near the unit.
- Select a place where there are no obstacles around the unit.
- Make sure that condensation drainage can be conveniently routed away.
- Do not install near a doorway.
- Ensure that the interval between a wall and the left (or right) of the unit is more than 100mm. The unit should be installed as high as possible on the wall, allowing a minimum of 200mm from ceiling.
- Use a metal detector to locate studs to prevent unnecessary damage to the wall.



### Outdoor unit

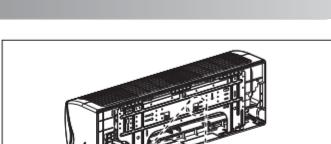
- If an awning is built over the unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
- Ensure that the space around the back and sides is more than 300mm. The space in front of the unit should be more than 700mm of space.
- Do not place animals and plants in the path of the warm air.
- Take the weight of the air conditioner into account and select a place where noise and vibration are minimum.
- Select a place where the warm air and noise from the air conditioner do not disturb neighbors.



### 5. Fixing Installation Plate

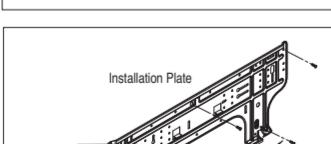
The wall you select should be strong and solid enough to prevent vibration.

Before installation, confirm the position of a screw between chassis and installation plate.

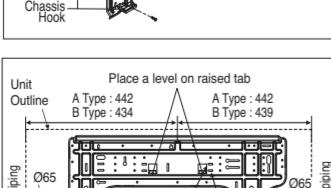


Mount the installation plate on the wall with type "A" screws. If mounting the unit on a concrete wall, use anchor bolts.

Mount the installation plate horizontally by aligning the centerline using Horizontal meter.

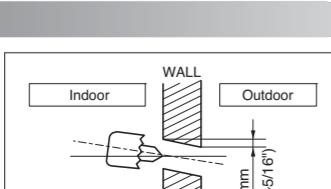


Measure the wall and mark the centerline. It is also important to use caution concerning the location of the installation plate. Routing of the wiring to power outlets is through the walls typically. Drilling the hole through the wall for piping connections must be done safely.



### 6. Drill a Hole in the Wall

Drill the piping hole with a ø65mm hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.



## 1 Safety Precautions

To prevent the injury of the user or other people and property damage, the following instructions must be followed.

■ Be sure to read before installing the air conditioner.

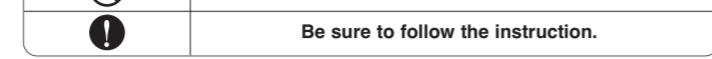
■ Be sure to observe the cautions specified here as they include important items related to safety.

■ Incorrect operation due to ignoring instruction will cause harm or damage. The seriousness is classified by the following indications.

**WARNING** This symbol indicates the possibility of death or serious injury.

**CAUTION** This symbol indicates the possibility of injury or damage to properties only.

■ The meanings of the symbols used in this manual are as shown below.



Be sure not to do.



Be sure to follow the instruction.

## 2 Installation

### ■ Installation

Always perform grounding.

Don't use a power cord, a plug or a loose socket which is damaged.

For installation of the product, always contact the service center or a professional installation agency.

Otherwise, it may cause electrical shock.

Otherwise, it may cause a fire or electrical shock.

Otherwise, it may cause a fire, electrical shock, explosion or injur.

Securely attach the electrical cover to indoor and pipe cover to outdoor unit

Always install a current leakage breaker and a dedicated switching board.

Do not keep or use flammable gases or combustibles near the air conditioner.

If the electrical part cover to indoor unit and pipe cover to outdoor unit are not attached securely, it could result in a fire or electric shock due to dust, water, etc.

No installation may cause a fire and electrical shock.

Otherwise, it may cause a fire or the failure of product.

Ensure that an installation frame of the outdoor unit is not damaged due to use for a long time.

Do not disassemble or repair the product randomly.

There is a risk of fire and explosion.

It may cause injury or an accident.

It will cause a fire or electrical shock.

Insert gas (nitrogen) should be used when you check plumbing lasts, cleaning or repairs of pipes etc. If you are using combustible gases including oxygen, product may have the risk of fires and explosions.

Do not install the product at a place where there is concern of falling down.

Use caution when unpacking and installing.

Otherwise, it may result in personal injury.

Sharp edges may cause injury.

Do not turn on the breaker or power under condition that front panel, cabinet, top cover, control box cover are removed or opened.

Otherwise, it may cause fire, electric shock, explosion or death.

### ■ Operation

Do not share the outlet with other appliances.

Do not use the damaged power cord.

Do not modify or extend the power cord randomly.

It will cause an electric shock or a fire due to heat generation.

Otherwise, it may cause a fire or electrical shock.

Otherwise, it may cause a fire or electrical shock.

Take care so that the power cord may not be pulled during operation.

Unplug the unit if strange sound, smell, or smoke comes from it.

Keep the flames away.

Otherwise, it may cause a fire or electrical shock.

Otherwise, it may cause a fire or electrical shock.

Otherwise, it may cause a fire.

Take the power plug out if necessary, holding the head of the plug and do not touch it with wet hands.

Do not use the power cord near the heating tools.

Do not open the inlet of the indoor/outdoor unit during operation.

Otherwise, it may cause a fire or electrical shock.

Otherwise, it may cause a fire or electrical shock.

Otherwise, it may cause electrical shock and failure.

Do not allow water to run into electrical parts.

Hold the plug by the head when taking it out.

Never touch the metal parts of the unit when removing the filter.

Do not step on the indoor/outdoor unit and do not put anything on it.

Do not place a heavy object on the power cord.

Otherwise, it may cause a fire or electrical shock.

When the product is submerged into water, always contact the service center.

Take care so that children may not step on the outdoor unit.

Otherwise, children may be seriously injured due to falling down.

## 3 Installation

### ■ Installation

Install the drain hose to ensure that drain can be securely done.

Install the product so that the noise or wind from the outdoor unit may not cause any damage to the neighbors.

Otherwise, it may cause water leakage.

Always inspect gas leakage after the installation and repair of product.

Keep level parallel while installing the product.

Otherwise, it may cause vibration or water leakage.

Thickness of copper pipes used are as shown "Flaring work" Table.

Do not use copper pipes having a collapsed.

Otherwise, the expansion valve or capillary tube may become blocked with contaminants.

For R410A model, use piping, flare nut and tools which is specified for R410A refrigerant.

It is desirable that the amount of residual oil less than 40 mg/10m.

Never use copper pipes thinner than that in the table even when it is available on the market.

### ■ Operation

Avoid excessive cooling and perform ventilation sometimes.

Use a soft cloth to clean. Do not use wax, thinner, or a strong detergent.

Otherwise, it may do harm to your health.

The appearance of the air conditioner may deteriorate, change color, or develop surface flaws.

Do not use the appliance for special purposes such as preserving animals, vegetables, precision machine, or art articles.

Otherwise, it may damage your properties.

Do not place obstacles around the flow inlet or outlet.

Otherwise, it may cause the failure of appliance or an accident.

## 4 Installation Tools

### 1. Installation Parts

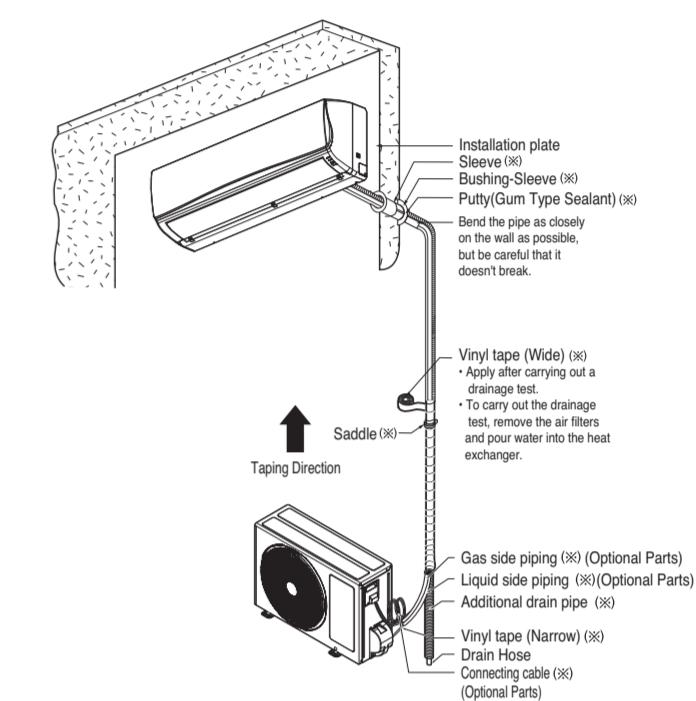
Installation plate	Type "A" screw	Type "B" screw	Type "C" screw	Remote control holder

### 2. Installation Tools

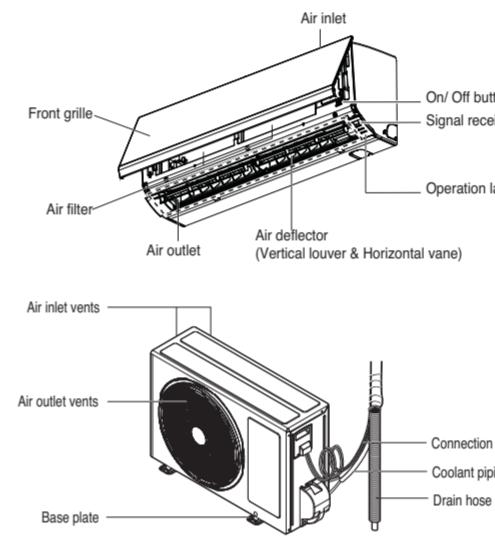
The feature can be changed according a type of model.

Figure	Name	Figure	Name
	Screw driver		Multi-meter
	Electric drill		Hexagonal wrench
	Measuring tape, Knife		Ammeter
	Hole core drill		Gas-leak detector
	Spanner		Thermometer, Level
	Torque wrench		Flaring tool set

### 3. Installation Map



### 4. Features



The feature can be changed according a type of model.

## 9. Connecting the Cables

**Indoor unit**  
Connect the cable to the indoor unit by connecting the wires to the terminals on the control board individually according to the indoor unit connection. (Ensure that the color of the wires of the outdoor unit and the terminal No. are the same as those of the indoor unit.)

### ▲ CAUTION

- The circuit diagram is a subject to change without notice.
- The earth wire should be longer than the common wires.
- When installing, refer to the circuit diagram on the chassis cover.
- Connect the wires firmly so that they may not be pulled out easily.
- Connect the wires according to color codes, referring to the wiring diagram.

### ▲ CAUTION

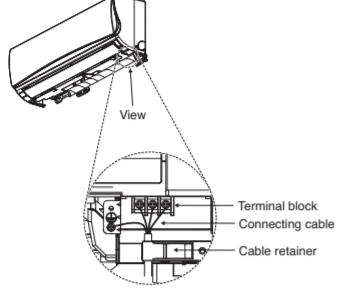
The power cord connected to the unit should be selected according to the following specifications(Type "B" approved by HAR or SAA).

Grade		(mm <sup>2</sup> )
NORMAL CROSS - SECTIONAL AREA	8.5 KBtu/h - 12 KBtu/h	1.0
Unit(A)	Indoor	
Cable Type(B)	H07RN-F	

The power connecting cable connecting the indoor and outdoor unit should be selected according to the following specifications (Type "B" approved by HAR or SAA).

Grade		(mm <sup>2</sup> )
NORMAL CROSS - SECTIONAL AREA	8.5 KBtu/h - 12 KBtu/h	1.0
Cable Type(B)	H07RN-F	

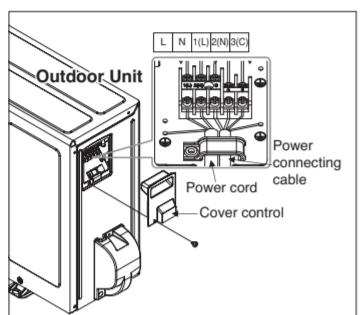
Insert the connecting cable through the bottom side of indoor unit and connect the cable.



## Outdoor unit

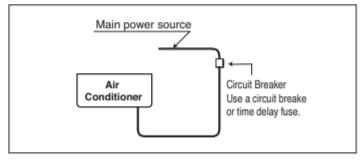
1. Connect Wire stripping and connecting the requirement to the wires to the terminals on the control board individually.  
2. Secure the cable onto the control board with the cord clamp.  
3. Use a recognized circuit breaker between the power source and the unit.  
A disconnecting device to adequately disconnect all supply lines must be fitted.

Circuit Breaker	Capacity (Cooling)	8.5KBtu/h-12KBtu/h	15A



### ▲ CAUTION

Provide the circuit breaker between power source and the unit as shown by



### ▲ CAUTION

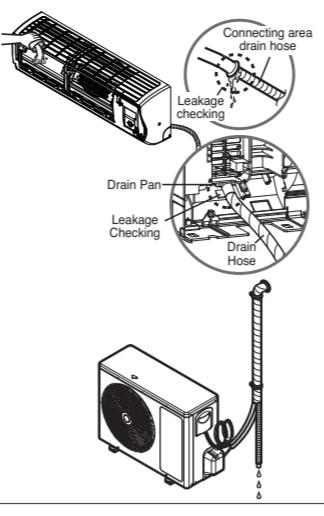
According to the confirmation of the above conditions, prepare the wiring as follows.  
1. Never fail to have an individual power circuit specifically for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control cover.  
2. The screw which fasten 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.)  
3. Specification of power source.  
4. Confirm that electrical capacity is sufficient.  
5. See that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.  
6. Confirm that the cable thickness is as specified in the power source specification. (Particularly note the relation between cable length and thickness.)  
7. Always install an earth leakage circuit breaker in a wet or moist area.  
8. 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.  
9. The means for disconnection from a power supply shall be incorporated in the fixed wiring and have an air gap contact separation of at least 3mm in each active(phase) conductors.

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## 10. Checking the Drainage

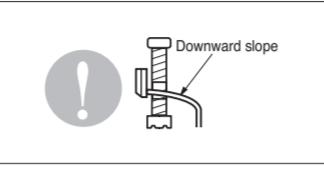
### To check the drainage.

- 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 tube.

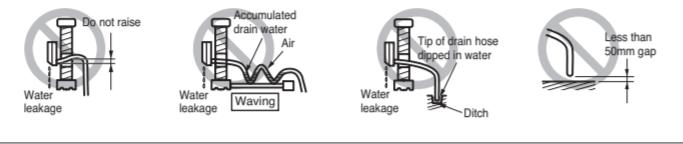


### Drain piping

- The drain hose should point downward for easy drain flow.



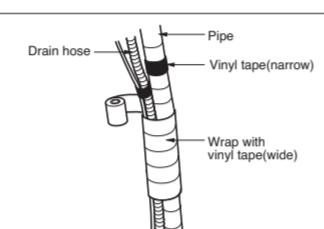
- Do not make drain piping like the following.



## 11. Forming the Piping

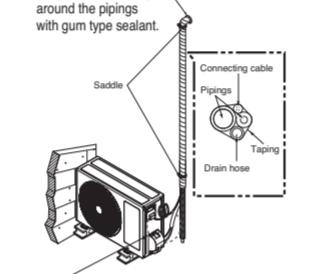
Form the piping by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tapes.

If you want to connect an additional drain hose, the end of the drain outlet should be routed above the ground. Secure the drain hose appropriately.



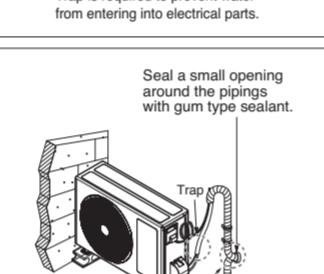
### In cases where the outdoor unit is installed below the indoor unit perform the following.

- Tape the piping, drain hose and connecting cable from down to up.
- Secure the tapped piping along the exterior wall using saddle or equivalent.



### In cases where the Outdoor unit is installed above the Indoor unit perform the following.

- Tape the piping and connecting cable from down to up.
- Secure the taped piping along the exterior wall. Form a trap to prevent water entering the room.
- Fix the piping onto the wall using saddle or equivalent.



## 14. Installation guide at the seaside

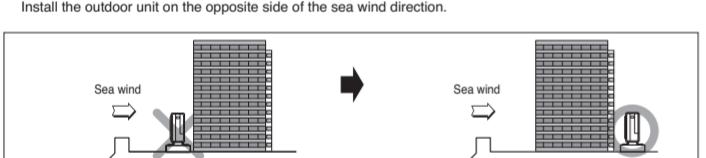
### ▲ CAUTION

1. Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced.  
2. Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient performance.

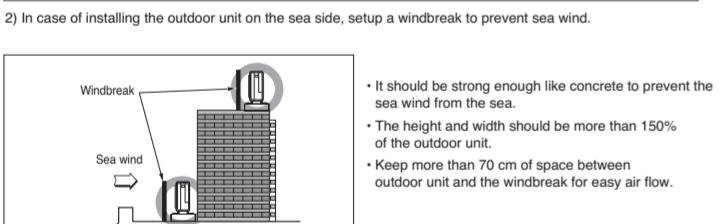
3. If outdoor unit is installed close to the seaside, it should avoid direct exposure to the sea wind. Otherwise it needs additional anticorrosion treatment on the heat exchanger.

### Selecting the location(Outdoor Unit)

1) If the outdoor unit is to be installed close to the seaside, then direct exposure to the sea wind should be avoided. Install the outdoor unit on the opposite side of the sea wind direction.



2) In case of installing the outdoor unit on the sea side, setup a windbreak to prevent sea wind.



3) Select a well-drained place.

- If you can't meet above guide line in the seaside installation, please contact LG Electronics for the additional anticorrosion treatment.
- Periodic (more than once/year) cleaning of the dust or salt particles stuck on the heat exchanger by using water.
- Do not use seawater when you clean up the heat exchanger.

- Note (Memo) -

## 12. Air Purging

The air and moisture remaining in the refrigerant system have undesirable effects as indicated below.

- Pressure in the system rises.
- Operating current rises.
- Cooling/heating efficiency drops.
- Moisture in the refrigerant circuit may freeze and block capillary tubing.
- Water may lead to corrosion of parts in the refrigeration system.

Therefore, after evacuating the system, take a leak test for the piping and tubing between the indoor and outdoor unit.

### Air purging with vacuum pump

- 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.
- Leak test
- Connect the manifold valve(with pressure gauges) and dry nitrogen gas cylinder to this service port with charge hoses.

### ▲ CAUTION

Be sure to use a manifold valve for air purging. If it is not available, use a stop valve for this purpose. The knob of the 3-way valve must always be kept close.

• Pressurize the system to maximum 250 P.S.I.G. (R-22 model) or 400 P.S.I.G. (R-410A model) with dry nitrogen gas and close the cylinder valve when the gauge reading reaches 250 P.S.I.G. (R-22 model) or 400 P.S.I.G. (R-410A model). Next step is leak test with liquid soap.

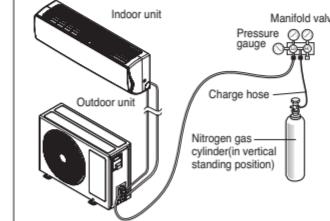
### ▲ CAUTION

To avoid nitrogen entering the refrigerant system in a liquid state, the top of the cylinder must be higher than its bottom when you pressurize the system. Usually, the cylinder is used in a vertical standing position.

### WARNING

▲ There is a risk of fire and explosion.  
Inert gas (nitrogen) should be used when you check plumbing leaks, cleaning or repairs of pipes etc. If you are using combustible gases including oxygen, product may have the risk of fire and explosions.

- Do a leak test of all joints of the tubing(both indoor and outdoor) and both gas and liquid side service valves. Bubbles indicate a leak. Be sure to wipe off the soap with a clean cloth.
- After the system is found to be free of leaks, relieve the nitrogen pressure by loosening the charge hose connector at the nitrogen cylinder. When the system pressure is reduced to normal, disconnect the hose from the cylinder.



### Soap water method

- Remove the caps from the 2-way and 3-way valves.
- Remove the service-port cap from the 3-way valve.
- Apply a soap water or a liquid neutral detergent on the indoor unit connection or outdoor unit connections with a soft brush to check for leakage of the connecting points of the piping.
- If bubbles come out, the pipes have leakage

### Evacuation

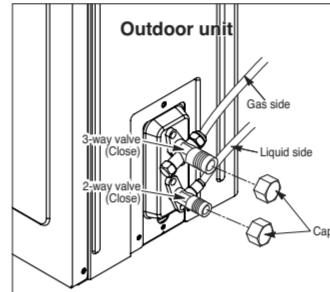
- Connect the charge hose end described in the preceding steps to the vacuum pump to evacuate the tubing and indoor unit.
- Confirm the "Lo" knob of the pressure Gauge is open. Then, run the vacuum pump. The operation time for evacuation varies with tubing length and capacity of the pump. The following table shows the time required for evacuation.

Required time for evacuation when 30 gal/h vacuum pump is used	
If tubing length is less than 10m (33 ft)	If tubing length is longer than 10m (33 ft)
10 min. or more	15 min. or more

- When the desired vacuum is reached, close the knob of the 3-way valve and stop the vacuum pump.

- With a service valve wrench, turn the valve of liquid side counter-clockwise to fully open the valve.
- Turn the valve of gas side counter-clockwise to fully open the valve.
- Loosen the charge hose connected to the gas side service port slightly to release the pressure, then remove the hose.
- Replace the flare nut and its bonnet on the gas side service port and fasten the flare nut securely with an adjustable wrench. This process is very important to prevent leakage from the system.
- Replace the valve caps at both gas and liquid side service valves and fasten them tight. This completes air purging with a vacuum pump.
- Replace the pipe cover to the outdoor unit by one screw.

Now the air conditioner is ready for test run.



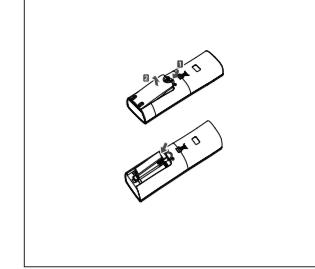
- Note (Memo) -

## 13. Test Running

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

### Prepare remote controller

- Remove the battery cover by pulling it according to the arrow direction.
- Insert new batteries making sure that the (+) and (-) of battery are installed correctly.
- Reattach the cover by pushing it back into position.

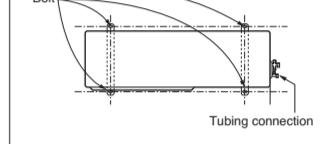


### NOTICE

- Use 2 AAA(1.5volt) batteries. Do not use rechargeable batteries.
- Remove the batteries from the remote controller if the system is not used for a long time.

### Settlement of outdoor unit

- Fix the outdoor unit with a bolt and nut(ø10mm) 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.
- If the vibration of the unit is transferred to the pipe, secure the unit with an anti-vibration rubber.



### Evaluation of the performance

Operate the unit for 15~20 minutes, then check the system refrigerant charge:

- Measure the pressure of the gas side service valve.

- Measure the air temperature from inlet and outlet of air conditioner.

- Ensure the difference between the inlet and outlet temperature is more than 8°C.

- For reference, the gas side pressure at optimum condition is shown on table (cooling)

The air conditioner is now ready to use.

### NOTICE

If the actual pressure is higher than shown, the system is most likely overcharged, and charge should be removed. If the actual pressure are lower than shown, the system is most likely undercharged, and charge should be added.

### PUMP DOWN

This is performed when the unit is relocated or the refrigerant circuit is serviced.

Pump Down means collecting all refrigerant into the outdoor unit without the loss of refrigerant.

### ▲ CAUTION

Be sure to perform Pump Down procedure in the cooling mode.

### Pump Down Procedure

- Connect a low-pressure gauge manifold hose to the charge port on the gas side service valve.
- Open the gas side service valve halfway and purge the air in the manifold hose using the refrigerant.
- Close the liquid side service valve(all the way).
- Turn on the unit's operating switch and start the cooling operation.

- When the low-pressure gauge reading becomes 1 to 0.5kg/cm<sup>2</sup> (14.2 to 7.1 P.S.I.G.), fully close the gas side valve and then quickly turn off the unit. Now Pump Down procedure is completed, and all refrigerant is collected into the outdoor unit.

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