



ENGLISH

FRANÇAIS

ESPAÑOL

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.

Art Cool Gallery Series
Original instruction



MFL67798127
Rev.01_091224

<http://www.lghvac.com>
www.lg.com

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IMPORTANT!

Please read this instruction sheet completely before installing the product.

This air conditioning system meets strict safety and operating standards. As the installer or service person, it is an important part of your job to install or service the system so it operates safely and efficiently.



WARNING

- Installation or repairs made by unqualified persons can result in hazards to you and others. Installation of all field wiring and components MUST conform with all local and national electrical codes.
- The information contained in the manual is intended for use by a qualified service technician familiar with safety procedures and equipped with the proper tools and test instruments.
- Failure to carefully read and follow all instructions in this manual can result in equipment malfunction, property damage, personal injury and/or death.

CAUTION: Improper installation, adjustment, alteration, service or maintenance can void the warranty.

The weight of the condensing unit requires caution and proper handling procedures when lifting or moving to avoid personal injury. Use care to avoid contact with sharp or pointed edges.

Safety Precautions

- Always wear safety eye wear and work gloves when installing equipment.
- Never assume electrical power is disconnected. Check with meter and equipment.
- Keep hands out of fan areas when power is connected to equipment.
- R-410A causes frostbite burns.
- R-410A is toxic when burned.

NOTE TO INSTALLING DEALER: The Owners Instructions and Warranty are to be given to the owner or prominently displayed near the indoor Air Handler Unit.



WARNING

When wiring:

Electrical shock can cause severe personal injury or death. Only a qualified, experienced electrician should attempt to wire this system.

- Do not supply power to the unit until all wiring and tubing are completed or reconnected and checked.
- Highly dangerous electrical voltages are used in this system. Carefully refer to the wiring diagram and these instructions when wiring. Improper connections and inadequate grounding can cause accidental injury or death.
- Ground the unit following in accordance with all local and national electrical codes
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.
- The choice of materials and installations must comply with the applicable local/national or international standards.

When transporting:

Be careful when picking up and moving the indoor and outdoor units. Get a partner to help, and bend your knees when lifting to reduce strain on your back. Sharp edges or thin aluminum fins on the air conditioner can cut your finger.

When installing...

... **in a wall:** Make sure the wall is strong enough to hold the unit's weight.

It may be necessary to construct a strong wood or metal frame to provide added support.

... **in a room:** Properly insulate any tubing run inside a room to prevent "sweating" that can cause dripping and water damage to wall and floors.

... **in moist or uneven locations:** Use a raised concrete pad or concrete blocks provide a solid, level foundation for the outdoor unit. This prevents water damage and abnormal vibration.

... **in an area with high winds:** Securely anchor the outdoor unit down with bolts and a metal frame. Provide a suitable air baffle.

... **in a snowy area(for Heat Pump Model):** Install the outdoor unit on a raised platform that is higher than drifting snow. Provide snow vents.

When connecting refrigerant tubing

- Keep all tubing runs as short as possible.
- Use the flare method for connecting tubing.
- Check carefully for leaks before starting the test run.

When servicing

- Turn the power OFF at the main power box(mains) before opening the unit to check or repair electrical parts and wiring.
- Keep your fingers and clothing away from any moving parts.
- Clean up the site after you finish, remembering to check that no metal scraps or bits of wiring have been left inside the unit being serviced.

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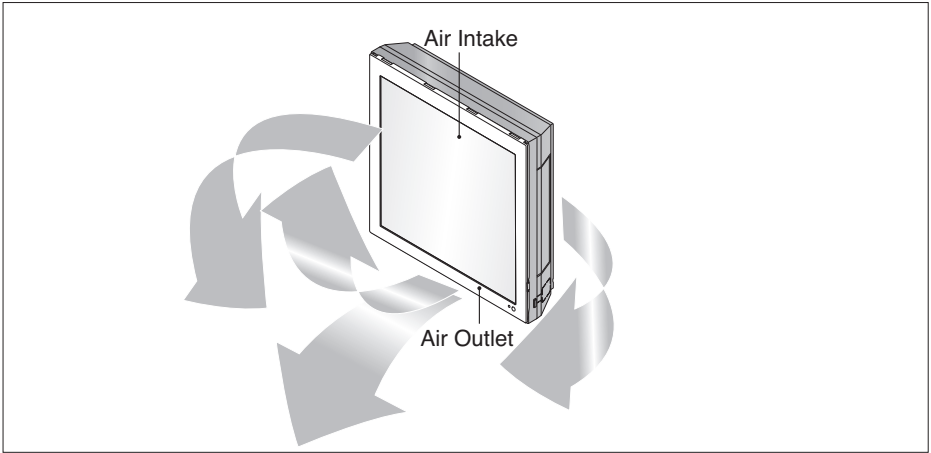
Limiting concentration18

- Installation guide map
- Four type "A" screws & plastic anchors
- Connecting cable

- Pipes: Gas side
Liquid side
(Refer to Product Data)
- Insulation materials
- Additional drain pipe



- Level gauge
- Screw driver
- Electric drill
- Hole core drill
- Horizontal meter
- Flaring tool set
- Specified torque wrenches
(different depending on model No.)
- SpannerHalf union
- A glass of water
- Screw driver
- Hexagonal wrench
- Gas-leak detector
- Vacuum pump
- Gauge manifold

Installation Parts



Read carefully, and then follow step by step.

Installation Parts

Installation guide map	Type "A" screw and plastic anchor
	

Safety Precautions

To prevent injury to 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.

- Meanings of symbols used in this manual are as shown below.



Be sure not to do.



Be sure to follow the instruction.

⚠ WARNING

Installation

- Do not use a defective or underrated circuit breaker. Use this appliance on a dedicated circuit.
 - There is risk of fire or electric shock.
- For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center.
 - Do not disassemble or repair the product. There is risk of fire or electric shock.
- Always ground the product.
 - There is risk of fire or electric shock.
- Install the panel and the cover of control box securely.
 - There is risk of fire or electric shock.
- Always install a dedicated circuit and breaker.
 - Improper wiring or installation may cause fire or electric shock.
- Use the correctly rated breaker or fuse.
 - There is risk of fire or electric shock.
- Do not modify or extend the power cable.
 - There is risk of fire or electric shock.
- Do not let the air conditioner run for a long time when the humidity is very high and a door or a window is left open.
 - Moisture may condense and wet or damage furniture.
- Be cautious when unpacking and installing the product.
 - Sharp edges could cause injury. Be especially careful of the case edges and the fins on the condenser and evaporator.
- For installation, always contact a licensed, trained dealer.
 - There is risk of fire, electric shock, explosion, or injury.
- Do not install the product on a defective installation stand.
 - It may cause injury, accident, or damage to the product.

Safety Precautions

- Be sure the installation area does not deteriorate with age.
 - If the base collapses, the air conditioner could fall with it, causing property damage, product failure, and personal injury.
- Use Inert (nitrogen) gas when doing leakage test. Do not compress air or Oxygen and Do not use Flammable gases. Otherwise, it may cause fire or explosion.
 - There is the risk of death, injury, fire or explosion.

Operation

- Do not store or use flammable gas or combustibles near the product.
 - There is risk of fire or failure of product.

CAUTION**Installation**

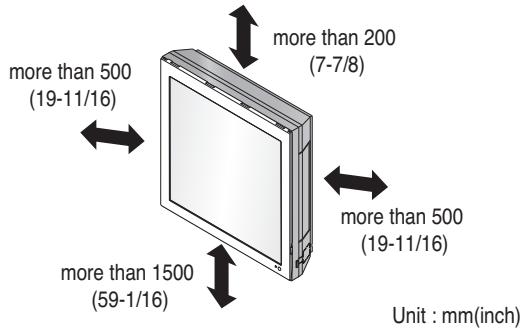
- Always check for gas (refrigerant) leakage after installation or repair of product.
 - Low refrigerant levels may cause failure of product.
- Install the drain hose to ensure that water is drained away properly.
 - A bad connection may cause water leakage.
- Keep level even when installing the product.
 - To avoid vibration or water leakage.
- Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods.
 - It may cause a problem for your neighbors.
- Use two or more people to lift and transport the product.
 - Avoid personal injury.
- Do not install the product where it will be exposed to sea wind (salt spray) directly.
 - It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.
- Do not touch batteries if leaking. Do not use the remote if the batteries have leaked.
 - The chemicals in batteries could cause burns or other health hazards.
- The Power cord connected to the unit should be selected according to the national electrical standards.

Installation

Read completely, then follow step by step.

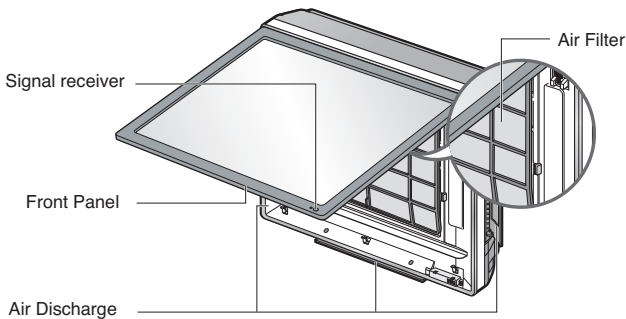
Selection of the best location

- Do not have any heat or steam near the unit.
- Select a place where there are no obstacles in front of the unit.
- Make sure that condensation drainage can be conveniently routed away.
Do not install near a doorway.
- Ensure that the space around the left and right of the unit is more than 50cm. The unit should be installed as high on the wall as possible, allowing a minimum of 10cm from ceiling.
- Use a stud finder to locate studs to prevent unnecessary damage to the wall.



⚠ CAUTION : In case that the unit is installed near the sea, the installation parts may be corroded by salt. The installation parts (and the unit) should be taken appropriate anti-corrosion measures.

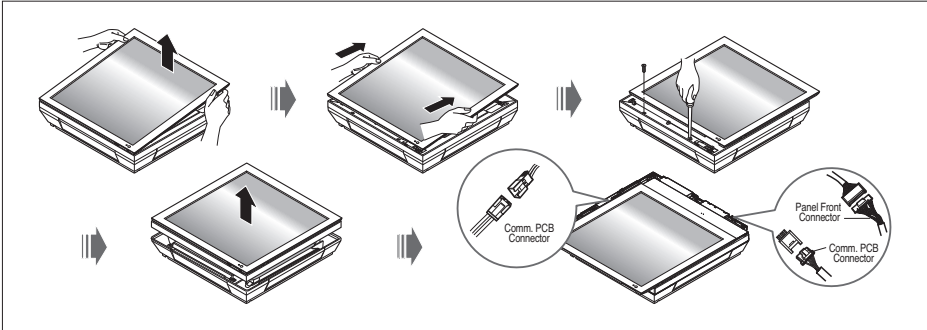
Features



Preparing Work for Installation

Open panel front

1. Pull the upper part of the front panel.
2. Lift up the panel.
3. To detach the front panel, remove the two screws at the lower part.
4. Detach the front panel from the body.
5. To detach the panel, disconnect the connector at the upper part.

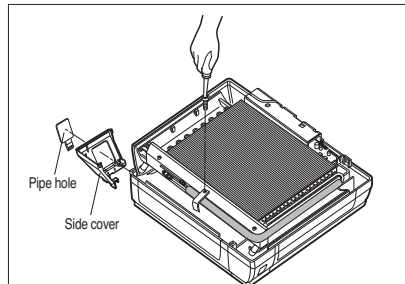


Remove cover pipe and cover side

1. Please remove the screw of the center tuning cover.
2. Pull up the side cover of desired connecting direction, then cover side is separated.
3. Pick the pipe hole of the side cover.

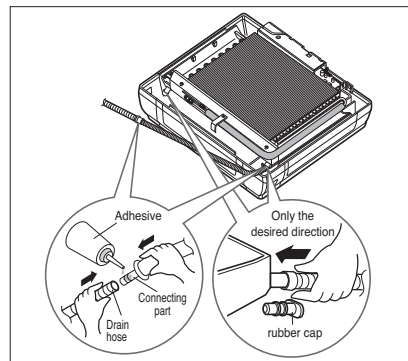
CAUTION: After removing the pipe hole, cut the burr for safety.

Notice When making pipe path through rear wall, you don't need to pick the pipe hole.



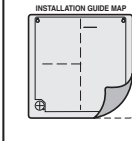
Drain hose junction

1. Remove the rubber cap in the desired drain direction.
2. Insert drain hose into the handle of drain pan, and join drain hose and connecting hose according to the figure by.

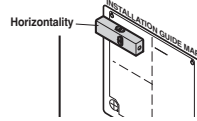


Fixing Indoor Unit

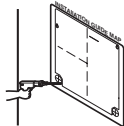
1. Attach an Installation guide map on the desired surface.



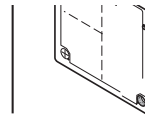
2. Look at suited horizon by horizontal meter on the horizontal setting line, and fix lightly the map by adhesive tape.



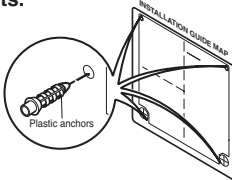
3. Make a hole with a diameter of 6mm(0.25") and depth of 30-35mm(1.25" to 1.5") by piercing a screw point.



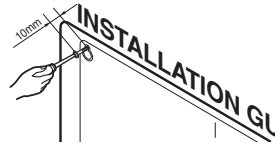
4. Drill the Pierced part as a diameter of 50mm(2") for connecting piping. (In case of piercing rear surface)



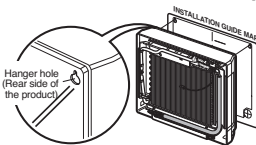
5. Drive the four plastic anchors into drilled points.



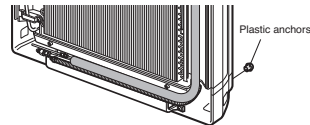
6. First, Drive the two points of the upper parts by screws. (Leave 10mm(0.5") for hanging the product)



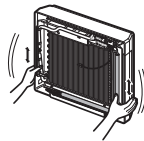
7. Hang the hole of product at the upper screws, and remove the map.



8. Secure the lower screws first, and then completely tighten the upper screws.



9. Check to ensure the unit is secure.



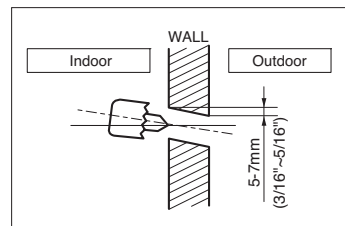
10. Once completed, connect the pipe and the wire. (Refer to installation manual)

Drill a Hole in the Wall

- Drill the piping hole with a $\varnothing 50\text{mm}$ (2") hole core drill. Drill the piping hole at either the right or the left with the hole slightly slanted to the outdoor side.

⚠ CAUTION

If the split type Indoor unit is installed in a wall having hole or opening near by or back side of the unit, then the air from other side of the wall can come inside the condition space through that hole/ opening. That air can cause unwanted dew/ water droplet formation when it comes in contact with body of the indoor unit. So all hole or opening on the wall must be blocked very well to avoid water Dripping from the body of the unit.

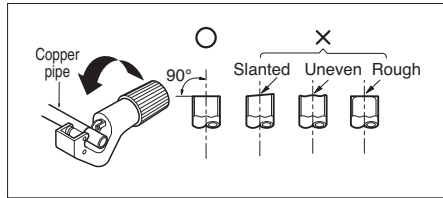


Flaring Work

Main cause for gas leakage is due to defect in flaring work. Carry out correct flaring work in the following procedure.

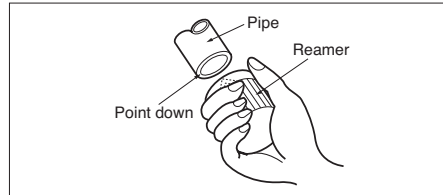
Cutting the pipes and the cable.

1. Use the piping kit accessory or the pipes purchased locally.
2. Measure the distance between the indoor and the outdoor unit.
3. Cut the pipes a little longer than measured distance.
4. Cut the cable 1.5m(5ft) longer than the pipe length.



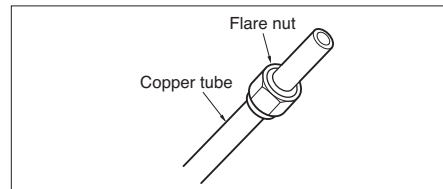
Removing burrs

1. Completely remove all burrs from the cut cross section of pipe/tube.
2. While removing burrs put the end of the copper tube/pipe in a downward direction while removing burrs location is also changed in order to avoid dropping burrs into the tubing.



Putting nut on

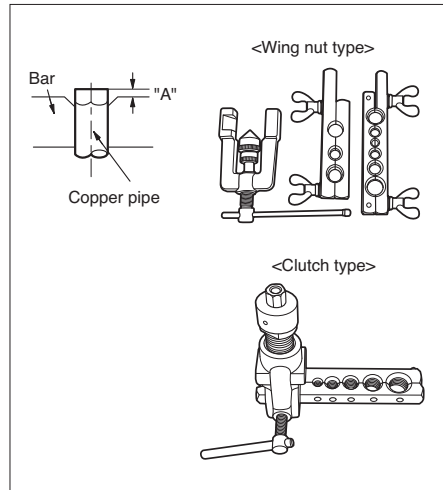
- Remove flare nuts attached to indoor and outdoor unit, then put them on pipe/tube having completed burr removal. (not possible to put them on after flaring work)



Flaring work

1. Firmly hold copper pipe in a die in the dimension shown in the table below.
2. Carry out flaring work with the flaring tool.

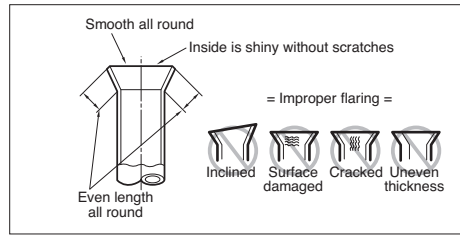
Pipe diameter Inch (mm)	A inch (mm)	
	Wing nut type	Clutch type
Ø1/4 (Ø6.35)	0.04~0.07 (1.1~1.8)	0~0.02 (0~0.5)
Ø3/8 (Ø9.52)		
Ø1/2 (Ø12.7)		
Ø5/8 (Ø15.88)		



Installation

Check

1. Compare the flared work with the figure by.
2. If a flared section is defective, cut it off and do flaring work again.

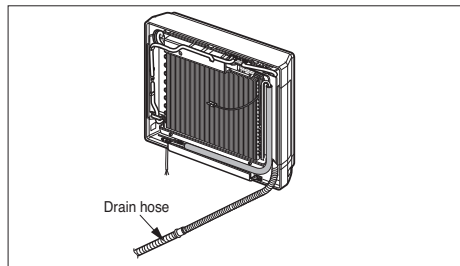


Connecting the Piping

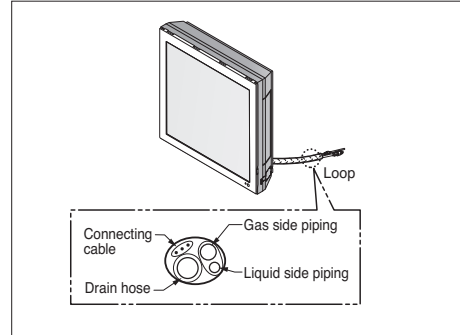
Indoor

Preparing the indoor unit's piping and drain hose for installation through the wall.

1. Route the indoor tubing and the drain hose in the direction of rear left or right



2. Tape the tubing, drain hose and the connecting cable. Be sure that the drain hose is located at the lowest side of the bundle. Locating at the upper side can cause drain pan to overflow inside the unit.



CAUTION: If the drain hose is routed inside the room, insulate the hose with an insulation material* so that dripping from "sweating"(condensation) will not damage furniture or floors.

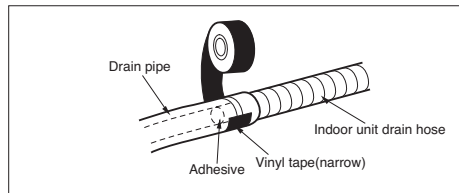
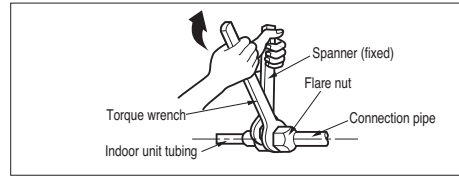
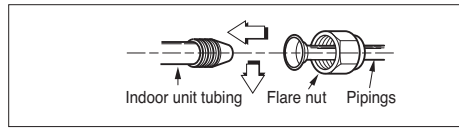
*Foamed polyethylene or equivalent is recommended.

Connecting the piping with the indoor unit and drain hose with drain pipe

1. Align the center of the pipings and sufficiently tighten the flare nut by hand.
2. Tighten the flare nut with a wrench.

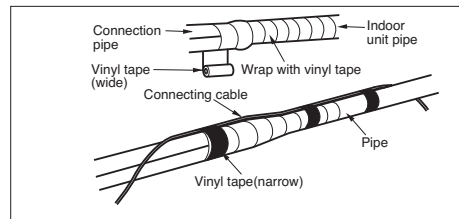
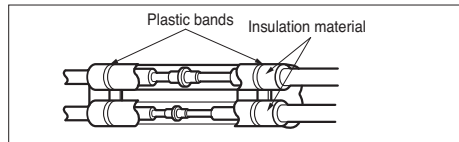
Piping Size		Torque		
mm	inch	kgf·m	N·m	lbf·ft
Ø 6.35	Ø 1/4	180~250	17.6~24.5	13~18
Ø 9.52	Ø 3/8	340~420	33.3~41.2	25~30
Ø 15.88	Ø 5/8	630~820	61.7~80.4	45~59
Ø 12.7	Ø 1/2	550~660	53.9~64.7	40~48
Ø 19.05	Ø 3/4	990~1210	97.0~118.7	71~87

3. When needed to extend the drain hose of indoor unit, assembly the drain pipe as shown on the drawing.

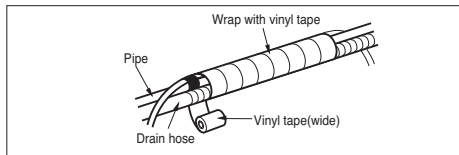


Wrap the insulation material around the connecting portion.

1. Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there may be no gap.
2. Wrap the area which accommodates the rear piping housing section with vinyl tape.



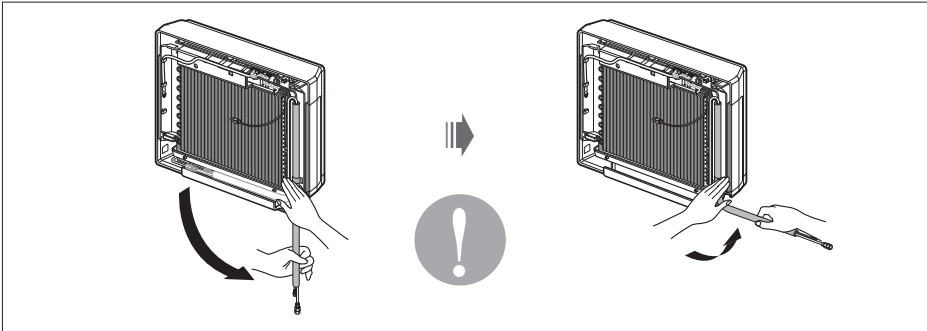
3. Bundle the piping and drain hose together by wrap them with vinyl tape over the range within which they fit into the rear piping housing section.



⚠ CAUTION: Installation Information
For right piping. Follow the instruction below.

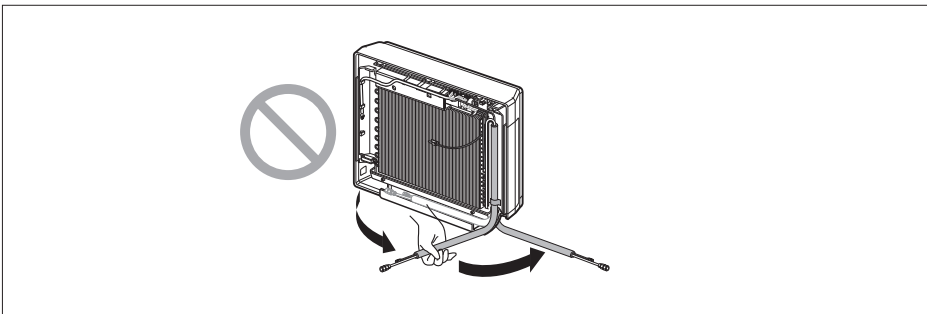
Good case

- Press on the upper side of clamp and unfold the tubing to downward slowly.



Bad case

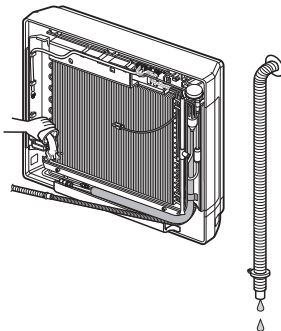
- Following bending type from left to right may cause damage to the tubing.



Drain Piping

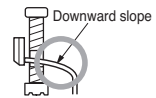
1) To check the drainage.

- 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.

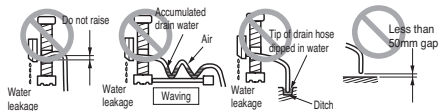


2) Drain piping

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

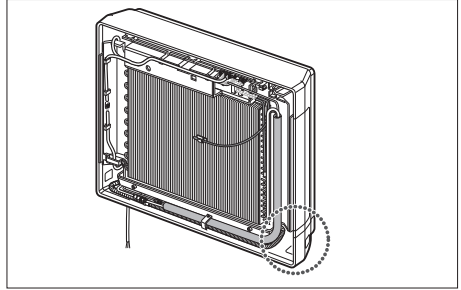


- Do not make drain piping.

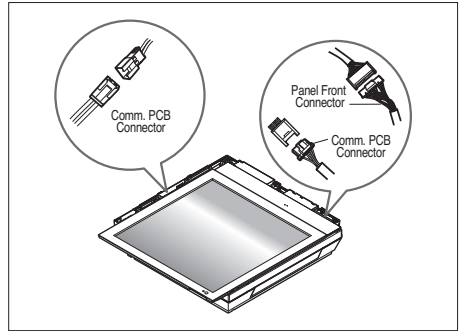


Panel Front Assembly

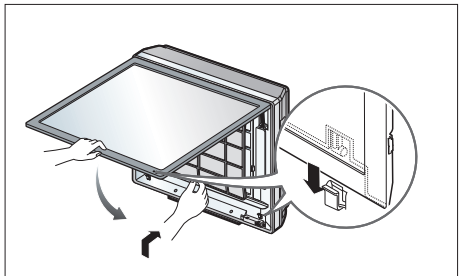
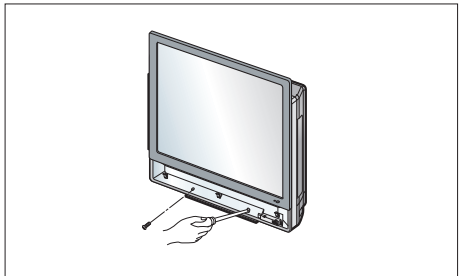
1. First, Check the side cover assembly exactly, and fix the power cord in the bottom groove of cover side left.



2. Assemble connecting lead wire with controller, fix the upper part of panel front, and match the lower part of panel front.



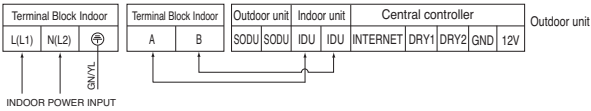
3. Screw up panel front, and suspend the hook of panel front in the groove.



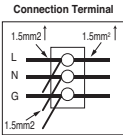
Wiring Connection

- Connect the cable to the indoor unit by connecting the wires to the terminals on the control board individually according to the outdoor 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.)

The ground wire should be longer than the common wires.



- When installing, refer to the circuit diagram on the Control Box of Indoor Unit.
- When installing, refer to the wiring diagram on the Control Cover Inside Outdoor Unit.



- The capacity of connection terminal should be over 250V 20A. And when connecting the power line and communication line between indoor units, you are advised to use the connection terminal.
- When you are not able to use the connection terminal, fix each power line/communication line by using the clamp cord attached in the product, together with the clamp cord and screw in the accessories.

Please consider the all connected capacity of indoor units.

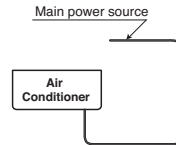


CAUTION

- The above circuit diagram is subject to change without notice.
- Be sure to connect wires according to the wiring diagram.
- Connect the wires firmly, so that not to be pulled out easily.
- Connect the wires according to color codes by referring the wiring diagram.



CAUTION If a power plug is not to be used, provide a circuit breaker between power source and the unit as shown below.



Circuit Breaker
Use a circuit breaker or time delay fuse.

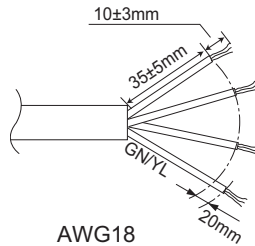


CAUTION After the confirmation of the above conditions, prepare the wiring as follows:

- 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 screws 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 to 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 where it is wet or moist.
- 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 protection device.

CAUTION :

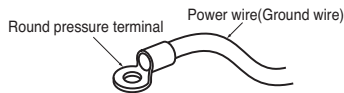
The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (This equipment shall be provided with a cord set complying with the national regulation).



If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.

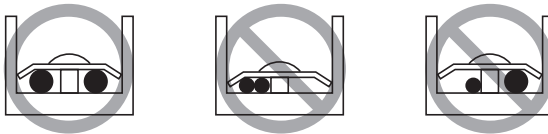
◆ Precautions when laying power and ground wiring

Use round pressure terminals for connections to the power terminal block. When laying ground wiring, you must use round pressure terminals.



When none are available, follow the instructions below.

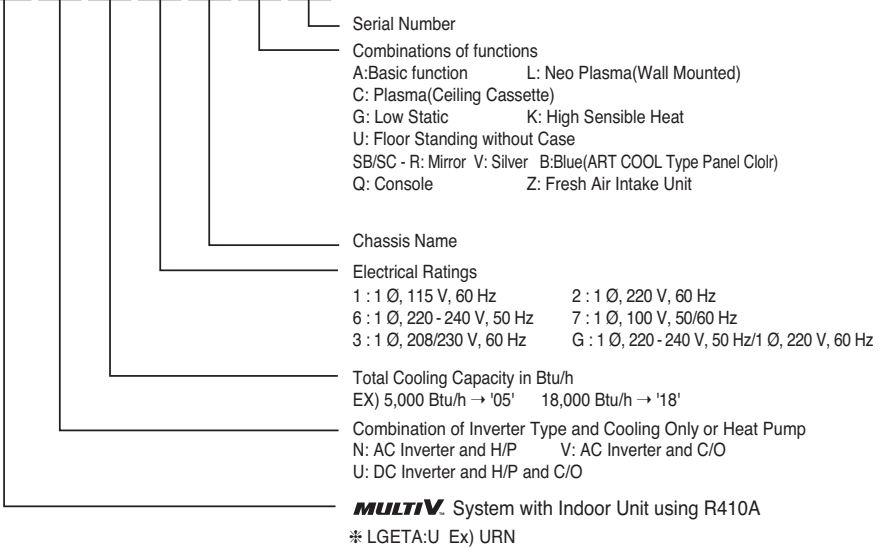
- Do not connect wiring of different thicknesses to the power terminal block. (Slack in the power wiring may cause abnormal heat.)
- When connecting wiring which is the same thickness, do as shown in the figure below.



- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.

Model Designation

ARN U 12 3 SF A 4



Airborne Noise Emission

The A-weighted sound pressure emitted by this product is below 70 dB.

** The noise level can vary depending on the site.

The figures quoted are emission level and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factors that influence the actual level of exposure of the workforce include the characteristics of the work room and the other sources of noise, i.e. the number of equipment and other adjacent processes and the length of time for which an operator is exposed to the noise. Also, the permissible exposure level can vary from country to country. This information, however, will enable the user of the equipment to make a better evaluation of the hazard and risk.

Limiting concentration

Limiting concentration is the limit of Freon gas concentration where immediate measures can be taken without hurting the human body when refrigerant leaks in the air. The limiting concentration shall be described in the unit of kg/m³ (lbs/ft³) (Freon gas weight per unit air volume) for facilitating calculation.

Limiting concentration: 0.44 kg/m³ (0.027 lbs/ft³) (R410A)

■ Calculate refrigerant concentration

$$\text{Refrigerant concentration} = \frac{\text{Total amount of replenished refrigerant in refrigerant facility [kg(lbs)]}}{\text{Capacity of smallest room where indoor unit is installed [m}^3\text{(ft}^3\text{)]}}$$



US	Please call the installing contractor of your product, as warranty service will be provided by them.
CANADA	Service call Number # : (888) LG Canada, (888) 542-2623 Numéro pour les appels de service : LG Canada, 1-888-542-2623