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.

Ceiling Suspended Air Conditioner

Original instruction

P/No.:MFL67107626
REV.01_052721

www.lghvac.com
www.lg.com

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TIPS FOR SAVING ENERGY

Here are some tips that will help you minimize the power consumption when you use the air conditioner. You can use your air conditioner more efficiently by referring to the instructions below:

- Do not cool excessively indoors. This may be harmful for your health and may consume more electricity.
- Block sunlight with blinds or curtains while you are operating the air conditioner.
- Keep doors or windows closed tightly while you are operating the air conditioner.
- Adjust the direction of the air flow vertically or horizontally to circulate indoor air.
- Speed up the fan to cool or warm indoor air quickly, in a short period of time.
- Open windows regularly for ventilation as the indoor air quality may deteriorate if the air conditioner is used for many hours.
- Clean the air filter once every 2 weeks. Dust and impurities collected in the air filter may block the air flow or weaken the cooling / dehumidifying functions.

For your records

Staple your receipt to this page in case you need it to prove the date of purchase or for warranty purposes. Write the model number and the serial number here:

Model number :

Serial number :

You can find them on a label on the side of each unit.

Dealer's name :

Date of purchase :

IMPORTANT SAFETY INSTRUCTIONS

READ ALL INSTRUCTIONS BEFORE USING THE APPLIANCE.

Always comply with the following precautions to avoid dangerous situations and ensure peak performance of your product

⚠ WARNING

It can result in serious injury or death when the directions are ignored

⚠ CAUTION

It can result in minor injury or product damage when the directions are ignored

⚠ WARNING

Installation

- Compliance with national gas regulations shall be observed.
- 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 install, remove, or re-install the unit by yourself (customer).
  - There is risk of fire, electric shock, explosion, or injury.
- 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 the dealer or an Authorized Service Center.
  - 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.
- 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.
- 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.
- Use Inert (nitrogen) gas when doing leakage

test or air purge. 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.

- Have all electric work done by a licensed electrician according to "Electric Facility Engineering Standard" and "Interior Wire Regulations" and the instructions given in this manual and always use a special circuit.
  - If the power source capacity is inadequate or electric work is performed improperly, electric shock or fire may result.
- Always install a dedicated circuit and breaker.
  - Improper wiring or installation may cause fire or electric shock.
- The appliance shall be stored in a room without continuously operating ignition sources (for example: open flames, an operating gas appliance or an operating electric heater.)
- Keep any required ventilation openings clear of obstruction.
- Mechanical connections shall be accessible for maintenance purposes.
- To prevent the mixing of different types of refrigerants, be sure to check the type of refrigerant used in the outdoor unit.

Operation

- 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.
- Take care to ensure that power cable could not be pulled out or damaged during operation.

- There is risk of fire or electric shock.

- Do not place anything on the power cable.
  - There is risk of fire or electric shock.
- Do not plug or unplug the power supply plug during operation.
  - There is risk of fire or electric shock.
- Do not touch(operate) the product with wet hands.
  - There is risk of fire or electrical shock.
- Do not place a heater or other appliances near the power cable.
  - There is risk of fire and electric shock.
- Do not allow water to run into electric parts.
  - There is risk of fire, failure of the product, or electric shock.
- Do not store or use flammable gas or combustibles near the product.
  - There is risk of fire or failure of product.
- Do not use the product in a tightly closed space for a long time.
  - Oxygen deficiency could occur.
- When flammable gas leaks, turn off the gas and open a window for ventilation before turn the product on.
  - Do not use the telephone or turn switches on or off. There is risk of explosion or fire.
- If strange sounds, smell or smoke comes from product. Turn the breaker off or disconnect the power supply cable.
  - There is risk of electric shock or fire.
- Stop operation and close the window in storm or hurricane. If possible, remove the product from the window before the hurricane arrives.
  - There is risk of property damage, failure of product, or electric shock.
- Do not open the inlet grill of the product during operation. (Do not touch the electrostatic filter, if the unit is so equipped.)
  - There is risk of physical injury, electric shock, or product failure.

- When the product is soaked (flooded or submerged), contact an Authorized Service Center.
  - There is risk of fire or electric shock.
- Be cautious that water could not enter the product.
  - There is risk of fire, electric shock, or product damage.
- Ventilate the product from time to time when operating it together with a stove, etc.
  - There is risk of fire or electric shock.
- Turn the main power off when cleaning or maintaining the product.
  - There is risk of electric shock.
- When the product is not be used for a long time, disconnect the power supply plug or turn off the breaker.
  - There is risk of product damage or failure, or unintended operation.
- Take care to ensure that nobody could step on or fall onto the outdoor unit.
  - This could result in personal injury and product damage.
- Periodic (more than once/year) cleaning of the dust or salt particles stuck on the heat exchanger by using water.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Do not pierce or burn refrigerant cycle part.
- Be aware that refrigerants may not contain an odour.

⚠ 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 neighbourhoods.
  - 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.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Refrigerant tubing shall be protected or enclosed to avoid damage.
- Flexible refrigerant connectors (such as connecting lines between the indoor and outdoor unit) that may be displaced

during normal operations shall be protected against mechanical damage.

- The installation of pipe-work shall be kept to a minimum.
- Pipe-work shall be protected from physical damage.
- A brazed, welded, or mechanical connection shall be made before opening the valves to permit refrigerant to flow between the refrigerating system parts.
- Dismantling the unit, treatment of the refrigerant oil and eventual parts should be done in accordance with local and national standards.
- Do not install the unit in potentially explosive atmospheres.

Operation

- Do not expose the skin directly to cool air for long periods of time. (Don't sit in the draft.)
  - This could harm to your health.
- Do not use the product for special purposes, such as preserving foods, works of art, etc. It is a consumer air conditioner, not a precision refrigeration system.
  - There is risk of damage or loss of property.
- Do not block the inlet or outlet of air flow.
  - It may cause product failure.
- Use a soft cloth to clean. Do not use harsh detergents, solvents, etc.
  - There is risk of fire, electric shock, or damage to the plastic parts of the product.
- Do not touch the metal parts of the product when removing the air filter. They are very sharp!
  - There is risk of personal injury.
- Do not step on or put anything on the product. (outdoor units)
  - There is risk of personal injury and failure of product.

- Always insert the filter securely. Clean the filter every two weeks or more often if necessary.
  - A dirty filter reduces the efficiency of the air conditioner and could cause product malfunction or damage.
- Do not insert hands or other objects through the air inlet or outlet while the product is operated.
  - There are sharp and moving parts that could cause personal injury.
- Do not drink the water drained from the product.
  - It is not sanitary and could cause serious health issues.
- Use a firm stool or ladder when cleaning or maintaining the product.
  - Be careful and avoid personal injury.
- Replace the all batteries in the remote control with new ones of the same type. Do not mix old and new batteries or different types of batteries.
  - There is risk of fire or explosion.
- Do not recharge or disassemble the batteries. Do not dispose of batteries in a fire.
  - They may burn or explode.
- If the liquid from the batteries gets onto your skin or clothes, wash it well with clean water. Do not use the remote if the batteries have leaked.
  - The chemicals in batteries could cause burns or other health hazards.
- If you eat the liquid from the batteries, brush your teeth and see doctor. Do not use the remote if the batteries have leaked.
  - The chemicals in batteries could cause burns or other health hazards.

- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

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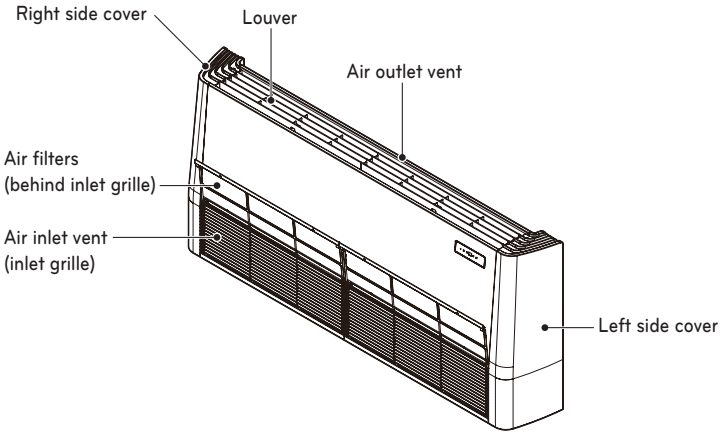
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14 Select the best Location

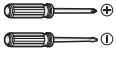
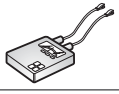
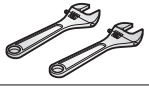
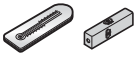
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PRODUCT PARTS



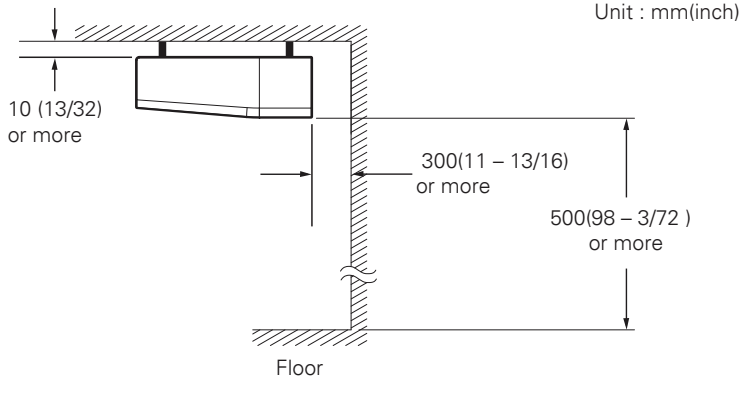
INSTALLATION TOOLS

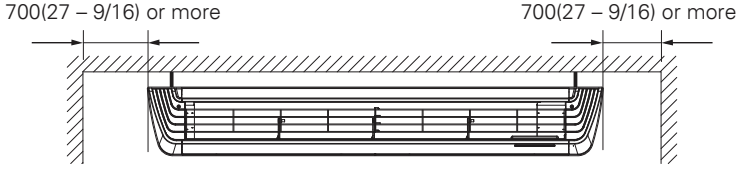
Figure	Name	Figure	Name
	Screw driver		Multi-meter
	Electric drill		Hexagonal wrench
	Measuring tape, Knife		Ammeter
	Hole core drill		Gas-leak detector
	Spanner		Thermometer, Level
	Torque wrench		Flaring tool set

INSTALLATION

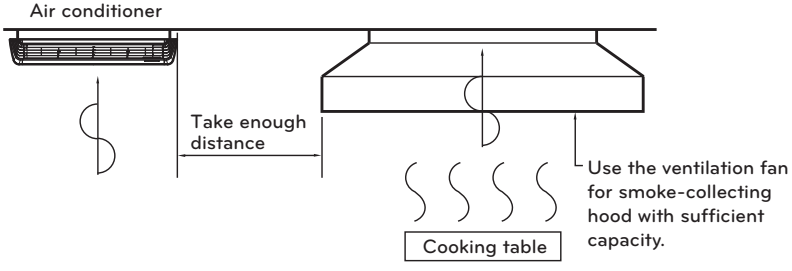
Select the best Location

- There should not be any heat source or steam near the unit.
- There should not be any obstacles to prevent the air circulat ion.
- 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, or other obstacles.
- The indoor unit must keep the maintenance space.





THE INDOOR UNIT INSTALLATION



CAUTION

- Install the unit horizontally using a level gauge.
- During the installation, care should be taken not to damage electric wires.
- Select and mark the position for fixing bolts and piping hole.
- Decide the position for fixing bolts slightly tilted to the drain direction after considering the direction of drain hose.
- Drill the hole for anchor bolt on the ceiling.

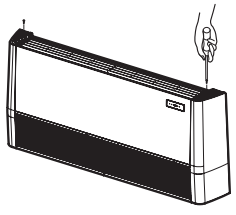
NOTE

- Avoid the following installation location.

1. Such places as restaurants and kitchen where considerable amount of oil steam and flour is generated.
   These may cause heat exchange efficiency reduction, or water drops, drain pump mal-function.
   In these cases, take the following actions;
   - Make sure that ventilation fan is enough to cover all noxious gases from this place.
   - Ensure enough distance from the cooking room to install the air conditioner in such a place where it may not suck oily steam.
2. Avoid installing air conditioner in such places where cooking oil or iron powder is generated.
3. Avoid places where inflammable gas is generated.
4. Avoid place where noxious gas is generated.
5. Avoid places near high frequency generators.

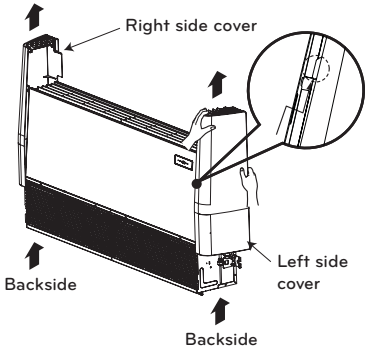
Open side-cover

Step 1



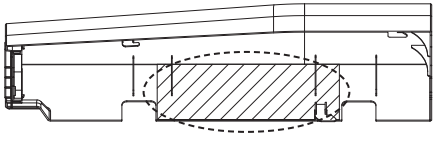
- Remove two screws from side cover.

Step 2



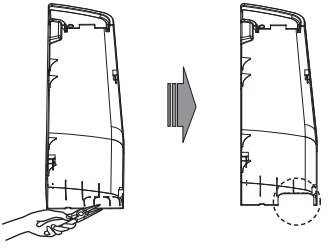
- Unlock side-cover from side-panel slightly (Tap the side-cover with your palm on the backside)

Step 3



- Remove paper bracket from side-cover.

Step 4



- Knock out the pipe hole from the left side cover with nipper/plier.

⚠ CAUTION

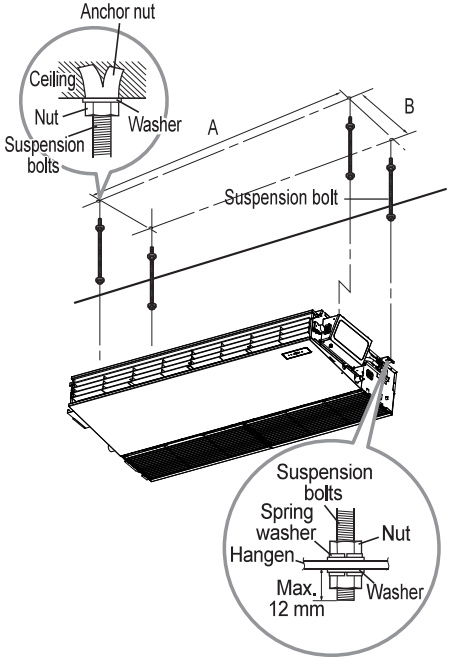
Hold the side-cover with other hand while tapping to prevent it to fall down.

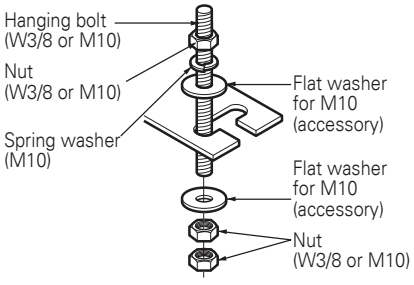
Mounting the anchor nut and bolt

- Prepare 4 suspension bolts. (Each bolts length should be same.)
- Measure and mark the position for the Suspension bolts and the piping hole.
- Drill the hole for anchor nut on the ceiling.
- Insert the nuts and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the anchornuts firmly.
- Secure the hangers onto the Suspension bolts (adjust level roughly.) using nuts, washers and spring washers.
- Adjust a level with a level gauge on the direction of left-right, back-forth by adjusting suspension bolts.
- Adjust a level on the direction of top-bottom by adjusting supension bolts. Then the unit will be declined to the bottomside so as to drain well.

Unit : inch(mm)

Chassis Code		A	B
VM1	ARNU**GV1A4	40-5/64 (1 018)	13-31/32 (355)
VM2	ARNU**GV2A4	55-53/64 (1 418)	13-31/32 (355)





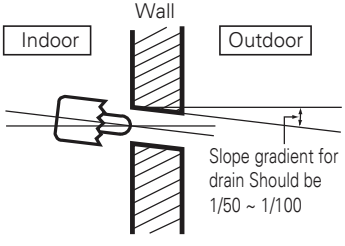
- The following parts is option.

Hanging Bolt - W 3/8 or M10
Nut - W 3/8 or M10
Spring Washer - M10
Plate Washer - M10

⚠ CAUTION

Tighten the nut and bolt to prevent unit from falling

- Drill the piping hole on the wall slightly tilted to the outdoor side by using a Ø 70 hole-core drill.



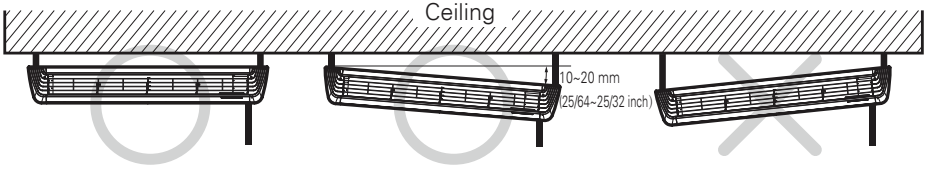
⚠ CAUTION

Installation information for declination

- Install declination of the indoor unit is very important for the drain of the convertible type air conditioner.
- Minimum thickness of the insulation for the connecting pipe shall be 10 mm（25/64 inch）.
- If the Installation Plates are fixed to horizontal line, the indoor unit after installing will be declined to the bottomside.

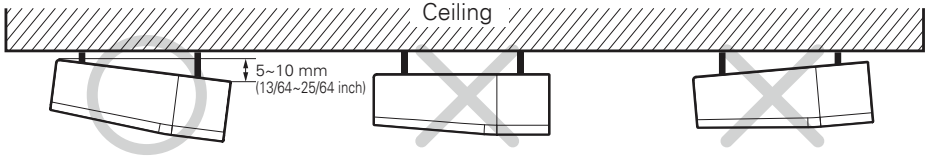
Front of view

- The unit must be horizontal or inclined at angle.
- The inclination should be less than or equal to 1° or in between 10 to 20 mm（25/64 to 25/32 inch）inclined in drain direction as shown in fig.



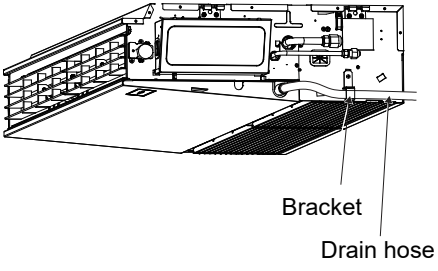
Side ofview

- The unit must be inclined to the bottomside of the unit when finished installation.



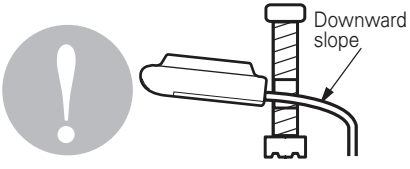
Indoor unit drain piping

- Drain piping must have down-slope (1/50 to 1/100): be sure not to provide up-and-down slope to prevent reversal flow.
- During drain piping connection, be careful not to exert extra force on the drain port on the indoor unit.
- Remove the rubber stopple before connecting drain hose.
- Hook on the bracket after connecting the drain hose as below.

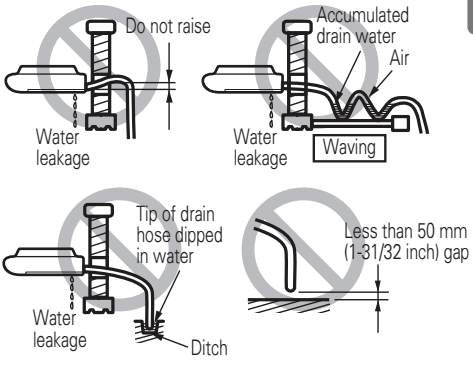


Drain piping

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



- Do not make drain piping like the following.

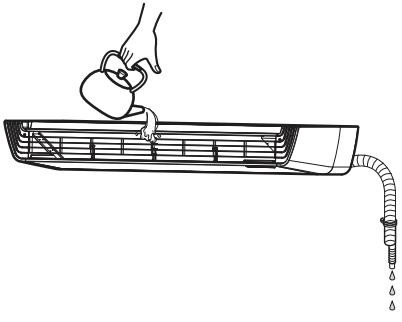


- Be sure to execute heat insulation on the drain piping.

Heat insulation material: Polyethylene foam with thickness more than 8 mm(5/16 inch).

Drain test

Use the following procedure to test the drain pump operation:

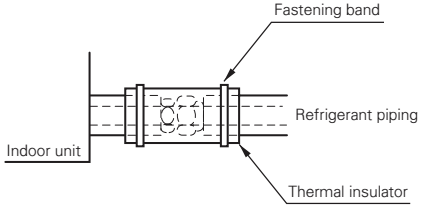


- Set the air direction louvers up-and-down to the position(horizontally) by hand.
- Pour a glass of water on the evaporator using a kettle.
- Ensure the water flows through the drain hose of the indoor unit without any leakage and goes out the drain exit.

Heat insulation

Use the heat insulation material for the refrigerant piping which has an excellent heat-resistance （over 248 °F/120°C).

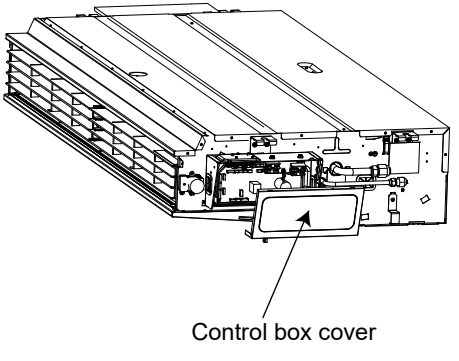
Precautions in high humidity circumstance: This air conditioner has been tested according to the "KS Standard Conditions with Mist" and confirmed that there is not any default. However, if it is operated for a long time in high humid atmosphere (dew point temperature: more than 73.4 °F / 23 °C), water drops are liable to fall. In this case, add heat insulation material according to the following procedure:



- Heat insulation material to be prepared... Adiabatic glass wool with thickness 10 to 20 mm(25/64 to 25/32 inch).
- Stick glass wool on all air conditioners that are located in ceiling atmosphere.

Connecting cables to the indoor unit

- Remove the control box cover for electrical connection between the indoor and out door unit
- Use the cord clamper to fix the cord.

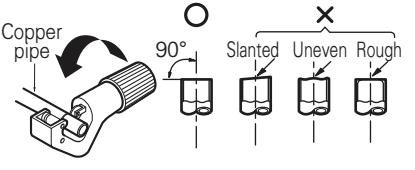


Flaring Work

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

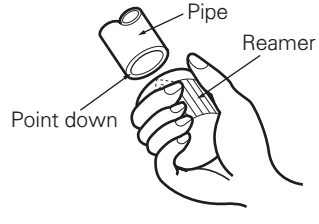
Cut the pipes and the cable

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(59-1/16 inch) longer than the pipe length.



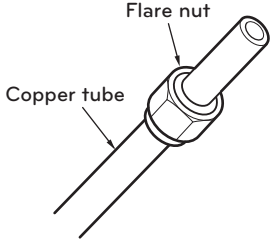
Burrs removal

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 finishing flare work)

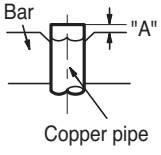


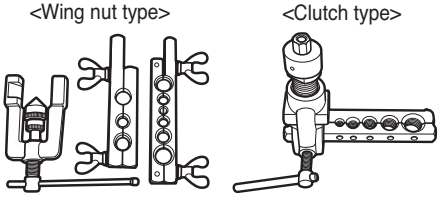
Flaring work

1 Firmly hold copper pipe in a bar with the dimension shown in below table table below.

2 Carry out flaring work with the flaring tool.

Pipe diameter inch (mm)	A inch (mm)	
	Wing nut type	Clutch type
Ø 1/4 (Ø 6.35)	0.04~0.05 (1.1~1.3)	0~0.02 (0~0.5)
Ø 3/8 (Ø 9.52)	0.06~0.07 (1.5~1.7)	
Ø 1/2 (Ø 12.7)	0.06~0.07 (1.6~1.8)	
Ø 5/8 (Ø 15.88)	0.06~0.07 (1.6~1.8)	
Ø 3/4 (Ø19.05)	0.07~0.08 (1.9~2.1)	

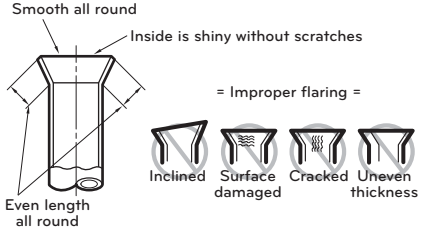




Check

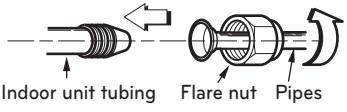
1 Compare the flared work with the figure by.

2 If a flared section is defective, cut it off and do flaring work again.



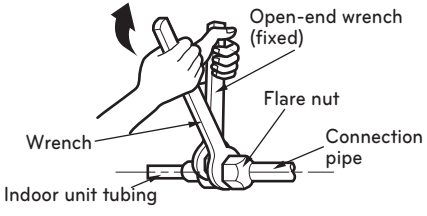
Connecting the installation pipe and drain hose to the indoor unit.

1 Align the center of the pipes and sufficiently tighten the flare nut by hand

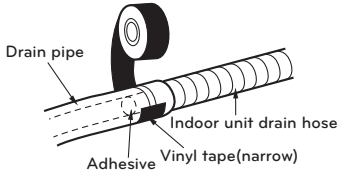


2 Tighten the flare nut with a wrench

Outside diameter		Torque
mm	inch	kgf·m
Ø 6.35	1/4	1.8~2.5
Ø 9.52	3/8	3.4~4.2
Ø 12.7	1/2	5.5~6.5
Ø 15.88	5/8	6.3~8.2
Ø 19.05	3/4	9.9~12.1

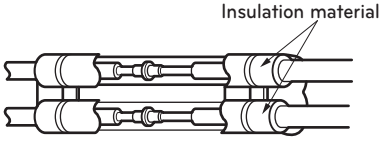


3 When needed to extend the drain hose of indoor unit, assembly the drain pipe as shown on the drawing

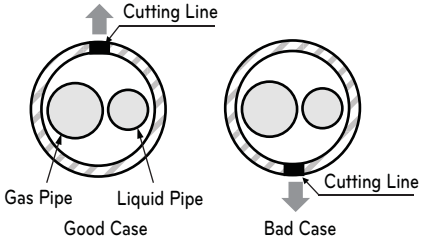


Wrap the insulation material around the connecting portion.

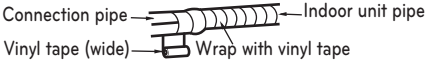
1 Overlap the connection pipe insulation material and the indoor unit pipe insulation material. Bind them together with vinyl tape so that there may be no gap.

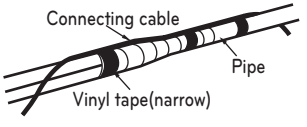


2 Set the tubing cutting line upward. Wrap the area which accommodates the rear piping housing section with vinyl tape.

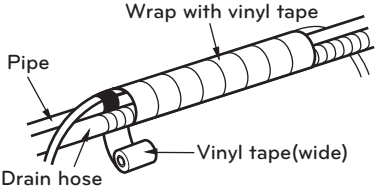


* Tubing cutting line have to be upward.



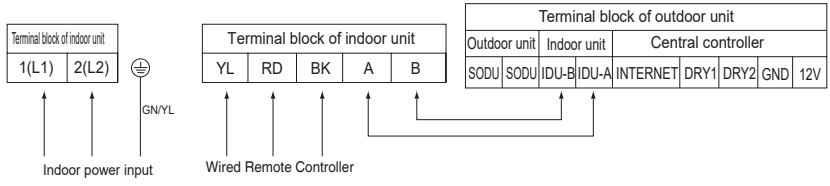


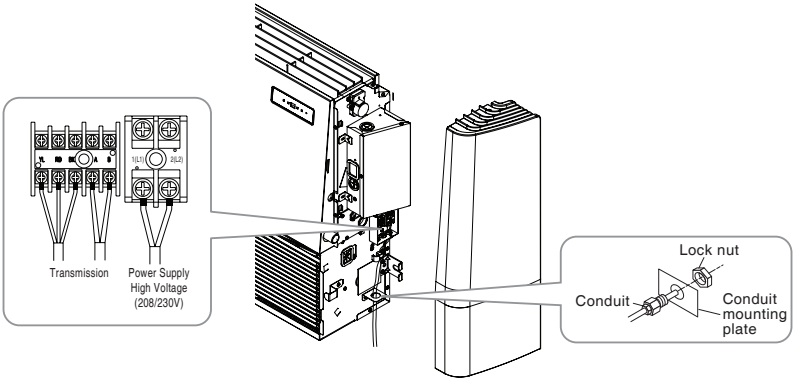
3 Bundle the piping and drain hose together by wrapping them with vinyl tape sufficient enough to cover where they fit into the rear piping housing section.



Wiring Connection

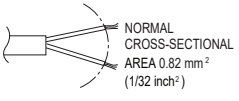
- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.





CAUTION

- The connecting cable:connected to the indoor and outdoor unit should be complied with the following specifications (AWG18).
- If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.



WARNING

Make sure that the screws of the terminal are free from looseness.

⚠ CAUTION

The Power cord connected to the unit should be selected according to the following specifications.

⚠ CAUTION

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

1) Never fail to have separate power specially for the air conditioner. As for the method of wiring, follow the circuit diagram pasted on the inside of control box cover.
2) Provide a circuit breaker switch between power source and the unit.
3) 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 give rise to burn-out of the wires.)
4) Confirm the Specification of power source
5) Confirm that electrical capacity is sufficient.
6) Be sure that the starting voltage is maintained at more than 90 percent of the rated voltage marked on the name plate.
7) Confirm that the cable thickness is as specified in the power sources specification. (Particularly note the relation between cable length and thickness.)
8) Do not install the leakage breaker in a place which is wet or moist. Water or moist may cause short circuit.
9) The following troubles would be caused by voltage drop-down.
   - Vibration of a magnetic switch, damage on the contact point there of, fuse breaking, disturbance to the normal function of a overload protection device.
   - Proper starting power is not given to the compressor.

DIP Switch Setting

Indoor Unit

	Function	Description	Setting Off	Setting On	Default
SW1	Communication	N/A (Default)	-	-	Off
SW2	Cycle	N/A (Default)	-	-	Off
SW3	Group Control	Selection of Master or Slave	Master	Slave	Off
SW4	Dry Contact Mode	Selection of Dry Contact Mode	Wired/Wireless remote controller Selection of Manual or Auto operation Mode	Auto	Off
SW5	Position	Selection of installation position	Ceiling	Bottom	Off
SW6	Heater linkage	N/A	-	-	Off
SW7	Ventilator linkage	Selection of Ventilator linkage	Linkage Removal	Working	Off
	Vane selection (Console)	Selection of up/down side Vane	Up side + Down side Vane	Up side Vane Only	
	Region selection	Selection tropical region	General model	Tropical model	
SW8	Etc.	Spare	-	-	Off

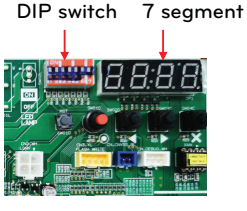
⚠ CAUTION

For Multi V Models, DIP switch 1, 2, 6, 8 must be set OFF.

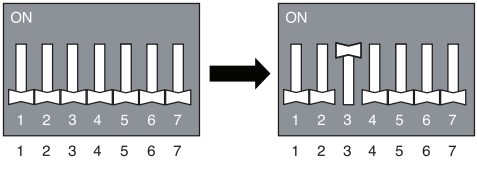
Outdoor Unit

In case that the products meet specific conditions, “Auto addressing” function can start automatically with the improved speed by turning the DIP switch #3 of the outdoor unit and resetting the power.

* Specific conditions:
  - All names of the indoor units are ARNU******4
  - The serial number of Multi V super IV (outdoor units) is after October 2013,



Outdoor Unit PCB

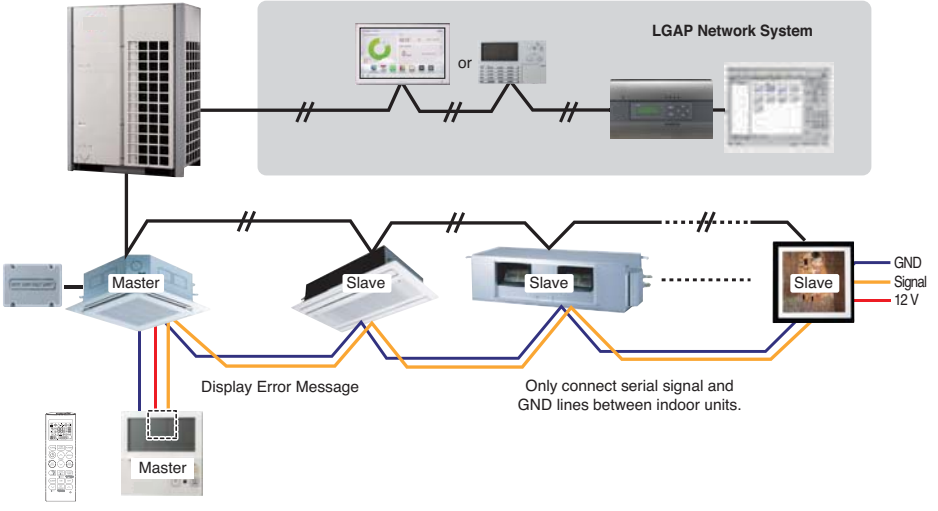


Outdoor Unit DIP Switch

Group Control Setting

Group Control 1

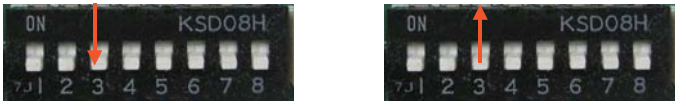
■ Wired remote controller 1 + Standard Indoor Units



■ DIP Switch in PCB

① Master Setting
- No. 3 Off

② Slave Setting
- No. 3 On



Indoor Unit DIP Switch

Some products have no DIP switch on PCB. It is possible to set indoor units to Master or Slave by using the wireless remote controller instead of DIP switch.

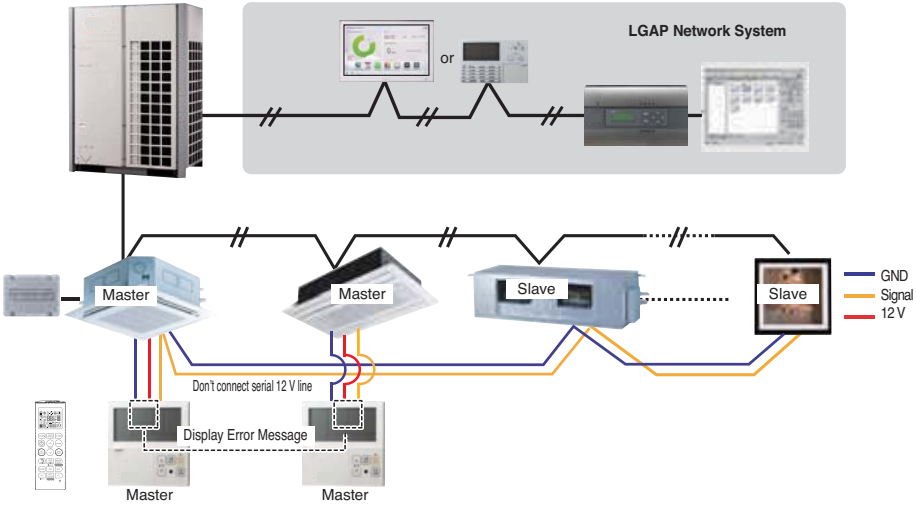
For the details of the setting, please refer to the manual of the wireless remote controller.

1. It is possible to 16 indoor units(Max.) by one wired remote controller.
   Set only one indoor unit to Master, set the others to Slave.
2. It is possible to connect with every type of indoor units.
3. It is possible to use wireless remote controller at the same time.
4. It is possible to connect with Dry Contact and Central controller at the same time.
   - The Master indoor unit is possible to recognize Dry Contact and Central Controller only.
5. In case that any error occurs at indoor unit, the error code is displayed on the wired remote controller.
   It is possible to control the other indoor units except the error units.

* It is possible to connect indoor units since Feb. 2009.
* It can be the cause of malfuctions when there is no setting of master and slave.
* In case of Group Control, it is possible to use following functions.
  - Selection of operation, stop or mode
  - Temperature setting and room temperature check
  - Current time change
  - Control of flow rate (High/Middle/Low)
  - Reservation settings
  - It is not possible at some functions.

Group Control 2

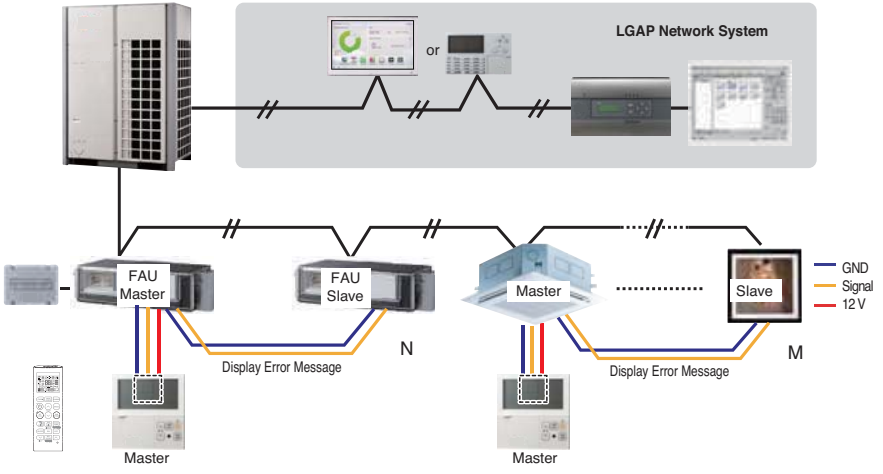
■ Wired remote controllers + Standard Indoor Units



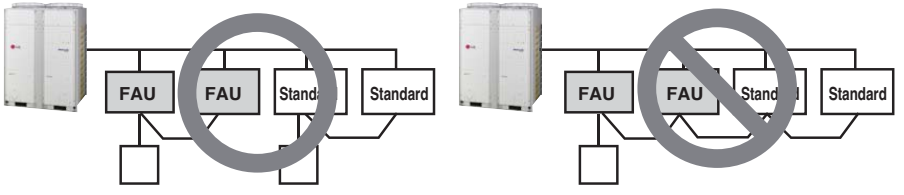
* It is possible to control 16 indoor units(Max.) with the master wired remote control.
* Other than those, it is same with the Group Control 1.

Group Control 3

■ Mixture connection with indoor units and Fresh Air Intake Unit



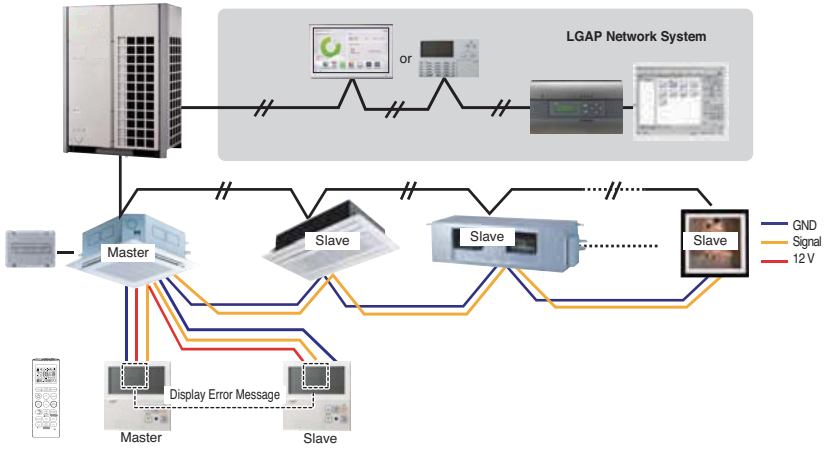
* In case of connecting with standard indoor unit and Fresh Air Intake Unit, separate Fresh Air Intake Unit with standard units. (N, M ≤ 16) (Because setting temperature are different.)
* Other than those, it is same with Group Control 1.



* FAU : Fresh Air Intake Unit
Standard: Standard Indoor Unit

2 Remote Control

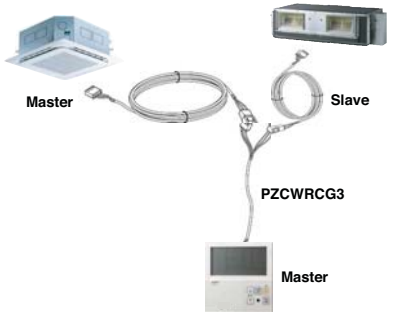
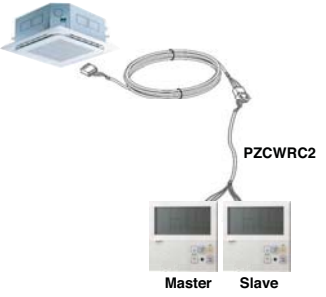
■ Wired remote controller 2 + Indoor unit 1



1. It is possible to connect two wired remote controllers (Max.) with one indoor unit.
   Set only one indoor unit to Master, set the others to Slave.
   Set only one wired remote controller to Master, set the others to Slave.
2. Every types of indoor unit is possible to connect two remote controller.
3. It is possible to use wireless remote controller at the same time.
4. It is possible to connect with Dry Contact and Central controller at the same time.
5. In case that any error occurs at indoor unit, the error code is displayed on the wired remote controller.
6. There isn't limits of indoor unit function.

Accessories for group control setting

It is possible to set group control by using below accessories.

Indoor unit 2 EA +Wired remote controller 1 EA	Indoor unit 1 EA +Wired remote controller 2 EA
* PZCWRCG3 cable used for connection 	* PZCWRC2 cable used for connection 

⚠ CAUTION

Apply totally enclosed noncombustible conduit in case of local building code Requiring plenum cable usage.



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