

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 : VENTILATOR

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P/NO : 3828A20469L

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

ERV Installation Instructions

IMPORTANT!

Please read these instructions completely before installing the product.

This Ventilation 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 **MUST** comply with local building codes or, in the absence of local codes, with the National Electrical Code NFPA 70/ANSI C1-1993 or current edition and Canadian Electrical Code Part I CSA C.22.1.
- The information contained in this 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 glasses 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.

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.



Special warnings

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 local electrical codes.
- Connect all wiring tightly. Loose wiring may cause overheating at connection points and a possible fire hazard.

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 fingers.

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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- Screws
- Nuts
- Ceiling Fixing Bolt(M10~12)
- Washer
- Aluminium Tape
- Screws

- Screw Driver
- Spanner
- Cutter
- Cutter
- Screw Driver

Safety Precautions

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

■ 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.

■ 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.

- Failure to use correctly rated breakers or fuse may cause 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.

- Failure to use correctly rated breakers or fuse may cause 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.

Use a vacuum pump or 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.

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.

Do not let the product 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.

For re-installation of the installed product, always contact the dealer or an Authorized Service Center.

- There is risk of fire, electric shock, explosion or injury.

Do not open the maintenance cover of the main body during operation.

- Otherwise, it may cause electrical shock.

Use the outdoor air suction hole with the net installed to ensure that birds could not come in.

- Remove estrange things like the bird's nest. Otherwise, it may cause scarcity of indoor oxygen.

Install the air intake where polluted air can not be directly sucked in.

- It may cause various accidents, including suffocation, due to the suction of harmful gasses(CO, etc.)

Do not install this product in a refrigerated warehouse, heated swimming pool or other location where the temperature and humidity are significantly different.

- There is risk of electrical shock, malfunctioning.

Install this product in an environment where the temperature ranges from -10°C to $+45^{\circ}\text{C}$ and the relative humidity is less than 80%. It condensation is expected to form, heat up the fresh outside air using a duct heater etc.

Install this product in and environments where the outside air intake meets the following conditions: temperature range is between -15°C and $+40^{\circ}\text{C}$ and the relative humidity is 80% or less.

Use the designated electrical wires for the terminal board connections, and connect the wires securely so that they will not become disconnected. (Failure to ensure proper connections may cause fire.)

When passing metal ducts through wooden buildings clad with metal laths, wire laths or metal, these ducts must be installed in such a way that they will not make electrical contact with the metal laths, wire laths or metal sheets. (Power leakage can cause ignition)

■ Operation

Avoid fire equipment

- There is risk of fire.

When the product is soaked (flooded or submerged), contact an Authorized Service Center.

- There is risk of fire or electric shock.

Don't touch a dedicated circuit or breaker with wet hands.

- 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.

Do not store or use flammable gas or combustibles near the product.

- There is risk of fire or failure of product.

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

Safety Precautions

- Be cautious that water could not enter the product.

 - If water enters the product, there is risk of fire, electric shock, or product damage.
- Turn the breaker off when cleaning or maintaining the product.

 - There is risk of electric shock, if product is cleaned while the breaker is on.
- The outside ducts must be tilted at a gradient (1/30 or more) down toward the outdoor area from the ventilator unit, and properly insulated. (The entry of rain water may cause power leaks, fire or damage to household property.)
- Glove should be worn when doing the installation work. (There is risk of injury.)

 CAUTION

■ Installation

- Don't connect the ground wire to the window frame or water cock.

 - There is risk of electric shock.
- Do not install the product at a smoky and oily place like kitchen or factory.

 - Otherwise, oil may adhere to the filter or heating exchanger and cause trouble.
- Install the product in an insulated space from outdoor air.

 - If the product is installed outside of the insulated layer, dewing occurs inside of the main body in winter and it causes electrical shock or falling of condensed water.
- Keep level even when installing the product.

 - To avoid vibration or water leakage.
- 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.

■ Operation

- Use a soft cloth to clean. Do not use harsh detergents, wax or thinner, etc.

 - Otherwise, color or surface of the product may deteriorate.
- Clean the filter and the heat exchanger regularly and use the gloves for cleaning.

 - Accumulation of dust or debris causes the deterioration of air volume.
- Do not use the product for special purposes, such as preserving foods, works of art, etc. It is a consumer ventilator, 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.
- Do not step on or put anything on the product.

 - There is risk of personal injury and failure of product.

Introduction

While using the remote controller , refer to attached remote controller manual

Symbols used in this Manual



This symbol alerts you to the risk of electric shock.



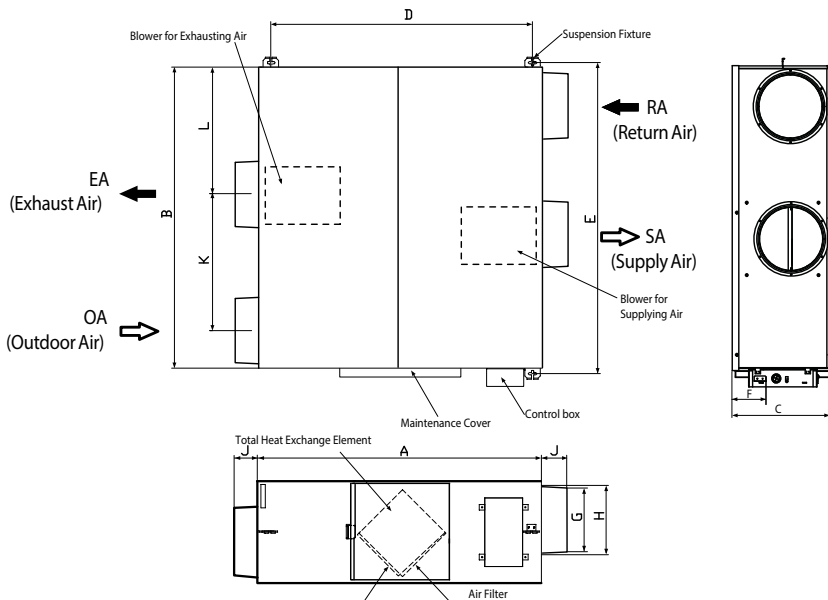
This symbol alerts you to hazards that could cause harm to the product.

NOTICE

This symbol indicates special notes.

Feature Dimension Diagram

Model : LZ-H080GBA2 [ARVU053ZEA2]/ LZ-H100GBA2 [ARVU063ZEA2]

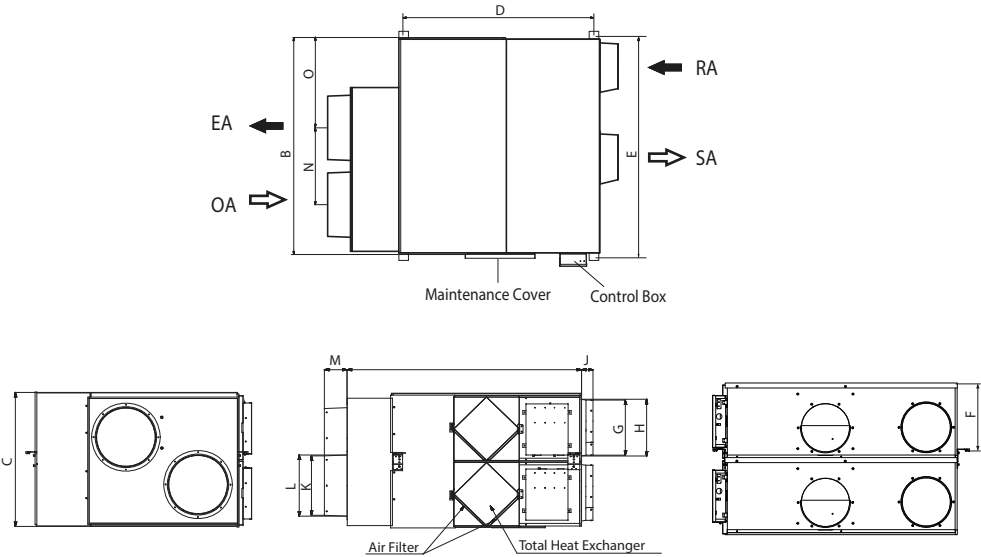


Unit : mm(inch)

Model	Figure			Pitch of Suspension Fixture			Nominal Diameter	Duct Connection Flange			Duct Pitch		Weight
	A	B	C	D	E	F	G	H	J	K	L	kg	(lb)
LZ-H080GBA2[ARVU053ZEA2] LZ-H100GBA2[ARVU063ZEA2]	1062 (41.8)	1140 (44.9)	365 (14.4)	987 (38.9)	1176 (46.3)	180 (7.1)	250 (9.8)	242 (9.5)	253 (10)	98 (3.9)	513 (20.2)	481 (18.9)	67 (147.7)

✳ Service clearances for maintenance must be added to dimension diagram above, refer to product engineering manual for required service clearances.

Model : LZ-H150GBA2 [ARVU093ZFA2]/ LZ-H200GBA2 [ARVU123ZFA2]



Unit: mm(inch)

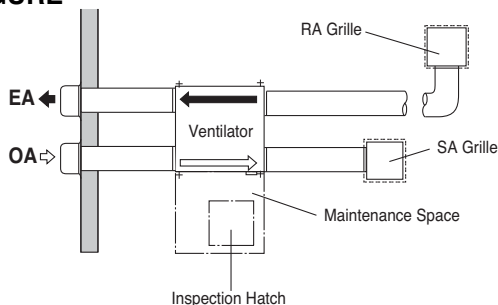
Model	Figure			Pitch of Suspension Fixture			Duct Connection Flange					Weight
	A	B	C	D	E	F	G	H	J	K	L	kg(lb)
LZ-H150GBA2[ARVU093ZFA2] LZ-H200GBA2[ARVU123ZFA2]	1313 (51.7)	1140 (44.9)	738 (29.1)	987 (38.9)	1176 (46.3)	339 (13.3)	242 (9.5)	253 (10)	98 (3.9)	340 (13.4)	350 (13.8)	146 (321.9)

* Service clearances for maintenance must be added to dimension diagram above, refer to product engineering manual for required service clearances.

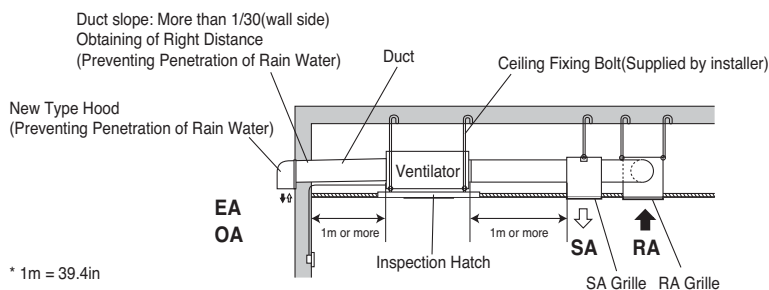
Installation

Installation Map (LZ-H080GBA2 [ARVU053ZEA2]/ LZ-H100GBA2 [ARVU063ZEA2])

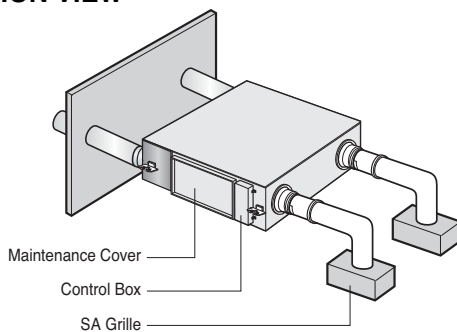
■ A PLANE FIGURE



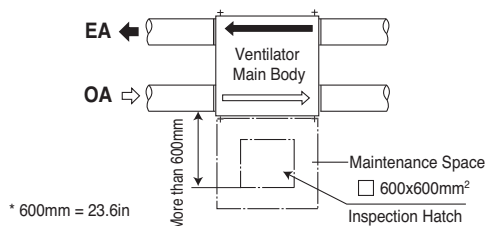
■ A FRONT VIEW



■ THREE DIMENSION VIEW

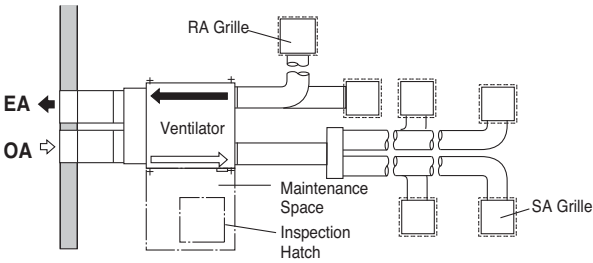


■ INSTALLATION OF MAINTENANCE COVER

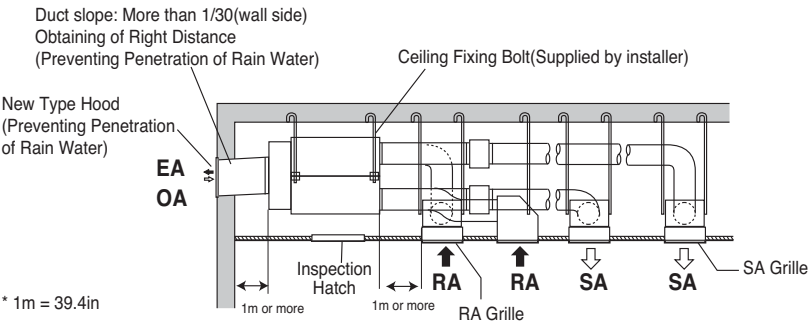


Installation Map (LZ-H150GBA2 [ARVU093ZFA2]/ LZ-H200GBA2 [ARVU123ZFA2])

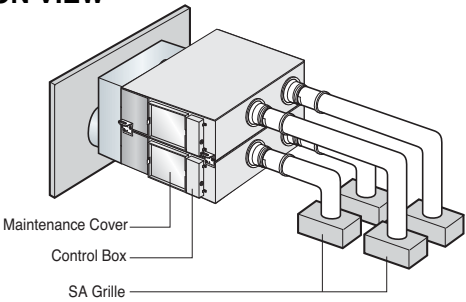
■ A PLANE FIGURE



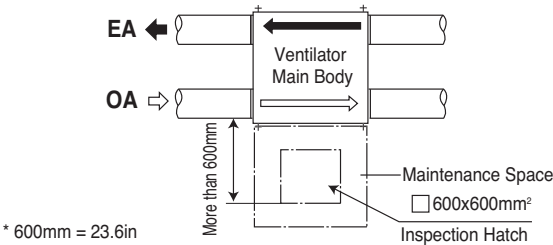
■ A FRONT VIEW



■ THREE DIMENSION VIEW



■ INSTALLATION OF MAINTENANCE COVER

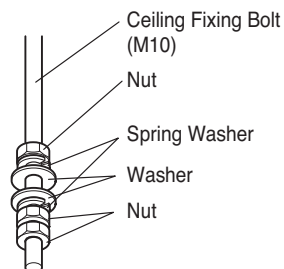


Installation of Main Body

Assembly of Washer, Nut

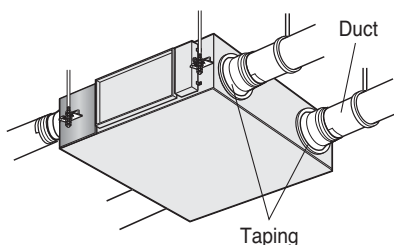
Tighten the common washer and nut (more than 21mm (0.83in) for the outside diameter of M10, to the commercial ceiling fixing bolt (M10) as shown in the right figure.

- For the ceiling fixing bolt, perform work less than 50mm(1.97in) under the ceiling fixing bracket.



Connection of Duct

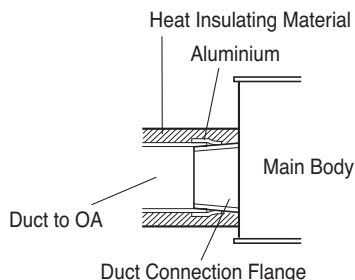
1. After securely connect the duct with the duct connection flange, wrap it with a commercial aluminium tape so that air cannot be leaked.
2. Adjust the duct from the ceiling so that no force is applied to the main body of the ventilation system.
3. Always use two ducts at the outdoor with the heat insulating material for prevention of dewing.





CAUTION:

- Check that there are no foreign materials (paper, vinyl, etc) or cutoff powders in the duct before connecting the duct.
- Take care so that shock may not be applied to the damper plate within the main body when performing the duct connection work.
- It is recommended to perform adiabatic treatment even to the duct pipe at the indoor side where ambient temperature is expected higher than room temperature when the main body of the ventilation system for cooling in summer.
- Take care so that work may not be performed as in the left figure. Otherwise, it may cause reduction of air volume or abnormal noise.



Rapid Bending



Excessive Bending



Too Close Bending to Outlet



Rapid Reduction of Duct Diameter



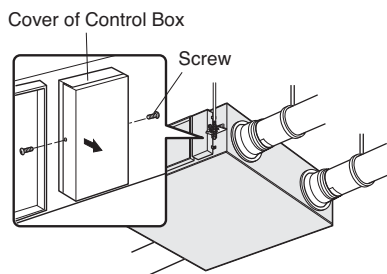
CAUTION:

- In -10°C below ambient temperature, when ventilation is installed the equivalent space in the outdoor and outdoor, It may cause condensation, you must install drainage facilities(Drain Pan) and MD(Moterized Damper) at SA/RA duct.

Method to Connect Power Cord

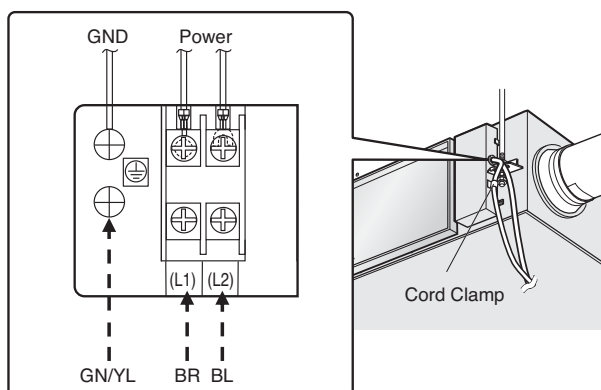
1. Release two screws and then open the cover of the control box.

- With reference to the below wiring diagram, accurately connect the main power cords into the terminal block.



2. After inserting the power cord into the bushing, fully insert it into the terminal block for connection.

- Fix the power cords with the clamp.
- Make sure that the power cords may not be removed by pulling them.



⚠ CAUTION

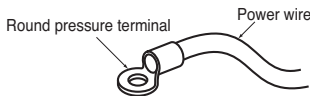
The Power cord connected to the unit should be selected according to the following specifications .

3. Wiring specifications

Wiring specifications	Sheathed wire(should be complied with IEC60245 standard) NRTL recognized (UL, CSA, ETL ...)
Length	MAX. 100m(109.4yd)
External contact specifications	Normally closed contact (Current tolerance 10mA - 0.5A)

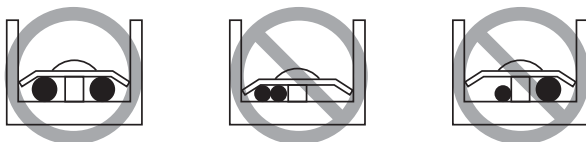
◆ Precautions when laying power wiring

Use round pressure terminals for connections to the power terminal block.



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.



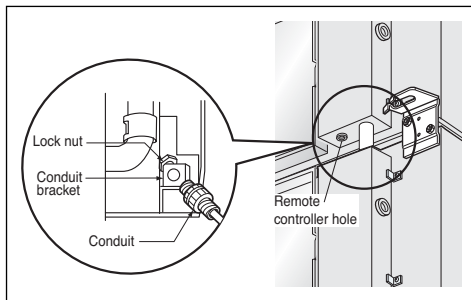
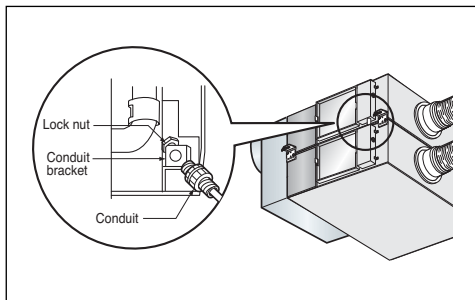
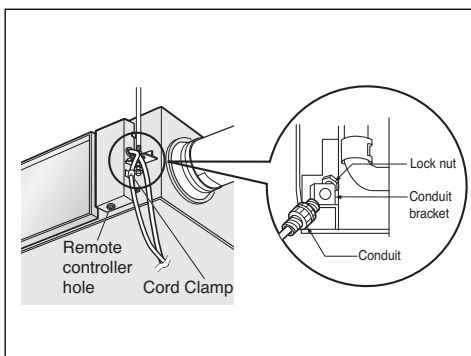
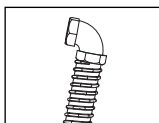
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.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

Conduit connection

1. Set the connecting cable into the terminal block of indoor unit, and tighten set screw to lock the conduit bracket to the indoor unit.
2. Join the conduit and the conduit bracket together.
3. After connecting the remote controller wire, complete to use conduit



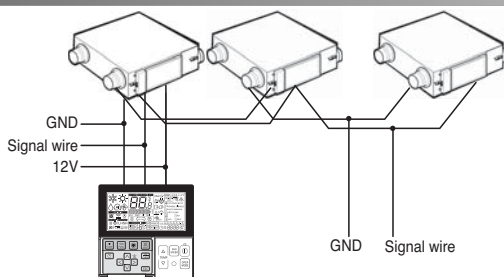
CAUTION: Must use the elbow type (L-Type) conduit.



Group control

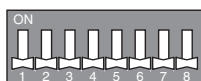
1. When installing more than 2 units of air conditioner to one wired remote controller, please connect as the right figure.

- If it is not event communication indoor unit, set the unit as slave.
- Check for event communication through the product manual.

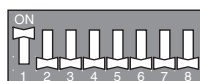


When controlling multiple indoor units with event communication function with one remote controller, you must change the master/slave setting from the indoor unit.

- Indoor units, the master/slave configuration of the product after completion of indoor unit power 'OFF' and then 'ON' the power after 1 minutes elapsed sign up.
- For ceiling type cassette and duct product group, change the switch setting of the indoor PCB.



#1 switch OFF: Master
(Factory default setting)



#1 switch ON: Slave

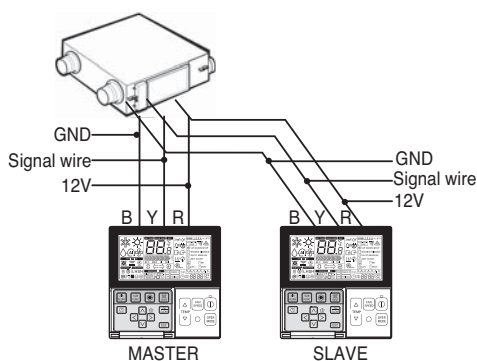
- For wall-mount type and stand type product, change the master/slave setting with the wireless remote controller. (Refer to wireless remote controller manual for detail)

✳ When installing 2 remote controllers to one indoor unit with event communication function, set the master/slave of the remote controller. (Refer to remote controller master/slave selection)

When controlling the group, some functions excluding basic operation setting, fan level Min/Mid/Max, remote controller lock setting and time setting may be limited.

2. When installing more than 2 wired remote controllers to one air conditioner, please connect as the right picture.

- When installing more than 2 units of wired remote controller to one air conditioner, set one wired remote controller as master and the others all as slaves, as shown in the right picture.
- You cannot control the group as shown in the right for some products.
- Refer to the product manual for more detail.

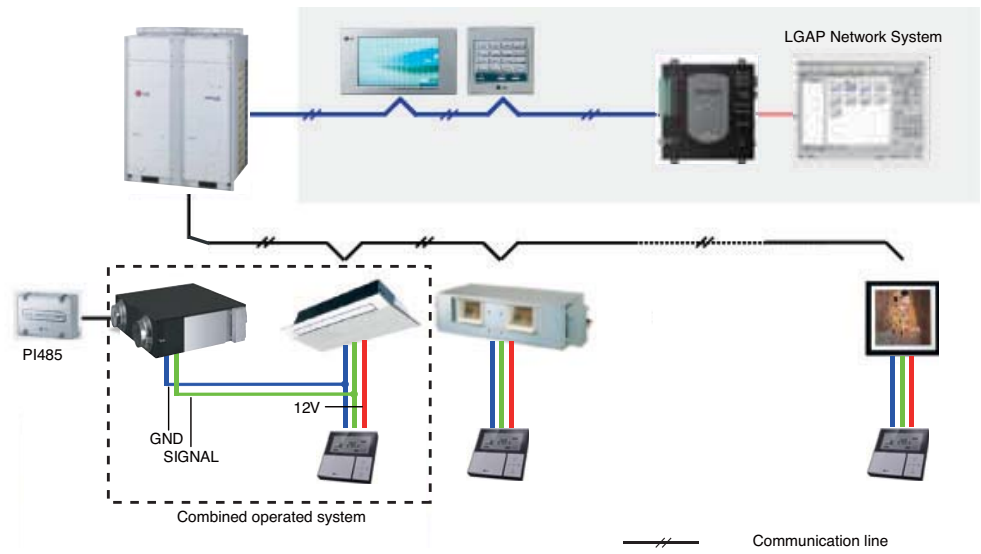


<When simultaneously connecting 2 sets of wired remote controller>

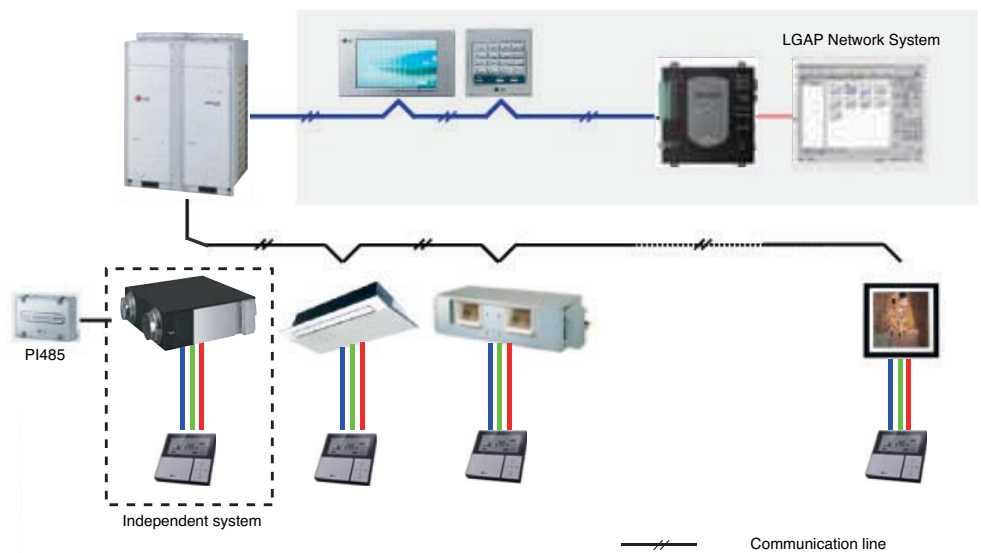
- When controlling in groups, set the master/slaver of the remote controller. Refer to Installer setting section on how to set master/slave for more detail.

- This unit can be used as part of the combined operation system used together with indoor units(Multi-V system air conditioners), or as an independent system for processing outside air.

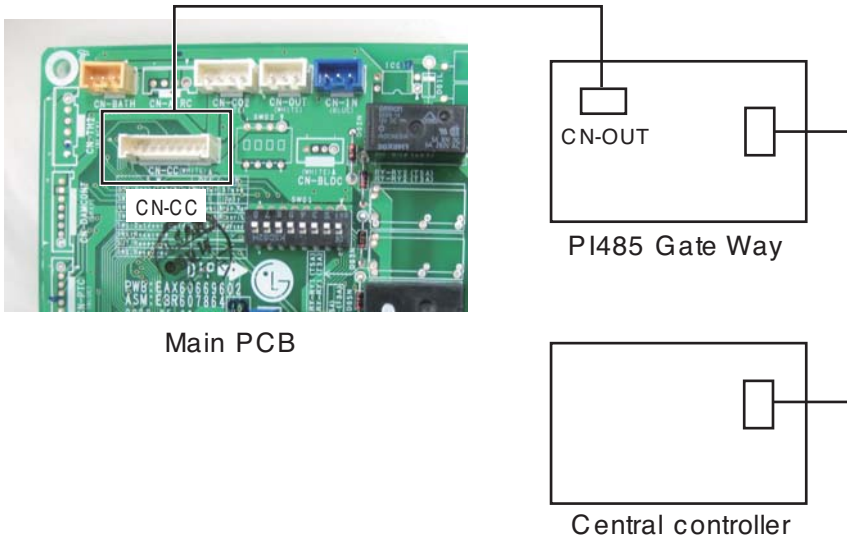
<Combined operation system with Multi-V system(connected with ventilation units and standard indoor units in a single refrigerant circuit)>



<Independent system (connected only with a ventilation unit in a single refrigerant circuit)>



How to connect Central Controller(Accessory)



1. Connect between PI485 Gate Way(CN-OUT) and Main PCB(CN-CC).
2. You do not need to set the Option Switch of Main PCB.
3. Please refer to the manual of Accessory for the detail installation method.

In case of finding a problem at a trial operation

Symptom	Counter-measures
The product doesn't work though you press the 'ON' switch.	• Checking the power(rated power 1 phase, 208V/230V, the diameter $\varnothing 0.6 \sim \varnothing 2.0$, capacity of breaker)
	• Isn't the fuse connected?
	• Are the PCB and Remote Controller rightly connected?
The fan doesn't run	• Is the outdoor temperature the limit temperature? (Less than $-10^{\circ}\text{C}(14^{\circ}\text{F})$, more than $45^{\circ}\text{C}(113^{\circ}\text{F})$)
	• In case of the limit temperature - Switch on Option No. 5. - Repower the product and check whether it works or not. - Switch off Option No. 5. and repower the product once again.

