

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 Concealed Duct



P/NO : MFL65003103

Rev.00_020718

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

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 local building codes or, in the absence of local codes, with the National Electrical Code 70 and the National Building Construction and Safety Code or Canadian Electrical code and National Building Code of Canada.
- 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 Furnace/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 local 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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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 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 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 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.

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.
 - It may cause 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, or small 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.

 **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.

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.

Introduction

Symbols Used in this Manual



This symbol alerts you to the risk of electric shock.



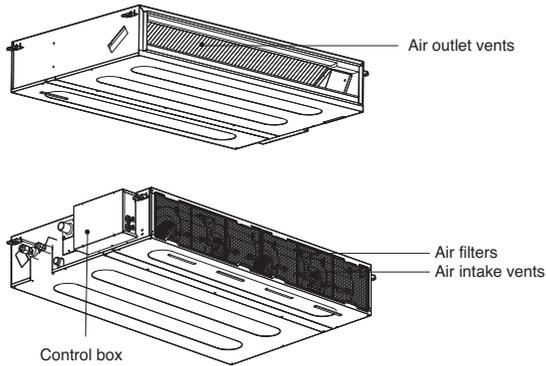
This symbol alerts you to hazards that could cause harm to the air conditioner.

NOTICE

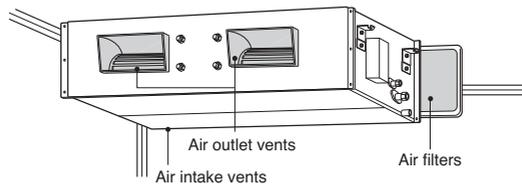
This symbol indicates special notes.

Features

Low static Duct type



High static Duct type



Name	Drain hose	Clamp metal	Washer for hanging bracket	Clamp (Tie Wrap)	Insulation for fitting	(Other)
Quantity	1 EA	2 EA	8 EA	4 EA	1 SET	
Shape					 for gas pipe for liquid pipe	<ul style="list-style-type: none"> • Owner's manual • Installation manual

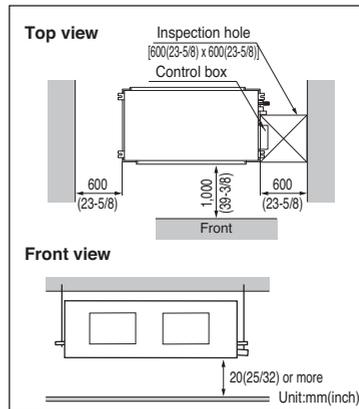
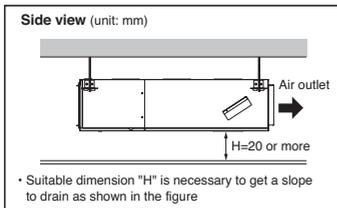
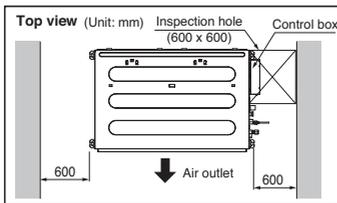
Installation

Read completely, then follow step by step.

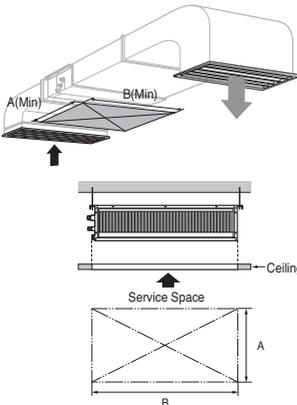
Selection of the best location

Install the air conditioner in the location that satisfies the following conditions.

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit as the figure.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage.
(Suitable dimension "H" is necessary to get a slope to drain as figure.)
- The place shall easily connect with the outdoor unit.
- The place where the unit is not affected by an electrical noise.
- The place where air circulation in the room will be good .
- There should not be any heat source or steam near the unit.



Low static Duct type



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.

Unit:mm(inch)

Capacity(kBtu/h)	A	B
L1	800	800(31-1/2)
L2	800	1,000(39-3/8)
L3	800	1,200(47-1/4)

Ceiling dimension and hanging bolt location

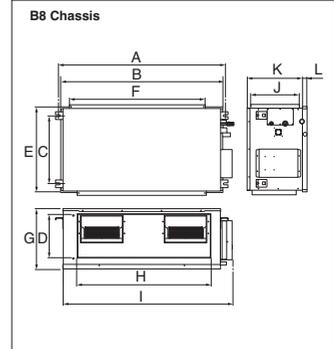
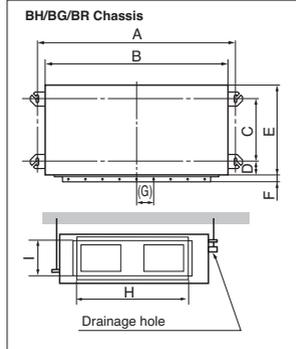
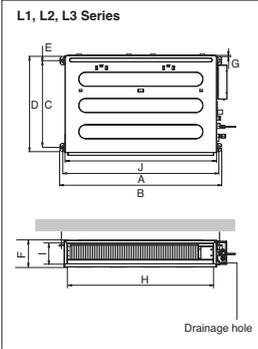
■ Installation of Unit

Install the unit above the ceiling correctly.

CASE 1

POSITION OF SUSPENSION BOLT

- Apply a joint-canvas between the unit and duct to absorb unnecessary vibration.
- Apply a filter Accessory at air return hole.



[Unit:mm(inch)]

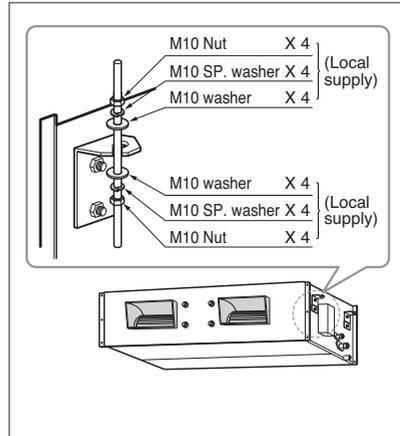
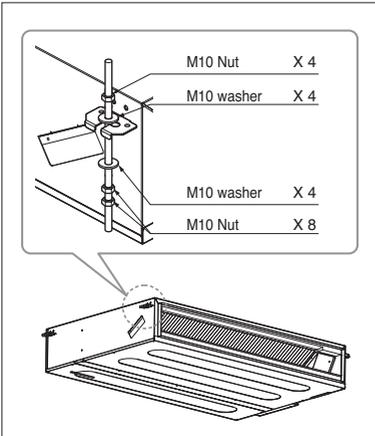
Chassis Dimension	A	B	C	D	E	F	G	H	I	J	K	L
BH	932 (36-9/13)	882 (34-21/29)	355 (13-5/8)	47 (1-3/4)	450 (17-23/32)	30 (1-3/16)	87 (3-5/8)	750 (295-8/29)	158 (62-9/44)	-	-	-
BG	1,232 (48-7/13)	1,182 (46-7/13)	355 (13-5/8)	47 (1-3/4)	450 (17-23/32)	30 (1-3/16)	87 (3-5/8)	830 (32-11/16)	186 (7-5/16)	-	-	-
BR	1,282 (50-15/32)	1,230 (48-7/16)	477 (18-13/16)	56 (2-3/13)	590 (23-7/32)	30 (1-3/16)	120 (4-9/13)	1,006 (39-19/32)	294 (11-9/16)	-	-	-
B8	1,622 (63-27/32)	1,565 (61-5/8)	580 (22-27/32)	292 (11-1/2)	695 (27-3/8)	1,400 (55-1/8)	460 (18-1/8)	1,122 (44-3/16)	1,680 (66-5/32)	390 (15-3/8)	445 (17-7/13)	15 (5/8)
L1	733 (28-27/32)	772 (30-13/32)	628 (24-23/32)	700 (27-9/16)	36 (1-13/32)	190 (7-15/32)	20 (25/32)	660 (25-31/32)	155 (6-3/32)	700 (27-9/16)	-	-
L2	933 (36-23/32)	972 (38-9/32)	628 (24-23/32)	700 (27-9/16)	36 (1-13/32)	190 (7-15/32)	20 (25/32)	860 (33-27/32)	155 (6-3/32)	900 (35-7/16)	-	-
L3	1133 (4-7/16)	1172 (46-5/32)	628 (24-23/32)	700 (27-9/16)	36 (1-13/32)	190 (7-15/32)	20 (25/32)	1060 (41-23/32)	155 (6-3/32)	1100 (43-5/16)	-	-

CASE 2

- Install the unit leaning to a drainage hole side as a figure for easy water drainage.

POSITION OF CONSOLE BOLT

- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



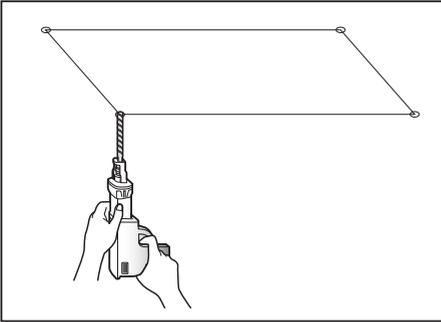
NOTICE

- Thoroughly study the following installation locations:

1. In such places as restaurants and kitchens, considerable amount of oil steam and flour adhere to the fan, the fin of the heat exchanger, resulting in heat exchange reduction, spraying, dispersing of water drops, etc.
In these cases, take the following actions:
 - Make sure that the ventilation fan for smoke-collecting hood on a cooking table has sufficient capacity so that it draws oily steam which should not flow into the suction of the air conditioner.
 - Make enough distance from a cooking room to install the air conditioner in such a place where it may not suck in oil steam.
2. Avoid installing air conditioner in such circumstances where cutting oil mist or iron powder is in suspension in factories, etc.
3. Avoid places where inflammable gas is generated, flows in, is stored or vented.
4. Avoid places where sulfurous acid gas or corrosive gas is generated.
5. Avoid places near high frequency generators.

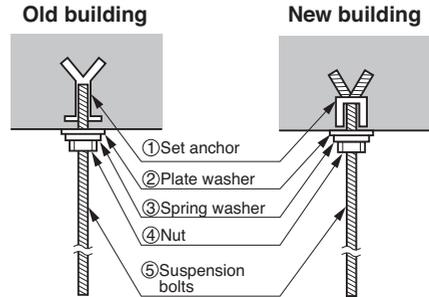
Indoor Unit Installation

- Select and mark the position for fixing bolts.
- Drill the hole for set anchor on the face of ceiling.



CAUTION : Tighten the nut and bolt to prevent unit falling.

- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
- Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.

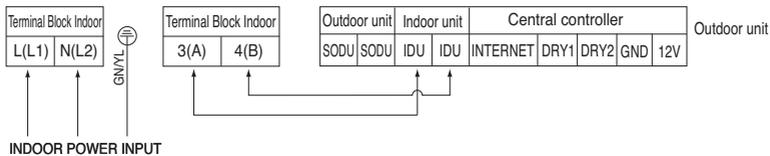


Wiring Connection

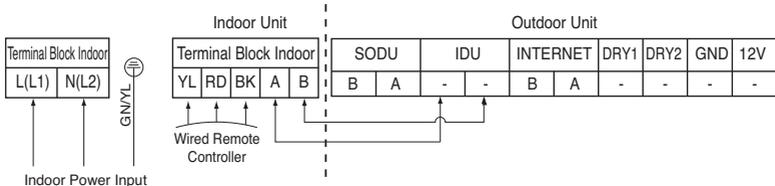
Connect the wires to the terminals on the control board individually according to the outdoor unit connection.

- Ensure that the color of the wires of outdoor unit and the terminal No. are the same as those of indoor unit respectively.

L1, L2, L3 Series



BH/BG/BR/B8 Series



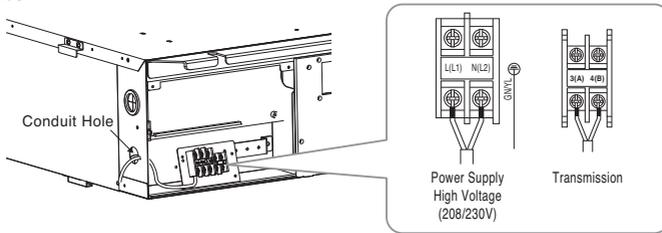
WARNING : Make sure that the screws of the terminal are free from looseness.

Clamping of cables

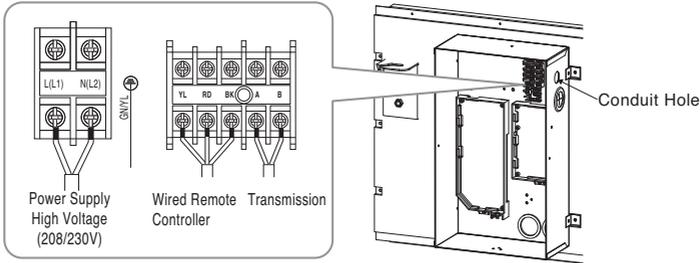
- 1) Arrange 2 power cables on the control panel.
- 2) First, fasten the steel clamp with a screw to the inner boss of control panel.
- 3) For the cooling model, fix the other side of the clamp with a screw strongly. For the heat pump model, put the AWG18 cable(thinner cable) on the clamp and tighten it with a plastic clamp to the other boss of the control panel.

Connection method of the connecting cable(Example)

L1, L2, L3 Series



BH/BG/BR/B8 Series

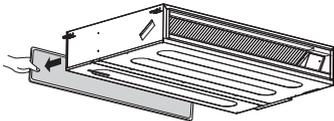


WARNING : Loose wiring may cause the terminal to overheat or result in unit malfunction. A fire hazard may also exist. Therefore, be sure all wiring is tightly connected.

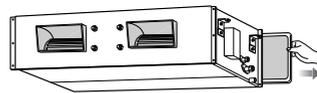
Checking the Drainage

1. Remove the Air Filter.

Low static Duct type



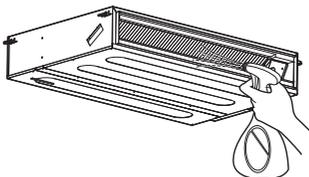
High static Duct type



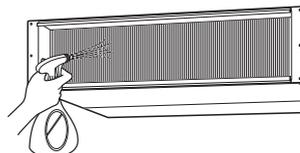
2. Check the drainage.

- Spray one or two glasses of water upon the evaporator.
- Ensure that water flows drain hose of indoor unit without any leakage.

Low static Duct type

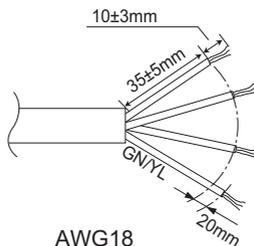


High static Duct type



⚠ CAUTION :

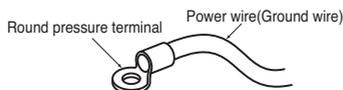
The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (This equipment shall be provided with a cord set complying with the national regulation).



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

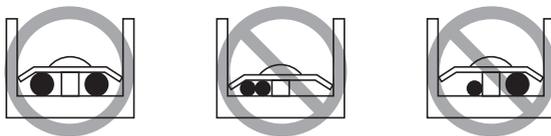
◆ Precautions when laying power and ground wiring

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.



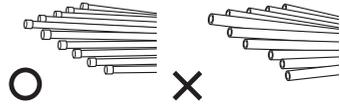
- For wiring, use the designated power wire and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.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

Plumbing materials and storage methods

Pipe must be able to obtain the specified thickness and should be used with low impurities.

Also when handling storage, pipe must be careful to prevent a fracture, deformity and wound.

Should not be mixed with contaminations such as dust, moisture.



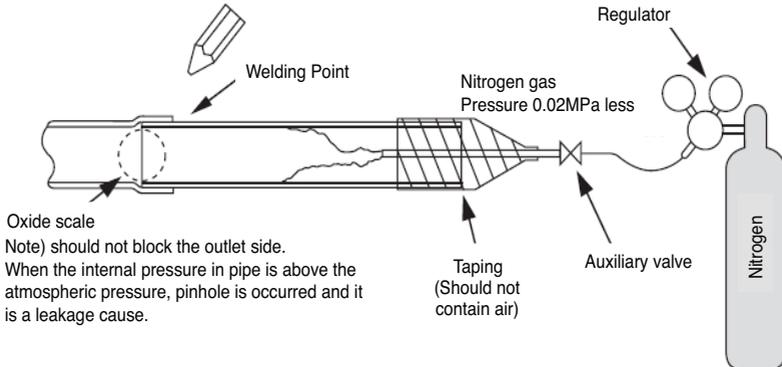
Refrigerant piping on three principles

	Drying	Cleanliness	Airtight
	Should be no moisture inside	No dust inside.	There is no refrigerant leakage
Items			
Cause failure	<ul style="list-style-type: none"> - Significant hydrolysis of refrigerant oil - Degradation of refrigerant oil - Poor insulation of the compressor - Do not cold and warm - Clogging of EEV, Capillary 	<ul style="list-style-type: none"> - Degradation of refrigerant oil - Poor insulation of the compressor - Do not cold and warm - Clogging of EEV, Capillary 	<ul style="list-style-type: none"> - Gas shortages - Degradation of refrigerant oil - Poor insulation of the compressor - Do not cold and warm
Countermeasure	<ul style="list-style-type: none"> - No moisture in the pipe - Until the connection is completed, the plumbing pipe entrance should be strictly controlled. - Stop plumbing at rainy day. - Pipe entrance should be taken side or bottom. - When removal burr after cutting pipe, pipe entrance should be taken down. - Pipe entrance should be fitted cap when pass through the walls. 	<ul style="list-style-type: none"> - No dust in the pipe. - Until the connection is completed, the plumbing pipe entrance should be strictly controlled. - Pipe entrance should be taken side or bottom. - When removal burr after cutting pipe, pipe entrance should be taken down. - Pipe entrance should be fitted cap when pass through the walls. 	<ul style="list-style-type: none"> - Airtightness test should be. - Brazing operations to comply with standards. - Flare to comply with standards. - Flange connections to comply with standards.

Nitrogen substitution method

Welding, as when heating without nitrogen substitution a large amount of the oxide film is formed on the internal piping. The oxide film is caused by clogging EEV, Capillary, oil hole of accumulator and suction hole of oil pump in compressor. It prevents normal operation of the compressor. In order to avoid this problem, Welding should be done after replacing air by nitrogen gas. When welding plumbing pipe, the work is required.

◆How to work



⚠ CAUTION:

1. Always use the nitrogen.(not use oxygen, carbon dioxide, and a Chevron gas):
Please use the following nitrogen pressure 0.02MPa
Oxygen ----- Promotes oxidative degradation of refrigerant oil.
Because it is flammable, it is strictly prohibited to use
Carbon dioxide --- Degrade the drying characteristics of gas
Chevron Gas ---- Toxic gas occurs when exposed to direct flame.
2. Always use a pressure reducing valve.
3. Please do not use commercially available antioxidant.
The residual material seems to be the oxide scale is observed.
In fact, due to the organic acids generated by oxidation of the alcohol contained in the anti-oxidants, ants nest corrosion occurs. (causes of organic acid → alcohol + copper + water + temperature)

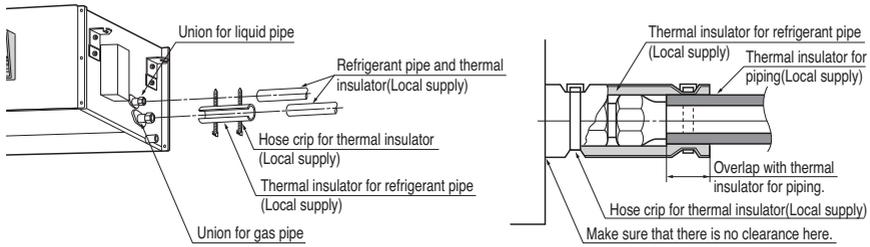
INSULATION, OTHERS

Insulate the joint and tubes completely.

THERMAL INSULATION

All thermal insulation must comply with local requirement.

INDOOR UNIT



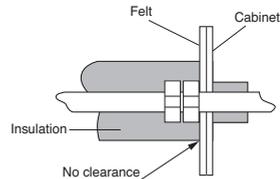
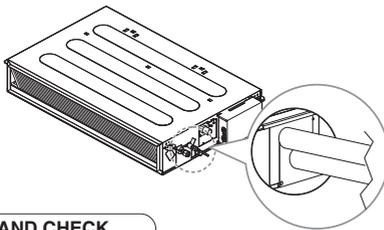
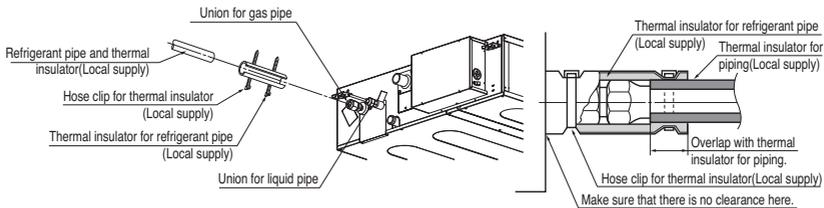
INSULATION, OTHERS

Insulate the joint and tubes completely.

THERMAL INSULATION

All thermal insulation must comply with local requirement.

INDOOR UNIT



TEST AND CHECK

■ **After all workings are finished, check the working and operation.**

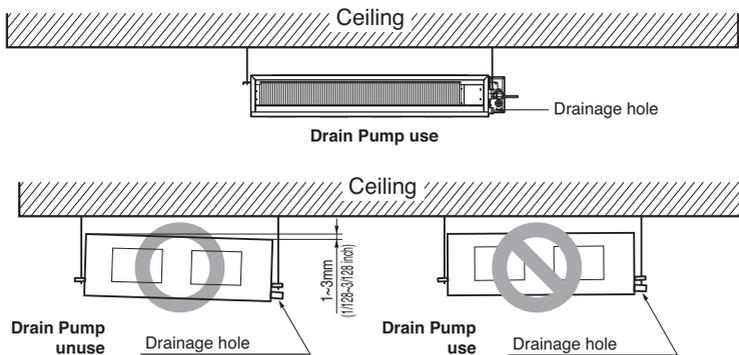
- Air distribution Is the air circulation good?
- Drain Is the drainage smoothly and no sweating?
- Gas leakage Is the piping connection correctly?
- Wiring Is the wiring connection correctly?
- Lock-bolt Is the lock-bolt of compressor loosened?
- Insulation Is the unit fully insulated?
- Ground Is the unit safely grounded?

CAUTION

1. **Install declination** of the indoor unit is very **important for the drain** of the duct type air conditioner.
2. Minimum thickness of the insulation for the connecting pipe shall be 19mm.

Front of view

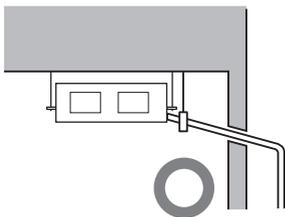
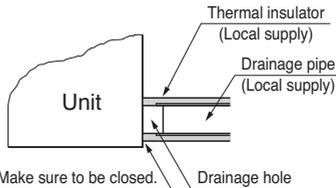
- The unit must be horizontal or declined to the drain hose connected when finished installation.



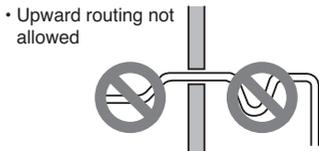
CAUTION FOR GRADIENT OF UNIT AND DRAIN PIPING

Lay the drain hose with a downware inclination so water will drain out.

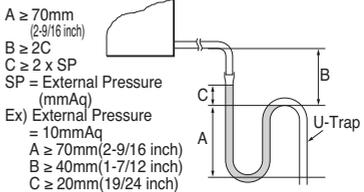
- Always lay the drain with downward inclination (1/50 to 1/100). Prevent any upward flow or reverse flow in any part.
- 5mm(5/24 inch) or thicker formed thermal insulator shall always be provided for the drain pipe.



- CORRECT**
- Install the P-Trap (or U-Trap) to prevent a water leakage caused by the blocking of intake air filter.



INCORRECT Applied U-Trap Dimension



- A ≥ 70mm (2-9/16 inch)
- B ≥ 2C
- C ≥ 2 x SP
- SP = External Pressure (mmAq)
- Ex) External Pressure = 10mmAq
- A ≥ 70mm(2-9/16 inch)
- B ≥ 40mm(1-7/12 inch)
- C ≥ 20mm(19/24 inch)

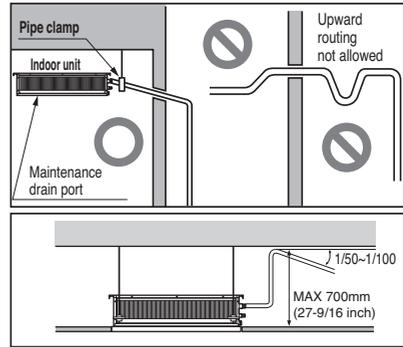
Drain Piping

- 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.
- The outside diameter of the drain connection on the indoor unit is 32mm(1-1/4 inch).

Piping material: Polyvinyl chloride pipe inner diameters \varnothing 25mm(1 inch) and pipe fittings

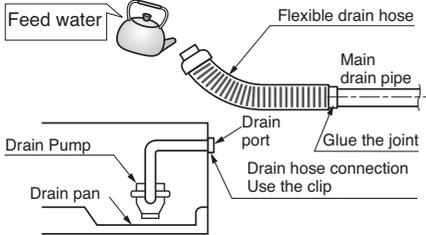
- Be sure to install heat insulation on the drain piping.

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



Drain test

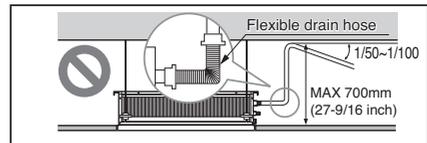
The air conditioner uses a drain pump to drain water. Use the following procedure to test the drain pump operation:



- Connect the main drain pipe to the exterior and leave it provisionally until the test comes to an end.
- Feed water to the flexible drain hose and check the piping for leakage.
- Be sure to check the drain pump for normal operating and noise when electrical wiring is complete.
- When the test is complete, connect the flexible drain hose to the drain port on the indoor unit.



CAUTION : The supplied flexible drain hose should not be curved, neither screwed. The curved or screwed hose may cause a leakage of water.



CAUTION:

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

- 1) Never fail to have an individual power specialized for the air conditioner. As for the method of wiring, be guided by the circuit diagram posted on the inside of control box cover.
- 2) Provide a circuit breaker switch between power source and the unit.
- 3) 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 give rise to burn-out of the wires.)
- 4) 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) Never fail to equip a leakage breaker where it is wet or moist.
- 9) The following troubles would be caused by voltage drop-down.
 - Vibration of a magnetic switch, damage on the contact point, fuse breaking, disturbance by the normal function of an overload protection device.
 - Proper starting power is not given to the compressor.

HAND OVER

Teach the customer the operation and maintenance procedures, using the operation manual. (air filter cleaning, temperature control, etc.)

Dip Switch Setting

1. 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	Installation	Fan continuous operation	Continuous operation Removal	-	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.

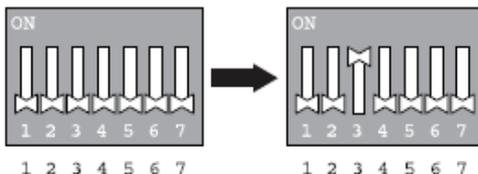
2. Outdoor Unit

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.

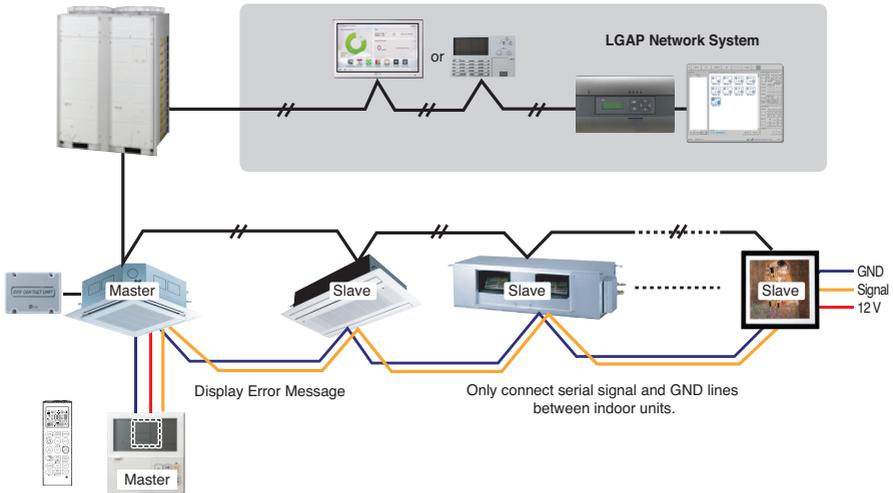
DIP switch 7 segment



Group Control Setting

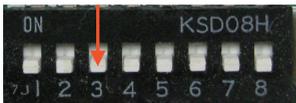
1. Group Control 1

■ 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.

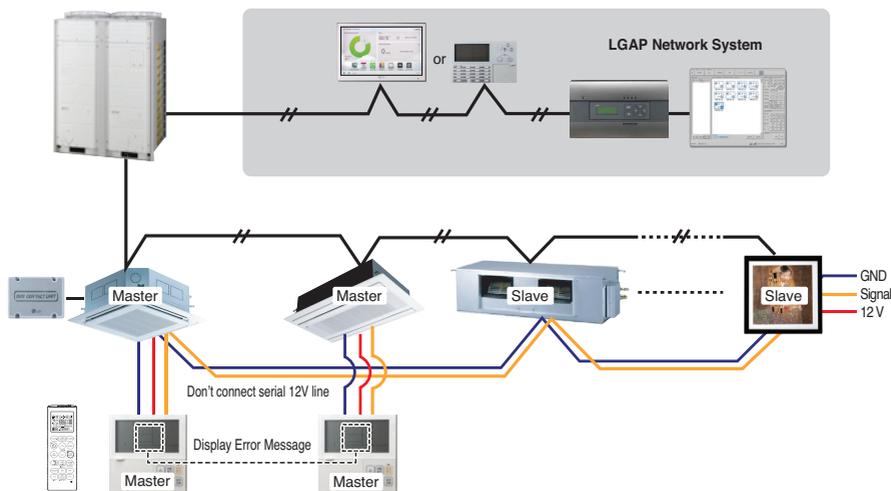
5. In case that any error occurs at indoor unit, the error code is displayed on the wired remote controller.

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 malfunctions 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 to use some functions.

2. Group Control 2

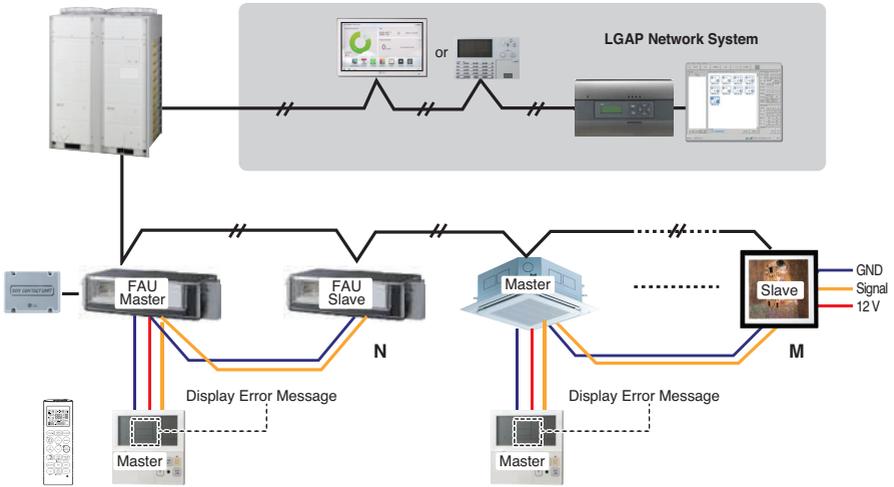
■ Wired remote controllers + Standard Indoor Units



- * 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.

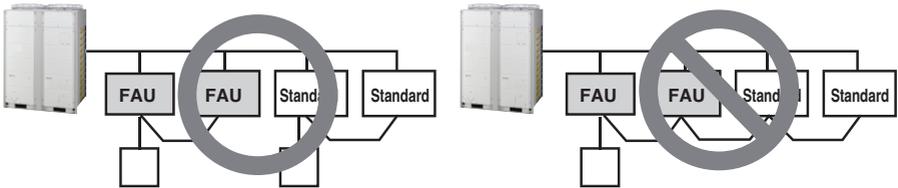
3. Group Control 3

■ 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. ($N, M \leq 16$) (Because setting temperature are different.)

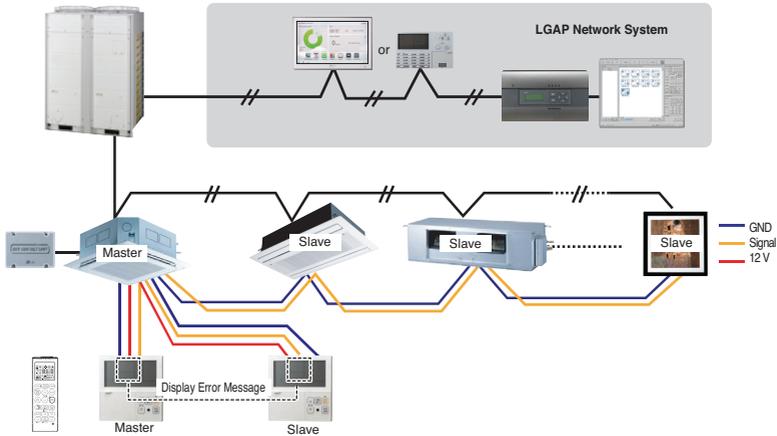
※ Other than those, it is same with Group Control 1.



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

4. 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.

5. Accessories for group control setting

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

Indoor unit 2 EA +Wired remote controller	Indoor unit 1 EA +Wired remote controller 2EA
<p>✳ PZCWRCG3 cable used for connection</p> <p>The diagram shows two indoor units, one labeled 'Master' and one labeled 'Slave', connected to a single wired remote controller. The connection is made using PZCWRC3 cables. The remote controller is labeled 'Master'.</p>	<p>✳ PZCWRC2 cable used for connection</p> <p>The diagram shows one indoor unit labeled 'Master' connected to two wired remote controllers, one labeled 'Master' and one labeled 'Slave'. The connection is made using PZCWRC2 cables.</p>

⚠ CAUTION

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

E.S.P Table**ARNU073L1G4, ARNU093L1G4**

(Unit:CMM (cfm))

Setting Value	Static Pressure(mmAq (in.Aq))					
	0(0)	1(0.04)	2(0.08)	3(0.12)	4(0.16)	5(0.20)
60	-	-	-	-	-	-
65	5.03(178)	-	-	-	-	-
70	5.60(198)	4.85(171)	-	-	-	-
75	6.19(219)	5.44(192)	4.57(161)	-	-	-
80	6.79(240)	6.05(214)	5.17(183)	-	-	-
85	7.41(262)	6.67(236)	5.80(205)	4.80(170)	-	-
90	8.05(284)	7.31(258)	6.43(227)	5.44(192)	-	-
95	8.71(308)	7.96(281)	7.09(250)	6.09(215)	4.97(176)	-
100	9.38(331)	8.63(305)	7.76(274)	6.76(239)	5.64(199)	-
105	10.07(356)	9.32(329)	8.45(298)	7.45(263)	6.33(224)	5.08(179)
110	-	10.03(354)	9.16(323)	8.16(288)	7.04(249)	5.79(204)
115	-	-	9.88(349)	8.88(314)	7.76(274)	6.51(230)
120	-	-	-	9.62(340)	8.50(300)	7.25(256)
125	-	-	-	10.38(367)	9.26(327)	8.01(283)
130	-	-	-	-	10.03(354)	8.78(310)

ARNU123L2G4, ARNU153L2G4, ARNU183L2G4

(Unit:CMM (cfm))

Setting Value	Static Pressure(mmAq (in.Aq))					
	0(0)	1(0.04)	2(0.08)	3(0.12)	4(0.16)	5(0.20)
75	6.50(230)	-	-	-	-	-
80	7.34(259)	6.70(237)	-	-	-	-
85	8.20(290)	7.55(267)	6.69(236)	-	-	-
90	9.07(320)	8.43(298)	7.56(267)	6.47(228)	-	-
95	9.96(352)	9.32(329)	8.45(298)	7.36(260)	-	-
100	10.87(384)	10.22(361)	9.36(331)	8.27(292)	6.96(246)	-
105	11.79(416)	11.15(394)	10.28(363)	9.19(325)	7.89(279)	6.35(224)
110	12.73(450)	12.09(427)	11.22(396)	10.14(358)	8.83(312)	7.30(258)
115	13.69(483)	13.05(461)	12.18(430)	11.09(392)	9.78(345)	8.25(291)
120	14.67(518)	14.02(495)	13.16(465)	12.07(426)	10.76(380)	9.23(326)
125	15.66(553)	15.01(530)	14.15(500)	13.06(461)	11.75(415)	10.22(361)
130	16.67(589)	16.02(566)	15.16(535)	14.07(497)	12.76(451)	11.23(397)
135	-	-	16.18(571)	15.10(533)	13.79(487)	12.26(433)
140	-	-	-	16.14(570)	14.83(524)	13.30(470)
145	-	-	-	-	15.89(561)	14.36(507)

ARNU243L3G4

(Unit:CMM (cfm))

Setting Value	Static Pressure(mmAq (in.Aq))					
	0(0)	1(0.04)	2(0.08)	3(0.12)	4(0.16)	5(0.20)
85	10.19(360)	-	-	-	-	-
90	12.18(430)	10.71(378)	11.09(392)	-	-	-
95	13.81(488)	12.34(436)	12.19(430)	-	-	-
100	15.16(535)	13.69(483)	13.38(473)	10.71(378)	-	-
105	16.30(576)	14.83(524)	14.36(507)	11.85(418)	-	-
110	17.31(611)	15.85(560)	15.23(538)	12.86(454)	10.97(387)	-
115	18.27(645)	16.80(593)	16.07(568)	13.82(488)	11.93(421)	-
120	19.26(680)	17.79(628)	16.93(598)	14.80(523)	12.91(456)	10.49(370)
125	20.34(718)	18.87(666)	17.89(632)	15.88(561)	13.99(494)	11.57(409)
130	21.60(763)	20.13(711)	19.01(671)	17.14(605)	15.25(539)	12.83(453)
135	-	21.64(764)	20.36(719)	18.66(659)	16.76(592)	14.35(507)
140	-	-	22.01(777)	20.50(724)	18.61(657)	16.19(572)
145	-	-	-	22.75(803)	20.86(737)	18.44(651)

Note :

1. The above table shows the correlation between the air rates and E.S.P.
2. Please refer wired remote controller manual for E.S.P setting procedure.

ARNU073BHA4, ARNU09GBHA4, ARNU123BHA4, ARNU153BHA4, ARNU183BHA4, ARNU243BHA4

(Unit : CMM(cfm))

Setting Value	Static Pressure(mm Aq (in. Aq))								
	3(0.12)	4(0.15)	5(0.19)	6(0.23)	7(0.27)	8(0.31)	9(0.35)	10(0.39)	12(0.47)
70	4.1(145)	-	-	-	-	-	-	-	-
80	7.6(269)	-	-	-	-	-	-	-	-
90	10.7(378)	8.1(286)	6.3(223)	4.9(173)	-	-	-	-	-
100	13.4(473)	11.2(396)	9.6(339)	7.5(265)	4.0(141)	-	-	-	-
110	15.9(562)	13.2(466)	12.6(445)	10.3(364)	7.7(272)	5.5(194)	-	-	-
120	18.6(657)	16.2(572)	15.2(537)	12.8(452)	11.1(392)	9.1(322)	6.7(237)	5.3(187)	-
130	19.8(700)	18.8(664)	18.0(636)	15.3(541)	14.2(502)	12.4(438)	10.4(367)	8.8(311)	5.7(201)
140	22.3(788)	21.1(746)	20.3(717)	17.7(625)	17.1(604)	15.5(548)	13.7(484)	12.6(445)	9.7(343)
145	23.2(820)	22.2(784)	21.4(756)	19.1(675)	18.4(650)	16.9(597)	15.3(541)	13.8(488)	11.8(417)
150	24.3(859)	23.1(816)	22.3(788)	21.1(746)	19.8(700)	18.3(647)	16.8(594)	15.2(537)	13.0(459)

ARNU073BGA4, ARNU093BGA4, ARNU123BGA4, ARNU153BGA4, ARNU183BGA4, ARNU243BGA4, ARNU283BGA4, ARNU363BGA4, ARNU423BGA4

(Unit : CMM(cfm))

Setting Value	Static Pressure(mmAq (in.Aq))										
	3(0.12)	4(0.15)	5(0.19)	6(0.23)	7(0.27)	8(0.31)	9(0.35)	10(0.39)	12(0.47)	14(0.55)	16(0.62)
70	10.3(363)	4.5(159)	-	-	-	-	-	-	-	-	-
80	13.8(487)	10.4(367)	4.0(141)	-	-	-	-	-	-	-	-
90	18.5(653)	15.3(540)	12.1(427)	6.9(243)	4.1(145)	-	-	-	-	-	-
100	22.1(780)	19.8(699)	17.0(600)	15.5(547)	11.0(388)	6.2(218)	4.2(148)	-	-	-	-
110	26.7(943)	24.6(869)	21.4(755)	19.6(692)	17.5(619)	14.0(494)	11.6(409)	6.6(233)	-	-	-
120	29.6(1045)	28.5(1007)	25.8(911)	24.0(847)	21.8(769)	19.8(699)	17.9(632)	14.6(515)	12.1(427)	-	-
130	33.4(1180)	32.5(1148)	30(1059)	28.5(1006)	26.9(951)	25.3(893)	23.4(826)	21.8(769)	18.1(639)	14.6(515)	11.3(399)
140	37.3(1318)	36.5(1289)	36.0(1271)	32.1(1133)	30.4(1073)	29.0(1024)	27.4(697)	25.9(914)	21.6(762)	17.8(628)	14.5(512)
143	38.6(1363)	37.4(1320)	37.5(1324)	33.9(1197)	32.1(1133)	30.7(1084)	28.8(1017)	27.2(960)	23.0(812)	20.1(709)	16.8(593)
150	41.1(1451)	40.1(1416)	41.0(1447)	38.0(1342)	36.0(1271)	34.5(1218)	32.1(1133)	30.1(1063)	26.3(928)	22.4(791)	18.2(642)
160	44.3(1564)	43.4(1533)	42.4(1497)	41.6(1469)	38.2(1349)	36.1(1274)	35.0(1236)	34.6(1221)	31.1(1098)	26.8(946)	23.3(822)

ARNU283BRA4, ARNU363BRA4, ARNU423BRA4, ARNU483BRA4, ARNU543BRA4

(Unit : CMM(cfm))

Setting Value	Static Pressure(mmAq (in.Aq))										
	5(0.19)	6(0.23)	8(0.31)	10(0.39)	12(0.47)	14(0.55)	15(0.59)	16(0.62)	17(0.66)	18(0.70)	20(0.78)
91	46.5(1642)	43.7(1543)	38.2(1349)	31.3(1105)	23.2(819)	14.0(494)	9.0(317)	3.7(130)	-	-	-
96	49.9(1762)	46.1(1628)	43.0(1518)	33.5(1183)	31.1(1098)	18.4(649)	13.7(483)	9.0(317)	2.6(91)	-	-
101	52.1(1839)	50.2(1772)	47.9(1691)	39.5(1395)	37.4(1320)	27.3(964)	25.2(889)	17.8(628)	8.9(314)	6.1(215)	-
106	51.4(1815)	51.2(1808)	50.4(1779)	44.4(1568)	43.1(1522)	33.3(1176)	32.1(1133)	28.9(1020)	21.0(741)	17.9(632)	8.3(293)
111	53.6(1892)	53.7(1896)	52.9(1868)	49.9(1762)	48.3(1705)	40.6(1433)	40.2(1419)	32.8(1158)	31.5(1112)	27.2(960)	17.5(618)
116	-	-	-	55.7(1967)	50.8(1794)	44.8(1582)	42.6(1504)	40.1(1416)	37.6(1327)	32.5(1147)	27.6(974)
121	-	-	-	-	52.2(1843)	50.8(1794)	50.3(1776)	45.7(1613)	44.6(1575)	38.8(1370)	32.2(1137)
126	-	-	-	-	-	-	54.4(1921)	51.2(1808)	50.4(1779)	46.0(1624)	43.5(1536)

Note: 1. The above table shows the correlation between the air rates and E.S.P.

ARNU363B8A4, ARNU423B8A4, ARNU483B8A4, ARNU763B8A4, ARNU963B8A4

(Unit : CMM(cfm))

Setting Value	Static Pressure(mmAq (in.Aq))								
	6(0.23)	9(0.35)	12(0.47)	15(0.59)	18(0.71)	20(0.79)	22(0.86)	23(0.90)	25(0.98)
60	40.5(1430)	-	-	-	-	-	-	-	-
65	52.7(1861)	39.3(1388)	-	-	-	-	-	-	-
70	63.7(2249)	47.1(1663)	-	-	-	-	-	-	-
75	71.1(2511)	56.9(2009)	44.7(1578)	-	-	-	-	-	-
80	76.3(2694)	69.7(2461)	55.2(1949)	-	-	-	-	-	-
85	83.3(2941)	78.6(2775)	67.4(2380)	55.9(1974)	31.8(1123)	-	-	-	-
91	89.7(3167)	87.1(3076)	78.9(2786)	67.6(2387)	54.2(1914)	-	-	-	-
95	93.4(3298)	91.4(3227)	86.1(3040)	77.0(2719)	66.4(2345)	50.6(1787)	30.0(1059)	-	-
100	93.4(3298)	91.4(3227)	88.3(3118)	84.9(2998)	75.9(2680)	69.5(2454)	60.8(2147)	43.1(1522)	-
105	93.2(3291)	91.3(3224)	88.3(3118)	84.9(2998)	81.1(2864)	77.4(2733)	72.0(2542)	68.0(2401)	52.0(1836)

Note:

1. The above table shows the correlation between the air rates and E.S.P.
2. The above table shows the available E.S.P. range.
3. If the E.S.P. of the installed indoor is less than the lowest value(as mention in the table), indoor components can be failed.