LG
Life's Good

ENGLISH

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 : CEILING CONCEALED DUCT
MODEL : B70AWYN985 / B70AWYUX85

P/NO : MFL41755813

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ENGLISH

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INTRODUCTION

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 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.
- 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.

Installation

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

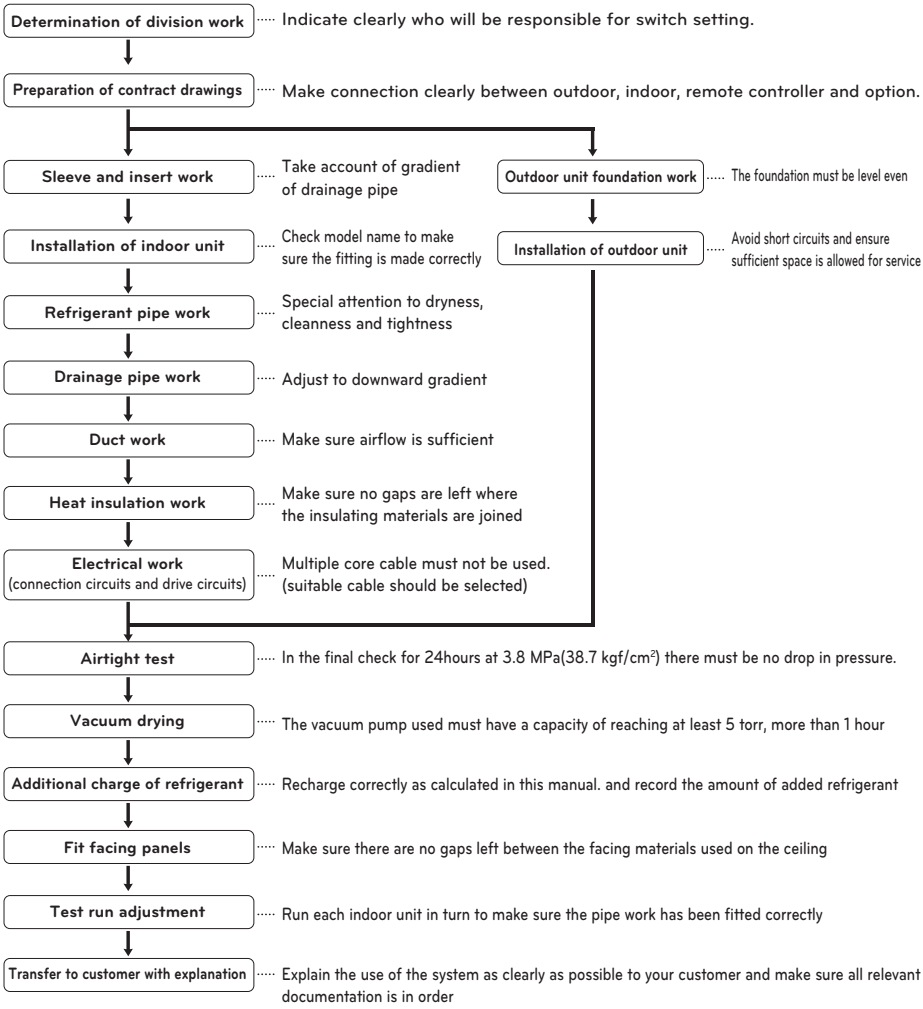
- Do not store or use flammable gas or combustibles near the product.
  - There is risk of fire or failure of product.

⚠ CAUTION

Installation

- Always check for gas (refrigerant) leakage after installation or repair of product.
  - Low refrigerant levels may cause failure of product.
- Install the drain hose to ensure that water is drained away properly.
  - A bad connection may cause water leakage.
- Keep level even when installing the product.
  - To avoid vibration or water leakage.
- Do not install the product where the noise or hot air from the outdoor unit could damage the neighborhoods.
  - It may cause a problem for your neighbors.
- Use two or more people to lift and transport the product.
  - Avoid personal injury.
- Do not install the product where it will be exposed to sea wind (salt spray) directly.
  - It may cause corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient operation.

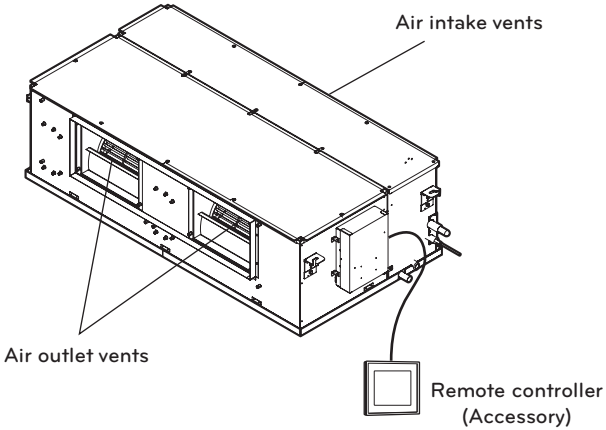
Installation process

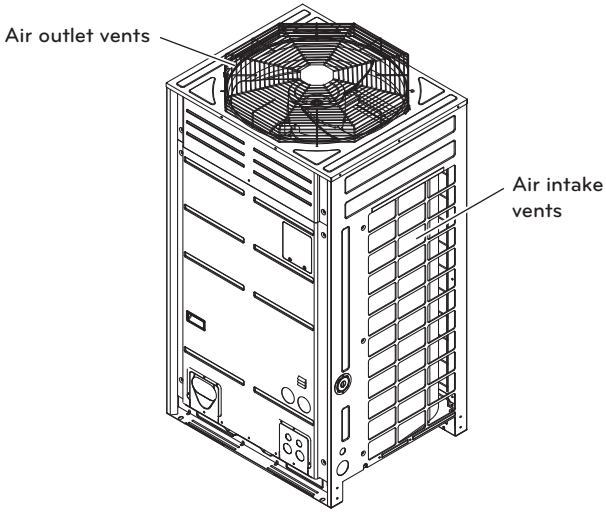


⚠ CAUTION

- The above list indicates the order in which the individual work operations are normally carried out but this order may be varied where local conditions warrants such change.
- The wall thickness of the pipe should comply with the relevant local and national regulations for the designed pressure 3.8MPa.
- Since R-410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state.(If the refrigerant is charged in its gaseous state, its composition changes and the system will not work properly.)

Features


Air intake vents
Air outlet vents
Remote controller
(Accessory)


Air outlet vents
Air intake
vents

Environment-friendly alternative refrigerant R-410A

- The refrigerant R-410A has the property of higher operating pressure in comparison with R22.
  Therefore, all materials have the characteristics of higher resisting pressure than R22 ones and this characteristic should be also considered during the installation.
  R-410A is an azeotrope of R32 and R125 mixed at 50:50, so the ozone depletion potential (ODP) of R-410A is 0. These days the developed countries have approved it as the environment-friendly refrigerant and encouraged to use it widely to prevent environment pollution.

⚠ CAUTION

- The wall thickness of the pipe should comply with the relevant local and national regulations for the designed pressure 3.8MPa
- Since R-410A is a mixed refrigerant, the required additional refrigerant must be charged in its liquid state.
  If the refrigerant is charged in its gaseous state, its composition changes and the system will not work properly.
- Do not place the refrigerant container under the direct rays of the sun to prevent it from exploding.
- For high-pressure refrigerant, any unapproved pipe must not be used.
- Do not heat pipes more than necessary to prevent them from softening.
- Be careful not to install wrongly to minimize economic loss because it is expensive in comparison with R22.

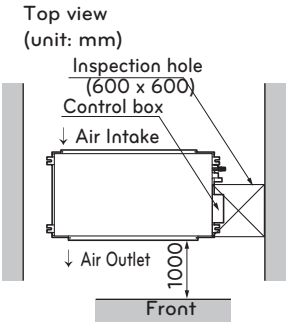
INSTALLATION PLACE

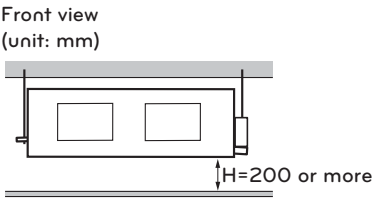
Select space for installing outdoor unit, which will meet the following conditions:

- No direct thermal radiation from other heat sources
- No possibility of annoying neighbors by noise from unit
- No exposition to strong wind
- With strength which bears weight of unit
- Note that drain flows out of unit when heating
- With space for air passage and service work shown next
- Because of the possibility of fire, do not install unit to the space where generation, inflow, stagnation, and leakage of combustible gas is expected.
- Avoid unit installation in a place where acidic solution and spray (sulfur) are often used.
- Do not use unit under any special environment where oil, steam and sulfuric gas exist.
- It is recommended to fence round the outdoor unit in order to prevent any person or animal from accessing the outdoor unit.
- If installation site is area of heavy snowfall, then the following directions should be observed.
  - Make the foundation as high as possible.
  - Fit a snow protection hood.
- Select installation location considering following conditions to avoid bad condition when additionally performing defrost operation.
  - Install the outdoor unit at a place well ventilated and having a lot of sunshine in case of installing the product at a place With a high humidity in winter (near beach, coast, lake, etc.)
    (Ex : Rooftop where there is always sunshine.)

Indoor unit installation place

- The place shall easily bear a load exceeding four times the indoor unit's weight.
- The place shall be able to inspect the unit.
- The place where the unit shall be leveled.
- The place shall allow easy water drainage.
- 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

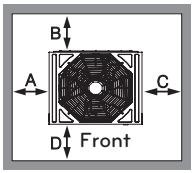
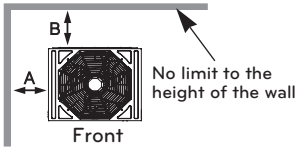
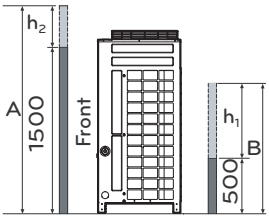




* Suitable dimension "H" is necessary to get a slope to drain.

Outdoor unit installation place

- If an awning is built over the unit to prevent direct sunlight or rain exposure, make sure that heat radiation from the condenser is not restricted.
- Ensure that the spaces indicated by arrows around front, back and side of the unit.
- Do not place animals and plants in the path of the warm air.
- Take the air conditioner weight into account and select a place where noise and vibration are minimum.
- Select a place so that the warm air and noise from the air conditioner do not disturb neighbors.

<table>
<tr><th>Category</th><th>Installation Space</th><th>Case1
(10mm≤ Side Space ≤49mm)</th><th>Case2
(Side Space ≥49mm)</th></tr>
<tr><td>4 sides are walls</td><td>
</td><td>A≥10
B≥300
C≥10
D≥500</td><td>A≥50
B≥100
C≥50
D≥500</td></tr>
<tr><td>Only 2 sides are walls</td><td>
</td><td>A≥10
B≥300</td><td></td></tr>
<tr><td>Limitations on the height of the wall (Refer to 4 side walls)</td><td>
</td><td colspan="2">• The height of the wall on the front side must be 1500mm or less.
• The height of the wall on the intake side must be 500mm or less.
• There is no limit to the wall on the side.
• If the height of the walls on the front and the side are higher than the limit, there must be additional space on the front and the side.
- Additional Space on the intake side by 1/2 of h1.
- Additional Space on the front side by 1/2 of h2
- h2 = A(Actual height) - 1500
- h1 = B(Actual height) - 500</td></tr>
</table>

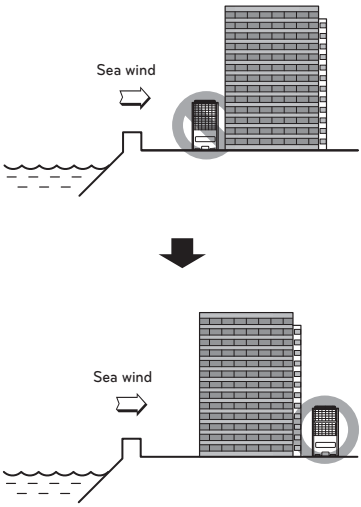
Installation guide at the seaside

CAUTION

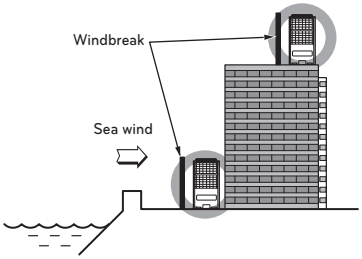
- Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced.
- Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the condenser and evaporator fins, could cause product malfunction or inefficient performance.
- If outdoor unit is installed close to the seaside, it should avoid direct exposure to the sea wind. Otherwise it needs additional anticorrosion treatment on the heat exchanger.

Selecting the location(Outdoor Unit)

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



In case, to install the outdoor unit on the seaside, set up a windbreak not to be exposed to the sea wind.



- It should be strong enough like concrete to prevent the sea wind from the sea.
- The height and width should be more than 150% of the outdoor unit.
- It should be keep more than 70 cm of space between outdoor unit and the windbreak for easy air flow.

Select a well-drained place.

- Periodic (more than once/year) cleaning of the dust or salt particles stuck on the heat exchanger by using water

PRODUCT INSTALLATION

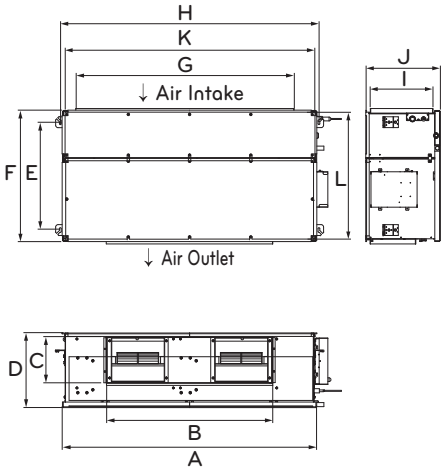
Indoor unit installation

Case1

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.

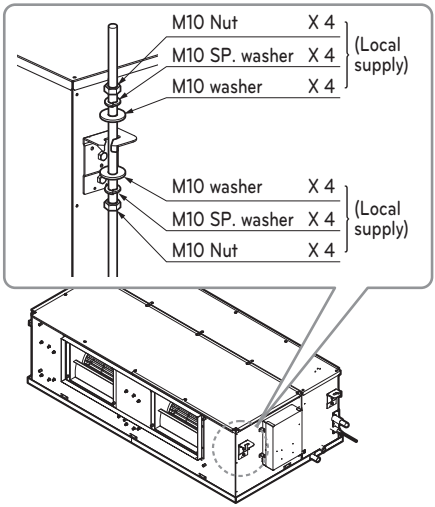
Dimension / Capacity	A	B	C	D	E	F	G	H	I	J	K	L
70 kBtu/h	1594	1044	286	464	657	821	1368	1622	392	458	1563	791



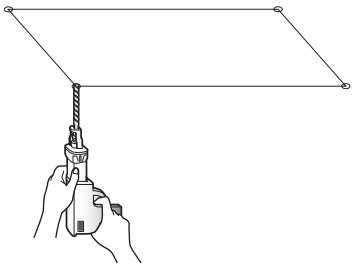
Case2

Position of Console Bolt

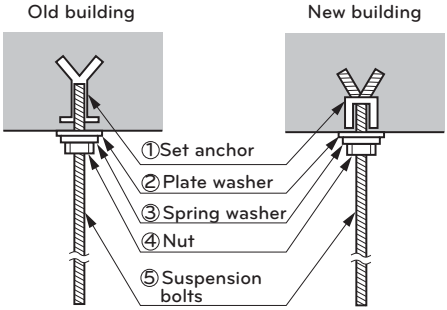
- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.

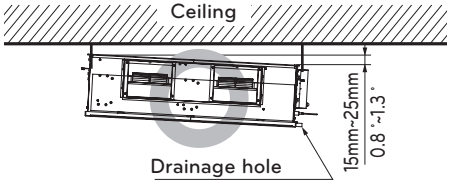


- Select and mark the position for fixing bolts.
- Drill the hole for set anchor on the face of ceiling.

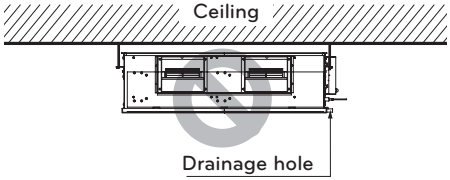


- Insert the set anchor and washer onto the suspension bolts for locking the suspension bolts on the ceiling.
- Mount the suspension bolts to the set anchor firmly.
- Secure the installation plates onto the suspension bolts (adjust level roughly) using nuts, washers and spring washers.

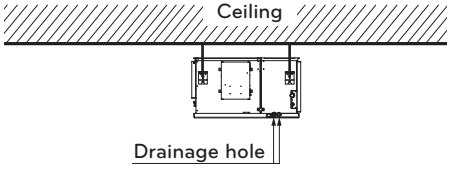




CORRECT



INCORRECT



• Local supply
  ① Set anchor
  ② Plate washer - M10
  ③ Spring washer - M10
  ④ Nut - W3/8 or M10
  ⑤ Suspension bolt - W3/8 or M10

CAUTION

Tighten the nut and bolt to prevent unit falling.

CAUTION

Install declination of the indoor unit is very important for the drain of the duct type air conditioner. Always lay the indoor unit with downward inclination (0.8 ° to 1.3 °). Prevent any upward flow or reverse flow in any part.

Separating work of the indoor unit (if required)

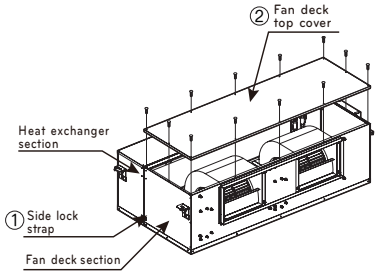
To install the indoor unit, it can be easily separated into 2 sections by making it lighter to carry and easier to maneuver through openings and in the ceiling.

> **CAUTION**
>
> Please separate the indoor unit only when necessary. Please disassemble and reassemble on a flat surface.

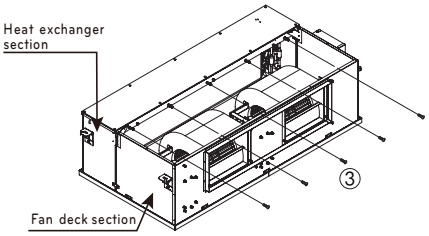
The method to separate the indoor unit is as follows.

① Remove the two side lock straps.

② Unscrew the top cover of the fan deck section.

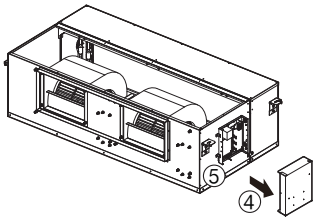


③ Unscrew the five bolts securing the two sections.

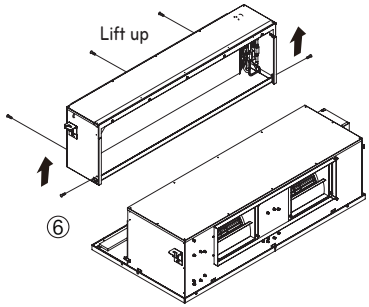


④ Remove the control box cover and unplug the air and two heat exchanger thermistors also unplug expansion valve cable.

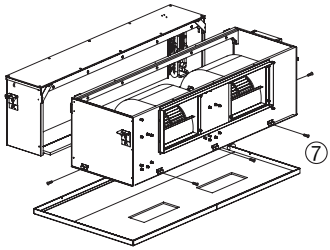
⑤ Carefully un-clip the three thermistor leads and push the leads through the back of the electrical box.



⑥ Unscrew 5 screws and separate the heat exchanger section from unit. Carefully unlatch the heat exchanger section from the fan deck section by lifting up the heat exchanger section and then pulling away. Ensure that the thermistor or expansion valve motor cables do not catch on either section as the unit is separated.

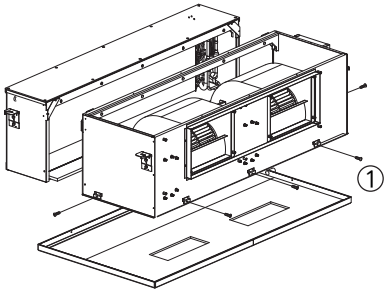


⑦ Unscrew the 5 screws and separate the fan deck section from sub drain pan



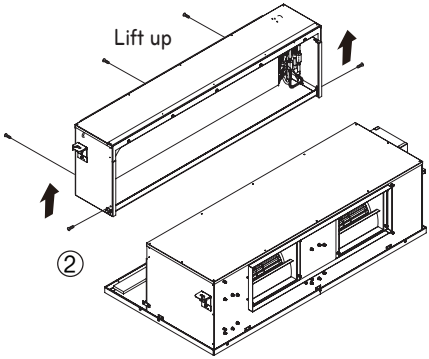
The method to rejoin the indoor unit is as follows.

① Sub drain pan and the fan deck section together with the 5 screws.

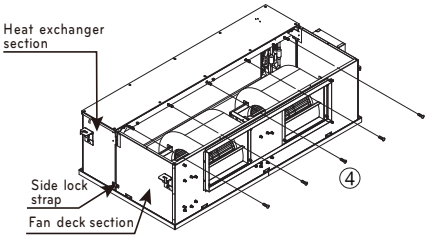


② Carefully align the heat exchanger section and fan deck section.

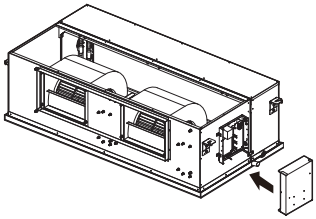
③ Lift the heat exchanger section about 50mm, push it forward and then back down And screw the 5 screws the heat exchanger section with unit.



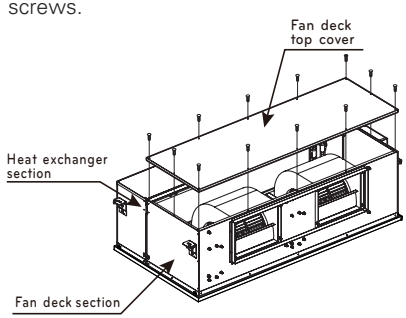
④ Secure the two sections together with the 5 bolts. Re-attach the side lock strap.



⑤ Re-connect the unplugged cables. Reassemble the control box cover.



⑥ Carefully replace the fan deck section top cover and secure the cover with the screws.



⚠ CAUTION

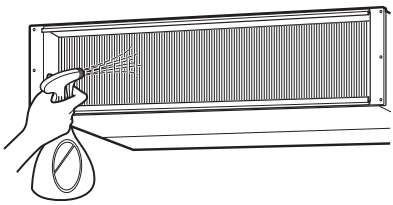
Please be sure to secure two section with 5 screws. if one of screw is missing, it could cause unbalance of product or capacity degradation.

Checking the Drainage

Checking the Drainage

* Check the drainage.

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

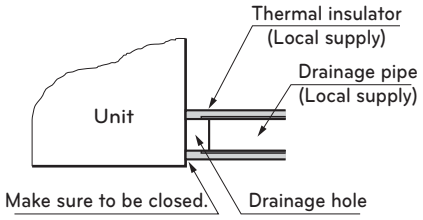


Caution for gradient of unit and drainage pipe

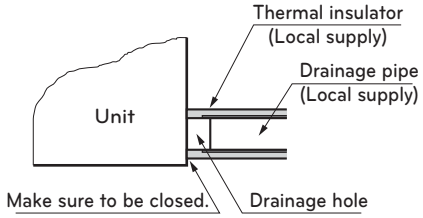
Lay the drainage pipe hose with a downward inclination so water will drain out.

Main drain

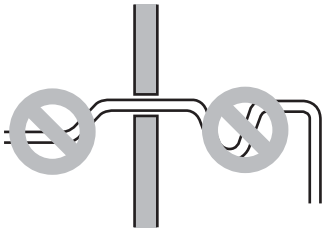
- Always lay the drainage with downward inclination (0.8 ˚ to 1.3 ˚).
  Prevent any upward flow or reverse flow in any part.
- 10mm or thicker formed thermal insulator shall always be provided for the drainage pipe.



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

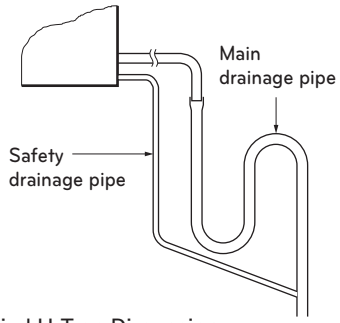


- Upward routing not allowed

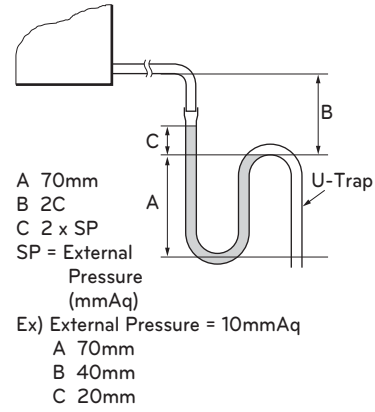


Safety drainage

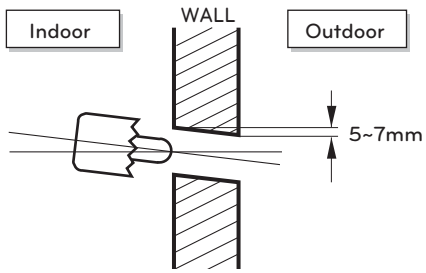
- There is no need to provide a trap for the safety drainage. If the safety drainage pipe is connected to the main drainage pipe, make the connection below the trap on the main drainage pipe.



Applied U-Trap Dimension

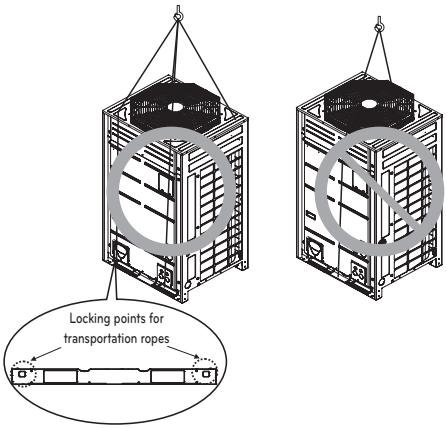


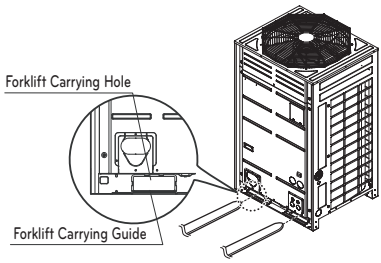
- Drill the pipe hole with 65mm dia, hole core drill.
- Pipe hole should be slightly slant to the outdoor side.



Lifting method of the outdoor unit

- When carrying the suspended, unit pass the ropes under the unit and use the two suspension points each at the front and rear.
- Always lift the unit with ropes attached at four points so that impact is not applied to the unit.
- Attach the ropes to the unit at an angle of 40° or less.





<Weight per Capacity>

Capacity(kBtu/h)	Weight(kg)
70	185

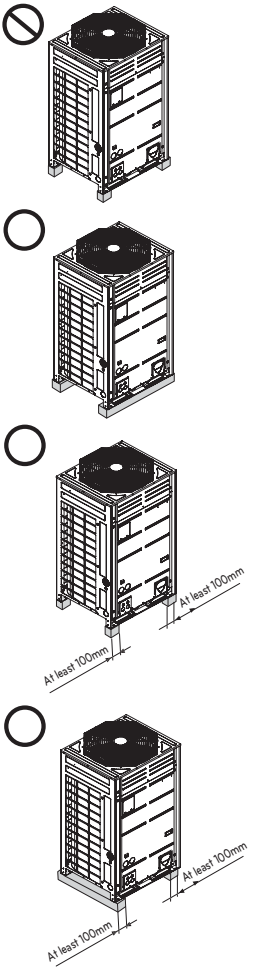
⚠ CAUTION

Be very careful while carrying the product.

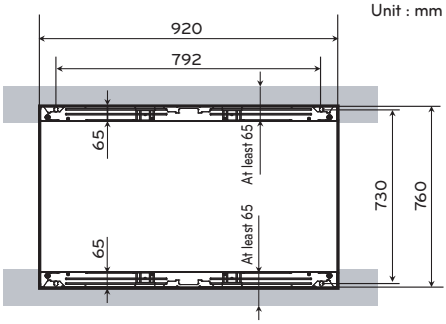
- Do not have only one person carry product if it is more than 20 kg.
- PP bands are used to pack some products. Do not use them as a mean for transportation because they are dangerous.
- Do not touch heat exchanger fins with your bare hands. Otherwise you may get a cut in your hands.
- Tear plastic packaging bag and scrap it so that children cannot play with it. Otherwise plastic packaging bag may suffocate children to death.
- When carrying in Outdoor Unit, be sure to support it at four points. Carrying in and lifting with 3-point support may make Outdoor Unit unstable, resulting in a fall.
- Use 2 belts of at least 8 m long.
- Place extra cloth or boards in the locations where the casing comes in contact with the sling to prevent damage.
- Hoist the unit making sure it is being lifted at its center of gravity.

The outdoor unit installation

- Install at places where it can endure the weight and vibration/noise of the outdoor unit.
- The outdoor unit supports at the bottom shall have width of at least 100mm under the Unit's legs before being fixed.
- The outdoor unit supports should have minimum height of 200mm.
- Anchor bolts must be inserted at least 75mm.

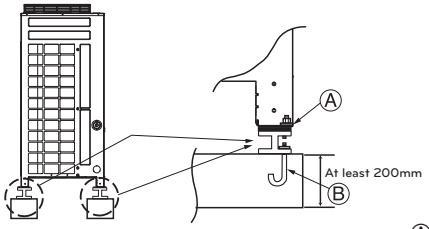


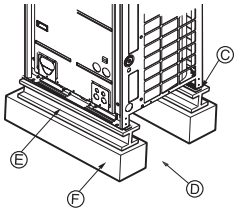
The location of the Anchor bolts for outdoor unit

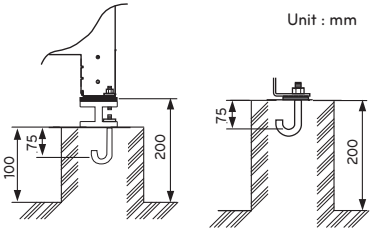


Foundation for outdoor unit Installation

- Fix the unit tightly with bolts as shown below so that unit will not fall down due to earthquake or gust.
- Use the H-beam support as a base support
- Noise and vibration may occur from the floor or wall since vibration is transferred through the installation part depending on installation status. Thus, use anti-vibration materials (cushion pad) fully (The base pad shall be more than 200mm).







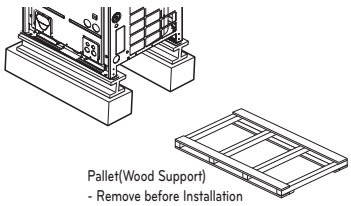
Ⓐ The corner part must be fixed firmly. Otherwise, the support for the installation may be bent.
Ⓑ Get and use M10 Anchor bolt.
Ⓒ Put Cushion Pad between the outdoor unit and ground support for the vibration protection in wide area.
Ⓓ Space for pipes and wiring (Pipes and wirings for bottom side)
Ⓔ H-beam support
Ⓕ Concrete support

⚠ WARNING

- Install where it can sufficiently support the weight of the outdoor unit.
  If the support strength is not enough, the outdoor unit may drop and hurt people.
- Install where the outdoor unit may not fall in strong wind or earthquake.
  If there is a fault in the supporting conditions, the outdoor unit may fall and hurt people.
- Please take extra cautions on the supporting strength of the ground, water outlet treatment (treatment of the water flowing out of the outdoor unit in operation), and the passages of the pipe and wiring, when making the ground support.
- Do not use tube or pipe for water outlet in the Base pan. Use drainage instead for water outlet. The tube or pipe may freeze and the water may not be drained.

⚠ CAUTION

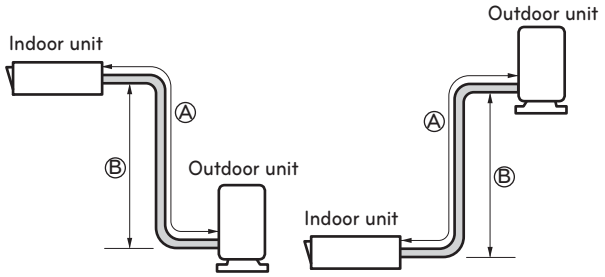
- Be sure to remove the Pallet(Wood Support) of the bottom side of the outdoor unit Base Pan before fixing the bolt. It may cause the unstable state of the outdoor settlement, and may cause freezing of the heat exchanger resulting in abnormal operations.
- Be sure to remove the Pallet(Wood Support) of the bottom side of the outdoor unit before welding. Not removing Pallet(Wood Support) causes hazard of fire during welding.



PIPE CONNECTION

Pipe length and the elevation

Capacity (Btu/h)	Pipe Size mm(inch)		Length A(m)		Elevation B(m)		*Additional refriger-ant(g/m)
	Gas	Liquid	Standard	Max.	Standard	Max.	
70k	22.2(7/8)	9.52(3/8)	7.5	100	0	30	61



CAUTION

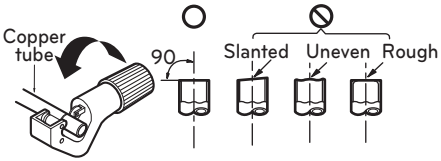
- The standard pipe length is 7.5m. If the pipe length exceeds 7.5m, Need to additional charge of the refrigerant which according to the table.
- If 72kBtu/h model is installed at a distance of 100m 5,550g of refrigerant should be added (100-7.5)x61g = 5,643g
- Capacity is based on standard length and maximum allowance length is on the basis of reliability.
- Improper refrigerant charge may result in abnormal cycle.

Preparation of Pipe

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

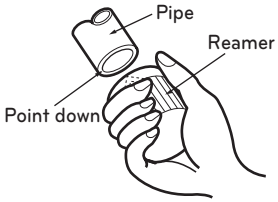
Cut the pipes and the cable.

- Use the accessory pipe kit or the pipes purchased locally.
- Measure the distance between the indoor and the outdoor unit.
- Cut the pipes a little longer than measured distance.
- Cut the cable 1.5m longer than the pipe length.



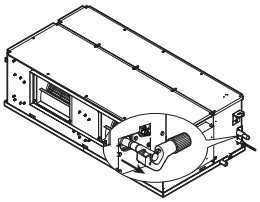
Burrs removal

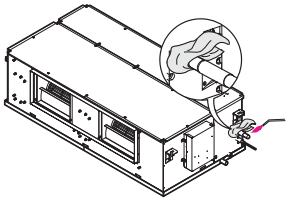
- Completely remove all burrs from the cut cross section of pipe.
- Put the end of the copper pipe to downward direction as you remove burrs in order to avoid to let burrs drop in the pipe.

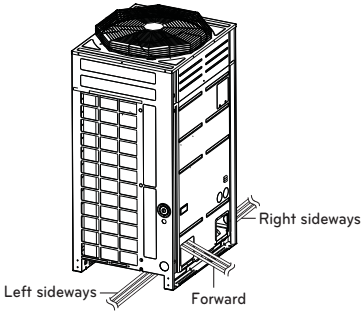


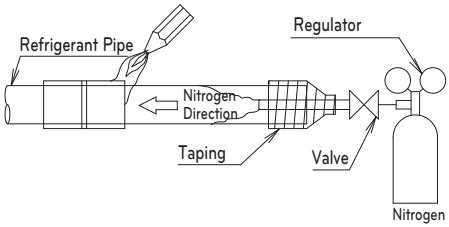
Welding

- Pipe connections can be done on the front side or on the side according to the installation environments.
- Be sure to let 0.2kgf/cm^2 Nitrogen flow in the pipe when welding.
- If Nitrogen was not flown during welding, many oxidized membranes may form inside the pipe and disturb the normal operations of valves and condensers.



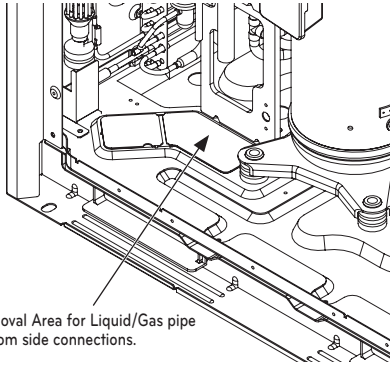






Preparation Work for piping

- Use Knock Outs of Base Pan of the outdoor unit for Left/Right or Bottom pipe drawing outs.



CAUTION

- Do not give damage to the pipe/base during the Knock Out work.
- Proceed to pipe work after removing burr after Knock Out work.
- Perform sleeve work to prevent damage to the wire when connecting wires using knock Outs.

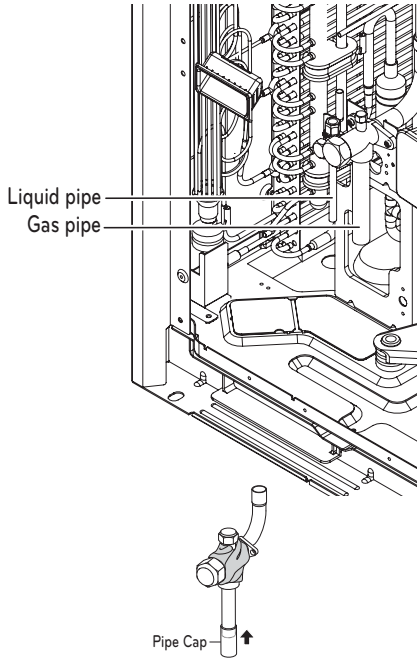
Remove leakage prevention cap

- Remove the leakage prevention cap attached to the outdoor unit service valve before pipe work.
- Proceed the leakage prevention cap removal as follows:

1. Verify whether the liquid/gas/common pipes are locked.
2. Extract remaining refrigerant or air inside using the service port.
3. Remove the leakage prevention cap

Method of pipe cap work during the installation of single outdoor unit

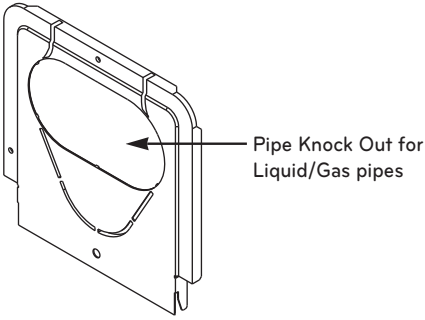
1. Remove rubber cap inserted in the common pipe.
2. Wrap the common pipe service valve with wet towel.
3. Insert the pipe cap provided into the common pipe.
4. Place high/low pressure flare nut cap under the pipe cap so that the pipe cap does not move.
5. Weld the pipe cap.
   - ❉ If not wrapped with a wet towel, there may be damages inside the valve.
   - ❉ If the unit is operated without pipe cap work, there may be abnormality in the cycle caused by refrigerant leakage.

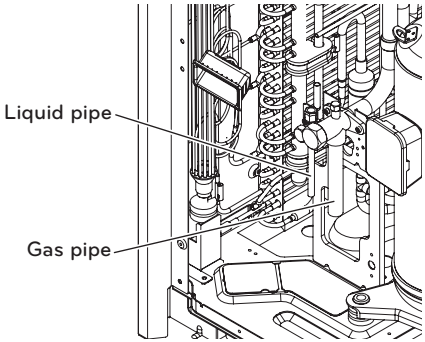


Pipe Drawing Out during Single connection

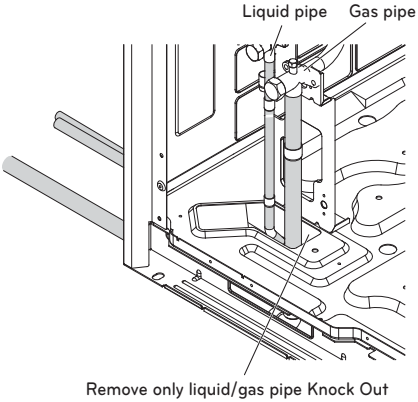
Method of drawing out pipes on the front side

- Proceed with the pipe work as shown in the below figure for front side pipe drawing out.





Method of drawing out pipes on the bottom side



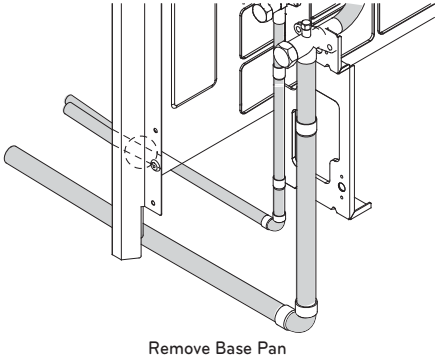
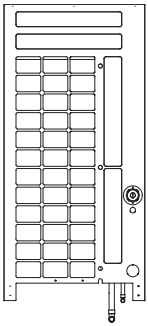
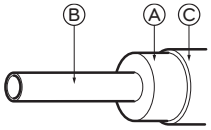


Figure of Sides when drawing out through bottom pipe



Thermal insulation of refrigerant pipe

Be sure to give insulation work to refrigerant pipe by covering liquid pipe and gas pipe separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation drip, etc. Pay special attention to insulation work to ceiling plenum.



Ⓐ Heat insulation material

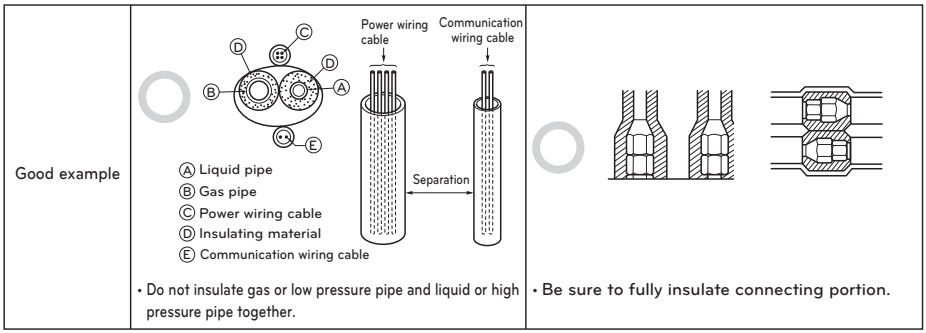
Ⓑ Pipe

Ⓒ Outer covering(Wind the connection part and cutting part of heat insulation material with a finishing tape.)

Heat insulation material	Adhesive + Heat - resistant polyethylene foam + Adhesive tape	
Outer covering	Indoor	Vinyl tape
	Floor exposed	Water-proof hemp cloth + Bronze asphalt
	Outdoor	Water-proof hemp cloth + Zinc plate + Oily paint

NOTE

When using polyethylene cover as covering material, asphalt roofing shall not be required.



CAUTION

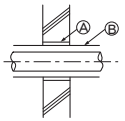
Cutting line of insulation must look upper direction. Thickness of insulation is 15mm(Gas pipe) and 19mm(Liquid pipe) or over.

NOTE

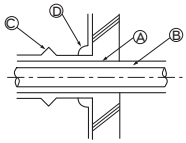
Recommended Insulation material
Material : EPDM
Thickness : 15mm(Gas pipe) and 19mm(Liquid pipe) or over.
Density : less than 0.032 ±0.005(g/cm^2)
Thermal conductivity : less than 0.03(kcal/m.hr.°C)

Penetrations

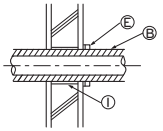
Inner wall (concealed)



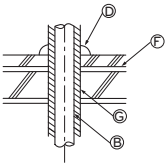
Outer wall



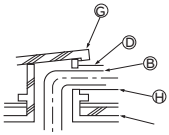
Outer wall (exposed)



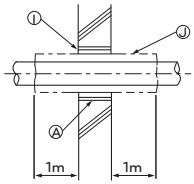
Floor (fireproofing)



Roof pipe shaft



Penetrating portion on fire limit and boundary wall



Ⓐ Sleeve
Ⓑ Heat insulating material
Ⓒ Lagging
Ⓓ Caulking material
Ⓔ Band
Ⓕ Waterproofing layer
Ⓖ Sleeve with edge
Ⓗ Lagging material
Ⓘ Mortar or other incombustible caulking
Ⓙ Incombustible heat insulation material

When filling a gap with mortar, cover the penetration part with steel plate so that the insulation material will not be caved in. For this part, use incombustible materials for both insulation and covering.(Vinyl covering should not be used.)

Forming the pipe

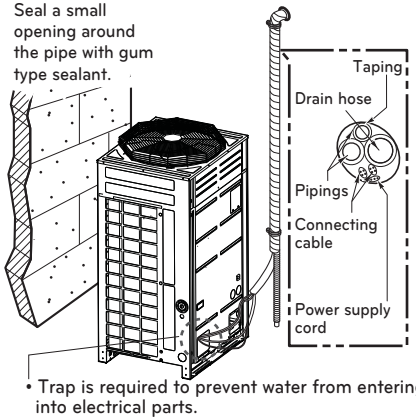
Form the pipe by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tape.

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

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

1 Tape the pipe, drainage hose and connecting cable from down to up.

2 Secure the tapped piping along the exterior wall using saddle or equivalent.

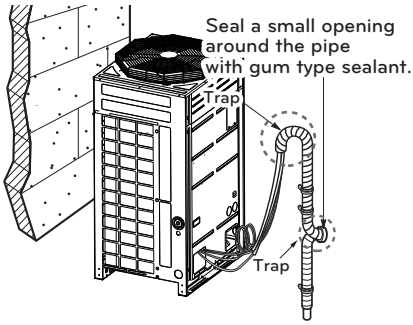


In cases where the Outdoor unit is installed above the Indoor unit perform the following.

1 Tape the pipe and connecting cable from down to up.

2 Secure the taped pipe along the exterior wall. Form a trap to prevent water entering the room.

3 Fix the pipe onto the wall by saddle or equivalent.



Leakage test and evacuation

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

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

Therefore, the indoor/outdoor unit and connecting tube must be checked for leak tight, and vacuumed to remove incondensible gas and moisture in the system.

Preparation for leakage test and evacuation

- Check that each tube(both liquid and gas side tubes) between the indoor and outdoor units have been properly connected and all wiring for the test run has been completed. Remove the service valve caps from both the gas and the liquid side on the outdoor unit. Check that both the liquid and the gas side service valves on the outdoor unit are kept closed at this stage.

Leakage test

- Connect the manifold valve(with pressure gauges) and dry nitrogen gas cylinder to this s[illegible]harge hoses.

⚠ CAUTION

Be sure to use a manifold valve for leakage test.
If it is not available, use a stop valve for this purpose. The "Hi" knob of the manifold valve must always be kept close.

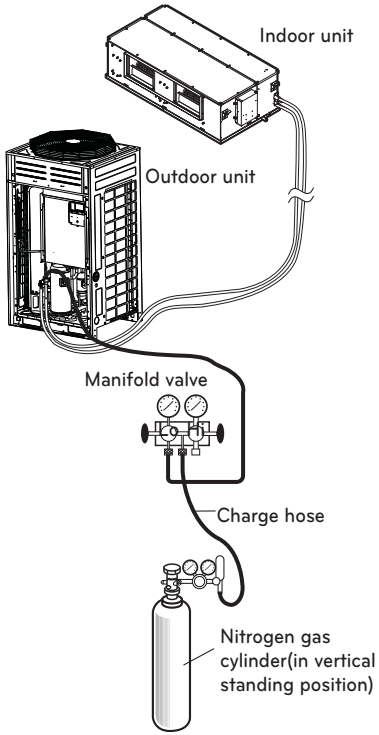
- Pressurize the system to no more than 3.0 Mpa with dry nitrogen gas and close the cylinder valve when the gauge reading Reached 3.0 Mpa. Next, test for leaks with liquid soap.

⚠ CAUTION

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

1 Do a leakage test of all joints of the tubing(both indoor and outdoor) and both gas and liquid side service valves.
Bubbles indicate a leak. Be sure to wipe off the soap with a clean cloth.

2 After the system is found to be free of leaks, relieve the nitrogen pressure by loosening the charge hose connector at the nitrogen cylinder. When the system pressure is reduced to normal, disconnect the hose from the cylinder.

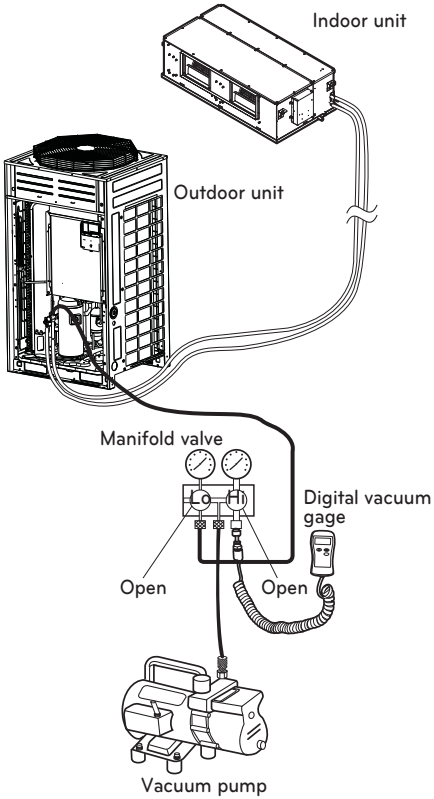


Vacuum

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

Required time for evacuation when 30 gal/h vacuum pump is used	
If pipe length is less than 10 m(33 ft)	If pipe length is longer than 10 m(33 ft)
30 min. or more	60 min. or more
0.5 torr or less	

2 When the desired vacuum is reached, close the "Lo and Hi" knob of the manifold valve and stop the vacuum pump.



Finishing the job

1 With a service valve wrench, turn the valve stem of liquid side valve counter-clockwise to fully open the valve.
2 Turn the valve stem of gas side valve counter-clockwise to fully open the valve.
3 Loosen the charge hose connected to the gas side service port slightly to release the pressure, then remove the hose.
4 Replace the flare nut and its bonnet on the gas side service port and fasten the flare nut securely with an adjustable wrench. This process is very important to prevent leakage from the system.
5 Replace the valve caps at both gas and liquid side service valves and fasten them tight.

This completes air purging with a vacuum pump.

The air conditioner is now ready to test run.

WIRING

Electrical Wiring

- Follow ordinance of your governmental organization for technical standard related to electrical equipment, wiring regulations and guidance of each electric power company.

⚠ WARNING

- Be sure to have authorized electrical engineers do the electric work using special circuits in accordance with regulations and this installation manual. If power supply circuit has a lack of capacity or electric work deficiency, it may cause an electric shock or fire.

- Install the Outdoor Unit transmission line away from the power source wiring so that it is not affected by electric noise from the power source. (Do not run it through the same conduit.)
- Be sure to provide designated grounding work to Outdoor Unit.

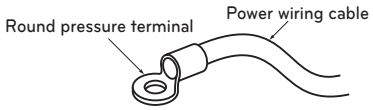
⚠ CAUTION

- Be sure to correct the outdoor unit to earth. Do not connect earth line to any gas pipe, liquid pipe, lightening rod or telephone earth line. If earth is incomplete, it may cause an electric shock.

- Give some allowance to wiring for electrical part box of Indoor and Outdoor Units, because the box is sometimes removed at the time of service work.
- Never connect the main power source to terminal block of transmission line. If connected, electrical parts will be burnt out.
- Only the transmission line specified should be connected to the terminal block for Outdoor Unit transmission.

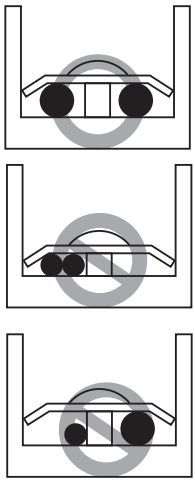
Precautions when laying power wiring cable

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



When none are available, follow the instructions below.

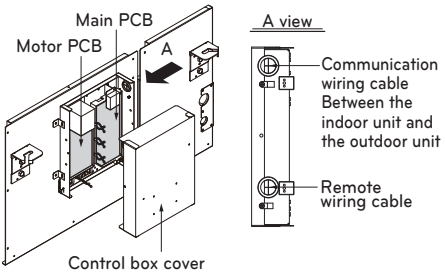
- Do not connect wiring cable of different thicknesses to the power terminal block. (Slack in the power wiring cable may cause abnormal heat.)
- When connecting wiring which is the same thickness, do as shown in the figure below.



- For wiring, use the designated power wiring cable 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 tighterning impossible.
- Over-tightening the terminal screws may break them.

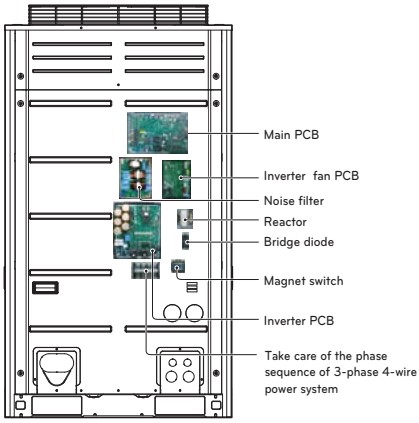
Indoor unit

- Remove the control box cover for electrical wiring between the indoor and outdoor unit.
- Use the cord clamper to fix the wiring cable.
- Connect the wiring cable of diameter 2.5mm^2 or more, to the panel of control box, marked as ⏚ and fasten with earth screw.



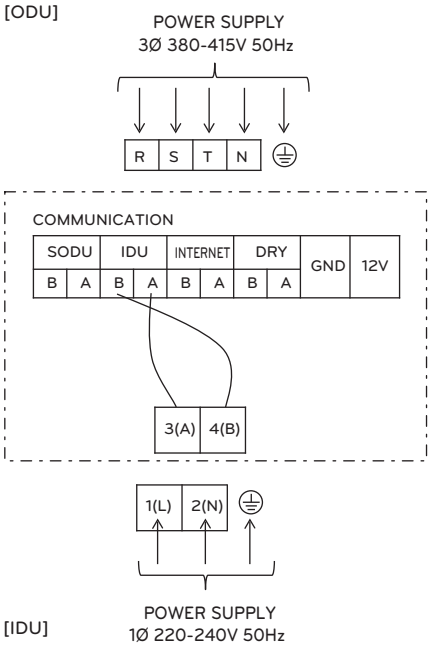
Outdoor unit

- Remove the control cover for wiring cable-connection.
- Use the cord clamper to fix the wiring cable.
- Fix the earth cable
- Connect the wiring cable of diameter 2.5mm^2 or more, to the panel of control box, marked as ⏚ and fasten with earth screw.



⚠ CAUTION

- The circuit diagram is not subject to change without notice.
- Be sure to connect wires according to the wiring diagram.
- Connect the wires firmly, so that not to be pulled out easily.
- Connect the wiring cables according to color codes by referring the wiring diagram.
- In Australia, the length of power supply cable measured from the entry of the power supply cable to the middle of live pin on the power plug should be over 1.8m.



Communication and Power wiring cable

1) Communication wiring cable

- Types : shielding wire
- Cross section : 1.0~1.5mm^2
- Maximum allowable temperature: 105°C
- Maximum allowable line length: under 100m

2) Remote wiring cable

- Types : 3 wiring cable

4) Separation of transmission and power lines

- communication and power wiring cable are run alongside each other then there is a strong likelihood of operational faults developing due to interference in the signal wiring caused by electrostatic and electromagnetic coupling.
  The tables below indicates our recommendation as to appropriate spacing of communication and power wiring cable where these are to be run side by side

Current capacity of power line		Spacing
100V or more	10A	300mm
	50A	500mm
	100A	1000mm
	Exceed 100A	1500mm

NOTE

- The figures are based on assumed length of parallel cabling up to 100m. For length in excess of 100m the figures will have to be recalculated in direct proportion to the additional length of line involved.
- If the power supply waveform continues to exhibit some distortion the recommended spacing in the table should be increased.
  - If the lines are laid inside conduits then the following point must also be taken into account when grouping various lines together for introduction into the conduits
  - Power lines(including power supply to air conditioner) and signal lines must not be laid inside the same

CAUTION

- If apparatus is not properly earthed then there is always a risk of electric shocks, the earthing of the apparatus must be carried out by a qualified person.

Wiring of main power supply and equipment capacity

1. Use a separate power supply for the Outdoor Unit and Indoor Unit.
2. Bear in mind ambient conditions (ambient temperature,direct sunlight, rain water,etc.) when proceeding with the wiring and connections.
3. The wire size is the minimum value for metal conduit wiring. The power wiring cable size should be 1 rank thicker taking into account the line voltage drops. Make sure the power-supply voltage does not drop more than 10%.
4. Specific wiring requirements should adhere to the wiring regulations of the region.
5. Power wiring cable of parts of appliances for outdoor use should not be lighter than polychloroprene sheathed flexible cord.
6. Don't install an individual switch or electrical outlet to disconnect each of indoor unit separately from the power supply.

WARNING

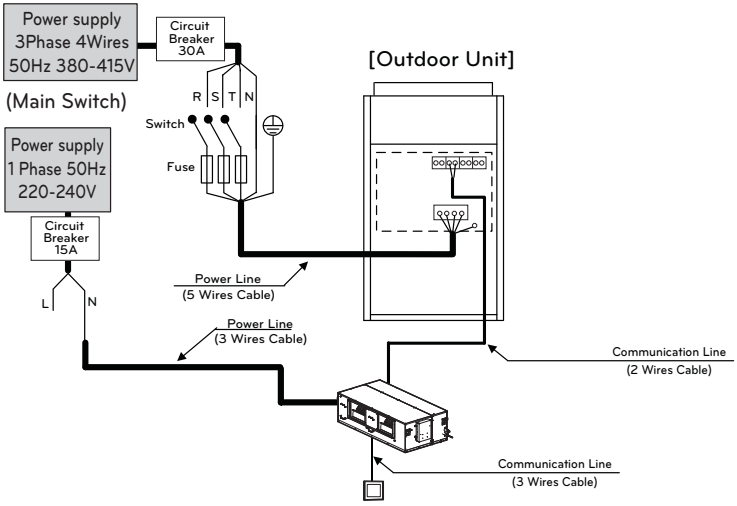
- Follow ordinance of your governmental organization for technical standard related to electrical equipment, wiring regulations and guidance of each electric power company.
- Make sure to use specified wires for connections so that no external force is imparted to terminal connections. If connections are not fixed firmly, it may cause heating or fire.
- Make sure to use the appropriate type of over current protection switch. Note that generated over current may include some amount of direct current.

CAUTION

- Some installation site may require attachment of an earth leakage breaker. If no earth leakage breaker is installed, it may cause an electric shock.
- Do not use anything other than breaker and fuse with correct capacity. Using fuse and wire or copper wire with too large capacity may cause a malfunction of unit or fire.

Field Wiring

◆ Example Connection of Communication wiring cable
Indoor Unit 50Hz, 1Ø, 220-240V
Outdoor Unit 50Hz, 3Ø, 380-415V



<Figure 1>

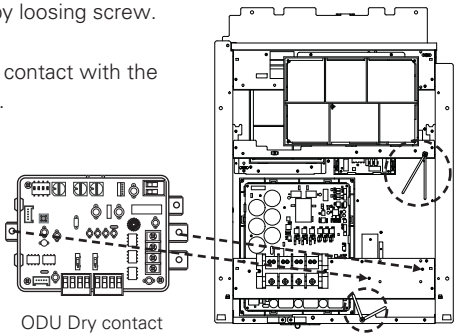
WARNING

- Indoor Unit ground Lines are required for preventing electrical shock accident during current leakage, Communication disorder by noise effect and motor current leakage (without connection to pipe).
- Install the electronic wiring cable like <Figure 1>
- Use a recognized circuit breaker between the power source and the Unit.
- Capacity of circuit breaker recommended by authorized personnel only
- Install the main switch that can interrupt all the power sources in an integrated manner because this system consists of the equipment utilizing the multiple power sources.
- If there exists the possibility of reversed phase, lose phase, momentary blackout or the power goes on and off while the product is operating, attach a reversed phase protection circuit locally. Running the product in reversed phase may break the compressor and other parts.

The GND terminal at the main PCB is a '-' terminal for dry contact, it is not the point to make ground connection.

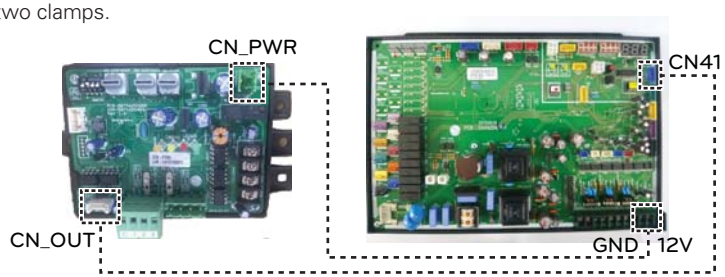
Connecting the DRED to the outdoor unit

- Remove the Front panel and the cover,control by loosing screw. Tighten a screw at two point as the right.
- After connect the Outdoor PCB to the ODU dry contact with the cable provided, arrange the wire by two clamps.

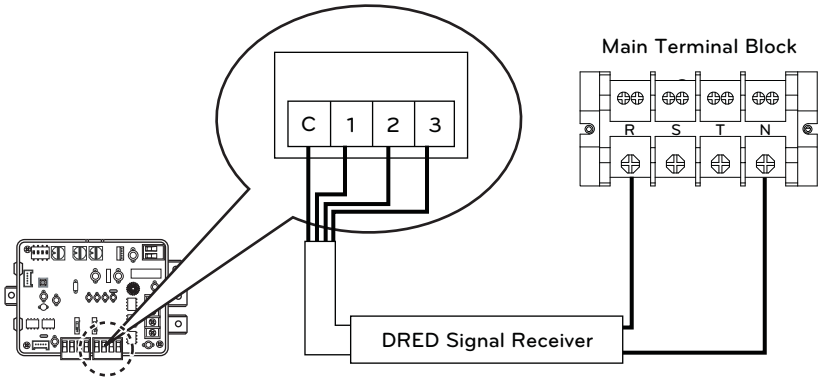


ODU Dry contact
(PQDSBCDVM0)

- Remove the Front panel and the cover,control by loosing screw. Tighten a screw at two point as the right.
- After connect the Outdoor PCB to the ODU dry contact with the cable provided, arrange the wire by two clamps.

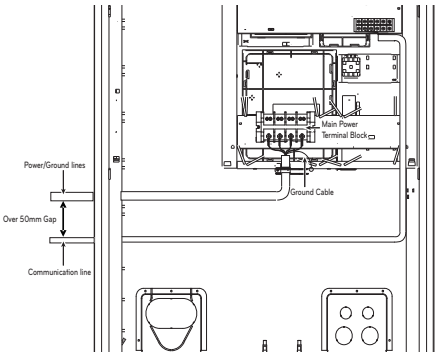


- When connecting cable, follow the Connection method below
- Refer to the ODU dry contact Installation manual

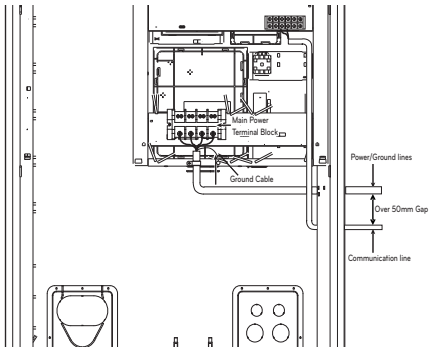


◆ Outdoor Unit Wiring Connection

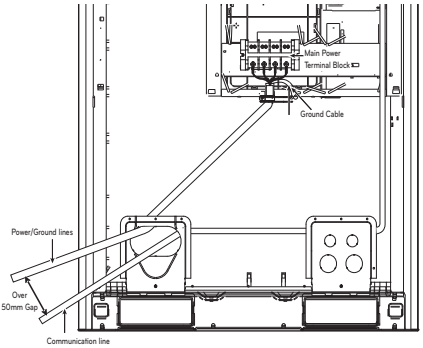
Left Side



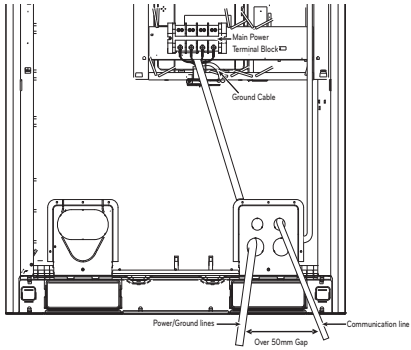
Right Side



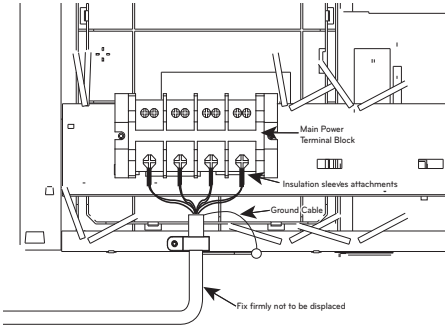
Front Side 1



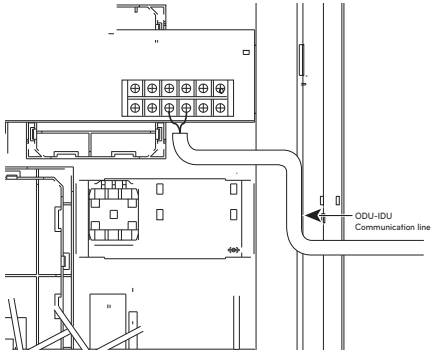
Front Side 2



Main Power Connection

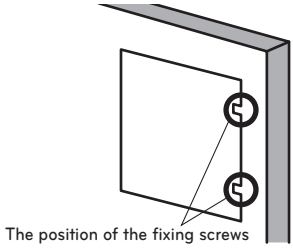


Main PCB Connection

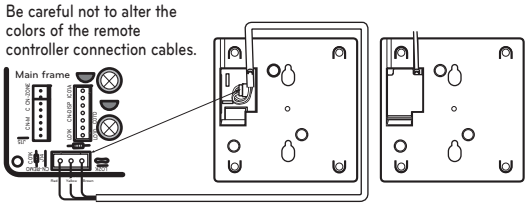


Wired remote controller installation

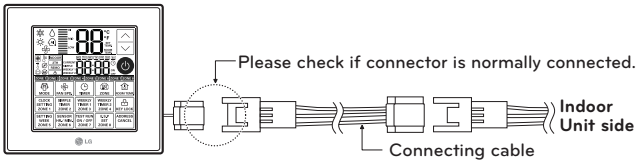
1 Put the installation paper on the place and determine the position and height of the fixing screws of the deluxe wired remote controller.
- Refer to the printed side of the installation paper.



2 Please connect indoor unit and remote controller using connection cable.
- The product is being shipped with the cable connected only to the remote controller. Put each cable to the remote controller according to the color match
- Please use extension cable if the distance between wired remote controller and indoor unit is more than 10m.



12V	Red
Signal	Yellow
GND	Black

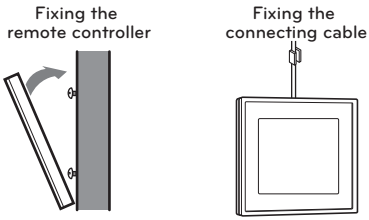


CAUTION

Installation work must be performed in accordance with the national wiring standards by authorized personnel only.

- Installations must comply with the applicable local/national or international standards.
- Apply totally enclosed noncombustible conduit (metal raceway) in case of local electric & building code require plenum cable usage.
- When installing the wired remote controller, do not bury it in the wall. (It can cause damage in the temperature sensor.)
- Do not install the remote controller near by window or door, because it is difficult to sensing real room temperature.
- Do not install the cable to be 50m or above. (It can cause communication error.)
- When installing the extension cable, check the connecting direction of the connector of the remote controller side and the product side for correct installation.
- If you install the extension cable in the opposite direction, the connector will not be connected.
- Specification of extension cable: 2547 1007 22# 2 core 3 shield 5 or above.

3 Remove the installation paper before installing the remote controller so that it can fit into the right place.



Supply the power after connecting deluxe wired remote controller.
When you need to change wired remote controller, turn off the main power and change it before turn on the main power.

Location of remote controller

- Since the room temperature sensor is in the remote controller, the remote controller box should be installed in a place away from direct sunlight, high humidity and direct supply of cold air to maintain proper space temperature. Install the remote controller about 5ft(1.5m) above the floor in an area with good air circulation at an average temperature.

Do not install the remote controller where it can be affected by:

- Drafts, or dead spots behind doors and in corners.
- Hot or cold air from ducts.
- Radiant heat from sun or appliances.
- Concealed pipes and chimneys.
- Uncontrolled areas such as an outside wall behind the remote controller.
- This remote controller is equipped with a seven segment LED. display. For proper display of the remote controller LED's, the remote controller should be installed properly as shown in Fig.1. (The standard height is 1.2~1.5 m from floor level.)

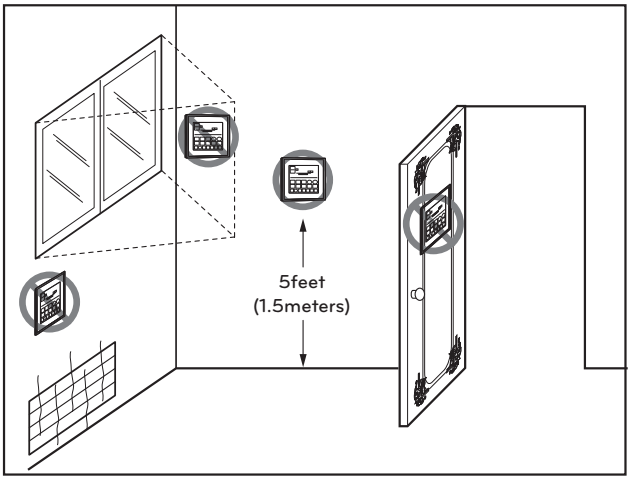


Fig.1 Typical locations for remote controller

SETTING & TEST

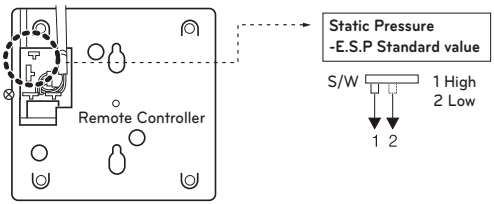
Static Pressure(Pa)			60	80	100	120	140	160	180
Model Name	Step	Setting Value	l/s	l/s	l/s	l/s	l/s	l/s	l/s
B70AWYN983	High	1167	78	82	86	90	93	96	99
	Med	1084	75	79	83	87	91	94	97
	Low	1000	71	75	79	83	87	91	95

NOTE

Capacities are tested in the following conditions.

Static Pressure (Pa)	Voltage (Phase/Volt)	Air Flow Step	Piping Length	Temperature (°C DB/°C WB)			
				Cooling		Heating	
				Indoor	Outdoor	Indoor	Outdoor
60	Ø 3 / 380~415V(ODU) Ø 1 / 220~240V(IDU)	High	7.5 m	27/19	35/24	20/15	7/6

How to set Remote Controller's Switch 2

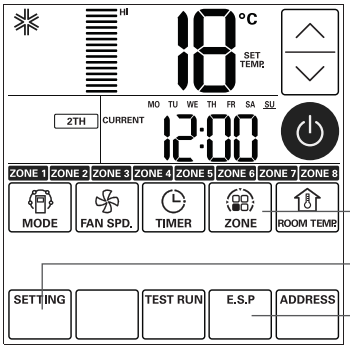


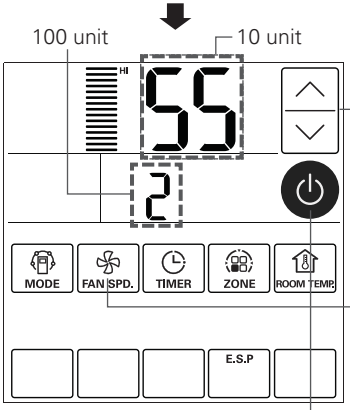
Installer Setting - E.S.P Function

E.S.P function is setting the volume of each air flow. It is for the convenience of installation. It is recommended that you should not use this function while using the wireless remote controller.

CAUTION

If you set E.S.P incorrectly, the air conditioner may malfunction.
This setting must be carried out by authorized personnel only.





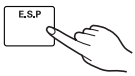
1 Press [ZONE] button to appear [SETTING] button on the screen. mode.



2 Press the [SETTING] button for 3secs.



3 Press the [E.S.P] button.



4 Set the volume of each air flow (LOW→MID→HI) by using the [▲▼] button. Press the [FAN SPD.] button to select the air flow. (The value of E.S.P could be adjusted from 1 to 255.) (The figure on the left shows when the strong wind's E.S.P value has been set to 255.)



5 If you press the [⏻] button, the E.S.P value will be set.



* The E.S.P value is already appropriately set when manufactured from the factory, it is recommended that you do not change the E.S.P value.

Precaution in test running

- The initial power supply must provide at least 90% of the rated voltage.
  Otherwise, the air conditioner should not be operated.

CAUTION

① For test run, carry out the cooling operation firstly even during heating season. If heating operation is carried out firstly, it leads to the trouble of compressor. Then attention must be paid.

② Carry out the test run more than 5 minutes without fail.
(Test run will be cancelled 18 minutes later automatically)

- To cancel the test run, press any button.

Check the following tiems when installation is complete

- After completing work, be sure to measure and record trial run properties, and store measured data, etc.
- Measuring items are room temperature, outside temperature, suction temperature, blow out temperature, wind velocity, wind volume, voltage, current, presence of abnormal vibration and noise, operating pressure, pipe temperature, compressive pressure.
- As to the structure and appearance, check following items.

*Is the circulation of air adequate?

*Is the drainage smooth?

*Is the heat insulation complete (refrigerant and drainage pipe)?

*Is there any leakage of refrigerant?

*Is the remote controller switch operated?

*Is there any faulty wiring?

*Are not terminal screws loosened?

M4.....118N.cm{12kgf.cm}
M5.....196N.cm{20kgf.cm}
M6.....245N.cm{25kgf.cm}
M8.....588N.cm{60kgf.cm}

Connection of power wiring cable

1 Connect the power wiring cable to the independent power supply.
  - Circuit breaker is required.
2 Operate the unit for fifteen minutes or more.

Evaluation of the performance

1 Measure the temperature of the intake and discharge air.
2 Ensure the difference between the intake temperature and the discharge one is more than 8°C (Cooling) or reversely (Heating).

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 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) 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 there of, fuse breaking, disturbance to the normal function of a 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.).

Self-diagnosis function

Error Indicator

- This function indicates types of failure in self-diagnosis and occurrence of failure for air condition.
- Error mark is displayed on display window of indoor units and wired remote controller, and 7-segment LED of outdoor unit control board as shown in the table.
- If more than two troubles occur simultaneously, lower number of error code is first displayed.
- After error occurrence, if error is released, error LED is also released simultaneously.

Error Display

1st,2nd LED of 7-segment indicates error number, 3rd LED indicates unit number.

※ 3rd LED : For single inverter comp. It should indicate only '1'

Ex) 211 : No.21 error of Outdoor unit
011 → 051 : No.105 error of Outdoor unit

Display				Title	Cause of Error
Indoor unit related error	0	1	-	Air temperature sensor of indoor unit	Air temperature sensor of indoor unit is open or short
	0	2	-	Inlet pipe temperature sensor of indoor unit	Inlet pipe temperature sensor of indoor unit is open or short
	0	3	-	Communication error : wired remote controller ↔ indoor unit	Failing to receive wired remote controller signal in indoor unit PCB
	0	4	-	Drain pump	Malfunction of drain pump
	0	5	-	Communication error : outdoor unit ↔ indoor unit	Failing to receive outdoor unit signal in indoor unit PCB
	0	6	-	Outlet pipe temperature sensor of indoor unit	Outlet pipe temperature sensor of indoor unit is open or short
	0	9	-	Indoor EEPROM Error	In case when the serial number marked on EEPROM of Indoor unit is 0 or FFFFFF
	1	0	-	Poor fan motor operation	Disconnecting the fan motor connector/Failure of indoor fan motor lock
Outdoor unit related error	2	1	1	Outdoor Unit Inverter Compressor IPM Fault	Outdoor Unit Inverter Compressor Drive IPM Fault
	2	2	1	Inverter Board Input Over Current(RMS) of Outdoor Unit	Outdoor Unit Inverter Board Input Current excess (RMS)

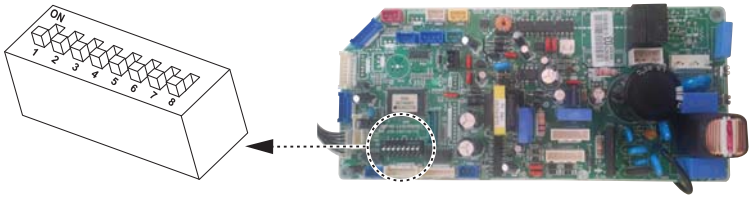
Display				Title	Cause of Error
Outdoor unit related error	2	3	1	Outdoor Unit Inverter Compressor DC link Low Voltage	DC charging is not performed at Outdoor Unit after starting relay turn on.
	2	4	1	Outdoor Unit High Pressure Switch	System is turned off by Outdoor Unit high pressure switch.
	2	5	1	Outdoor Unit Input Voltage High/ Low Voltage	Outdoor Unit input voltage is over 487V or below 270V
	2	6	1	Outdoor Unit Inverter Compressor Start Failure	The First Start Failure by Outdoor Unit Inverter Compressor Abnormality
	2	8	1	Outdoor Unit Inverter DC link High Voltage	System is turned off by Outdoor Unit DC Voltage Over Charging
	2	9	1	Outdoor Unit Inverter Compressor Over Current	Outdoor Unit Inverter Compressor Fault OR Drive Fault
	3	2	1	Outdoor Unit Inverter Compressor High Discharge Temperature	System is turned off by Outdoor Unit Inverter Compressor High Discharge Temperature
	3	4	1	High Pressure of Outdoor Unit	System is turned off by excessive increase of high pressure of Outdoor Unit
	3	5	1	Low Pressure of Outdoor Unit	System is turned off by excessive decrease of low pressure of Outdoor Unit
	4	0	1	Outdoor Unit Inverter Compressor CT Sensor Fault	Outdoor Unit Inverter Compressor CT Sensor open or short
	4	1	1	Outdoor Unit Inverter Compressor Discharge Temperature Sensor Fault	Outdoor Unit Inverter Compressor Discharge Temperature Sensor open or short
	4	2	1	Outdoor Unit Low Pressure Sensor Fault	Outdoor Unit Low Pressure Sensor open or short
	4	3	1	Outdoor Unit High Pressure Sensor Fault	Outdoor Unit High Pressure Sensor open or short
	4	4	1	Outdoor Unit Air Temperature Sensor Fault	Outdoor Unit Air Temperature Sensor open or short
	4	5	1	Outdoor Unit Heat Exchanger Temperature Sensor (Front side) Fault	Outdoor Unit Heat Exchanger Temperature Sensor(Front side) open or short
	4	6	1	Outdoor Unit Suction Temperature Sensor Fault	Outdoor Unit Suction Temperature Sensor open or short

Display				Title	Cause of Error
Outdoor unit related error	4	9	1	Outdoor Unit Faulty IPM Temperature Sensor	Outdoor Unit IPM Temperature Sensor short/open
	5	0	1	Omitting connection of R, S, T power of Outdoor Unit	Omitting connection of outdoor unit
	5	2	1	Transmission error : inverter PCB → Main PCB	Failing to receive inverter signal at main PCB of Outdoor Unit
	5	3	1	Transmission error : indoor unit → main PCB of Outdoor Unit	Failing to receive indoor unit signal at main PCB of Outdoor Unit .
	5	4	1	Reverse connection of R, S, T power of Outdoor Unit	Reverse connection or omitting connection of R, S, T power of Outdoor Unit
	5	7	1	Outdoor Unit Communication Error with Inverter Controller	Outdoor Unit Controller part cannot receive inverter control signals (usually happens after on-boarding)
	6	0	1	Inverter PCB EEPROM Error of Outdoor Unit	Access Error of Inverter PCB of Outdoor Unit
	6	7	1	Outdoor Unit Fan Lock	Restriction of Outdoor Unit
	7	3	1	Instant Over Current(Peak) of Outdoor Unit PFC	Instant Over Current(Peak) of Outdoor Unit PFC
	7	5	1	Outdoor Unit Fan CT Sensor Error	Outdoor Unit Fan CT Sensor open or short
	7	6	1	Outdoor Unit Fan DC Link High Voltage Error	Outdoor Unit Fan DC Link High Voltage Error
	7	7	1	Outdoor Unit Fan Over Current Error	Outdoor Unit Fan Current is over 5A
	7	9	1	Outdoor Unit Fan Start Failure Error	Outdoor Unit Fan First Position Sensing Failure

Display					Title	Cause of Error
Outdoor unit related error		8	6	1	Outdoor Unit Main PCB EEPROM Error	Communication Fail Between Outdoor Unit Main MICOM and EEPROM or omitting EEP-ROM
		8	7	1	Outdoor Unit Fan PCB EEPROM Error	Communication Fail Between Outdoor Unit Fan MICOM and EEPROM or omitting EEPROM
	1	0	5	1	Outdoor Unit Fan PCB Communication Error	Failing to receive fan signal at main PCB of unit.
	1	0	6	1	Outdoor Unit FAN IPM Fault Error	Instant Over Current at Outdoor Unit Fan IPM
	1	0	7	1	Outdoor Unit Fan DC Link Low Voltage Error	Outdoor Unit Fan DC Link Input Voltage is under 380V
	1	1	3	1	Outdoor Unit Liquid pipe Temperature Sensor Error	Liquid pipe temperature sensor of Outdoor Unit is open or short
	1	1	5	1	Outdoor Unit Subcooling Outlet Temperature Sensor Error	Outdoor Unit Subcooling Outlet Temperature Sensor open or short
	1	5	1	1	Failure of operation mode conver-sion at Outdoor Unit	Pressure unbalance between Outdoor Units
	1	8	2	1	outdoor unit Main Board Main-Sub Micom communication error	Outdoor Unit Main Board Main-Sub Micom communication failed
	1	9	3	1	Excessive increase of Outdoor Unit Fan PCB Heat Sink Temperature	Outdoor Unit Fan Inverter PCB Temperature is Over 95°C
	1	9	4	1	Outdoor Unit Fan PCB Heat Sink Temperature Sensor Error	Outdoor Unit Fan PCB Heat Sink Temperature Sensor open or short

Dip switch setting

Indoor Unit

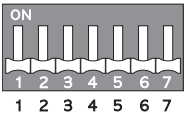


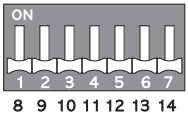
▲ Factory Set : All OFF

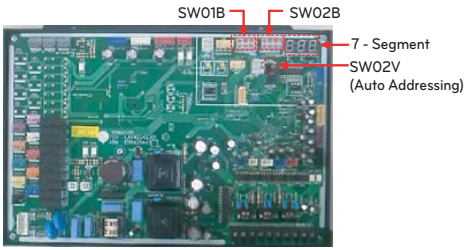
Function		Description	Setting Off	Setting On	Default
SW1	Communication	Communication Between Indoor & Outdoor	Communication	Non Communication	Off
SW3	Group Control	Selection of Master or Slave	Master	Slave	Off
SW4	Dry Contact Mode	Selection of Dry Contact Mode	Wired/Wireless remote controller Selection of Manual or Auto operation Mode	Auto	Off
SW5	Installation	Fan continuous operation	Continuous operation Removal	Working	Off

Outdoor Unit

- If you set the Dip switch when power is on, the changed setting will not be applied immediately. The changed setting will be enabled only when Power is reset or by pressing Reset button.







	Index	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Function	Snow removal function								●	X					
	Early defrost start								X	●					
	Snow removal + Early defrost start								●	●					
	Fan high static pressure mode	X	X										X	●	X
	Night silent operation (Cooling only)												●	X	●
	Night silent operation (Cooling/Heating)												●	●	●
	Pump down										●				X
	Pump out										●				●
	Forced oil return operation	X	X					●							X
	Forced defrost							●							●
	Vacuum mode											●	X	X	●

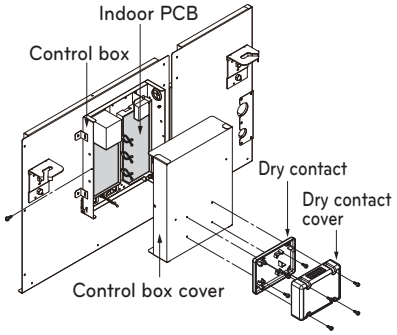
CAUTION

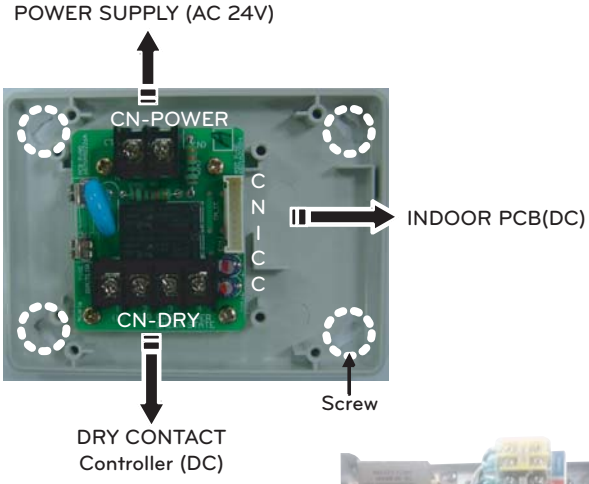
- Refer to the table that match dip switch of the product.
- 'X' mark within the table means that the dip switch must be pulled down. If not, the function may not work properly.
- If the applicable dip switch is not set properly, the product may not work properly.

ACCESSORY GUIDE (PQDSB1)

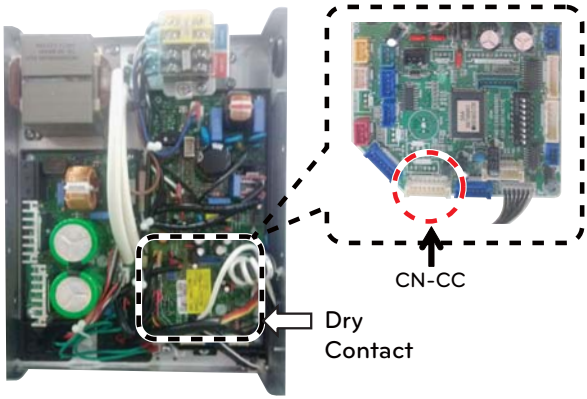
Dry Contact(Only AC 24V)

- Fix dry contact on the indoor control box cover.
- Connect dry contact(CN-CC) to Indoor PCB(CN-CC) with cable.
- Use the DC line hole when connecting the cable to indoor PCB.(Figure 2).
- Connect CN-POWER to power supplier.(Only AC 24V).
- Connect CN-DRY to dry contact controller. (Power supplier and dry contact controller are produced locally.)
- Tie the cables with the tie-wraps and clamps. (Figure 2).
- Refer to dry contact installation manual for detailed installation method.





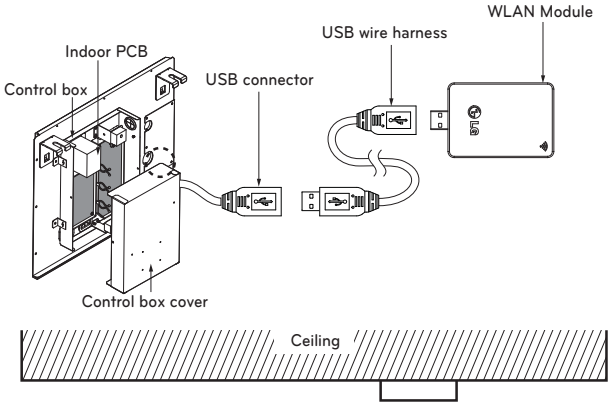
(Figure 1)

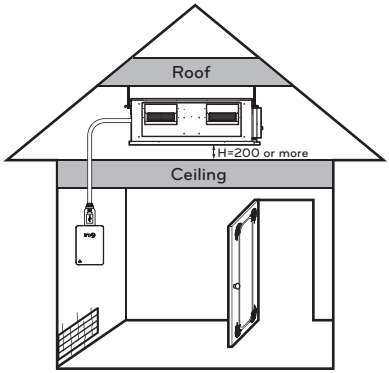


(Figure 2)

WLAN module installation (PWFMDD101)

1. Connect USB wire harness to USB connector. Beside the control box of the product.
2. Connect USB wire harness to WAN module
3. Install WLAN module proper location under ceiling and set AP mode to use App.
4. Refer to WLAN module and App installation manual. For detailed installation method.





Please check these out.

- Install WLAN module in a space open on all sides.
  (Avoid installing it in a blind spot where the signal is weak or blocked.)
- Install the unit so that the LG logo in WLAN module face in the direction of Wi-Fi wireless router installed.
- Avoid to install the WLAN module in a place blocked by the wall if possible.

Damper Controller(PBZC80)

- Open the cover of indoor unit control box and damper controller(Figure 1)
- Assemble the damper controller on the cover which is seperated.
- Connect the lead wires between main PCB and damper controller.(Figure 2)
- Connect the main power cable and actuator cable to damper controller.(Figure 2)
- Assemble the damper controller to indoor unit and then assemble cover of damper controller.
- Check the slide switch position, it should be located "1" position.
- Refer to damper controller Installation manual for detailed installation metheod.

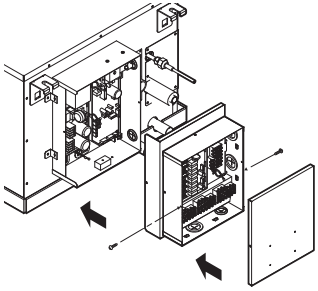


Figure 1

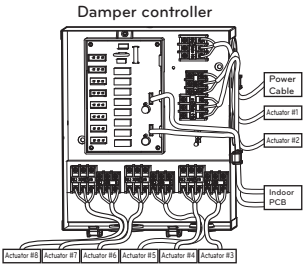
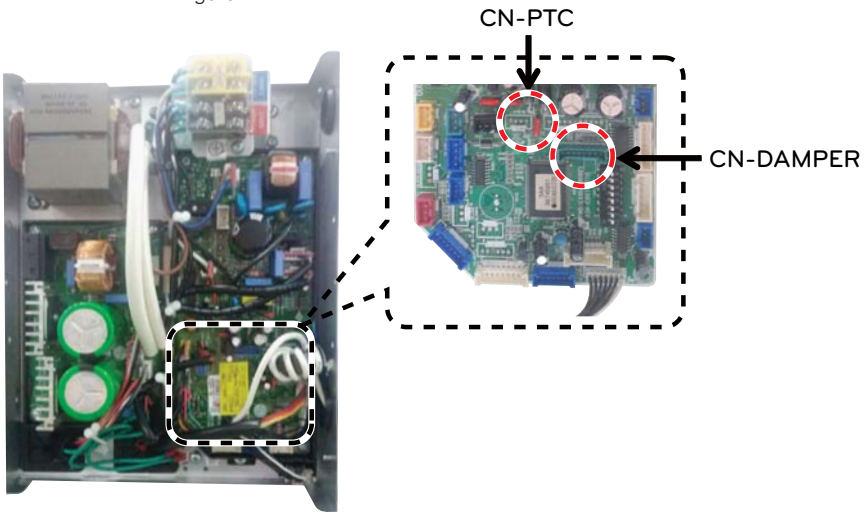


Figure 2



NOTICE

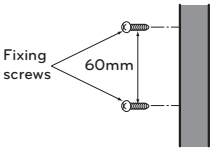
When install Damper Controller, The Remote controller Should be matched as following table

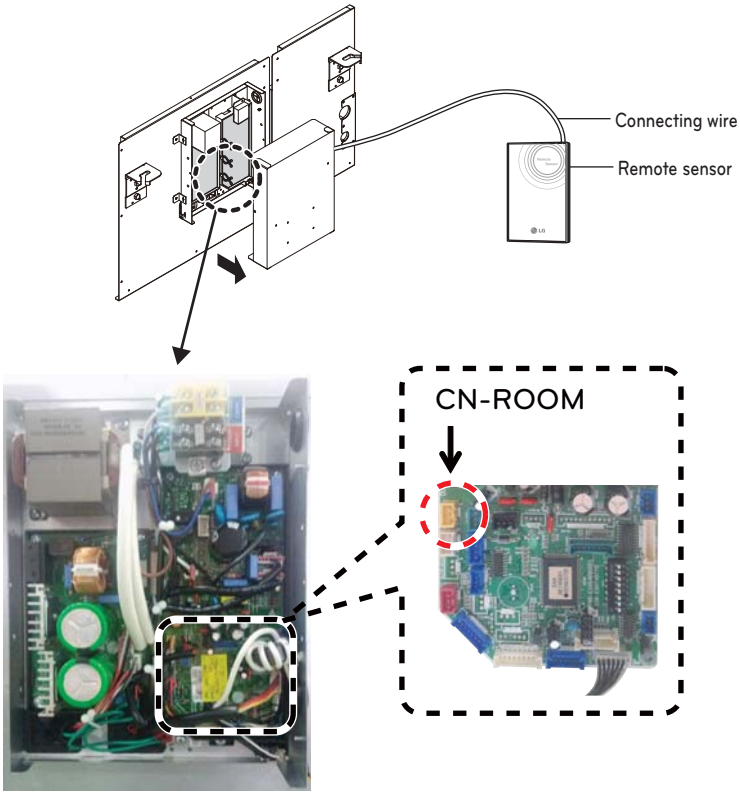
No.	Model name of Damper Controller	Model name of Remote controller	Remark
1	PBZC80	PDRCUDC0	
2	PBDC40	PDRCUDB0	

If There is a mismatched usage such as PDRCUDC0 and PBDC40, The unit can have improper operation

Remote Temperature Sensor(PQRSTA0)

- After deciding where the remote temperature sensor is installed, decide the location and height of the fixing screws. (Interval between the screws : 60mm).
- After removing the control box cover of the indoor unit, remove the room temperature sensor in CN-ROOM of the main PCB.
- Insert the connector of remote sensor wire into CN-ROOM.
- Using the DC line hole when connecting the wire to Indoor PCB.
- For using the two thermistor fuction, the remote sensor should be installed from the wired remote controller as far as possible.
- Refer to damper remote sensor manual for detailed installation metheod.



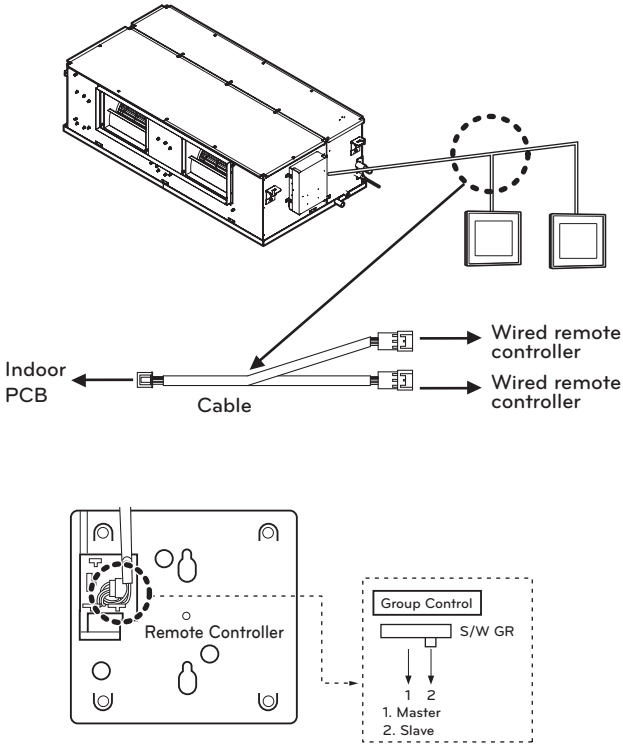


NOTE

PDRCUDC0 is a remote controller connected to 8 damper controller.

Two wired remote controller

- All wired remote controllers are displayed on identical information.
- Last used wired romote controller has priority on product's movement.
- Set one wired remote controller as master,the others as slave.<Figure 1>
- The thermistor mode is operated by the wired remote controller set as "master"



<Figure 1>

CAUTION

Two wired remote controllers should be same model name, otherwise it can cause unexpected problems.
For example) Using PQRCVSLOQW with PQRCVSLOQW is proper.
Using PDRCUDC0 with PDRCUDC0 is proper.
PQRCVSLOQW & PDRCUDC0 are improper.


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