

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 : B30AWYN7G5 / B30AWYU4G5

B36AWYN7G5 / B36AWYU4G5

B42AWYN7G5 / B42AWYU3G5

B55AWYN7G5 / B55AWYU3G5



P/NO : MFL62541008

www.lg.com

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.
- 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

- Have all electric work done by a licensed electrician according to "Electric Facility Engineering Standard" and "Interior Wire Regulations" and the instructions given in this manual and always use a special circuit.
 - If the power source capacity is inadequate or electric work is performed improperly, electric shock or fire may result.
- Ask the dealer or an authorized technician to install the air conditioner.
 - Improper installation by the user may result in water leakage, electric shock, or fire.
- Always ground the product.
 - 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.
- For re-installation of the installed product, always contact a dealer or an Authorized Service Center.
 - There is risk of fire, electric shock, explosion, or injury.
- Do not install, remove, or re-install the unit by yourself (customer).
 - There is risk of fire, electric shock, explosion, or injury.
- Do not store or use flammable gas or combustibles near the air conditioner.
 - There is risk of fire or failure of product.
- Use the correctly rated breaker or fuse.
 - There is risk of fire or electric shock.
- Prepare for strong wind or earthquake and install the unit at the specified place.
 - Improper installation may cause the unit to topple and result in injury.
- Do not install the product on a defective installation stand.
 - It may cause injury, accident, or damage to the product.
- 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.

4 IMPORTANT SAFETY INSTRUCTIONS

- When installing and moving the air conditioner to another site, do not charge it with a different refrigerant from the refrigerant specified on the unit.
 - If a different refrigerant or air is mixed with the original refrigerant, the refrigerant cycle may malfunction and the unit may be damaged.
- Do not reconstruct to change the settings of the protection devices.
 - If the pressure switch, thermal switch, or other protection device is shorted and operated forcibly, or parts other than those specified by LGE are used, fire or explosion may result.
- Ventilate before operating air conditioner when gas leaked out.
 - It may cause explosion, fire, and burn.
- Securely install the cover of control box and the panel.
 - If the cover and panel are not installed securely, dust or water may enter the outdoor unit and fire or electric shock may result.
- If the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration from exceeding the safety limit when the refrigerant leaks.
 - Consult the dealer regarding the appropriate measures to prevent the safety limit from being exceeded. Should the refrigerant leak and cause the safety limit to be exceeded, hazards due to lack of oxygen in the room could result.

Operation

- Do not damage or use an unspecified power cord.
 - There is risk of fire, electric shock, explosion, or injury.
- Use a dedicated outlet for this appliance.
 - There is risk of fire or electrical shock.
- Be cautious that water could not enter the product.
 - There is risk of fire, electric shock, or product damage.
- Do not touch the power switch with wet hands.
 - There is risk of fire, electric shock, explosion, or injury.
- When the product is soaked (flooded or submerged), contact an Authorized Service Center.
 - There is risk of fire or electric shock.
- Be cautious not to touch the sharp edges when installing.
 - It may cause injury.
- Take care to ensure that nobody could step on or fall onto the outdoor unit.
 - This could result in personal injury and product damage.
- Do not open the inlet grille 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.

CAUTION

Installation

- Always check for gas (refrigerant) leakage after installation or repair of product.
 - Low refrigerant levels may cause failure of product.
- 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.
- Keep level even when installing the product.
 - To avoid vibration or water leakage.
- Do not install the unit where combustible gas may leak.
 - If the gas leaks and accumulates around the unit, an explosion may result.
- Use power cables of sufficient current carrying capacity and rating.
 - Cables that are too small may leak, generate heat, and cause a fire.
- 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.
- Keep the unit away from children. The heat exchanger is very sharp.
 - It can cause the injury, such as cutting the finger. Also the damaged fin may result in degradation of capacity.
- When installing the unit in a hospital, communication station, or similar place, provide sufficient protection against noise.
 - The inverter equipment, private power generator, high-frequency medical equipment, or radio communication equipment may cause the air conditioner to operate erroneously, or fail to operate. On the other hand, the air conditioner may affect such equipment by creating noise that disturbs medical treatment or image broadcasting.
- Do not install the product where it is 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 use the air conditioner in special environments.
 - Oil, steam, sulfuric smoke, etc. can significantly reduce the performance of the air conditioner or damage its parts.
- Do not block the inlet or outlet.
 - It may cause failure of appliance or accident.
- Make the connections securely so that the outside force of the cable may not be applied to the terminals.
 - Inadequate connection and fastening may generate heat and cause a fire.
- 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, or personal injury.
- Install and insulate the drain hose to ensure that water is drained away properly based on the installation manual.
 - A bad connection may cause water leakage.
- Be very careful about product transportation.
 - Only one person should not carry the product if it weighs more than 20 kg.
 - Some products use PP bands for packaging. Do not use any PP bands for a means of transportation. It is dangerous.
 - Do not touch the heat exchanger fins. Doing so may cut your fingers.
 - When transporting the outdoor unit, suspending it at the specified positions on the unit base. Also support the outdoor unit at four points so that it cannot slip sideways.

- Safely dispose of the packing materials.
 - Packing materials, such as nails and other metal or wooden parts, may cause stabs or other injuries.
 - Tear apart and throw away plastic packaging bags so that children may not play with them. If children play with a plastic bag which was not torn apart, they face the risk of suffocation.
- Turn on the power at least 6 hours before starting operation.
 - Starting operation immediately after turning on the main power switch can result in severe damage to internal parts. Keep the power switch turned on during the operational season.
- Do not touch any of the refrigerant piping during and after operation.
 - It can cause a burn or frostbite.
- Do not operate the air conditioner with the panels or guards removed.
 - Rotating, hot, or high-voltage parts can cause injuries.
- Do not directly turn off the main power switch after stopping operation.
 - Wait at least 5 minutes before turning off the main power switch. Otherwise it may result in water leakage or other problems.
- Use a firm stool or ladder when cleaning or maintaining the air conditioner.
 - Be careful and avoid personal injury.
- Do not insert hands or other objects through the air inlet or outlet while the air conditioner is plugged in.
 - There are sharp and moving parts that could cause personal injury.

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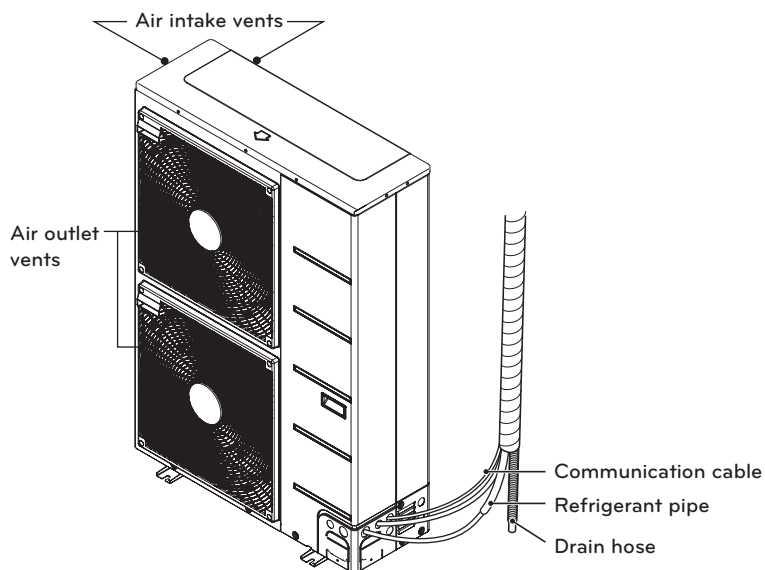
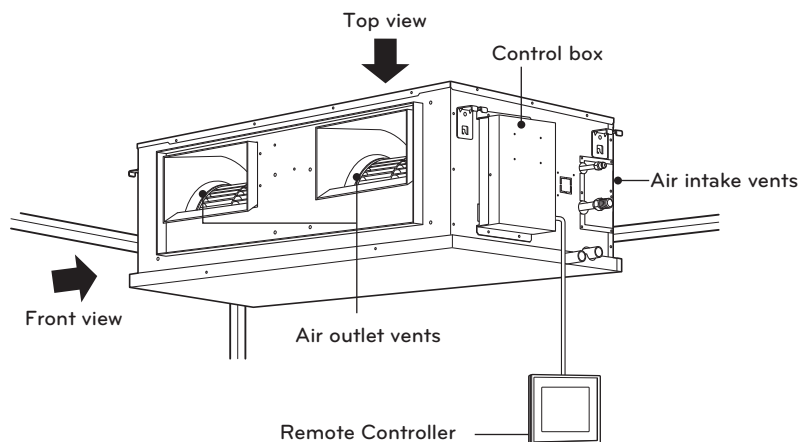
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INTRODUCTION

Features

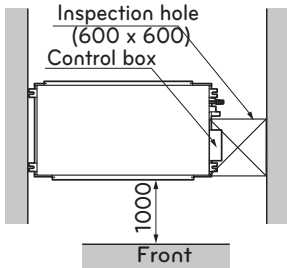


INSTALLATION PLACES

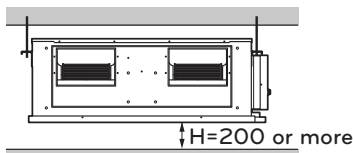
Indoor unit

- 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.
- 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

Top view
(unit: mm)

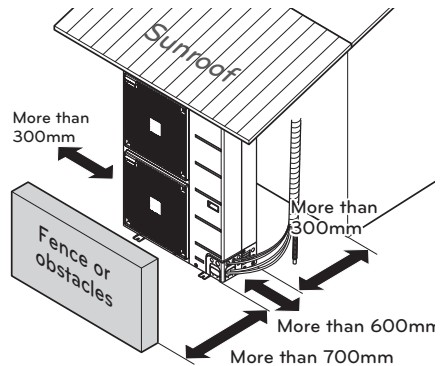


Front view
(unit: mm)



Outdoor unit

- 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.



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

THE INDOOR UNIT INSTALLATION

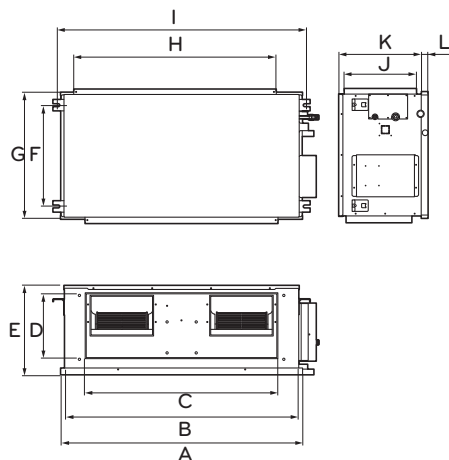
Install the unit above the ceiling correctly.

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.

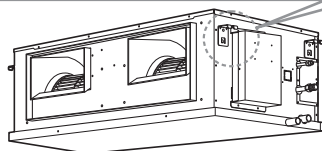
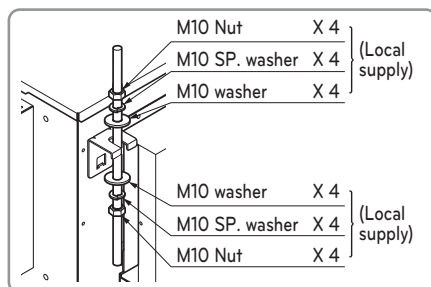
Dimension	A	B	C	D	E	F	G	H	I	J	K	L
Capacity (Btu/h)												
30/36/42/55K	1352	1320	840	287	400	441	563	1172	1365	317	360	40



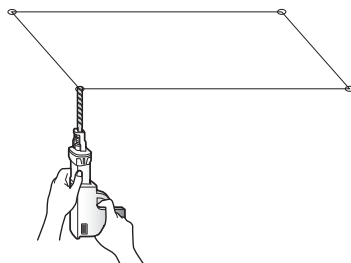
Case2

Position of Console Bolt

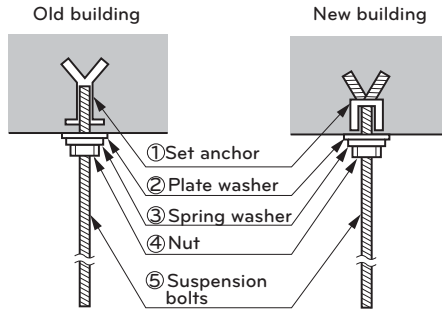
- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



- 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.



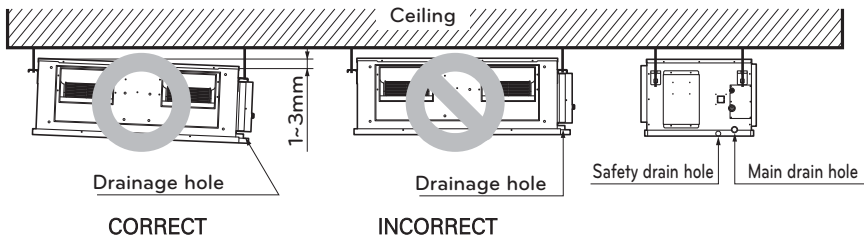
- Local supply
 - ① Set anchor
 - ② Plate washer - M10
 - ③ Spring washer - M10
 - ④ Nut - W3/8 or M10
 - ⑤ Suspension bolt - W3/8 or M10

CAUTION

Tighten the nut and bolt to prevent unit falling.

CAUTION

- 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 10mm.

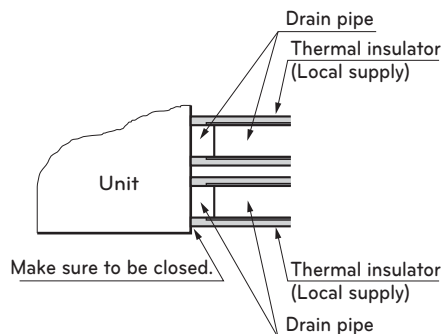


Caution for gradient of unit and drain piping

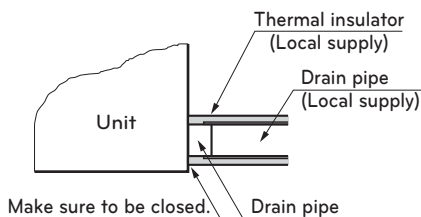
Lay the drain hose with a downward inclination so water will drain out.

Main drain

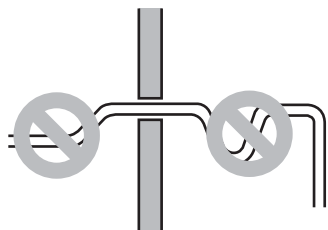
- Always lay the drain with downward inclination (1/50 to 1/100). Prevent any upward flow or reverse flow in any part.
- 10mm or thicker formed thermal insulator shall always be provided for the drain pipe.



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

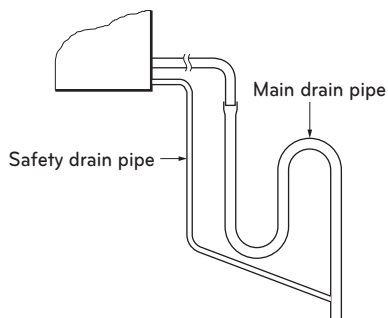


- Upward routing not allowed

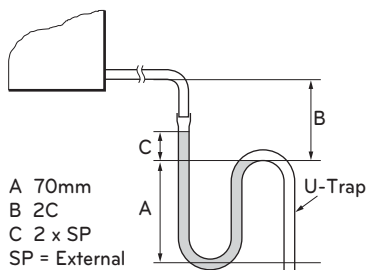


Safety drain

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



Applied U-Trap Dimension



A 70mm

B 2C

C 2 x SP

SP = External Pressure (mmAq)

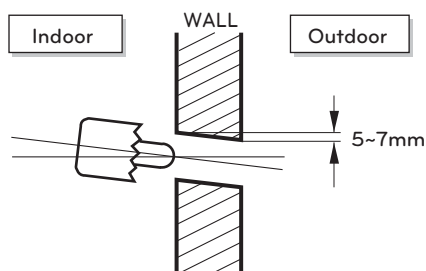
Ex) External Pressure = 10mmAq

A 70mm

B 40mm

C 20mm

- Drill the piping hole with 70mm dia, hole core drill.
- Piping hole should be slightly slant to the outdoor side.

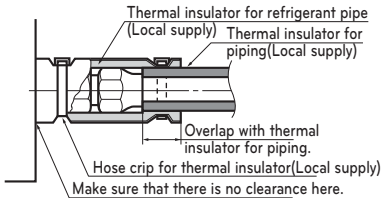
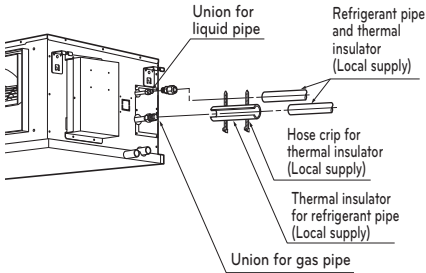


Insulation, others

Insulate the joint and tubes completely.

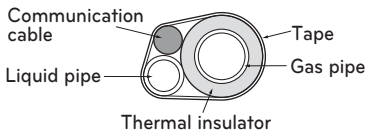
Thermal insulation : All thermal insulation must comply with local requirement.

Indoor unit



Refrigerant pipe

- Insulate and tape the refrigerant pipe.



CAUTION

Cutting line of insulation must look upper direction. Thickness of insulation is 10mm or over.



NOTE

Recommended Insulation material
Material : FOAM PE
Thickness : 10mm
Density : less than $0.032 \pm 0.005(\text{g/cm}^3)$
Thermal conductivity : less than $0.03(\text{kcal/m.hr.}^\circ\text{C})$

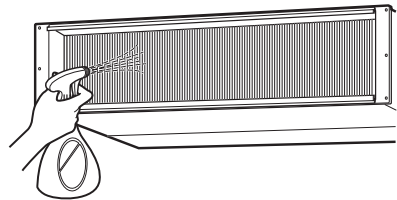
Test and check

- * 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?

Checking the Drainage

Checking the Drainage

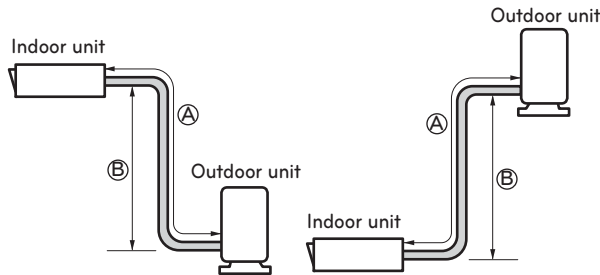
- * Check the drainage.
- Spray one or two glasses of water upon the evaporator.
- Ensure that water flows drain hose of indoor unit without any leakage.



PIPING LENGTH AND THE ELEVATION

Capacity (Btu/h)	Pipe Size mm(inch)		Length A(m)		Elevation B(m)		*Additional refrigerant(g/m)
	Gas	Liquid	Standard	Max.	Standard	Max.	
30k	15.88(5/8)	9.52(3/8)	7.5	50	0	30	40
36k	15.88(5/8)	9.52(3/8)	7.5	50	0	30	30
42k	15.88(5/8)	9.52(3/8)	7.5	50	0	30	40
55k	15.88(5/8)	9.52(3/8)	7.5	50	0	30	40

If installed tube is shorter than 7.5m, additional charging is not necessary Additional Refrigerant = (A-7.5) x Additional refrigerant (g)



CAUTION

- Capacity is based on standard length and maximum allowance length is on the basis of reliability.
- Improper refrigerant charge may result in abnormal cycle.

CONNECTING COPPER PIPES

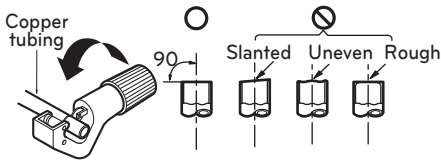
Refrigerant piping must be refrigeration grade copper tubing.

Preparation of Piping

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

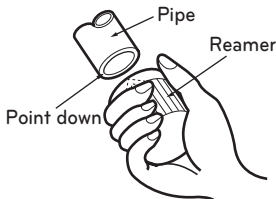
Cut the pipes and the cable.

- Use the accessory piping 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.



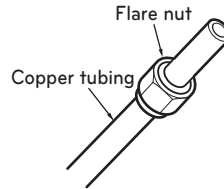
Burrs removal

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



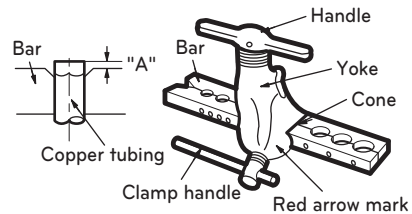
Putting nut on

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



Flaring work

- Carry out flaring work using dedicated flaring tool for R-410A as shown below.

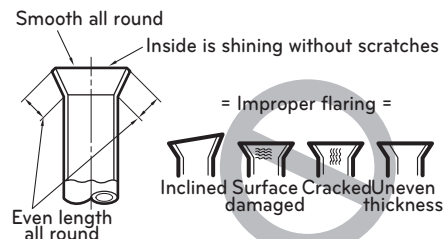


Outside diameter		"A"
mm	inch	mm
Ø6.35	1/4	1.1~1.3
Ø9.52	3/8	1.5~1.7
Ø12.7	1/2	1.6~1.8
Ø15.88	5/8	1.6~1.8

Firmly hold copper tube in a bar(or die) as indicated dimension in the table above.

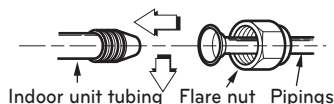
Check

- Compare the flared work with figure below.
- If flare is noted to be defective, cut off the flared section and do flaring work again.

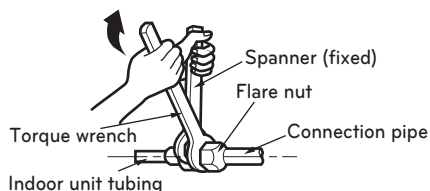


Connecting the pipings to the indoor unit and drain hose to drain pipe

- Align the center of the pipings and sufficiently tighten the flare nut by hand.

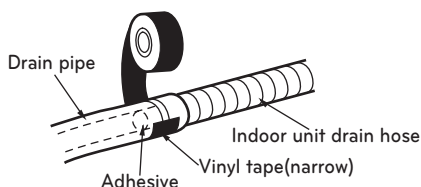


- Tighten the flare nut with a wrench.



Outside diameter		Torque
mm	inch	kg.m
Ø6.35	1/4	1.8~2.5
Ø9.52	3/8	3.4~4.2
Ø12.7	1/2	5.5~6.6
Ø15.88	5/8	6.6~8.2

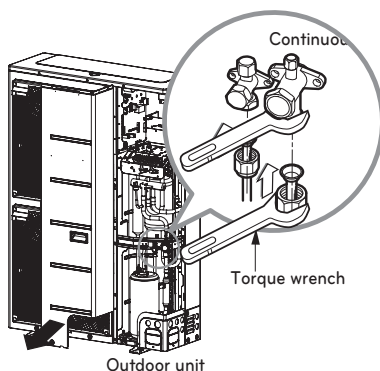
- When extending the drain hose at the indoor unit, install the drain pipe.



Connecting the pipes to the Outdoor unit

Connecting the pipes to the Outdoor unit

- Align the center of the pipings and sufficiently tighten the flare nut with fingers.
- Finally, tighten the flare nut with torque wrench until the wrench clicks. When tightening the flare nut with torque wrench, ensure the direction for tightening follows the arrow on the wrench.

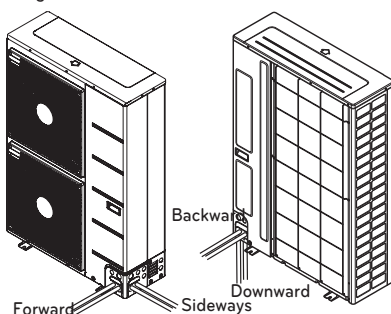


Outside diameter		Torque
mm	inch	kg.m
Ø6.35	1/4	1.8~2.5
Ø9.52	3/8	3.4~4.2
Ø12.7	1/2	5.5~6.6
Ø15.88	5/8	6.6~8.2
Ø19.05	3/4	9.9~12.1

Align the center of the piping and sufficiently tighten the flare nut by hand.

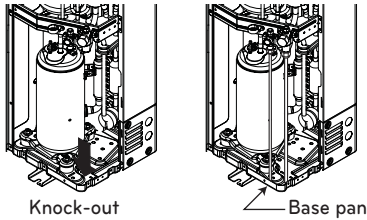
- The installation piping is connectable in four directions.(refer to figure 1)

<Figure 1>



- When connecting in a downward direction, knock out the knockout hole of the base pan. (refer to figure 2)

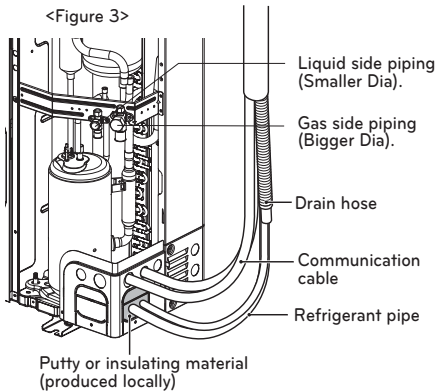
<Figure 2>



Preventing foreign objects from entering (Figure3)

- Plug the pipe through-holes with putty or insulation material (procured locally) to stop up all gaps, as shown in the figure 3.
- Insects or small animals entering the outdoor unit may cause a short circuit in the electrical box.

<Figure 3>



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 tubing.
- 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 incondensable gas and moisture in the system.

Preparation

- 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 service port with charge hoses.

CAUTION

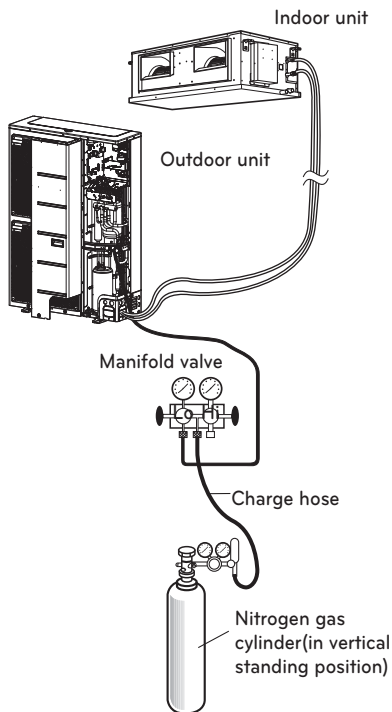
Be sure to use a manifold valve for leakage test.
If it is not available, use a stop valve for this purpose. The "Hi" knob of the manifold valve must always be kept close.

- 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.



Evacuation

- 1 Connect the charge hose end described in the preceding steps to the vacuum pump to evacuate the tubing 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 tubing 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 tubing length is less than 10 m(33 ft)	If tubing length is longer than 10 m(33 ft)
30 min. or more	60 min. or more
0.5 torr or less	

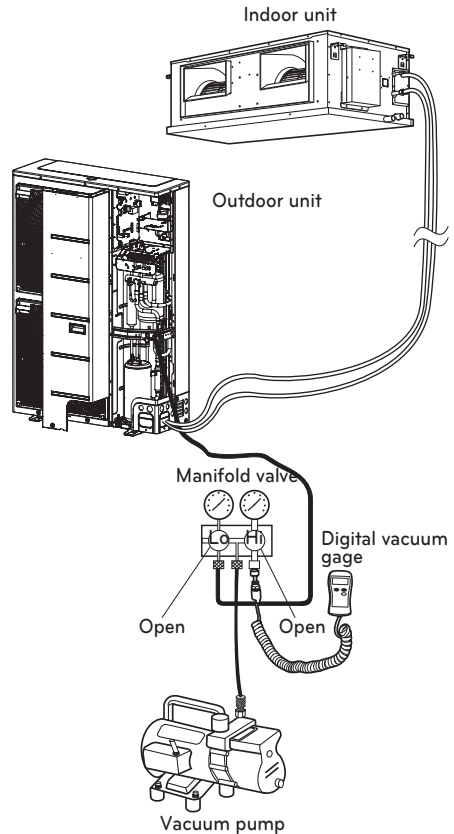
- 2 When the desired vacuum is reached, close the "Lo and Hi" knob of the manifold valve and stop the vacuum pump.

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.

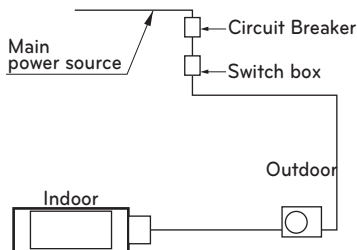
The air conditioner is now ready to test run.



WIRING CONNECTION

Electrical Wiring

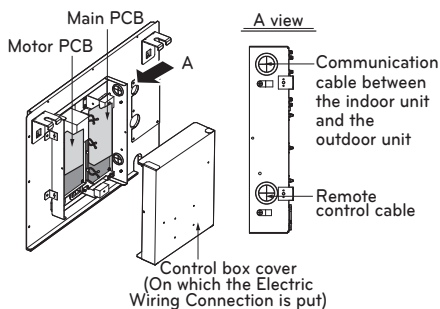
- All wiring must comply with local requirements.
- Select a power source that is capable of supplying the current required by the air conditioner.
- Use a recognized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.
- Capacity of circuit breaker recommended by authorized personnel only.



Capacity(Btu/h)	Phase(Ø)	Circuit Breaker
30k	1	25A
36k	1	40A
42k/55k	1	40A

Indoor unit

- Remove the control box cover for electrical connection between the indoor and outdoor unit.
- Use the cord clamp to fix the cable.



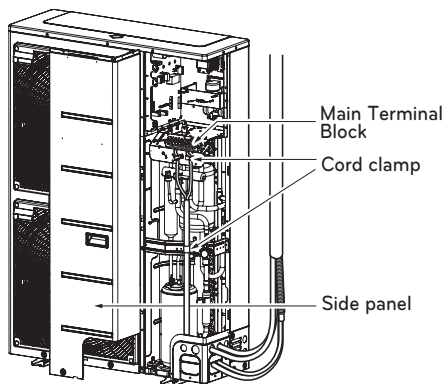
Outdoor unit

- Remove the control cover for wiring connection.
- Use the cord clamp to fix the cable.
- Earthing work
Case 1 :Terminal block of Outdoor Unit have ⊕ mark.

Connect the cable of diameter 1.6mm² or more to the earthing terminal provided in the control box and do earthing.

Case 2 :Terminal block of Outdoor Unit don't have ⊕ mark.

- Connect the cable of diameter 1.6mm² or more, to the panel of control box, marked as ⊕ and fasten with earth screw.

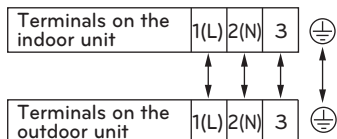


! CAUTION

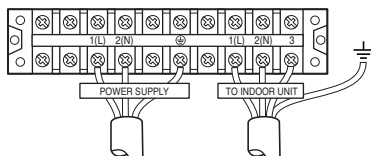
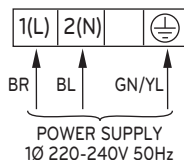
- The circuit diagram is not subject to change without notice.
- Be sure to connect wires according to the wiring diagram.
- Connect the wires firmly, so that not to be pulled out easily.
- Connect the wires according to color codes by referring the wiring diagram.

Connecting cables to the Indoor Unit

- 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.



(220V-240V~)



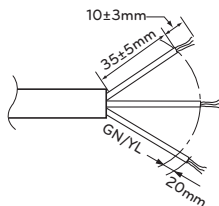
Capacity (Btu/h)	Mode	Max. Input	Max. Current
30 k	Cooling	3,800W	16.9 A
	Heating	3,800W	16.8 A
36 k	Cooling	4,270W	22.8 A
	Heating	5,560W	24.2 A
42 k / 55 k	Cooling	6,600W	28 A
	Heating	6,100W	25 A

CAUTION

- Make sure that the screws of the terminal fixed tightly
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only

Clamping of cables

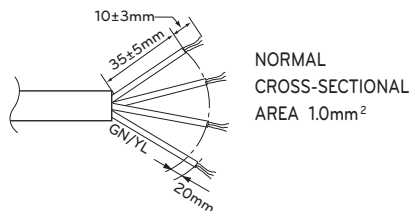
- Arrange two power cables on the control panel.
- First, fasten the clamp with a screw to the inner boss of control panel.
- For connecting cable to the terminal block, put the 1.0mm² cable(thinner cable) on the clamp and tighten it with a plastic clamp to the other boss of the control panel.
- In Australia, 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.



Model	Phase(Ø)	Area(mm ²)
30k	1	2.5
36k/42k/55k	1	5

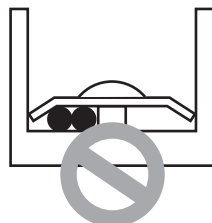
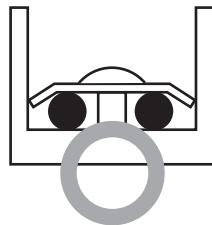
CAUTION

- Supply cable of parts of appliance for outdoor use shall not be lighter than polychloroprene sheathed flexible cord (code designation 60245 IEC 57) or complied with HD 22.4 S4
- If the supply cable is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.



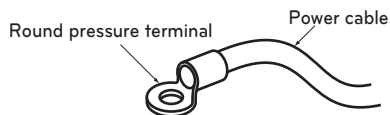
CAUTION

- The connecting cable connected to the outdoor unit should be complied with IEC 60245 or HD 22.4 S4 (This equipment shall be provided with a cable set complying with the national regulation.)
- When the communication cable between the indoor unit and outdoor unit is over 40m, connect the telecommunication line and power line separately.
- If the supply cable is damaged, it must be replaced by a special cable or assembly available from the manufacturer of its service agent.



Precautions when laying power wiring

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



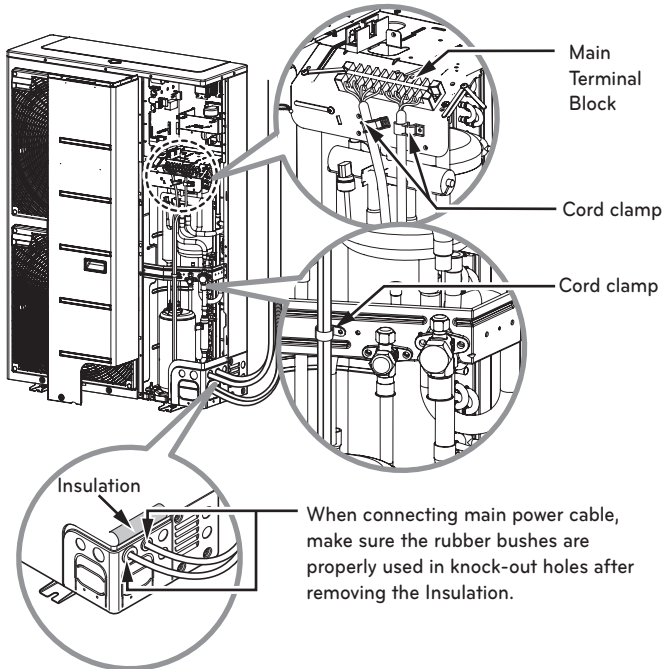
- For wiring, use the designated power cable and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terminal screws. A screwdriver with a small head will strip the head and make proper tightening impossible.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

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.

Connecting the cable to the Outdoor Unit

- Remove the side panel from the unit by loosening screws.
- Connect the wires to the terminals on the control board individually as previous page.
- Secure the cable onto the control board with the holder (clamp).
- Refix the cover control to the original position with the screw.



! CAUTION

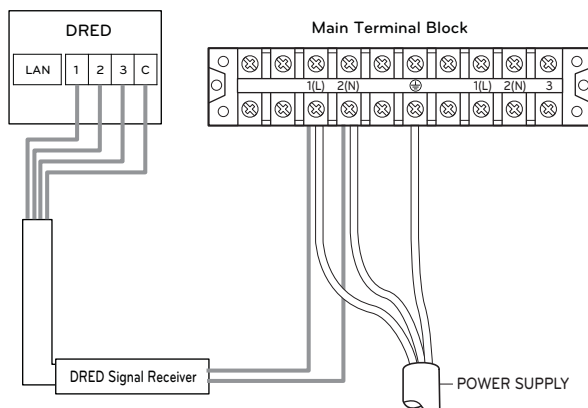
After the confirmation of the above conditions, prepare the wiring as follows:

- 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.

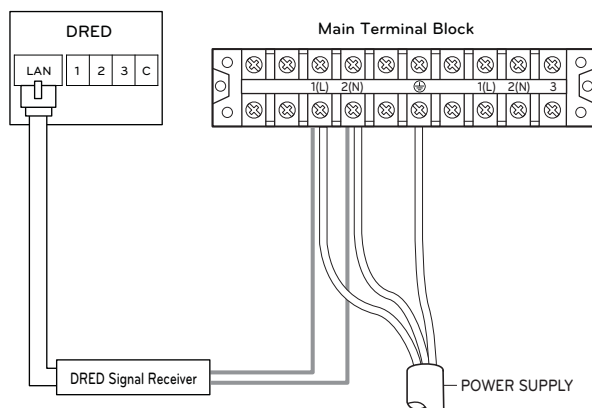
Connecting the DRED to the Outdoor unit

- Remove the side panel from the unit by loosening the screw. Connect the wires to the terminals on the control board individually as follows.
- Connecting cable between outdoor unit and DRED (Demand Response Enabling Device). It must have a double insulation layer.
- Connect the cable to DRED according to the diagram below. (Select one of the two ways)

<Terminal DRM connection>



<RJ45 DRM connection>



- DRED Signal Receiver must be concealed.

FORMING THE PIPING

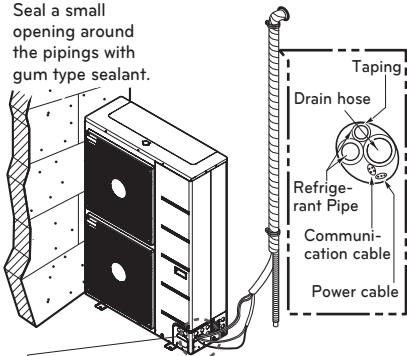
Form the piping by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tape.

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

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

- 1 Tape the piping, drain hose and communication cable from down to up.
- 2 Secure the tapped piping along the exterior wall using saddle or equivalent.

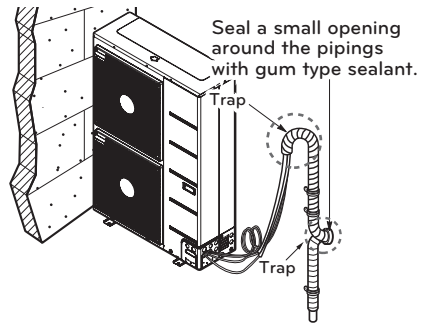
Seal a small opening around the pipings with gum type sealant.



Trap is required to prevent water from entering into electrical parts.

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

- 1 Tape the piping and communication cable from down to up.
- 2 Secure the taped piping along the exterior wall. Form a trap to prevent water entering the room.
- 3 Fix the piping onto the wall by saddle or equivalent.



REMOTE CONTROLLER INSTALLATION

Point of remote controller installation

- Although the room temperature sensor is in the indoor unit, the remote control box should be installed in such places away from direct sunlight and high humidity.

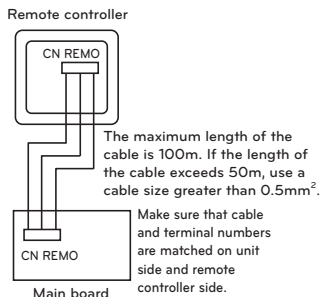
Installation of the remote control box

- Select places that is not splashed by water.
- Select control position after receiving customer approval.
- The room temperature sensor of the thermostat for temperature control is built in the indoor unit.
- This remote controller equipped with liquid crystal display. If this position is higher or lower, display is difficult to see. (The standard height is 1.5m high)

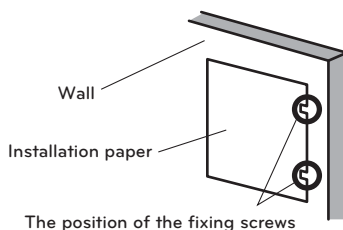
Routing of the remote control cable

- Keep the remote control cable away from the refrigerant pipe and the drain pipe.
- To protect the remote control cable from electrical noise, place the cable at least 5cm away from other power cables. (Audio equipment, Television set, etc)
- If the remote control cable is secured to a wall, provide a trap at the top of the cable to prevent water droplets from running.

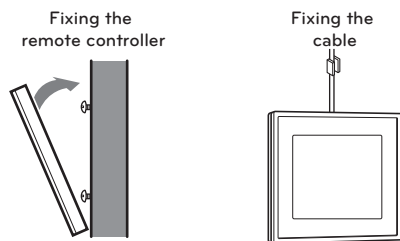
Electrical wiring to the indoor unit



- 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.



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



- When installing the deluxe wired remote controller, do not install it so that it is buried to the wall. (This can cause error in the temperature sensor)
- When installing multiple deluxe wired remote controllers horizontally in one location, leave a minimum distance apart (20mm). (This can cause error in the temperature sensor)
- Do not install the cable with a distance of 50 m or longer. (This can cause communication error.)
- When installing the cable, check whether the connector between the remote controller and the product is installed properly. The connector will not be connected when installed in opposite sides.

Locations for 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.)

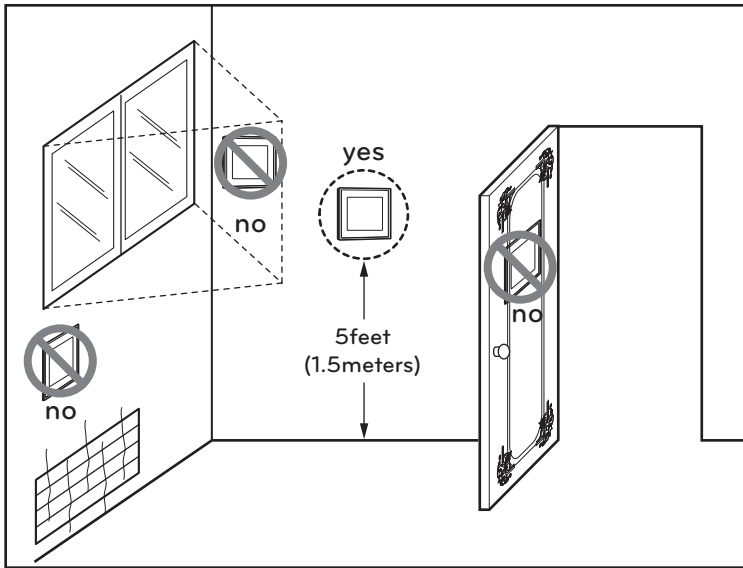


Fig.1 Typical locations for remote controller

EXTERNAL STATIC PRESSURE & FLOW

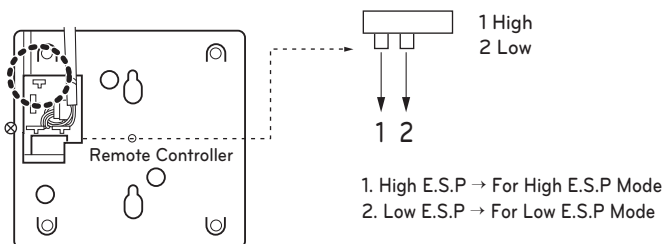
External Static Pressure			60	80	100	120	130	140	160	180	200
Model	Step	Air flow (l/s)	(Low E.S.P)				(High E.S.P)				
30kBtu/h	High	53	70	79	86	92	95	98	104	108	110
	Med	43	67	76	83	89	93	95	102	106	108
	Low	33	64	74	80	87	91	92	100	104	106
36kBtu/h	High	70	74	84	91	96	99	103	107	110	119
	Med	60	71	80	88	93	96	100	105	108	117
	Low	46	67	77	84	90	93	96	102	106	115
42kBtu/h	High	80	85	93	97	102	103	107	114	118	124
	Med	70	81	89	94	101	101	106	112	116	121
	Low	60	76	87	93	97	98	104	109	114	118
55kBtu/h	High	100	94	100	106	111	113	115	120	126	129
	Med	83	87	92	98	105	106	109	116	119	124
	Low	66	79	86	92	100	101	104	111	116	120

NOTE

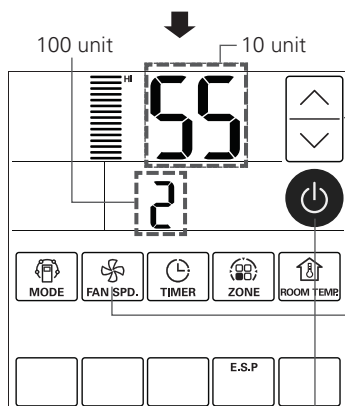
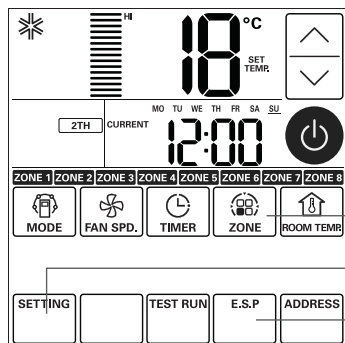
Capacities are tested in the following conditions.

Static Pressure (Pa)	Voltage (Phase/Volt)	Air Flow Step	Piping Length	Temperaure(°C DB/°C WB)			
				Cooling		Heating	
				Indoor	Outdoor	Indoor	Outdoor
60	Ø1/230 V	High	7.5 m	27/19	35/24	20/15	7/6

How to set Remote Controller's Switch for E.S.P



How to set RPM



- 1 Press the button to appear button on the screen. mode.



- 2 Press the button for 3secs.



- 3 Press the button.



- 4 Set the volume of each air flow (LOW→MID→HI) by using the button. Press the 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.



TEST RUNNING

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 items 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, piping temperature, compressive pressure.
 - As to the structure and appearance, check following items.
 - *Is the circulation of air adequate?
 - *Is the draining smooth?
 - *Is the heat insulation complete (refrigerant and drain piping)?
 - *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 supply

- 1 Connect the power supply 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.

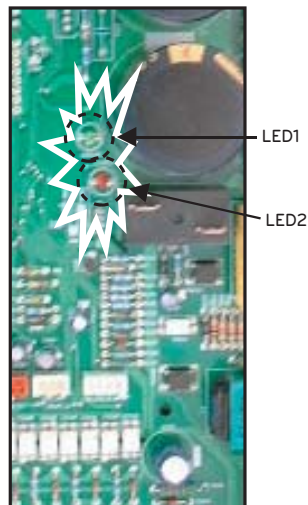
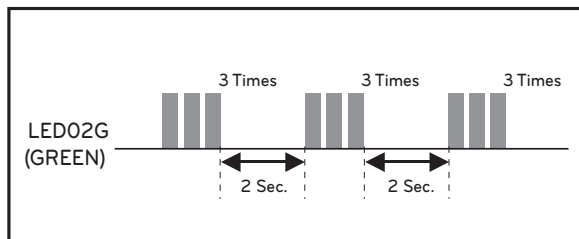
HAND OVER

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

SELF-DIAGNOSIS FUNCTION

Indoor Unit Error

Ex) Error 03 (Remote controller error)



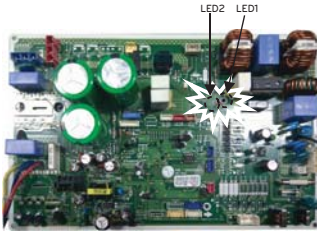
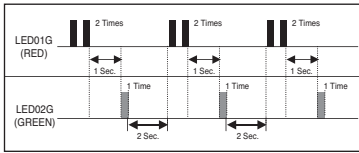
Error Code	Description	LED 1 (Green)	LED 2 (Red)	Indoor status
01	Indoor Room sensor error	0	1time	OFF
02	Indoor in-pipe sensor error	0	2times	OFF
03	Remote controller error	0	3times	OFF
04	Drain pump error	0	4times	OFF
05	Communication error indoor and outdoor	0	5times	OFF
06	Indoor out-pipe sensor error	0	6times	OFF
09	EEPROM error (indoor)	0	9times	OFF
10	BLDC motor fan lock (indoor)	1time	0	OFF

* Because remote controller turn off when occur ERROR in simultaneous operation system, it should check LED blinks of outdoor in order to confirm error code.

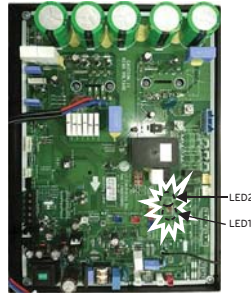
* Repeatedly after LED1 is turned on and off as the Error code number of tens digit, LED2 is turned on and off as the Error code number of single-digit.

Outdoor Unit Error

Ex) Error 21 (DC Peak)



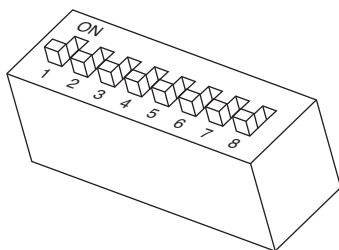
B30AWYU4G4



B36AWYU4G4, B42/55AWYU3G4

Error Code	Description	LED 1 (Red)	LED 2 (Green)	Indoor status
21	DC Peak(IPM Fault)	2times	1time	OFF
22	Max. CT(CT2)	2times	2times	OFF
23	DC Link Low Volt.	2times	3times	OFF
26	DC Comp Position Error	2times	6times	OFF
27	PFC Fault Error	2times	7times	OFF
29	Comp Over Current	2times	9times	OFF
32	D-Pipe High(Inv.)	3times	2times	OFF
35	Low Pressure	3times	5times	OFF
40	CT Sensor(Open/Short)	4times	0	OFF
41	Inv. D-Pipe Th Error(Open/Short)	4times	1time	OFF
43	High Pressure Sensor(Open/Short)	4times	3times	OFF
44	Outdoor air Th Error(Open/Short)	4times	4times	OFF
45	Cond. Middle Pipe Th Error(Open/Short)	4times	5times	OFF
46	Suction Pipe Th Error(Open/Short)	4times	6times	OFF
48	Cond. Out-Pipe Th Error(Open/Short)	4times	8time	OFF
53	Communication Error(Indoor ↔ Outdoor)	5times	3times	OFF
60	EEPROM Error(Outdoor)	6times	0	OFF
61	Cond. Middle Pipe High	6times	1times	OFF
62	Heatsink Error(High)	6times	2times	OFF
65	Heatsink Th Error(Open/Short)	6times	5times	OFF
67	BLDC motor fan lock(Outdoor)	6times	7times	OFF
73	PFC Fault Error(S/W)	7times	3times	OFF

DIP SWITCH SETTING



(Initial condition is all off)



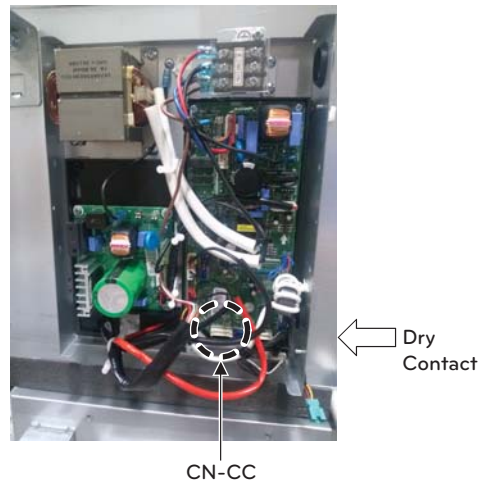
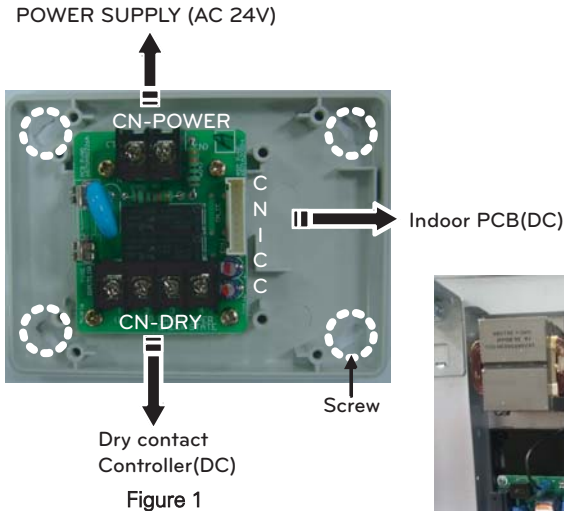
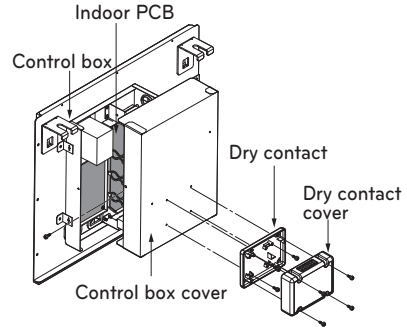
Indoor PCB

Function		Description	Setting Off	Setting On	Default
SW1	Communication	Communication Between Indoor & Outdoor	Communication	Non Communication	Off
SW2	Cycle	Cooling or Heating Model	H/P	C/O	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

ACCESSORY INSTALLATION GUIDE

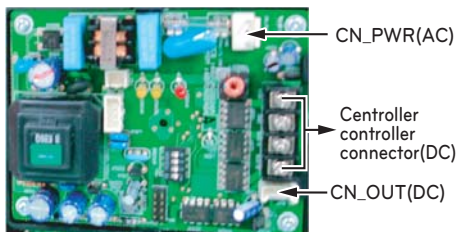
Dry Contact(PQDSB1)

- Fix dry contact on the indoor control box cover.
- Connect dry contact(CN-CC) to Indoor PCB(CN-CC) with cable provided.
- 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.



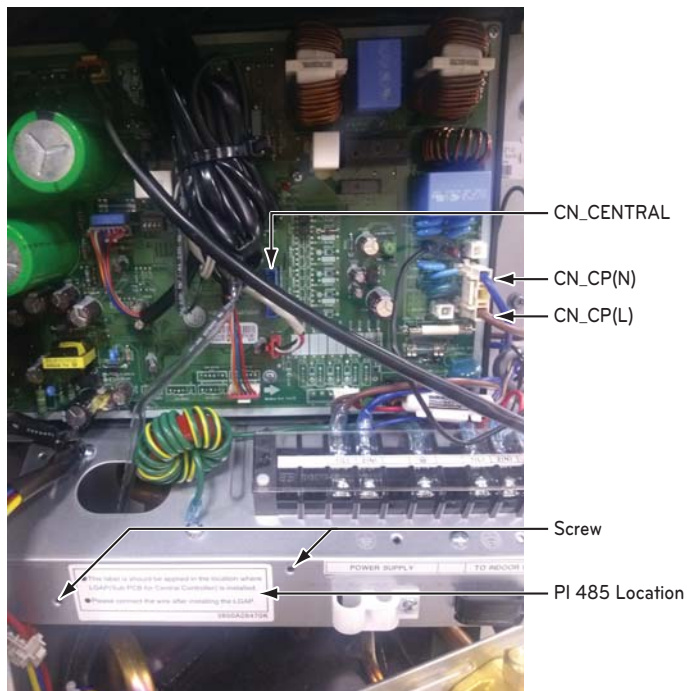
Installation of PI485 for 30k(PMNFP14A1)

- Fix PI485 to the bracket in the outdoor control box.(Figure 2)
- Connect PI485 to outdoor PCB and central controller with cable.(Figure 1,2)
 - Connect CN_PWR to CN_CP(N) and CN_CP(L)
 - Connect CN-OUT to CN_CENTRAL.
- Tie the cables with the wraps and clamps after installing dry contact.
- Refer to PI485 installation manual for detailed installation method.



PI485

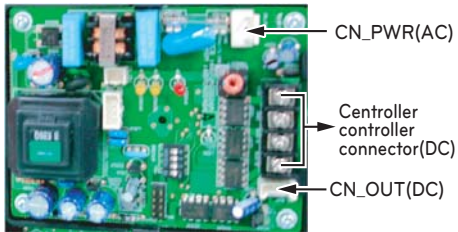
<Figure 1>



<Figure 2>

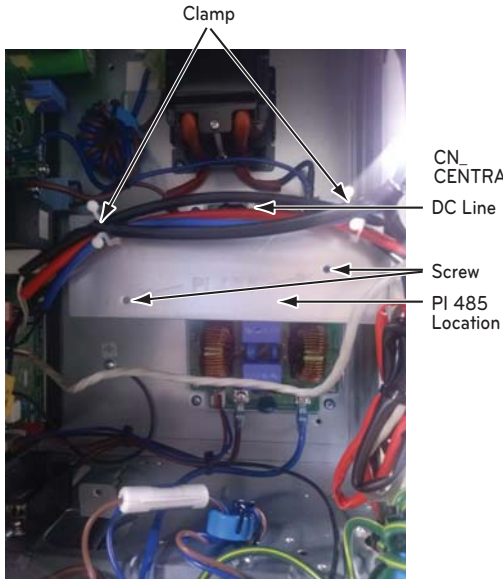
Installation of PI485 for 36k/42k/55k(PMNFP14A1)

- Fix PI485 to the bracket in the outdoor control box.(Figure 2)
- Connect PI485 to outdoor PCB and central controller with cable.(Figure 1,3)
 - Connect CN-PWR to CN_CP(N) and CN_CP(L)
 - Connect CN-OUT to CN_CENTRAL.
- Separate AC and DC line when connecting the cable to outdoor PCB
 - Use the clamp at the bracket to fix connection from CN_OUT to CN_CENTRAL
- Tie the cables with the tie-wraps and clamps after installing PI485.
- Refer to PI485 installation manual for detailed installation method



PI485

<Figure 1>



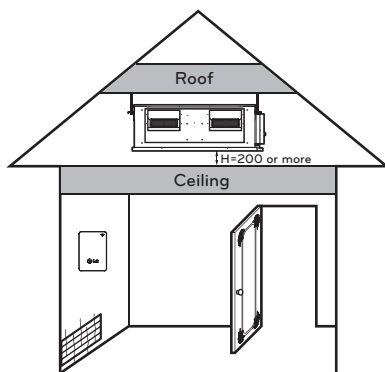
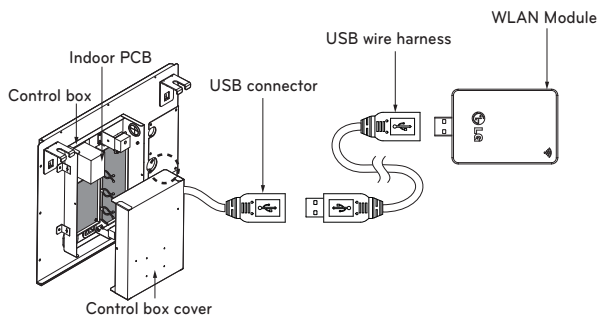
<Figure 2>



<Figure 3>

WLAN module installation (PWFMD101)

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 to cover which is seperated.
- Connect the lead wires between main PCB and damper controller.(Figure 2)
- Connect the power cord to damper controller and actuator.(Figure 3)
- Assemble the damper controller to indoor unit and then assemble cover of damper controller.
- Refer to damper controller Installation manual for detailed installation methed.

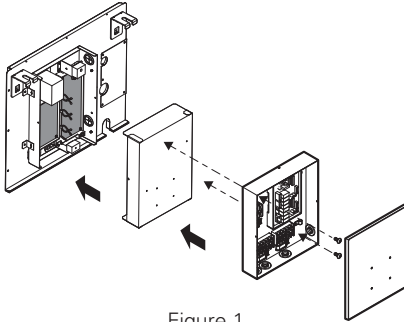


Figure 1

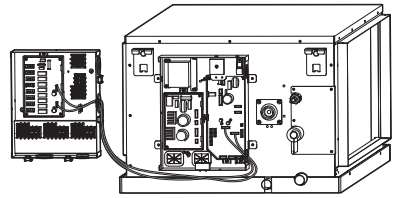


Figure 2

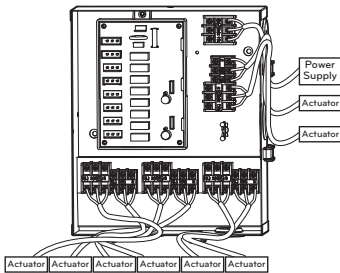
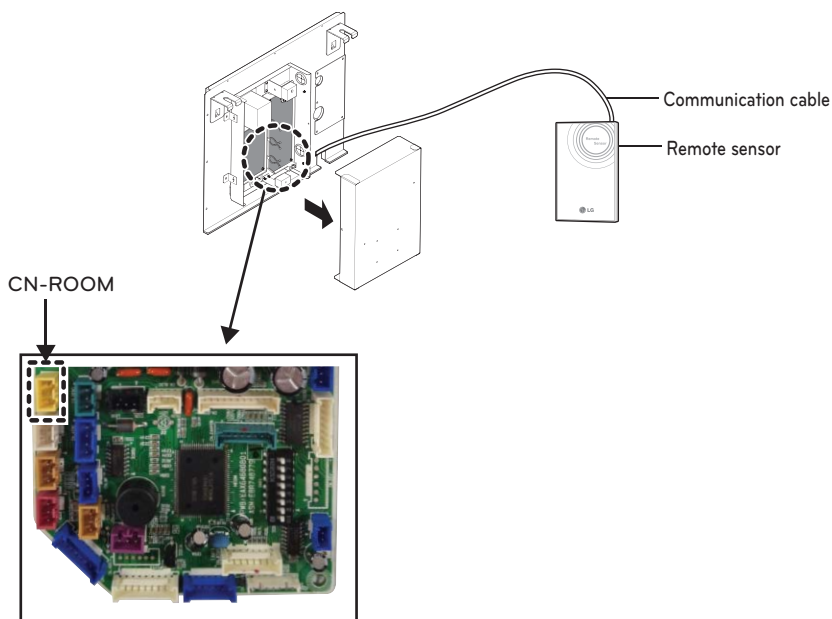
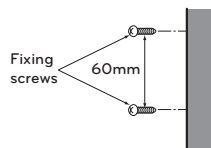


Figure 3

It is possible to use 2-position control actuator(on/off) or 3-position control actuator(open/close/N)

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 function, the remote sensor should be installed from the wired remote controller as far as possible.
- Refer to damper remote sensor manual for detailed installation method.



Two wired remote controller

- All wired remote controllers are displayed on identical information.
- Last used wired remote 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"

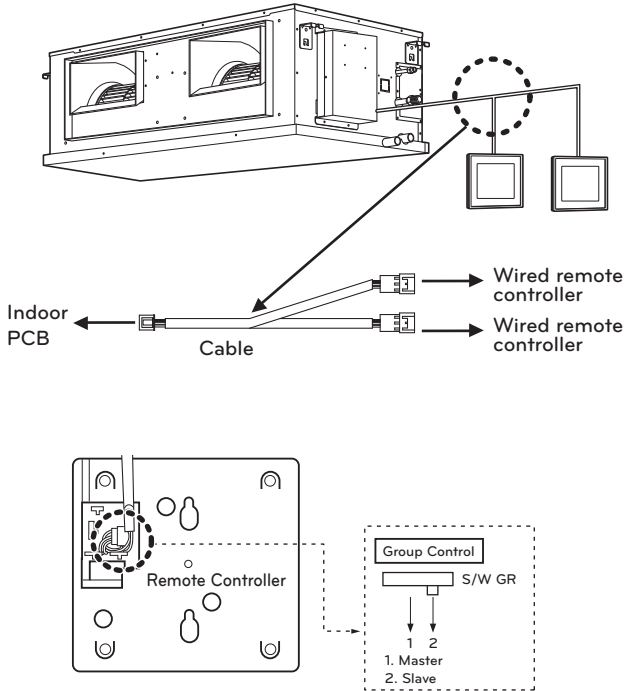


Figure 1

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.

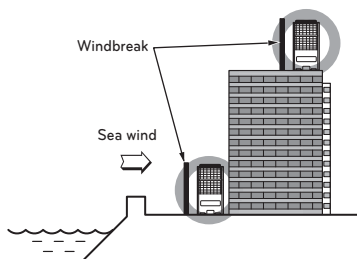
PQRCVSLOQW & PDRCUDC0 are improper.

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.

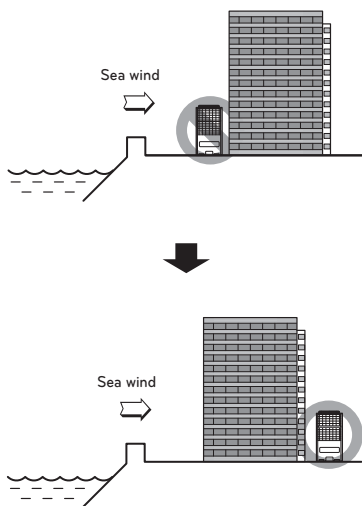
In case, to install the outdoor unit on the sea-side, set up a windbreak not to be exposed to the sea wind.



- 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.

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.



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

