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 : AB-W4267SA3 / AB-W4867SA3 / AB-W5567SA3

P/NO : MFL62541006

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.
- Installation MUST conform with local building codes or, in the absence of local codes, with the Nation Electrical Code NFPA 70/ANSI C1-1003 or current edition and Canadian Electrical Code Part1 CSA C.22.1.
- 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.

ENGLISH

TABLE OF CONTENTS

2 TIPS FOR SAVING ENERGY

3 IMPORTANT SAFETY INSTRUCTIONS

6 INTRODUCTION

6 Features

7 INSTALLATION PLACES

7 Indoor unit

7 Outdoor unit

8 THE INDOOR UNIT INSTALLATION

8 Install the unit above the ceiling correctly.

11 Insulation, others

11 Checking the Drainage

12 PIPING LENGTH AND THE ELEVATION

13 CONNECTING PIPES

13 Preparation of Piping

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

14 Connecting the pipes to the Outdoor unit

16 LEAKAGE TEST AND EVACUATION

16 Preparation

16 Leakage test

17 Evacuation

18 WIRING CONNECTION

18 Electrical Wiring

19 Connecting cables to the Indoor Unit

19 Clamping of cables

20 Connecting the cable to the Outdoor Unit

21 FORMING THE PIPING

22 REMOTE CONTROLLER INSTALLATION

22 Point of remote controller installation

23 Wired remote controller installation

24 EXTERNAL STATIC PRESSURE & FLOW

25 TEST RUNNING

25 Precaution in test running

25 Check the following tiems when installation is complete

25 Connection of power supply

25 Evaluation of the performance

27 SELF-DIAGNOSIS FUNCTION

27 Indoor Unit Error

28 Outdoor Unit Error

29 DIP SWITCH SETTING

30 ACCESSORY INSTALLATION GUIDE

30 Dry Contact(Only AC 24V)

31 PI485

32 RF Remote Controller

33 Damper Controller

34 Remote Temperature Sensor

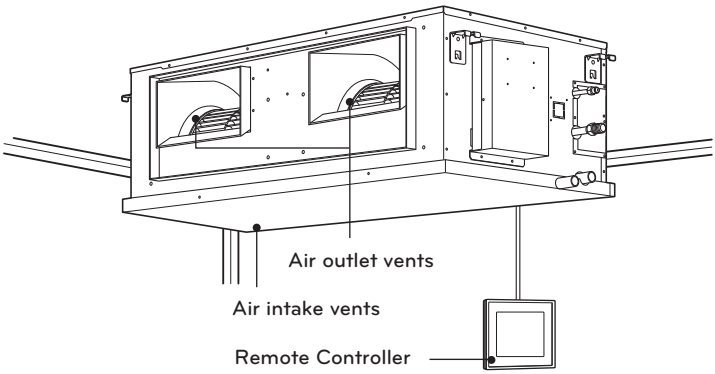
35 Two wired remote controller

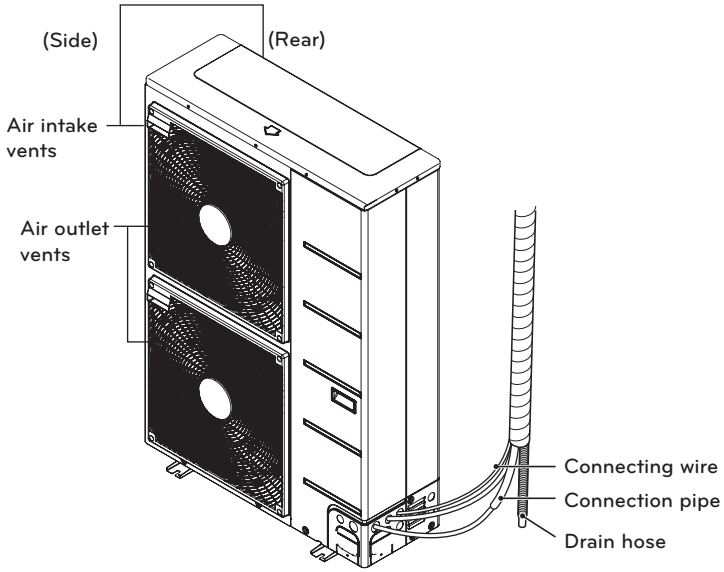
36 Simple Contact

37 INSTALLATION GUIDE AT THE SEASIDE

INTRODUCTION

Features



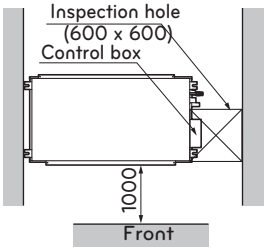


INSTALLATION PLACES

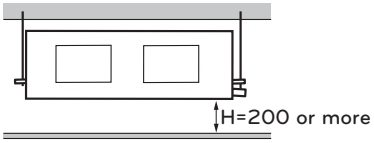
Indoor unit

- 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)



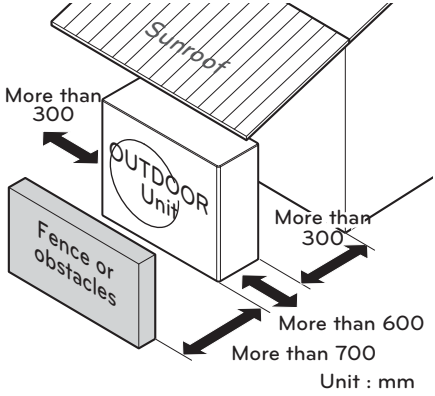
Front view
(unit: mm)



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

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.



THE INDOOR UNIT INSTALLATION

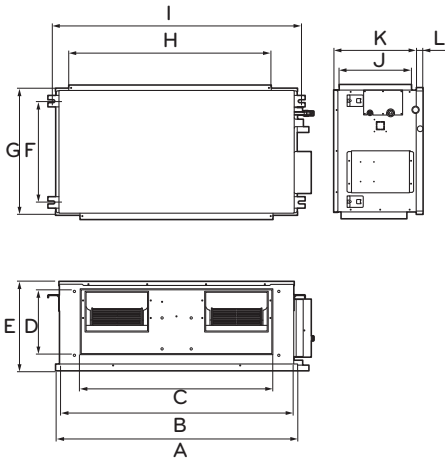
Install the unit above the ceiling correctly.

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.

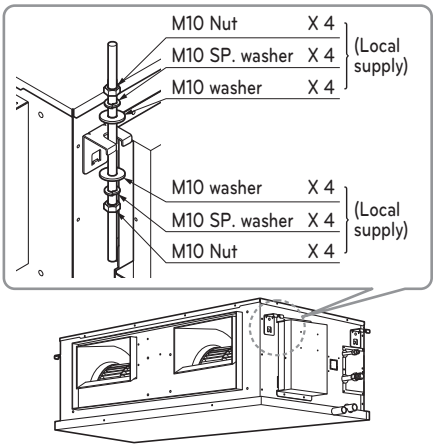
Dimension / Capacity (Btu/h)	A	B	C	D	E	F	G	H	I	J	K	L
42/48/55K	1352	1320	840	287	400	441	563	1172	1365	317	360	40



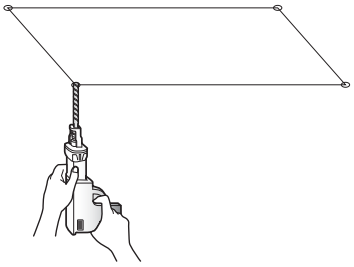
Case2

Position of Console Bolt

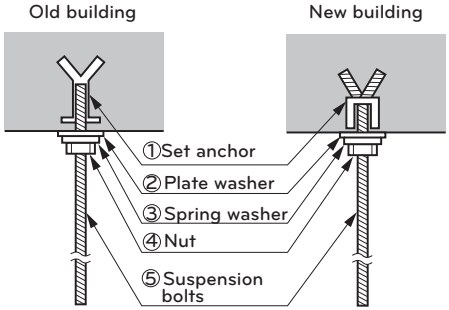
- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



- 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

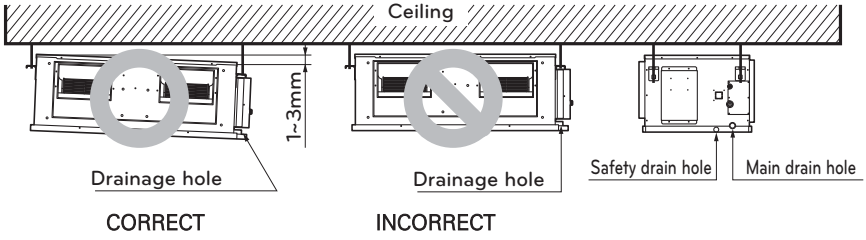
CAUTION

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.

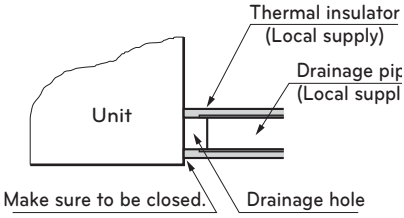


Caution for gradient of unit and drain piping

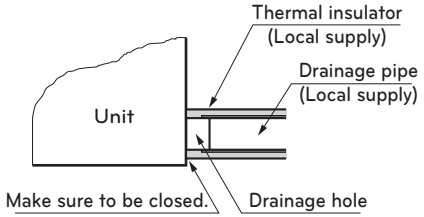
Lay the drain hose with a downward inclination so water will drain out.

Main drain

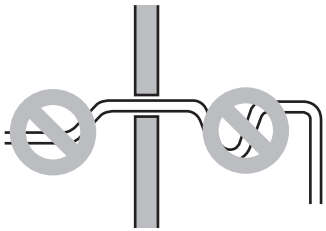
- Always lay the drain with downward inclination (1/50 to 1/100).
  Prevent any upward flow or reverse flow in any part.
- 10mm or thicker formed thermal insulator shall always be provided for the drain pipe.



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

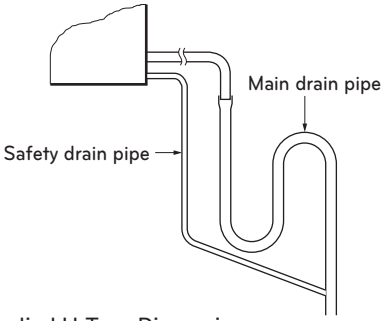


- Upward routing not allowed

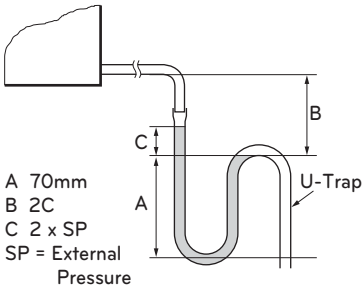


Safety drain

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



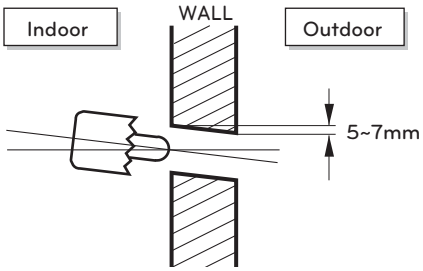
Applied U-Trap Dimension



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.

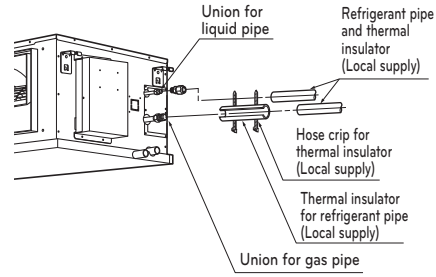


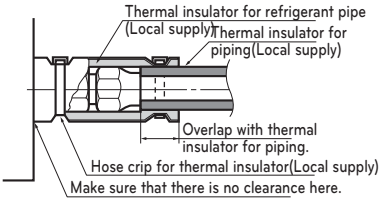
Insulation, others

Insulate the joint and tubes completely.

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

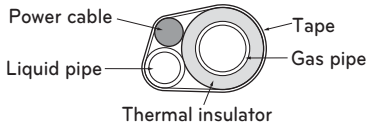
Indoor unit





Refrigerant pipe

- Insulate and tape the gas piping.



CAUTION

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

NOTE

Recommended Insulation material
Meterial : FOAM PE
Thickness : 10mm
Density : less than 0.032 ±0.005(g/cm^2)
Thermal conductivity : less than 0.03(kcal/m.hr.°C)

Test and check

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

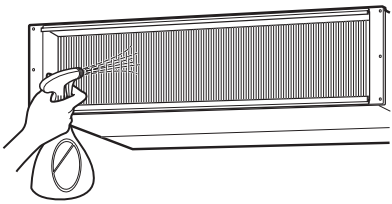
- Air distribution : Is the air circulation good?
- Drain : Is the drainage smoothly and no sweating?
- Gas leakage : Is the piping connection correctly?
- Wiring : Is the wiring connection correctly?
- Lock-bolt : Is the lock-bolt of compressor loosened?

Checking the Drainage

Checking the Drainage

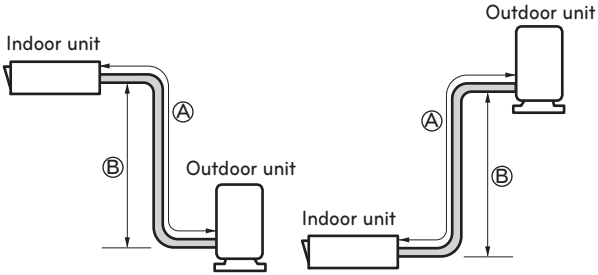
* Check the drainage.

- 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 refriger-ant(g/m)
	Gas	Liquid	Standard	Max.	Standard	Max.	
42k/48k/56k	15.88(5/8)	9.52(3/8)	7.5	50	0	30	60



⚠ CAUTION

- The standard pipe length is 7.5 m and no need to additional charge of the refrigerant to max 15 m. If the pipe length exceeds 15 m, need to additional charge of the refrigerant which according to the table.
- If 42 kBtu/h model is installed at a distance of 50m, 2,100g of refrigerant should be added (50-15) x 60g = 2,100g
- Capacity is based on standard length and maximun allowance length is on the basis of reliability.
- Improper refrigerant charge may result in abnormal cycle.

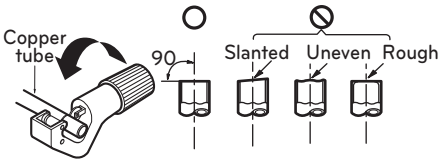
CONNECTING PIPES

Preparation of Piping

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

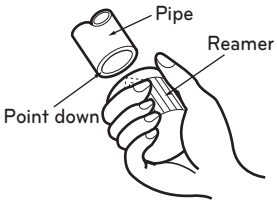
Cut the pipes and the cable.

- 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.



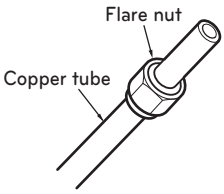
Burrs removal

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



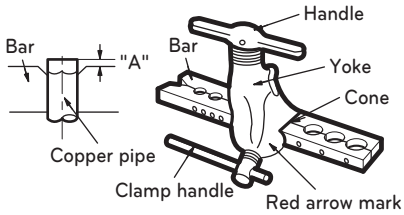
Putting nut on

- Remove flare nuts attached to indoor and outdoor units, than 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.

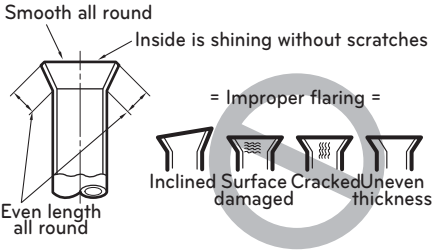


Outside diameter		"A"
mm	inch	mm
Ø6.35	1/4	1.1~1.3
Ø9.52	3/8	1.5~1.7
Ø12.7	1/2	1.6~1.8
Ø15.88	5/8	1.6~1.8

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

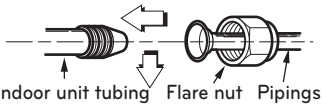
Check

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

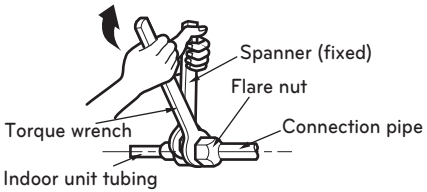


Connecting the pipings to the indoor unit and drain hose to drain pipe

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

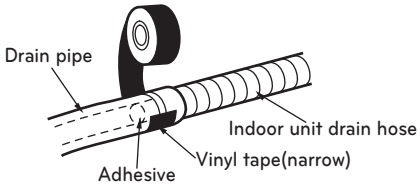


- Tighten the flare nut with a wrench.



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

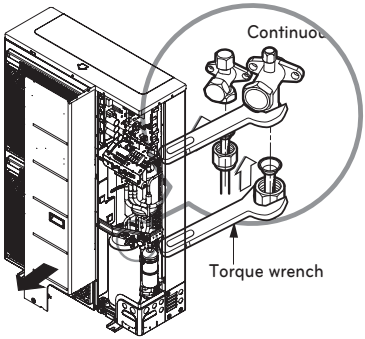
- When extending the drain hose at the indoor unit, install the drain pipe.



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.

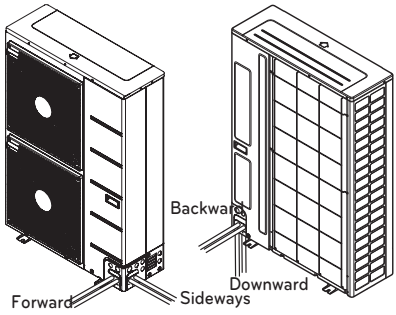


Outside diameter		Torque
mm	inch	kg.m
Ø6.35	1/4	1.8~2.5
Ø9.52	3/8	3.4~4.2
Ø12.7	1/2	5.5~6.6
Ø15.88	5/8	6.6~8.2
Ø19.05	3/4	9.9~12.1

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

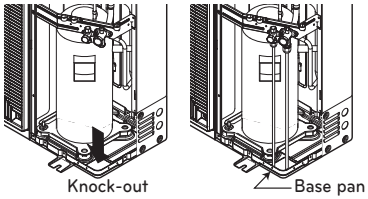
- The installation piping is connectable in four directions.(refer to figure 1)

<Figure 1>



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

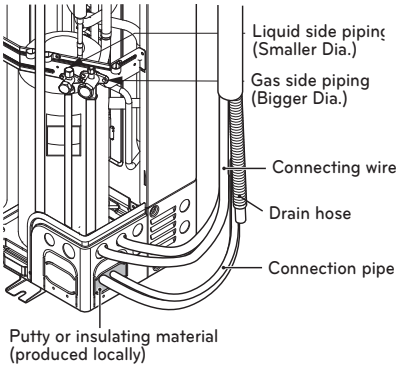
<Figure 2>



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 incondensible 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.

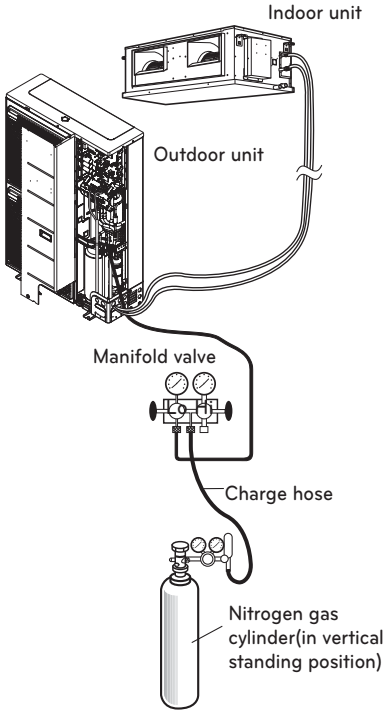
- Pressurize the system to no more than 3.0 Mpa with dry nitrogen gas and close the cylinder valve when the gauge reading reached 3.0 Mpa Next, test for leaks with liquid soap.

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	

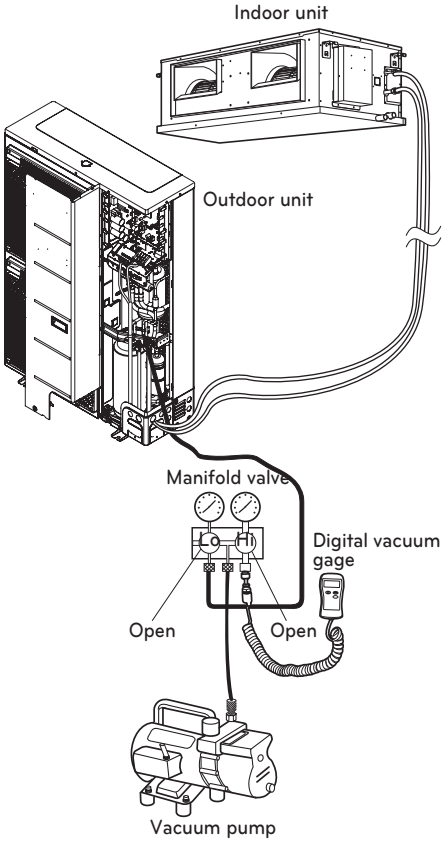
2 When the desired vacuum is reached, close the "Lo and Hi" knob of the manifold valve and stop the vacuum pump.

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.

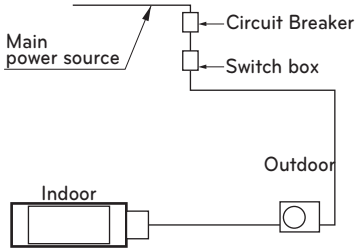
The air conditioner is now ready to test run.



WIRING CONNECTION

Electrical Wiring

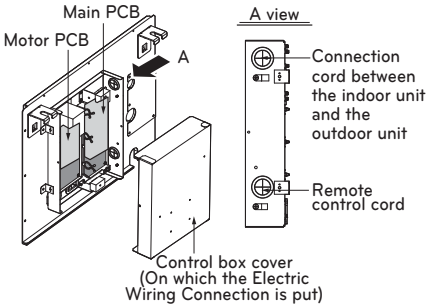
- All wiring must comply with local requirements.
- Select a power source that is capable of supplying the current required by the air conditioner.
- Use a recognized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.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



Capacity(Btu/h)	Phase(Ø)	Circuit Breaker
42 k	1	35A
48 k	1	35A
55 k	1	35A

Indoor unit

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

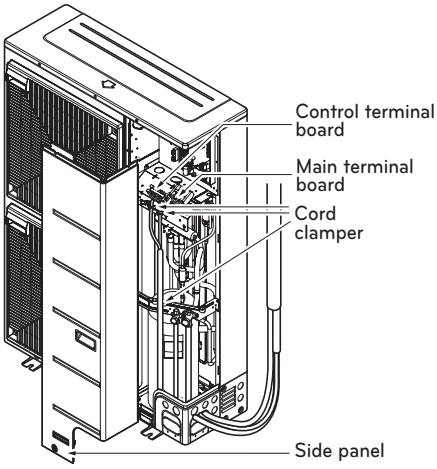


Outdoor unit

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

  Connect the cable of diameter 1.6mm^2 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 1.6mm^2 or more, to the panel of control box, marked as ⏚ and fasten with earth screw.

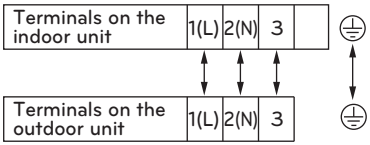


⚠ CAUTION

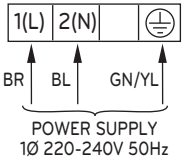
- The circuit diagram is not subject to change without notice.
- Be sure to connect wires according to the wiring diagram.
- Connect the wires firmly, so that not to be pulled out easily.
- Connect the wires according to color codes by referring the wiring diagram.

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 and the terminal No. are the same as those of indoor unit respectively
- Heatpump Model



(220V-240V~)



Capacity	Mode	Max. Input	Max. Current
42kBtu/h 48kBtu/h 55kBtu/h	Cooling	6,600 W	28 A
	Heating	6,100 W	25 A

CAUTION

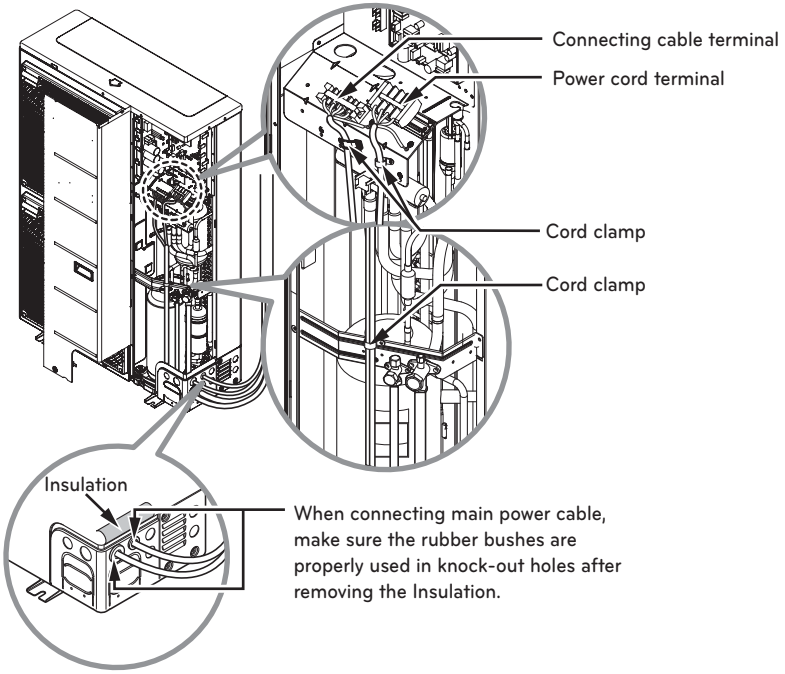
- Make sure that the screws of the terminal fixed tightly
- Installation work must be performed in accordance with the national wiring standards by authorized personnel only

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 the cooling model, fix the other side of the clamp with a screw strongly.
  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.

Connecting the cable to the Outdoor Unit

- Remove the side panel from the unit by loosing 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 (clamper).
- 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.

FORMING THE PIPING

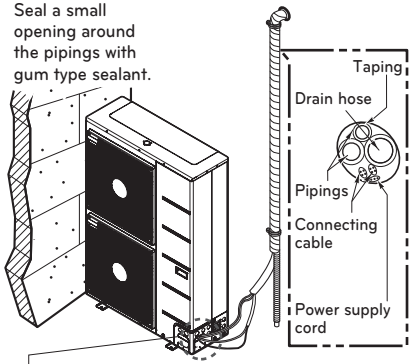
Form the piping by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tape.

- 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 connecting cable from down to up.

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



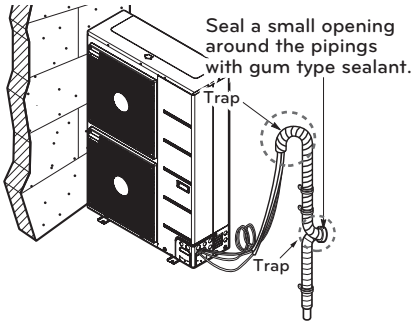
• Trap is required to prevent water from entering into electrical parts.

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

1 Tape the piping and connecting 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.

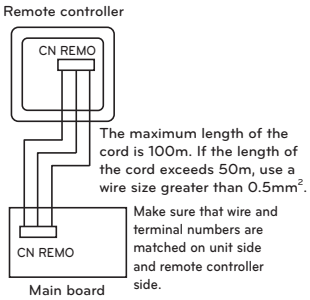
Installation of the remote control box

- 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)

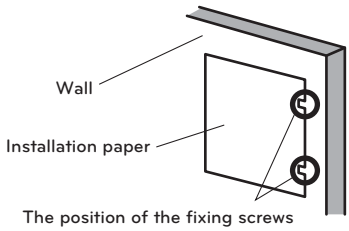
Routing of the remote control cord

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

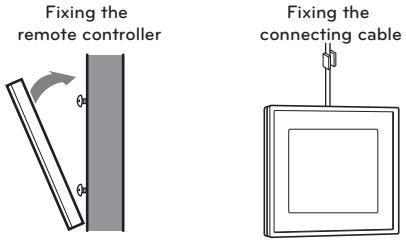
Electrical wiring to the indoor unit



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.

Wired remote controller installation

- 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.)

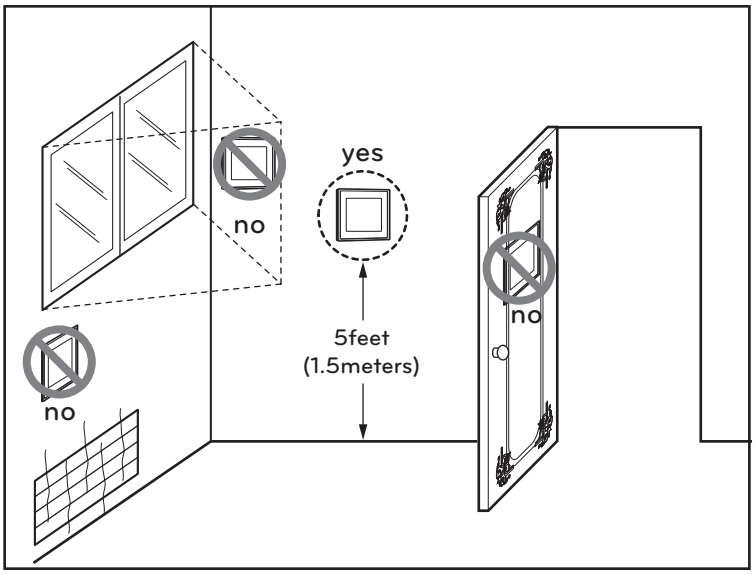


Fig.1 Typical locations for remote controller

EXTERNAL STATIC PRESSURE & FLOW

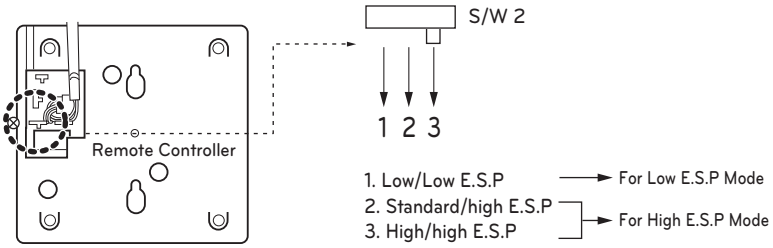
External Static Pressure(Pa)		60 (Low EPS)	80	100	120	130 (High EPS)	140	160	180	200
Model (Capacity)	Step									
42 kBtu/h	Hi (48 CMM)	92	96	101	106	113	116	120	124	126
	Med(42 CMM)	86	90	96	101	106	110	114	119	121
	Low(36 CMM)	80	86	92	96	101	105	109	113	115
48 kBtu/h 55 kBtu/h	Hi (60 CMM)	101	105	108	112	117	120	124	127	129
	Med(50 CMM)	90	97	101	107	113	114	117	120	122
	Low(40 CMM)	86	90	93	96	103	107	110	113	115

NOTE

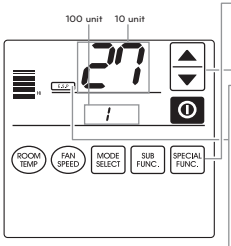
Capacities are tested in the following conditions.

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 2



How to set RPM



1 Press the SPECIAL FUNC. button.



2 Press the E.S.P button.



3 Set the volume of each air flow (Lo → Med → Hi) by using the button. Press the FAN SPEED button to select the air flow.
(The value of E.S.P could be adjusted from 1 to 255.)
(Ex. The figure on the left shows when the strong wind's ESP value has been set to 127. 127 means 1270 RPM).



4 If you press the E.S.P button one more time, the E.S.P value will be set and the setting mode will be unset.



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 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, 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 cord 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.

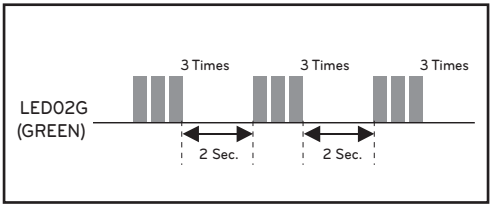
HAND OVER

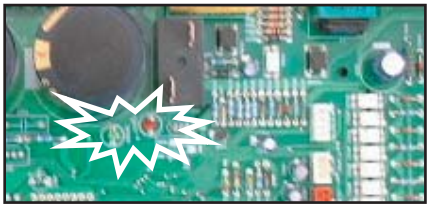
Teach the customer the operation and maintenance procedures, using the operation manual (air filter cleaning, temperature control, etc.).

SELF-DIAGNOSIS FUNCTION

Indoor Unit Error

Ex) Error 03 (Remote controller error)



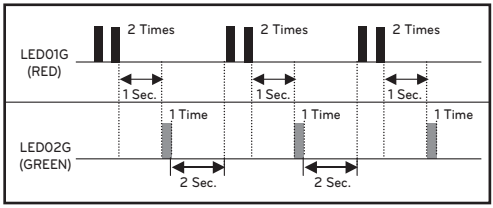


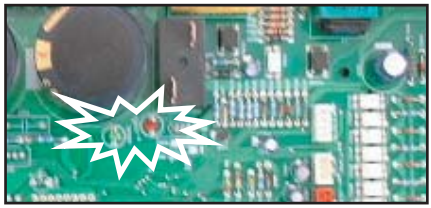
Error Code	Description	LED 1 (Red)	LED 2 (Green)	Indoor status
01	Indoor Room sensor error	0	1time ◑	OFF
02	Indoor in-pipe sensor error	0	2times ◑	OFF
03	Remote controller error	0	3times ◑	OFF
04	Drain pump error	0	4times ◑	OFF
05	Communication error indoor and outdoor	0	5times ◑	OFF
06	Indoor out-pipe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

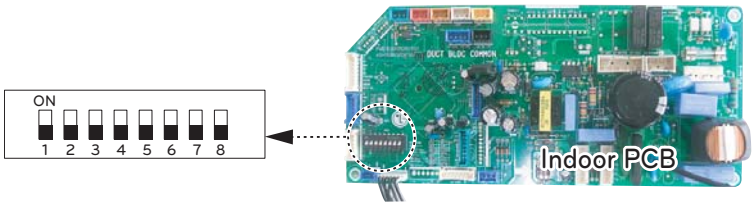




Error Code	Description	LED 1 (Red)	LED 2 (Green)	Indoor status
21	DC Peak(IPM Fault)	2times ◑	1time ◑	OFF
22	Max. CT(CT2)	2times ◑	2times ◑	OFF
23	DC Link Low Volt.	2times ◑	3times ◑	OFF
24	Pressure switch/Heater Sink.	2times ◑	4times ◑	OFF
26	DC Comp Position Error	2times ◑	6times ◑	OFF
27	PSC Fault Error	2times ◑	7times ◑	OFF
28	DC Link High Volt.	2times ◑	8times ◑	OFF
29	Comp Over Current	2times ◑	9times ◑	OFF
32	D-Pipe High(Inv.)	3times ◑	2times ◑	OFF
41	Inv. D-Pipe Th Error(Open/Short)	4times ◑	1time ◑	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 ◑	8times ◑	OFF
51	Capacity over	5times ◑	1time ◑	OFF
53	Communication Error(Indoor÷Outdoor)	5times ◑	3times ◑	OFF
60	EEPROM Error(Outdoor)	6times ◑	0	OFF
61	(Cooling Mode) Outdoor Middle Pipe High (Heating Mode) Indoor Middle Pipe High	6times ◑	1time ◑	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

* 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.

DIP SWITCH SETTING

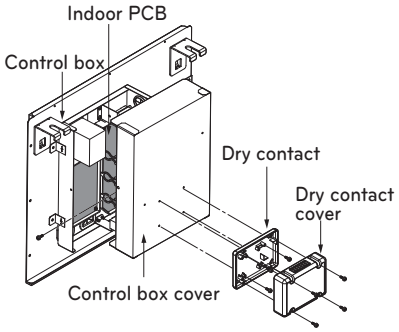


Function		Description	Setting Off	Setting On	Default
SW1	Communica-tion	Communication Between Indoor & Outdoor	Communication	Non Com-munication	Off
SW2	Cycle	Cooling or Heating Model	H/P	C/O	Off
SW3	Group Control	Selection of Master or Slave	Master	Slave	Off
SW4	Dry Contact Mode	Selection of Dry Contact 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(Only AC 24V)

- 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.



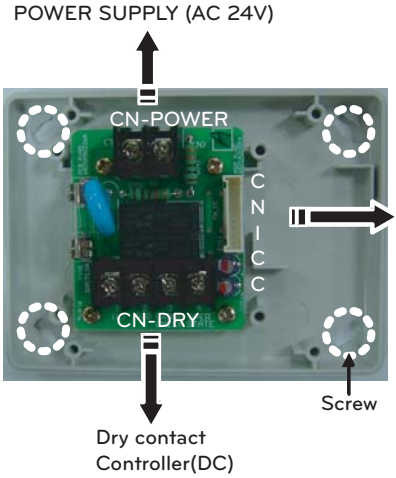
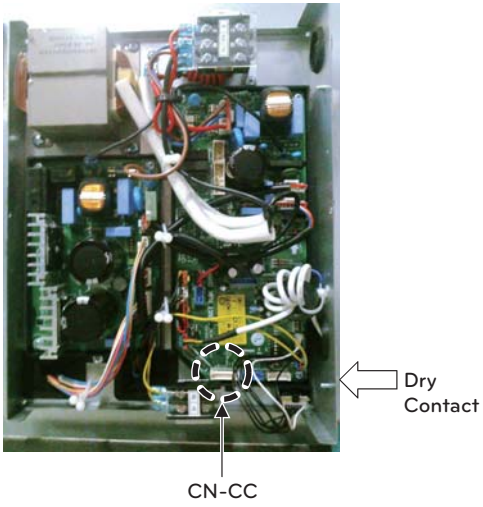


Figure 1

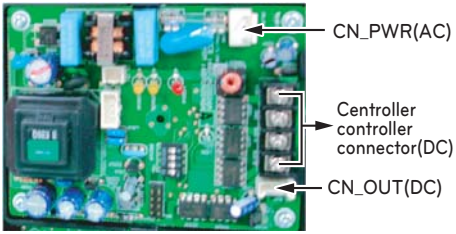


Indoor control box

Figure 2

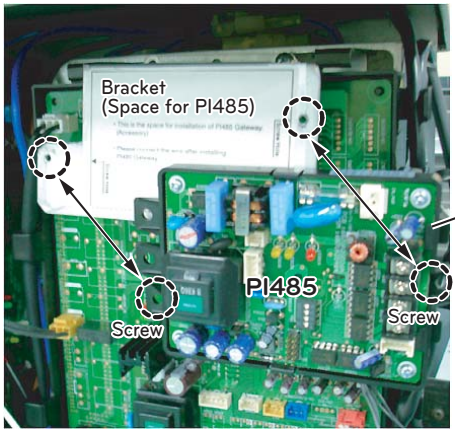
PI485

- 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 WCN_P(N) and WCN_P(L).
  - Connect CN-OUT to CN_CENTRAL.
- Separate AC and DC line when connecting the cable to outdoor PCB.(Figure 3)
  - Use the clip at the PCB case side.
- Tie the cables with the tie-wraps and clamps after intalling PI485.
- Refer to PI485 installation manual for detailed installation method

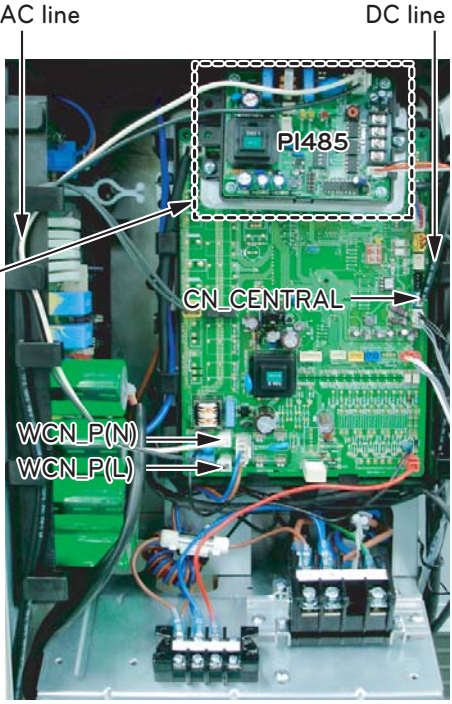


PI485

<Figure 1>



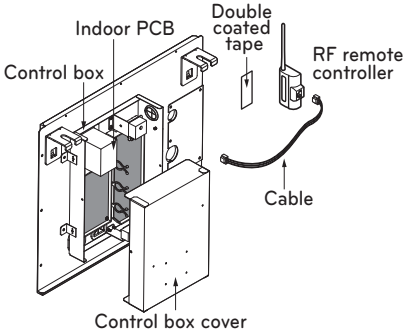
<Figure 2>

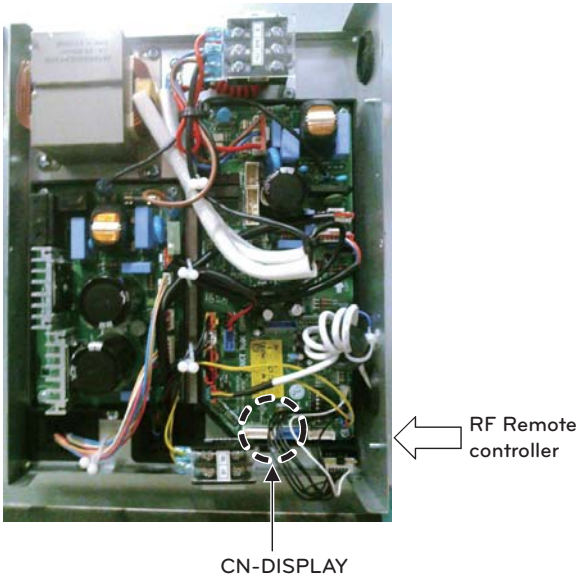


<Figure 3>

RF Remote Controller

- Connect Indoor PCB(CN-DISPLAY) to RF remote controller with the cable provided.
- Use the DC line hole when connecting the cable to Indoor PCB.
- Fix the RF remote controller with adhesive tape at your desired location.
- Tie the cables with tie-wraps and clamps after intalling.
- Refer to RF remote controller Installation manual for detailed installation metheod.





Damper Controller

- 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 2)
- Assemble the damper controller to indoor unit and then assemble cover of damper controller.
- Set the slide switch in the wired remote contorller as "1" positon.(Figure 3)
- Refer to damper controller Installation manual for detailed installation metheod.

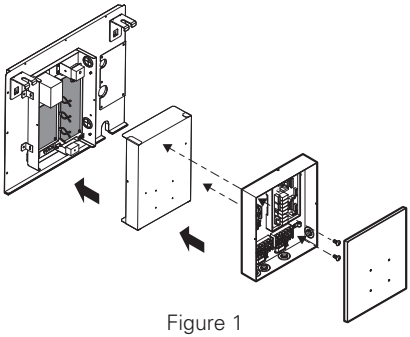


Figure 1

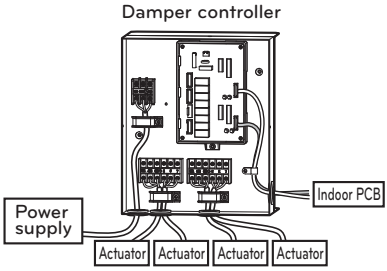


Figure 2

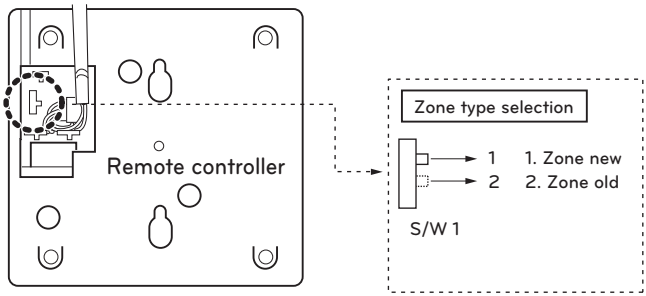
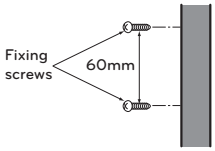


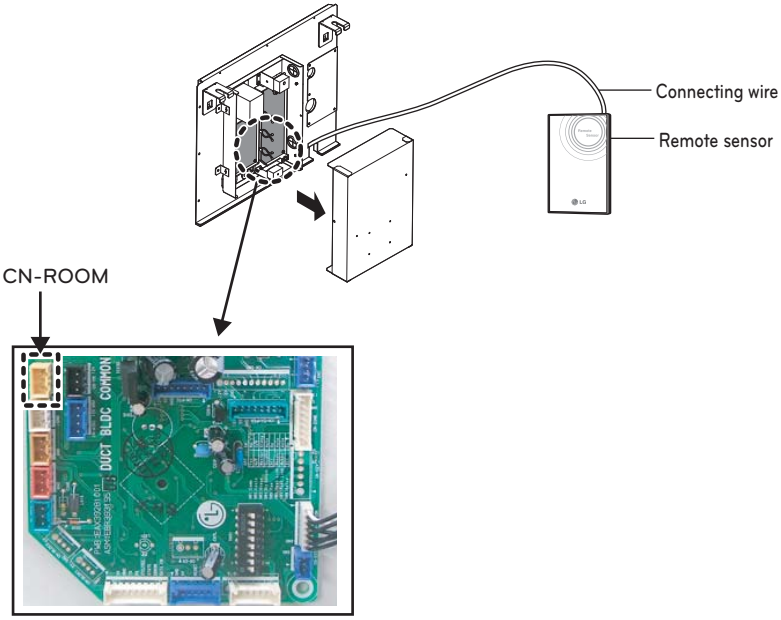
Figure 3

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

Remote Temperature Sensor

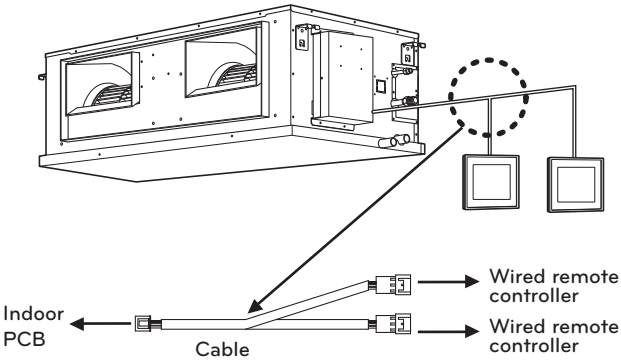
- After deciding where the remote temperature sensor is installed, decide the location and height of the fixing screws. (Interval between the screws : 60mm).
- After removing the control box cover of the indoor unit, remove the room temperature sensor in CN-ROOM of the main PCB.
- Insert the connector 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.

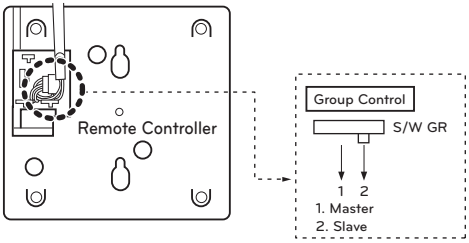




Two wired remote controller

- 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"



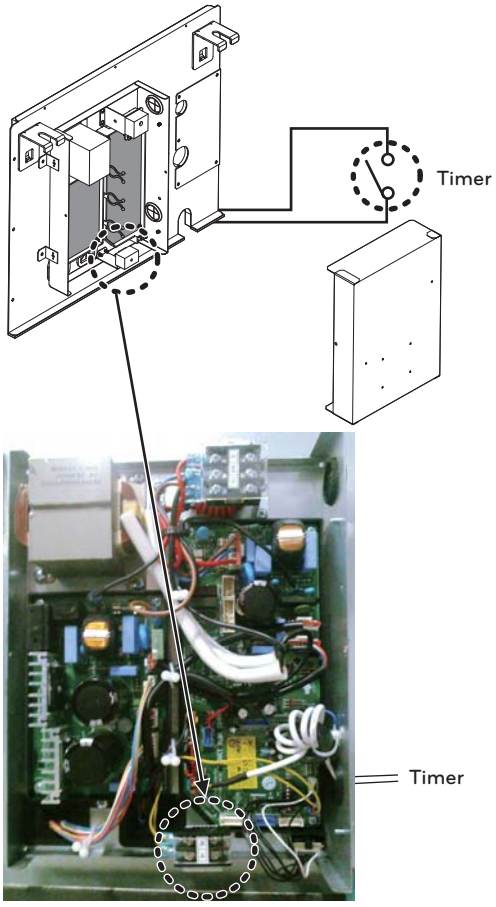


CAUTION

Two wired remote controllers should be same model name, otherwise it can cause unexpected problems.
For example) Using PQRCVSLOQW with PQRCVSLOQW is proper.
Using PDRCUDB0 with PDRCUDB0 is proper.
PQRCVSLOQW & PDRCUDB0 are improper.

Simple Contact

- It can be used to turn the unit On/Off after getting the signal from external sources like timer, key-in lock etc.
- This function is similar to the dry contact, but need to no additional accessory.
- Open the cover of indoor unit control box, connect the external source to the terminal block.



Indoor control box

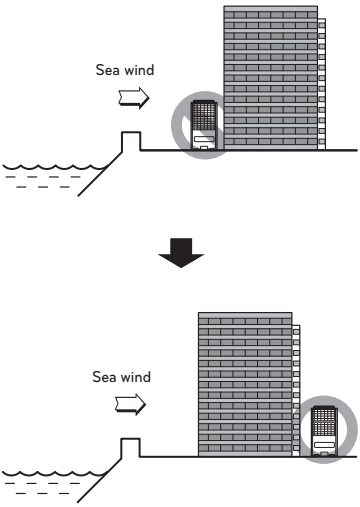
INSTALLATION GUIDE AT THE SEASIDE

CAUTION

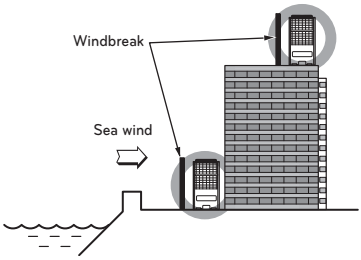
- Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced.
- Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the condenser and evaporator 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


LG
Life's Good