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.

CEILING CONCEALED DUCT
Original instruction

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ENGLISH

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SAFETY INSTRUCTIONS

The following symbols are displayed on indoor and outdoor units.

	Read the precautions in this manual carefully before operating the unit.		This appliance is filled with flammable refrigerant. (for R32)
	This symbol indicates that the Operation Manual should be read carefully.		This symbol indicates that a service personnel should be handling this equipment with reference to the Installation Manual.

The following safety guidelines are intended to prevent unforeseen risks or damage from unsafe or incorrect operation of the appliance.
The guidelines are separated into 'WARNING' and 'CAUTION' as described below.

This symbol is displayed to indicate matters and operations that can cause risk.
Read the part with this symbol carefully and follow the instructions in order to avoid risk.

⚠ WARNING

This indicates that the failure to follow the instructions can cause serious injury or death.

⚠ CAUTION

This indicates that the failure to follow the instructions can cause the minor injury or damage to the product.

⚠ WARNING

- Always ground the product.
  - There is a risk of electric shock.
- Do not use a defective or underrated circuit breaker. Use the correctly rated breaker and fuse.
  - There is risk of fire or electric shock.
- Do not use a multi consent.
  - Always use this appliance on a dedicated circuit and breaker. Otherwise it can cause electric shock or fire.
- For electrical work, contact the dealer, seller, a qualified electrician, or an Authorized Service Center.
  - Do not disassemble or repair the product by yourself. There is risk of fire or electric shock.
- Always ground the product as per the wiring diagram.
  - Do not connect the ground wire to gas or water pipes lightening rod or telephone ground wire. 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 due to dust, water etc.
- Use the correctly rated breaker or fuse.
  - There is risk of fire or electric shock.

- Do not modify or extend the power cable.
  - If the power cable or cord has scratches or skin peeled off or deteriorated then it must be replaced. There is risk of fire or electric shock.
- For installation, removal or reinstall, 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.
  - Be sure that the installation area does not deteriorate with age. It may cause product to fall.
- Never install the outdoor unit on a moving base or a place from where it can fall down.
  - The falling outdoor unit can cause damage or injury or even death of a person.
- When the product is soaked (flooded or submerged) in water, contact an Authorized Service Center for repair before using it again.
  - There is risk of fire or electric shock.
- Be sure to check the refrigerant to the used.
  - Please read the label on the product. Incorrect refrigerant used can prevent the normal operation of the unit.
- Don't use a power cord, a plug or a loose socket which is damaged.
  - Otherwise it may cause a fire or electrical shock.
- Do not touch, operate, or repair the product with wet hands.
  - Hold the plug by hand when taking out. There is risk of electric shock or fire.
- Do not place a heater or other heating appliances near the power cable.
  - There is risk of fire and electric shock.
- Do not allow water to run into electric parts. Install the unit away from water sources.
  - There is risk of fire, failure of the product, or electric shock.
- Do not store or use or even allow flammable gas or combustibles near the product.
  - There is risk of fire.
- Indoor/outdoor wiring connections must be secured tightly and the cable should be routed properly so that there is no force pulling the cable from the connection terminals.
  - Improper or loose connections can cause heat generation or fire.
- Safely dispose off the packing materials.
  - Like screws, nails, batteries, broken things etc after installation or svc and then tear away and throw away the plastic packaging bags. Children may play with them and cause injury.
- Make sure to check that the power cable plug is not dirty, loose or broken and then only insert the plug completely.
  - Dirty, loose or broken power plug can cause electric shock or fire.
- In outdoor unit the step-up capacitor supplies high voltage electricity to the electrical components.
  - Be sure to discharge the capacitor completely before conducting the repair work. An charged capacitor can cause electrical shock.
- When installing the unit, use the installation kit provided with the product.
  - Otherwise the unit may fall and cause severe injury.
- Be sure to use only those parts which are listed in the svc parts list.
  - Never attempt to modify the equipment. The use of inappropriate parts can cause an electrical shock, excessive heat generation or fire.
- Do not use the product in a tightly closed space for a long time. Perform ventilation regularly.
  - Oxygen deficiency could occur and hence harm your health.

- Do not open the front 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.
- If strange sounds, smell or smoke comes from product.
  - Immediately turn the breaker off or disconnect the power supply cable. There is risk of electric shock or fire.
- Ventilate the product room from time to time when operating it together with a stove, or heating element etc.
  - Oxygen deficiency can occur and hence harm your health.
- Turn the main power off and unplug the unit when cleaning or repairing the product.
  - There is risk of electric shock.
- When the product is not to be used for a long time, disconnect the power supply plug or turn off the breaker.
  - There is risk of product damage or failure, or unintended operation.
- Take care to ensure that nobody especially kids could step on or fall onto the outdoor unit.
  - This could result in personal injury and product damage.
- Take care to ensure that power cable could not be pulled out or damaged during operation.
  - There is risk of fire or electric shock.
- Do not place ANYTHING on the power cable.
  - There is risk of fire or electric shock.
- Do not plug or unplug the power supply plug to turn the unit ON/OFF.
  - There is risk of fire or electric shock.
- When flammable gas leaks, turn off the gas and open a window for ventilation before turn the product on.
  - Do not use the telephone or turn switches on or off. There is risk of explosion or fire.
- Do not turn on the breaker or power under condition that front panel, cabinet, top cover, control box cover are removed or opened.
  - Otherwise, it may cause fire, electric shock, explosion or death.
- Use a vacuum pump or Inert (nitrogen) gas when doing leakage test or air purge.
  - Do not compress air or Oxygen and Do not use Flammable gases. Otherwise, it may cause fire or explosion. There is the risk of death, injury, fire or explosion.
- The appliance shall be stored in a room without continuously operating ignition sources (for example : open flames, an operating gas appliance or an operating electric heater.)
- Keep any required ventilation openings clear of obstruction.
- The appliance shall be stored in a well-ventilated area where the room size corresponds to the room area as specified for operation. (for R32)
- Ducts connected to an appliance shall not contain an ignition source. (for R32)
- Compliance with national gas regulations shall be observed.
- Mechanical connections shall be accessible for maintenance purposes.
- Do not use means to accelerate the defrosting process or to clean, other than those recommended by the manufacturer.
- Do not pierce or burn refrigerant cycle part.
- Be aware that refrigerants may not contain an odour.

⚠ CAUTION

- Two or more people must 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.
- Install the drain hose to ensure that the condensed water is drained away properly.
  - A bad connection may cause water leakage.
- Keep level even when installing the product.
  - To avoid vibration or noise.
- Do not install the product where the noise or hot air from the outdoor unit could damage or disturb the neighborhoods.
  - It may cause a problem for your neighbors and hence dispute.
- Always check for gas (refrigerant) leakage after installation or repair of product.
  - Low refrigerant levels may cause failure of product.
- Do not use the product for special purposes, such as preserving foods, works of art, etc.
  - It is a consumer air conditioner, not a precision refrigeration system. There is risk of damage or loss of property.
- Do not block the inlet or outlet of air flow.
  - It may cause product failure.
- Use a soft cloth to clean. Do not use harsh detergents, solvents or splashing water etc.
  - There is risk of fire, electric shock, or damage to the plastic parts of the product.
- Do not touch the metal parts of the product when removing the air filter.
  - There is risk of personal injury.
- Do not step on or put anything on the product.
  - There is risk of personal injury and failure of product.
- Always insert the filter securely after cleaning.
  - Clean the filter every two weeks or more often if necessary. A dirty filter reduces the efficiency.
- Do not insert hands or other objects through the air inlet or outlet while the product is operating.
  - There are sharp and moving parts that could cause personal injury.
- Be cautious when unpacking and installing the product.
  - Sharp edges could cause injury.
- If the refrigerant gas leaks during the repair, do not touch the leaking refrigerant gas.
  - The refrigerant gas can cause frostbite (cold burn)
- Do not tilt the unit when removing or uninstalling it.
  - The condensed water inside can spill.
- Do not mix air or gas other than the specified refrigerant used in the system.
  - If air enters the refrigerant system, an excessively high pressure results, causing equipment damage or injury.
- If the refrigerant gas leaks during the installation, ventilate the area immediately.
  - Otherwise it can be harmful for your health.
- Dismantling the unit, treatment of the refrigerant oil and eventual parts should be done in accordance with local and national standards.
- Replace the all batteries in the remote control with new ones of the same type.
  - Do not mix old and new batteries or different types of batteries. There is risk of fire or product failure.

- Do not recharge or disassemble the batteries.
  - Do not dispose off batteries in a fire. They may burn or explode.
- If the liquid from the batteries gets onto your skin or clothes, wash it well with clean water.
  - Do not use the remote if the batteries have leaked. The chemicals in batteries could cause burns or other health hazards.
- If you eat the liquid from the batteries, brush your teeth and see doctor.
  - Do not use the remote if the batteries have leaked. The chemicals in batteries could cause burns or other health hazard.
- 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.
- Do not expose your skin or kids or plants to the cool or hot air draft.
  - This could harm to your health.
- Do not drink the water drained from the product.
  - It is not sanitary and could cause serious health issues.
- Use a firm stool or ladder when cleaning, maintaining or repairing the product at an height.
  - Be careful and avoid personal injury.
- The air conditioner is not intended for use by young children or invalids without supervision.
- Young children should be supervised to ensure that they do not play with the air conditioner.
- The appliance shall be stored so as to prevent mechanical damage from occurring.
- Any person who is involved with working on or breaking into a refrigerant circuit should hold a current valid certificate from an industry-accredited assessment authority, which authorizes their competence to handle refrigerants safely in accordance with an industry recognized assessment specification. (for R32)
- Servicing shall only be performed as recommended by the equipment manufacturer. Maintenance and repair requiring the assistance of other skilled personnel shall be carried out under the supervision of the person competent in the use of flammable refrigerants. (for R32)
- Wear adequate personal protection equipment (PPE) when installing, maintaining or servicing the product.
- This appliance can be used by children aged from 8 years and above and persons with reduced physical, sensory or mental capabilities or lack of experience and knowledge if they have been given supervision or instruction concerning use of the appliance in a safe way and understand the hazards involved.
  - Children shall not play with the appliance. Cleaning and user maintenance shall not be made by children without supervision.
- This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
  - Children should be supervised to ensure that they do not play with the appliance.
- If the supply cord is damaged, it must be replaced by a special cord or assembly available from the manufacturer of its service agent.
- The appliance shall be installed in accordance with national wiring regulations.
- Do not touch refrigerant pipe and water pipe or any internal parts while the unit is operating or immediately after operation.
  - There is risk of burns or frostbite, personal injury.
- The air conditioner should be used only for the applications for which it has been designed : the indoor unit is not suitable to be installed in areas used for laundry.

- The installation of pipe-work shall be kept to a minimum.
- Means for disconnection must be incorporated in the fixed wiring in accordance with the wiring rules.
- Pipe-work shall be protected from physical damage.
- Do not install the unit in potentially explosive atmosphere.
- (Australia only) This product must be installed by a professional installer.
- After the installation of the product in the customer premises, fully remove all product packaging (including any expanded or moulded plastic packaging materials) and recycle or dispose of such packaging responsibly. Do not dispose any expanded plastic packaging in the household bin.

- The figures quoted are emission level and are not necessarily safe working levels. Whilst there is a correlation between the emission and exposure levels, this cannot be used reliably to determine whether or not further precautions are required. Factor that influence the actual level of exposure of the workforce include the characteristics of the work room and the other sources of noise, i.e. the number of equipment and other adjacent processes and the length of time for which an operator exposed to the noise. Also, the permissible exposure level can vary from country to country. This information, however, will enable the user of the equipment to make a better evaluation of the hazard and risk.
- The sound pressure of this product is below 70 dB.
- The noise level can vary depending on the site.

INTRODUCTION

Tips for saving energy

Here are some tips that will help you minimize the power consumption when you use the air conditioner. You can use your air conditioner more efficiently by referring to the instructions below:

- Do not cool excessively indoors. This may be harmful for your health and may consume more electricity.
- Block sunlight with blinds or curtains while you are operating the air conditioner.
- Keep doors or windows closed tightly while you are operating the air conditioner.
- Adjust the direction of the air flow vertically or horizontally to circulate indoor air.
- Speed up the fan to cool or warm indoor air quickly, in a short period of time.
- Open windows regularly for ventilation as the indoor air quality may deteriorate if the air conditioner is used for many hours.
- Clean the air filter once every 2 weeks. Dust and impurities collected in the air filter may block the air flow or weaken the cooling / dehumidifying functions.

For your records

Staple your receipt to this page in case you need it to prove the date of purchase or for warranty purposes. Write the model number and the serial number here:

Model number :

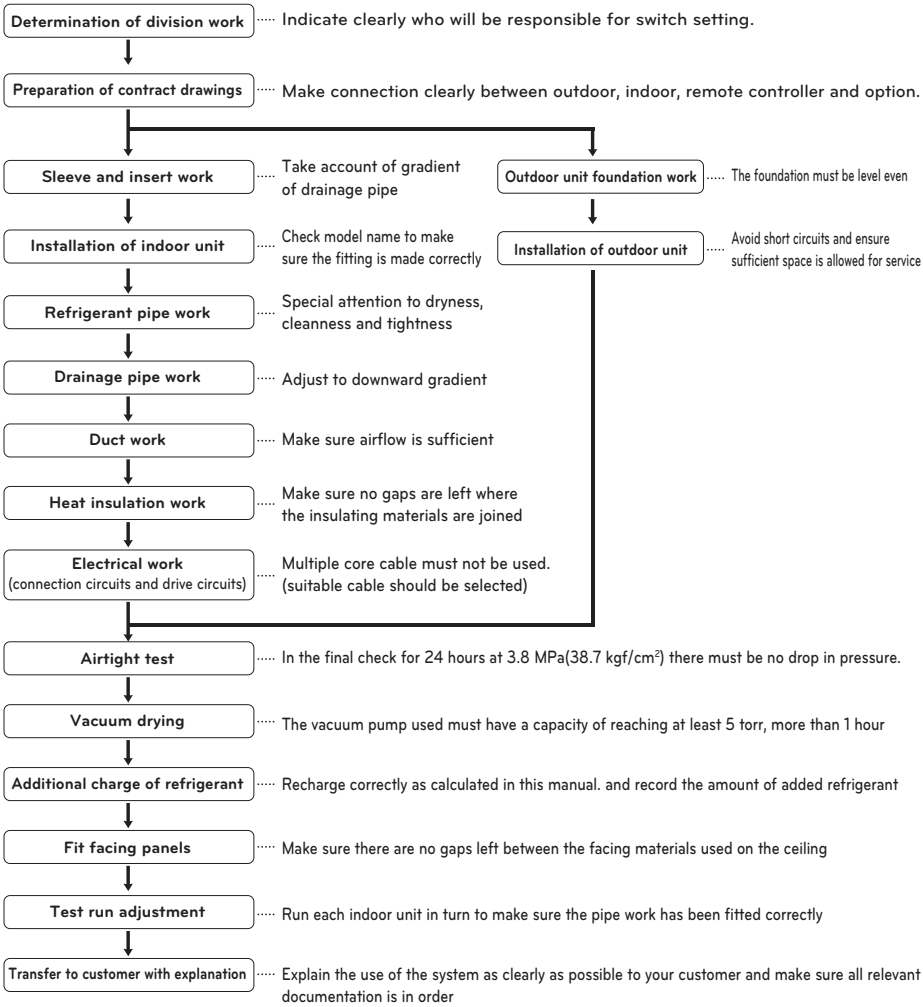
Serial number :

You can find them on a label on the side of each unit.

Dealer's name :

Date of purchase :

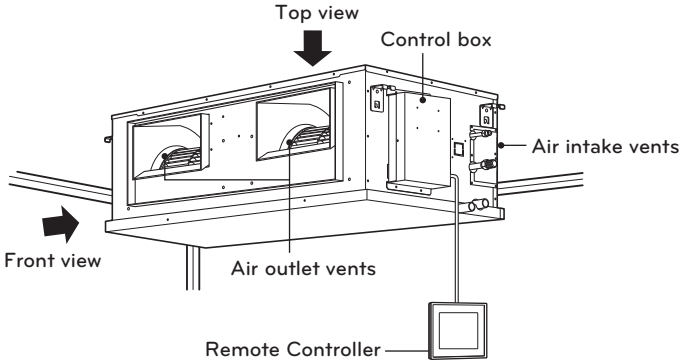
Installation process

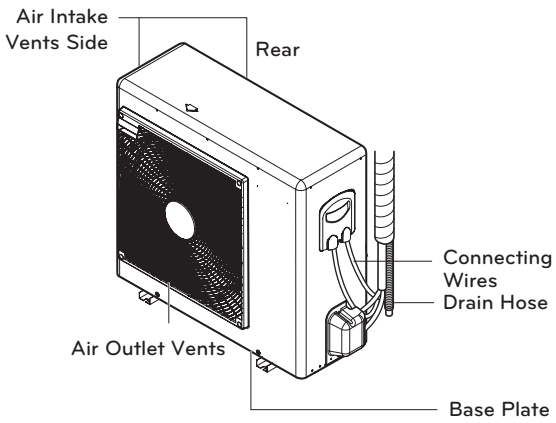


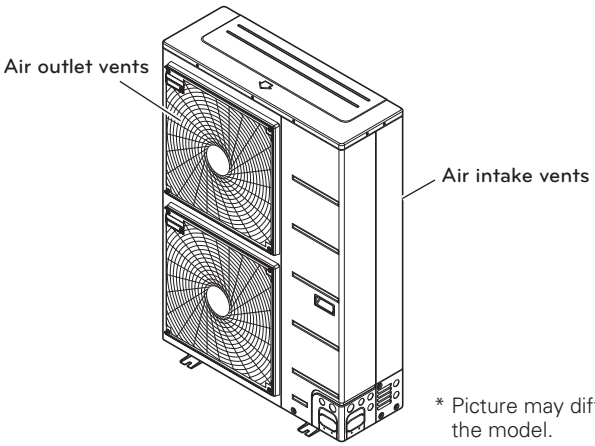
⚠ CAUTION

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

Features







* Picture may differ depending on the model.

Environment-friendly alternative refrigerant R-410A

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

⚠ CAUTION

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

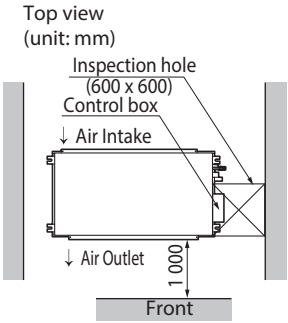
INSTALLATION PLACE

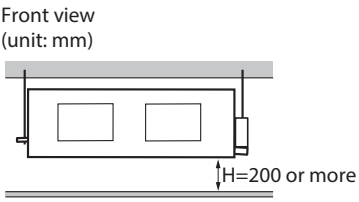
Select space for installing outdoor unit, which will meet the following conditions:

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

Indoor unit installation place

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

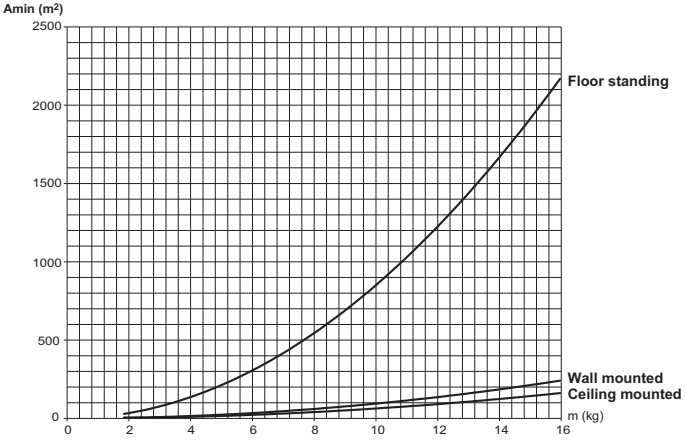




* Suitable dimension "H" is necessary to get a slope to drain.

Minimum floor area (for R32)

- The appliance shall be installed, operated and stored in a room with a floor area larger than the minimum area.
- Use the graph of table to determine the minimum area.



- m : Total refrigerant amount in the system
- Total refrigerant amount : factory refrigerant charge + additional refrigerant amount
- Amin : minimum area for installation

Floor standing	
m (kg)	Amin (m²)
< 1.842	-
1.842	28.88
2.00	34.04
2.20	41.19
2.40	49.02
2.60	57.53
2.80	66.72
3.00	76.60
3.20	87.15
3.40	98.39
3.60	110.30
3.80	122.90
4.00	136.17
4.20	150.13
4.40	164.77
4.60	180.09
4.80	196.09
5.00	212.77
5.20	230.13
5.40	248.18
5.60	266.90
5.80	286.30
6.00	306.39
6.20	327.16
6.40	348.60
6.60	370.73
6.80	393.54
7.00	417.03
7.20	441.20
7.40	466.05
7.60	491.59
7.80	517.80
8.00	544.69
8.20	572.27
8.40	600.52
8.60	629.46
8.80	659.08

Floor standing	
m (kg)	Amin (m²)
9.00	689.38
9.20	720.36
9.40	752.02
9.60	784.36
9.80	817.38
10.00	851.08
10.20	885.47
10.40	920.53
10.60	956.28
10.80	992.70
11.00	1029.81
11.20	1067.60
11.40	1106.07
11.60	1145.22
11.80	1185.05
12.00	1225.56
12.20	1266.75
12.40	1308.62
12.60	1351.18
12.80	1394.41
13.00	1438.33
13.20	1482.93
13.40	1528.20
13.60	1574.16
13.80	1620.80
14.00	1668.12
14.20	1716.12
14.40	1764.80
14.60	1814.17
14.80	1864.21
15.00	1914.94
15.20	1966.34
15.40	2018.43
15.60	2071.19
15.80	2124.64
15.964	2168.98

Wall mounted	
m (kg)	Amin (m²)
< 1.842	-
1.842	4.44
2.00	4.83
2.20	5.31
2.40	5.79
2.60	6.39
2.80	7.41
3.00	8.51
3.20	9.68
3.40	10.93
3.60	12.26
3.80	13.66
4.00	15.13
4.20	16.68
4.40	18.31
4.60	20.01
4.80	21.79
5.00	23.64
5.20	25.57
5.40	27.58
5.60	29.66
5.80	31.81
6.00	34.04
6.20	36.35
6.40	38.73
6.60	41.19
6.80	43.73
7.00	46.34
7.20	49.02
7.40	51.78
7.60	54.62
7.80	57.53
8.00	60.52
8.20	63.59
8.40	66.72
8.60	69.94
8.80	73.23

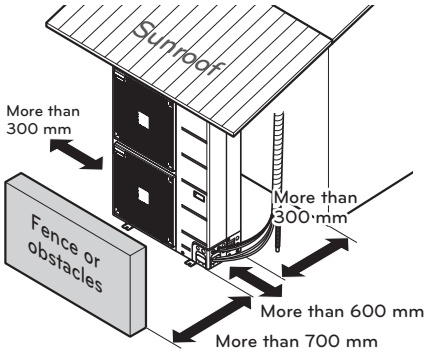
Wall mounted	
m (kg)	Amin (m²)
9.00	76.60
9.20	80.04
9.40	83.56
9.60	87.15
9.80	90.82
10.00	94.56
10.20	98.39
10.40	102.28
10.60	106.25
10.80	110.30
11.00	114.42
11.20	118.62
11.40	122.90
11.60	127.25
11.80	131.67
12.00	136.17
12.20	140.75
12.40	145.40
12.60	150.13
12.80	154.93
13.00	159.81
13.20	164.77
13.40	169.80
13.60	174.91
13.80	180.09
14.00	185.35
14.20	190.68
14.40	196.09
14.60	201.57
14.80	207.13
15.00	212.77
15.20	218.48
15.40	224.27
15.60	230.13
15.80	236.07
15.964	241.00

Ceiling Mounted	
m (kg)	Amin (m²)
< 1.842	-
1.842	3.64
2.00	3.95
2.20	4.34
2.40	4.74
2.60	5.13
2.80	5.53
3.00	5.92
3.20	6.48
3.40	7.32
3.60	8.20
3.80	9.14
4.00	10.13
4.20	11.17
4.40	12.26
4.60	13.40
4.80	14.59
5.00	15.83
5.20	17.12
5.40	18.46
5.60	19.85
5.80	21.30
6.00	22.79
6.20	24.33
6.40	25.93
6.60	27.58
6.80	29.27
7.00	31.02
7.20	32.82
7.40	34.67
7.60	36.56
7.80	38.51
8.00	40.51
8.20	42.57
8.40	44.67
8.60	46.82
8.80	49.02

Ceiling Mounted	
m (kg)	Amin (m²)
9.00	51.28
9.20	53.58
9.40	55.94
9.60	58.34
9.80	60.80
10.00	63.30
10.20	65.86
10.40	68.47
10.60	71.13
10.80	73.84
11.00	76.60
11.20	79.41
11.40	82.27
11.60	85.18
11.80	88.14
12.00	91.16
12.20	94.22
12.40	97.34
12.60	100.50
12.80	103.72
13.00	106.98
13.20	110.30
13.40	113.67
13.60	117.09
13.80	120.56
14.00	124.08
14.20	127.65
14.40	131.27
14.60	134.94
14.80	138.66
15.00	142.43
15.20	146.26
15.40	150.13
15.60	154.06
15.80	158.03
15.964	161.33

Outdoor unit installation place

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



* Picture may differ depending on the model.

Unit : mm

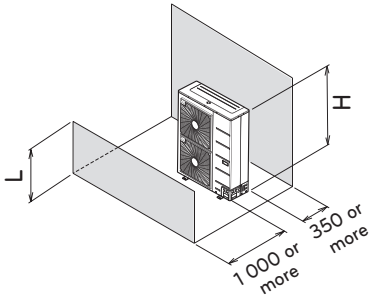
- Place that can sufficiently endure the weight and vibration of the outdoor unit and where even installation is possible.
- Place that has no direct influence of snow or rain
- Place with no danger of snowfall or icicle drop
- Place without weak floor or base such as decrepit part of the building or with a lot of snow accumulation
- Install at a place with fluent water draining to prevent damage from localized heavy rain and avoid frequent flooded area.

Obstacle height of discharge side is lower than the unit

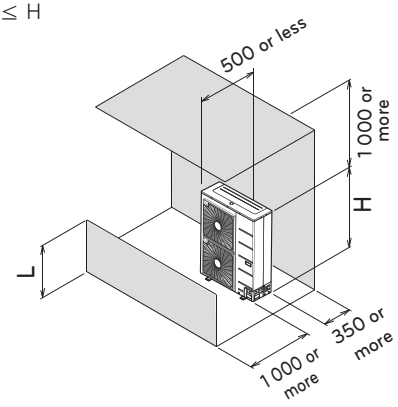
1. Stand alone installation

[Unit:mm]

L ≤ H

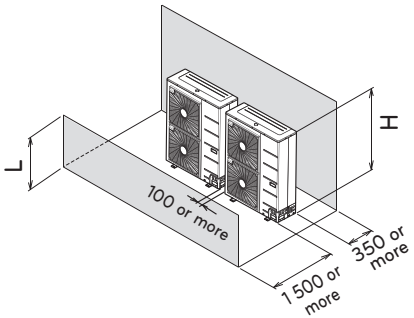


L ≤ H

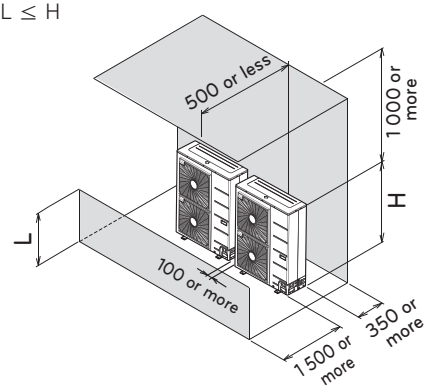


2. Collective installation

L ≤ H



L ≤ H



* Picture may differ depending on the model.

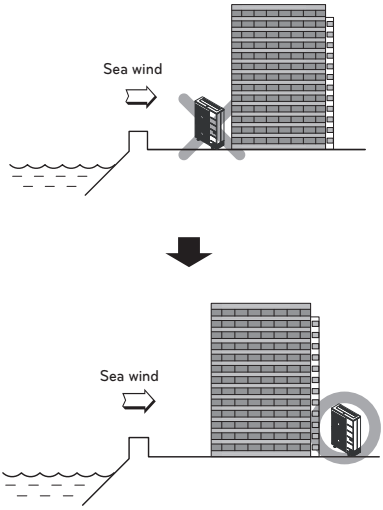
Installation guide at the seaside

⚠ CAUTION

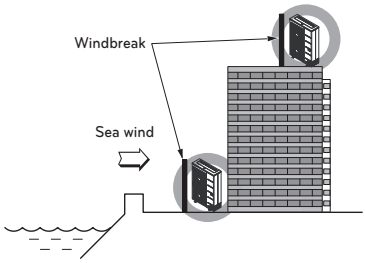
- Air conditioners should not be installed in areas where corrosive gases, such as acid or alkaline gas, are produced.
- Do not install the product where it could be exposed to sea wind (salty wind) directly. It can result corrosion on the product. Corrosion, particularly on the condenser and evaporator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

Place with fluent water draining

- Install at a place with fluent water draining to prevent damage from localized heavy rain and avoid frequent flooded area.

- If you can't meet above guide line in the seaside installation, please contact LG Electronics for the additional anticorrosion treatment.
- Periodic (more than once/year) cleaning of the dust or salt particles stuck on the heat exchanger by using water

THE INDOOR UNIT INSTALLATION

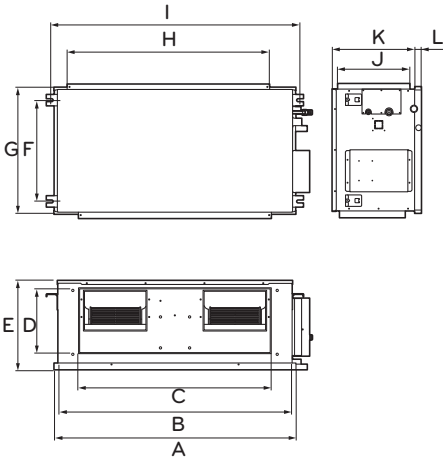
Install the unit above the ceiling correctly

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.

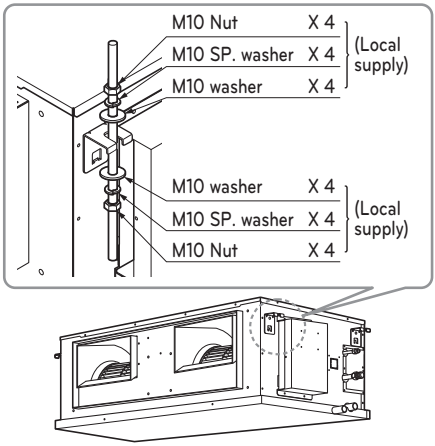
Dimension / Capacity (kW)	A	B	C	D	E	F	G	H	I	J	K	L
8.8 / 10.5 / 12.5 / 15	1 352	1 320	840	287	400	441	563	1 172	1 365	317	360	40



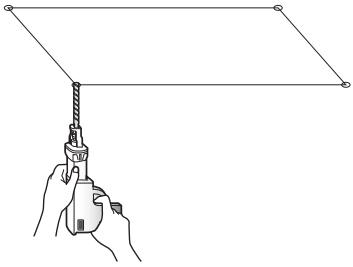
Case2

Position of Console Bolt

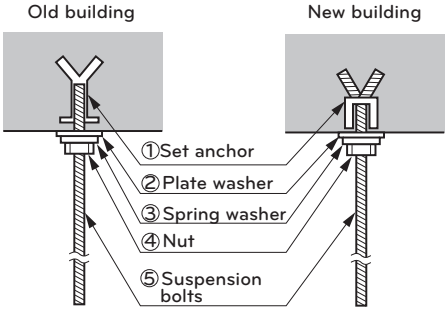
- A place where the unit will be leveled and that can support the weight of the unit.
- A place where the unit can withstand its vibration.
- A place where service can be easily performed.



- 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

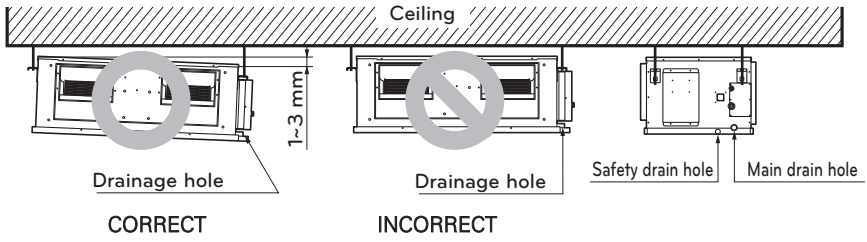
⚠ CAUTION

Tighten the nut and bolt to prevent unit falling.

⚠ CAUTION

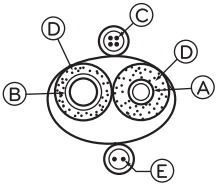
1 Install declination of the indoor unit is very important for the drain of the duct type air conditioner.

2 Minimum thickness of the insulation for the connecting pipe shall be 10 mm.

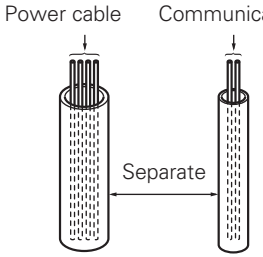


Thermal Insulation of refrigerant pipe

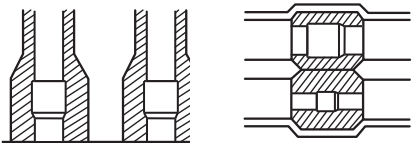
- Loosen the flare nut of the indoor unit's piping connection port, insert it into the liquid pipe and the gas pipe, and then conduct flaring work on the ends of each pipe.
- Insulate each of the liquid pipes and gas pipes using insulation material for piping.



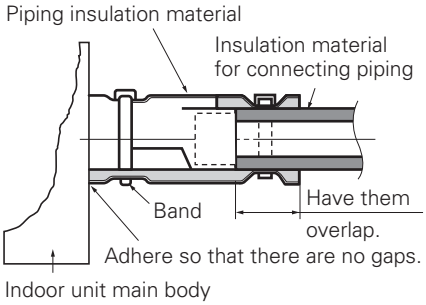
Ⓐ Liquid piping
Ⓑ Gas piping
Ⓒ Power cable
Ⓓ Insulation material
Ⓔ Communication cable



Fully insulate the connection parts.



- Use the piping insulation included in the accessories to once again insulate the piping connection part of the gas pipe as shown below. (Piping insulation must be at least 19 mm thick)



Applies to	Insulation material standard (mm) (besides normal conditions for residential use)		Insulation material Standard (mm) - residential		Insulation material standard (mm) (unfavorable conditions)
			If installed in an air-conditioned place (CASE 1) (ex: bedroom, living room, etc.)	If installed in a non-air-conditioned place (CASE 2) (ex: hallway, outdoors, etc.)	
	Refrigerant piping dimensions (mm)	EPDM	EPDM	EPDM	EPDM
Gas piping	6.35	19	13	19	19
	9.52	19	13	19	25
	12.7	19	13	19	25
	15.88	19	13	19	25
	19.05	19	13	19	25
	22.22	19	13	19	32
	25.40	19	19	19	32
	28.58	19	19	19	32
	31.75	19	19	19	32
	38.1	25	19	25	32
	44.45	25	19	25	32
Liquid piping	6.35 9.52	9	9	9	9
	12.7~ 44.45	13	13	13	13

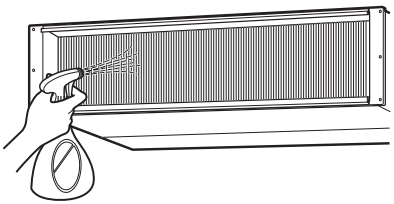
- Normal conditions: Temperature of 30 °C, relative humidity of 85 %
- Unfavorable conditions: Temperature of 30 °C, relative humidity of 90 % (humid places such as bathrooms, swimming pools, etc.: air supply and exhaust fan installation)

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.

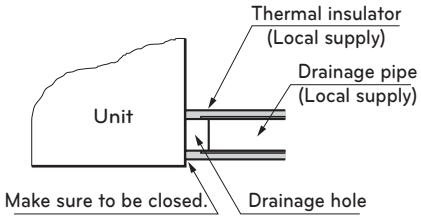


Caution for gradient of unit and drainage pipe

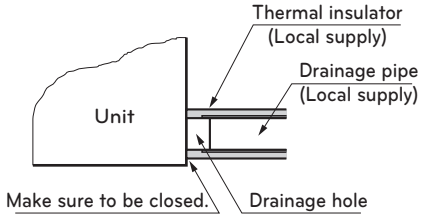
Lay the drainage pipe hose with a downward inclination so water will drain out.

Main drain

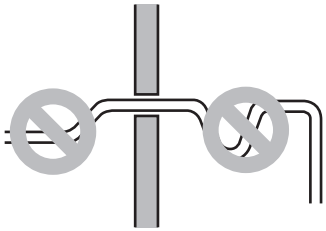
- Always lay the drainage with downward inclination (0.8˚ to 1.3˚).
  Prevent any upward flow or reverse flow in any part.
- 10 mm or thicker formed thermal insulator shall always be provided for the drainage pipe.



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

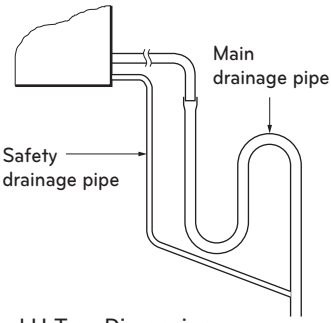


- Upward routing not allowed

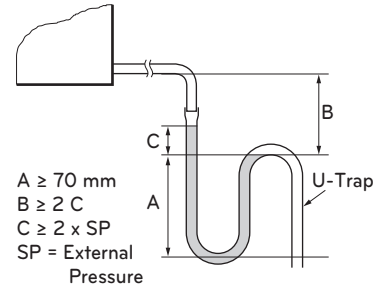


Safety drainage

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



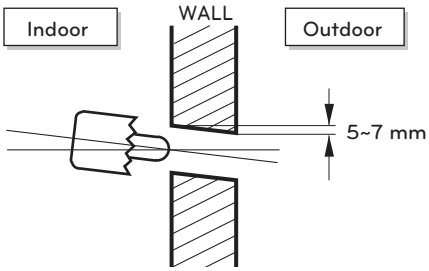
Applied U-Trap Dimension



A ≥ 70 mm
B ≥ 2 C
C ≥ 2 x SP
SP = External Pressure (mmAq)

Ex) External Pressure = 10 mmAq
A ≥ 70 mm
B ≥ 40 mm
C ≥ 20 mm

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



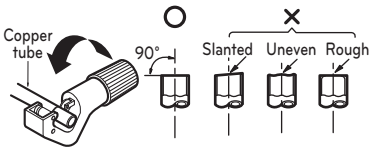
CONNECTING PIPES

Preparation of Piping

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

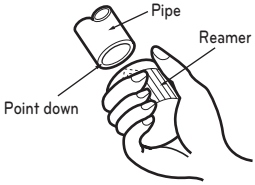
Cut the pipes and the cable

- Use the piping kit accessory 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 1.5 m longer than the pipe length.



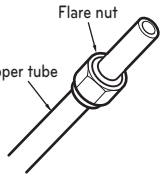
Burrs removal

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



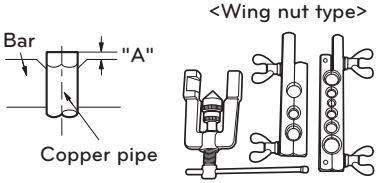
Putting nut on

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

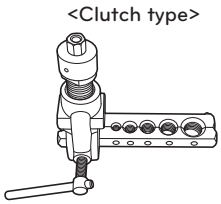


Flaring work

- Carry out flaring work using flaring tool as shown below.



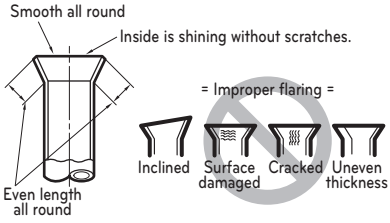
Pipe diameter Inch (mm)	A Inch (mm)	
	Wing nut type	Clutch type
Ø 1/4 (Ø 6.35)	0.04~0.05 (1.1~1.3)	0~0.02 (0~0.5)
Ø 3/8 (Ø 9.52)	0.06~0.07 (1.5~1.7)	
Ø 1/2 (Ø 12.7)	0.06~0.07 (1.6~1.8)	
Ø 5/8 (Ø 15.88)	0.06~0.07 (1.6~1.8)	
Ø 3/4 (Ø 19.05)	0.07~0.08 (1.9~2.1)	



Firmly hold copper pipe in a bar in the dimension shown in the table below.

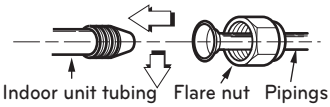
Check

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

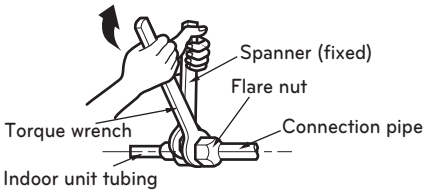


Connecting the pipings to the indoor unit and drain hose to drain pipe

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

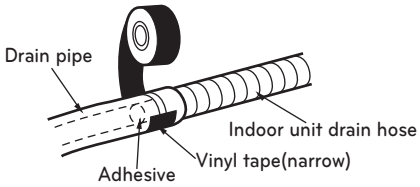


- Tighten the flare nut with a wrench.



Outside diameter		Torque
mm	inch	kg.m
Ø 6.35	1/4	1.8~2.5
Ø 9.52	3/8	3.4~4.2
Ø 12.7	1/2	5.5~6.6
Ø 15.88	5/8	6.6~8.2
Ø 19.05	3/4	9.9~12.1

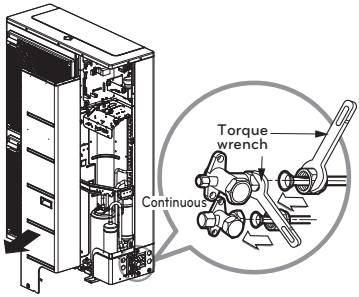
- When extending the drain hose at the indoor unit, install the drain pipe.

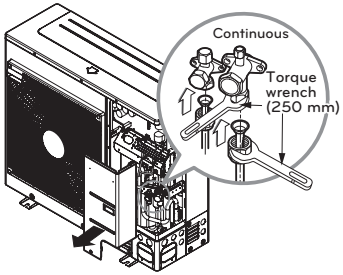


Connecting the pipes to the Outdoor unit

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.
- When tighten the pipe, hold the haxagonal body.

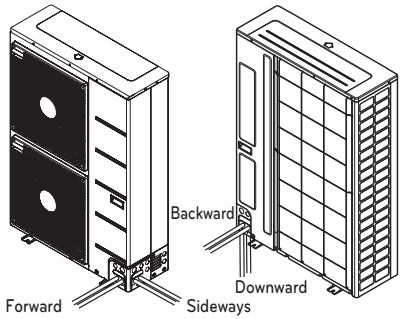




Align the center of the piping and sufficiently tighten the flare nut by hand.

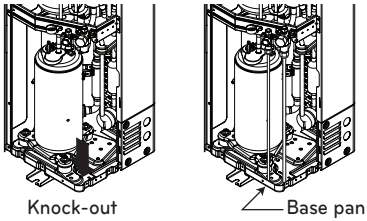
- The installation piping is connectable in four directions.(refer to figure 1)

<Figure 1>



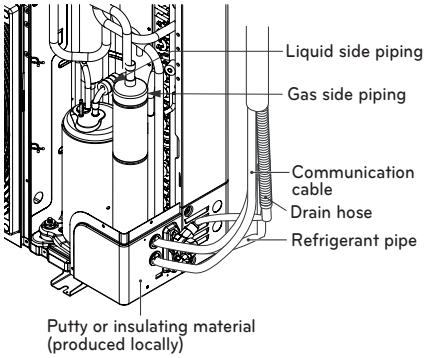
- When connecting in a downward direction, knock out the knockout hole of the base pan. (refer to figure 2)

<Figure 2>



Preventing foreign objects from entering (Figure3)

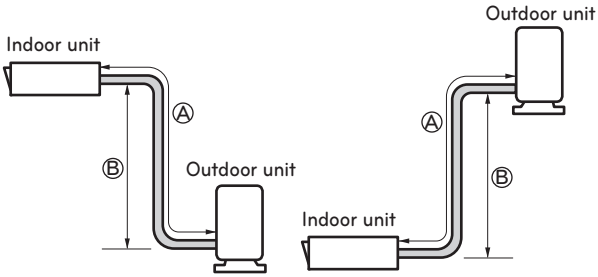
- Plug the pipe through-holes with putty or insulation material(procured locally)to stop up all gaps,as shown in the figure 3.
- Insects or small animals entering the outdoor unit may cause a short circuit in the electrical box.



PIPING LENGTH AND THE ELEVATION

Capacity (kW)	Pipe Size mm(inch)		Length A(m)		Elevation B(m)		*Additional refrigerant (g/m)
	Gas	Liquid	Standard	Max.	Standard	Max.	
8.8	15.88(5/8)	9.52(3/8)	10	30	0	25	50
10.5/12.5/15	15.88(5/8)	9.52(3/8)	20	75	0	30	50

If installed tube is shorter than 20 m, additional charging is not necessary
Additional Refrigerant = (A-20) x Additional refrigerant (g)



⚠ CAUTION

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

⚠ WARNING

- Regulation for refrigerant leakage
  : the amount of refrigerant leakage should satisfy the following equation for human safety.

$$\frac{\text{Total amount of refrigerant in the system}}{\text{Volume of the room at which Indoor Unit of the least capacity is installed}} \leq 0.44 \text{ (kg / m}^3\text{)}$$

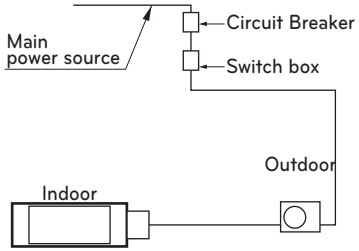
If the above equation can not be satisfied, then follow the following steps.

- Selection of air conditioning system: select one of the next
  - Installation of effective opening part
  - Reconfirmation of Outdoor Unit capacity and piping length
  - Reduction of the amount of refrigerant
  - Installation of 2 or more security device (alarm for gas leakage)
- Change Indoor Unit type
  : installation position should be over 2 m from the floor (Wall mounted type → Cassette type)
- Adoption of ventilation system
  : choose ordinary ventilation system or building ventilation system
- Limitation in piping work
  : Prepare for earthquake and thermal stress

WIRING CONNECTION

Electrical Wiring

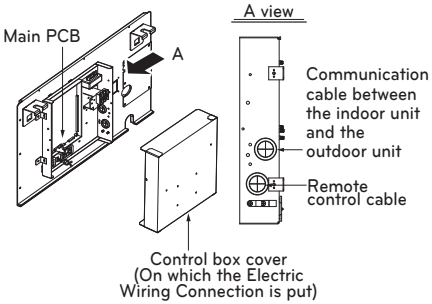
- All wiring must comply with local requirements.
- Select a power source that is capable of supplying the current required by the air conditioner.
- Use a recognized circuit breaker between the power source and the unit. A disconnection device to adequately disconnect all supply lines must be fitted.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



Capacity (kW)	Phase(Ø)	Circuit Breaker
8.8	1	25 A
10.5/12.5/15	1	40 A

Indoor unit

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

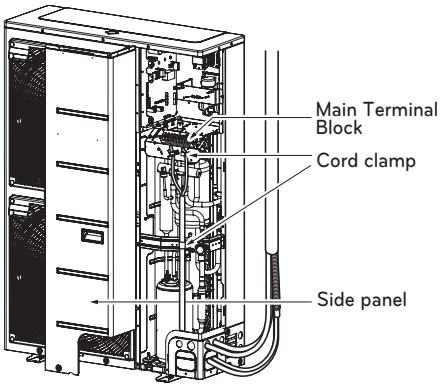


Outdoor unit

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

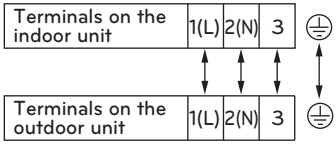


⚠ CAUTION

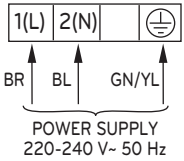
- The circuit diagram is not subject to change without notice.
- Be sure to connect wires according to the wiring diagram.
- Connect the wires firmly, so that not to be pulled out easily.
- Connect the wires according to color codes by referring the wiring diagram.
- The Power cable connected to the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

Connecting cables to the Indoor Unit

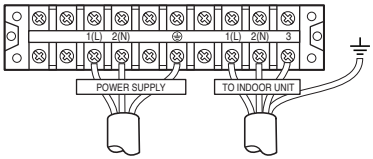
- Connect the wires to the terminals on the control board individually according to the outdoor unit connection.
  * Ensure that the color of the wires of outdoor unit.



<Indoor>



<Outdoor>



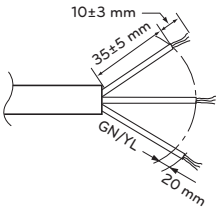
Capacity (kW)	Mode	Max. Current
8.8	Cooling	17 A
	Heating	17 A
10.5	Cooling	29 A
	Heating	29 A
12.5	Cooling	29 A
	Heating	29 A
15	Cooling	29 A
	Heating	29 A

⚠ 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 1.0 mm^2 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 1.8 m.



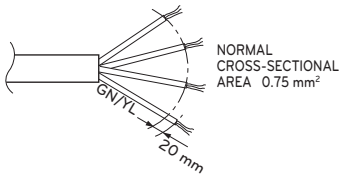
Capacity (kW)	Phase(Ø)	Area(mm^2)
8.8	1	2.5
10.5/12.5/15	1	6

⚠ 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 availible from the manufacturer of its service agent.

⚠ CAUTION

- The connecting cable connected to the indoor and outdoor unit should be complied with the following specifications (Rubber insulation, type H05RN-F approved by HAR or SAA).

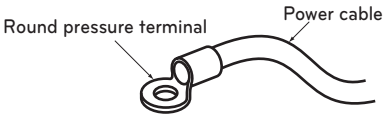


Rated current of appliance A.	Nominal cross-sectional area mm^2
≤ 0.2	Tinsel cord
> 0.2 and ≤ 3	0.5
> 3 and ≤ 6	0.75
> 6 and ≤ 10	1.0 (0.75)
> 10 and ≤ 16	1.5 (1.0)
> 16 and ≤ 25	2.5
> 25 and ≤ 32	4
> 32 and ≤ 40	6
> 40 and ≤ 63	10

NOTE For **supply cords** supplied with multi-phase appliances, the nominal cross-sectional area of the conductors is based on the maximum cross-sectional area of the conductors per phase at the **supply cord** connection to the appliance terminals.

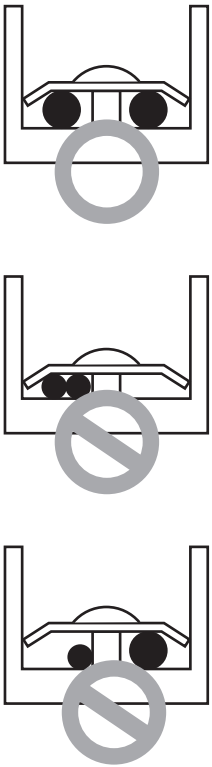
Precautions when laying power wiring

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



When none are available, follow the instructions below.

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

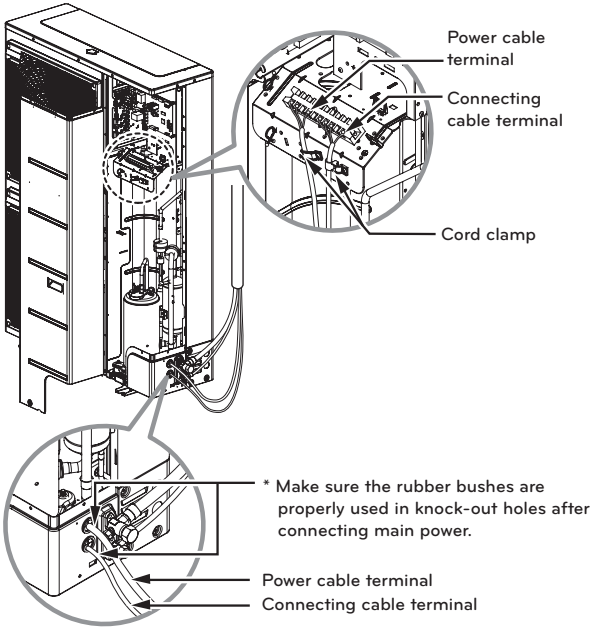


- For wiring, use the designated power cable and connect firmly, then secure to prevent outside pressure being exerted on the terminal block.
- Use an appropriate screwdriver for tightening the terinal screws. A screwdriver with a small head will strip the head and make proper tighterning impossible.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

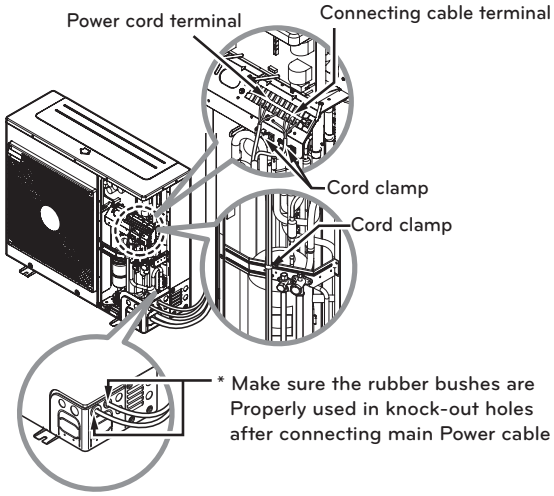
Connecting the cable to the Outdoor Unit

- 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 (clamp).
- Refix the cover control to the original position with the screw.

<10.5 / 12.5 / 15 kW>



<8.8 kW>



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

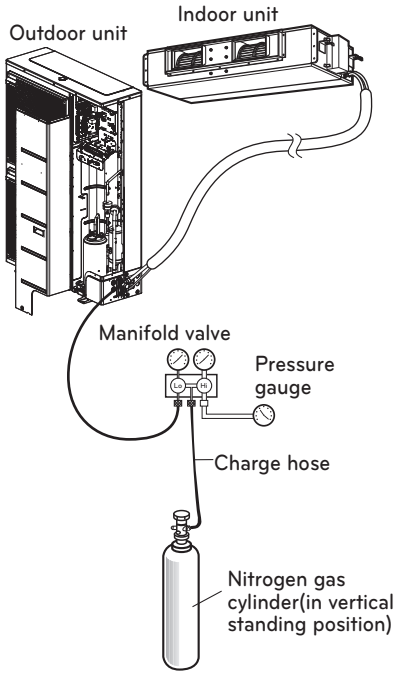
Be sure to use a manifold valve for leakage test. If it is not available, use a stop valve for this purpose. The "Hi" knob of the manifold valve must always be kept close.

- Pressurize the system to no more than 3.8 MPa with dry nitrogen gas and close the cylinder valve when the gauge reading reached 3.8 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.

- 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.
- 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

- 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.

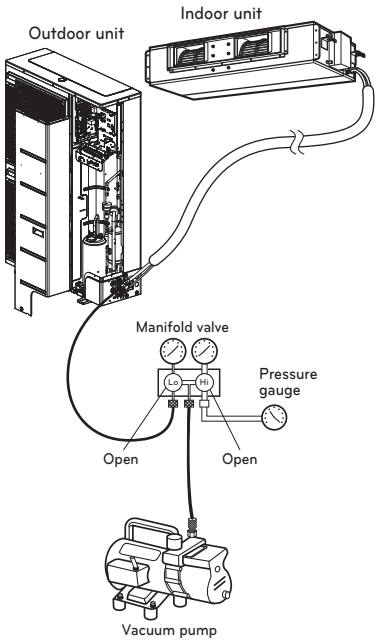
Required time for evacuation when 30 gal / h vacuum pump is used	
If tubing length is less than 10 m(33 ft)	If tubing length is longer than 10 m(33 ft)
30 minutes or more	60 minutes or more
0.07 kPa or less	

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

Finishing the Job

- With a service valve wrench, turn the valve stem of liquid side valve counter-clockwise to fully open the valve.
- Turn the valve stem of gas side valve counter-clockwise to fully open the valve.
- Loosen the charge hose connected to the gas side service port slightly to release the pressure, then remove the hose.
- 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.
- 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.



TEST RUNNING

Precautions 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

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.

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

- The test run is started by pressing the room temperature checking button and down timer button for 3 seconds at the same time.
- 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?

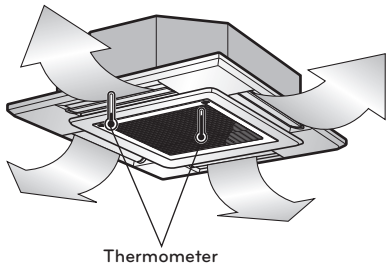
M4.....118 N·cm {12 kgf·cm}
M5.....196 N·cm {20 kgf·cm}
M6.....245 N·cm {25 kgf·cm}
M8.....588 N·cm {60 kgf·cm}

Connection of power supply

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

Evaluation of the performance

- Measure the temperature of the intake and discharge air.
- 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.

FORMING THE PIPING

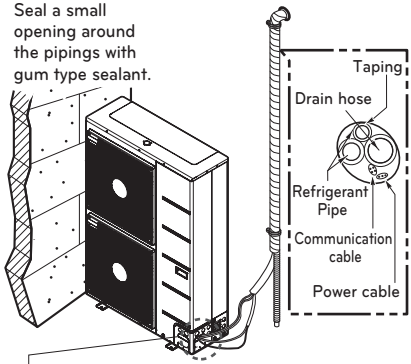
Form the piping by wrapping the connecting portion of the indoor unit with insulation material and secure it with two kinds of vinyl tape.

- 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.



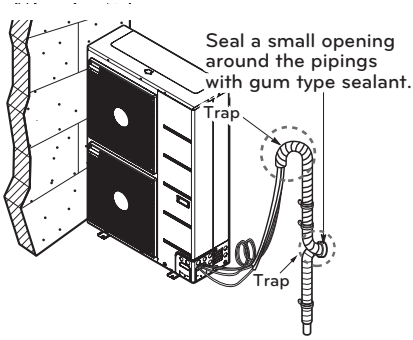
• Trap is required to prevent water from entering into electrical parts.

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.

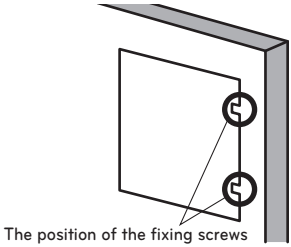


* Picture may differ depending on the model.

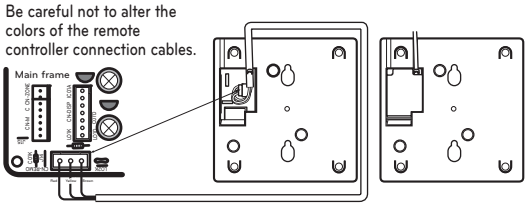
REMOTE CONTROLLER INSTALLATION

Wired remote controller installation

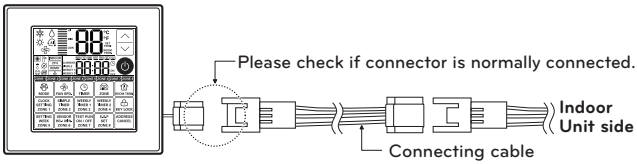
1 Put the installation paper on the place and determine the position and height of the fixing screws of the deluxe wired remote controller.
- Refer to the printed side of the installation paper.



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



12 V	Red
Signal	Yellow
GND	Black

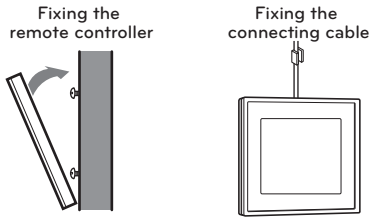


⚠ CAUTION

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

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

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



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

Location of remote controller

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

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

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

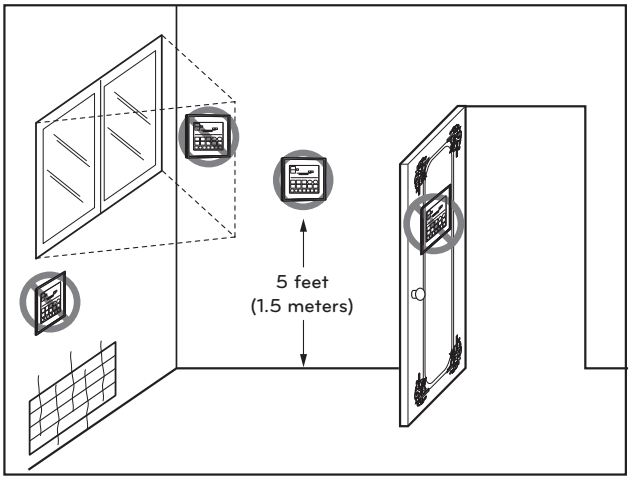


Fig.1 Typical locations for remote controller

SETTING & TEST

Capacity (kW)	Step	Air Flow (L/s)	Static Pressure [Pa]										
			50	60	80	90	100	120	130	140	160	180	200
			Function code (Setting Value)										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
8.8	High	533	72	75	82	84	88	94	98	101	105	111	115
	Mid	433	67	71	78	80	84	90	94	97	101	107	111
	Low	333	63	67	74	76	80	84	90	93	97	103	107
10.5	High	700	80	83	89	92	94	100	103	106	110	116	119
	Mid	600	76	78	84	88	90	96	99	102	106	112	115
	Low	467	70	72	80	83	84	92	95	98	102	108	111

Capacity (kW)	Step	Air Flow (L/s)	Static Pressure [Pa]										
			60	70	80	90	100	120	130	140	160	180	200
			Function code (Setting Value)										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
12.5	High	833	86	89	92	94	98	101	106	109	116	118	122
	Mid	717	80	84	86	89	92	97	101	105	111	114	118
	Low	600	74	78	80	84	88	93	97	100	107	110	114

Capacity (kW)	Step	Air Flow (L/s)	Static Pressure [Pa]										
			60	70	80	90	100	120	130	140	160	180	200
			Function code (Setting Value)										
			32:01	32:02	32:03	32:04	32:05	32:06	32:07	32:08	32:09	32:10	32:11
15	High	1 000	94	97	100	101	105	110	114	116	119	122	125
	Mid	833	86	89	92	94	98	101	106	108	115	117	121
	Low	667	78	80	84	85	90	96	100	101	110	112	117

※ Setting of code 32 is applied for only Standard & Premium remote controller

NOTE

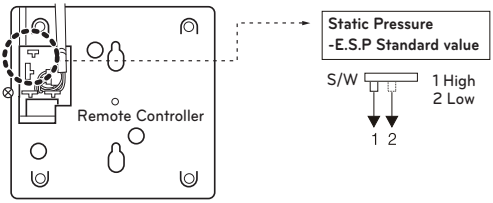
1. Be sure to set the value refering table 1. Unexpected set value will cause mal-function.
2. Table 1 is based at 230 V. According to the fluctuation of voltage, air flow rate varies.
3. Factory Set(External Static Pressure) each Model

Capacity (kW)	Factory set (E.S.P) Pa(mmAq)
8.8 / 10.5	60 (6.1)
12.5	70 (7.1)
15	80 (8.2)

* If it is zero static pressure, please set value below Maximum value.

Capacity (kW)	Maximum value
8.8	75
10.5	93
12.5	92
15	100

How to set Remote Controller's Switch 2

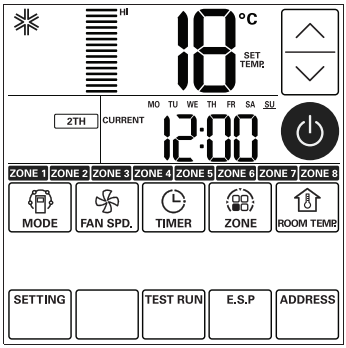


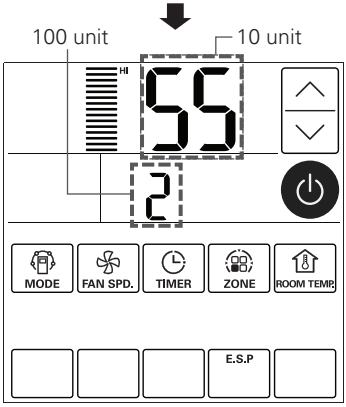
Installer Setting - E.S.P Function

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

⚠ CAUTION

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





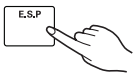
1 Press ZONE button to appear SETTING button on the screen. mode.



2 Press the SETTING button for 3 seconds.



3 Press the E.S.P button.



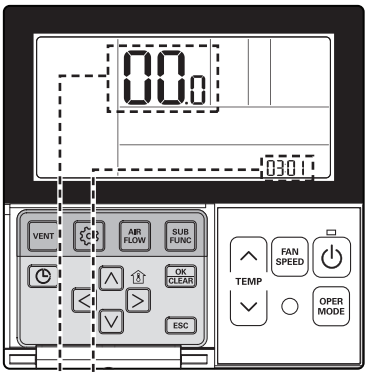
4 Set the volume of each air flow (LOW→MID→HI) by using the button. Press the FAN SPD. button to select the air flow. (The value of E.S.P could be adjusted from 1 to 255.) (The figure on the left shows when the strong wind's E.S.P value has been set to 255.)



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



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

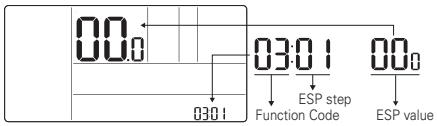


- When setting ESP value on the product without very weak wind or power wind function, it may not work.
- Please be careful not to change the ESP value for each fan step.
- It does not work to setup ESP value for very low/power step for some products.
- ESP value is available for specific range belongs to the product.

1 If pressing [⚙] button long for 3 seconds, it enters into remote controller setter setup mode.
- If pressing once shortly, it enters into user setup mode. Please press more than 3 seconds for sure.

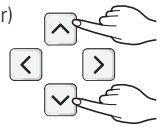


2 If entering into ESP setup mode by using [⚙] button, it indicates as the picture below.



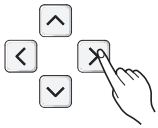
3 Select ESP fan step by pressing [∧] [∨] button. (01: very low, 02: low, 03: medium, 04: high, 05: power)

0301



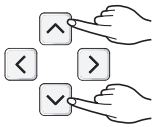
4 Move to ESP value setting by pressing [>] button.
(It is 000 when delivering from the warehouse.)

0301 000



5 Press [∧] [∨] button to setup ESP value.

(It is possible to setup ESP value from 1 to 255, and 1 is the smallest and 255 is the biggest.)



6 Select ESP fan step again by using [<] [>] button and setup ESP value, as No. 4 and 5, that corresponds each wind flow

7 Press [OK CLEAR] button to save.



8 Press [ESC] button to exit.
- ❊ After setup, it automatically gets out of setup mode if there is no button input for 25 seconds.
- ❊ When exiting without pressing set button, the manipulated value is not reflected.

Installer Setting - Auto ESP

This function automatically sets the rotation speed of the fans corresponding to each step of rated airflow for easy installation.

Please refer to the manual for separately sold remote control for detailed setup.

NOTE

If this function is incorrectly set especially, in case of mismatching the voltage, the air conditioner may malfunction.

this function must be set by the installation specialist that holds an installation license. (please check the product type)

This function is only available on some products.

NOTE

- If the heat exchanger is not dry, please set the device to operate in air circulation mode for 15 minutes.
- The air filter must be properly attached to the suction side of the product.
- Adjust the dampers so that each air inlet and outlet exhaust the required air.
- Please do not use the set auto air flow function when using various booster fans (outdoor air treatment device or ERV through ducts).
- Please reinitiate the set auto air flow function if the duct shape has changed since its initial installation.
- When setting the voltage manually, the set air flow will differ from the actual air flow if the set voltage is different from the actual voltage.
- When setting voltage manually, measure the actual voltage and select the set voltage on the remote control.
- Failure to follow the above method may cause the actual air flow to differ from the rated air flow.

Self-diagnosis function

Error Indicator

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

Error Display

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

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

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

Indoor Unit Error

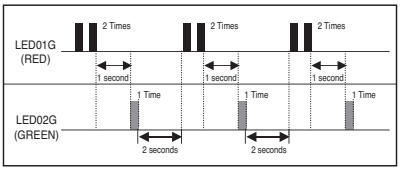
Ex) Error 03 (Remote controller error)

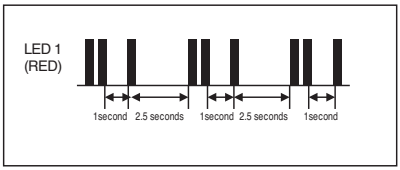
Error Code	Description	LED 1 (Red)	LED 2 (Green)	Indoor status
01	Indoor Room sensor error	0	1 time ◑	OFF
02	Indoor in-pipe sensor error	0	2 times ◑	OFF
03	Remote controller error	0	3 times ◑	OFF
04	Drain pump error	0	4 times ◑	OFF
05	Communication error indoor and outdoor	0	5 times ◑	OFF
06	Indoor out-pipe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

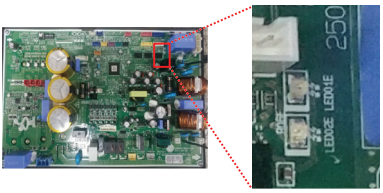
❊ Because remote controller turn off when occur ERROR in simultaneous operation system, it should check LED blinks of outdoor in order to confirm error code.

❊ Repeatedly after LED 1 is turned on and off as the Error code number of tens digit, LED 2 is turned on and off as the Error code number of single-digit.

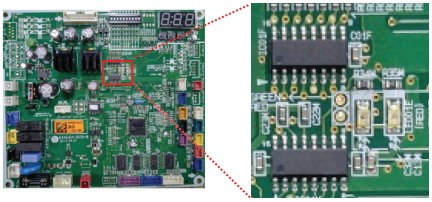
Error Indicator (Outdoor)







8.8 kW



10.5 kW / 12.5 kW / 15 kW

Code	Contents	Operation State	Error Display			Count
			Cable Remote Controller	Outdoor Device		
				Red LED	Green LED	
21	IPM Fault Error	Stop	CH21	Flashing 2 times	Flashing 1 time	10 time Within 1h
22	CT 2 Error (Input of Over-Current)	Stop	CH22	Flashing 2 times	Flashing 2 times	Infinite restart
23	DC Link Error (High/Low DC Voltage)	Stop	CH23	Flashing 2 times	Flashing 3 times	Infinite restart
25	Input Frequency Detection Failure	Stop	CH25	Flashing 2 times	Flashing 5 times	1 time Within 1h
26	DC Comp Position Detection Error	Stop	CH26	Flashing 2 times	Flashing 6 times	1 time Within 1h
27	PSC/PFC Over-Current Error (HW)	Stop	CH27	Flashing 2 times	Flashing 7 times	10 time Within 1h
29	Comp Phase Over-Current Error	Stop	CH29	Flashing 2 times	Flashing 9 times	10 time Within 1h
32	D-Pipe Overheating Error (INV Comp)	Stop	CH32	Flashing 3 times	Flashing 2 times	Infinite restart
33	D-Pipe Overheating Error (Constant-rate Comp)	Stop	CH33	Flashing 3 times	Flashing 3 times	Infinite restart
35	Low Pressure Error of Outdoor Unit	Stop	CH35	Flashing 3 times	Flashing 5 times	6 time Within 1h
38	Refrigerant Leakage Error	Stop	CH38	Flashing 3 times	Flashing 5 times	4 time Within 3h
41	D-Pipe Sensor Error (INV Comp)	Stop	CH41	Flashing 4 times	Flashing 1 time	1 time Within 1h
43	High pressure Sensor Error	Stop	CH43	Flashing 4 times	Flashing3 time	1 time Within 1h
44	Outdoor Inlet Sensor Error	Stop	CH44	Flashing 4 times	Flashing 4 times	1 time Within 1h

Code	Contents	Operation State	Error Display			Count
			Cable Remote Controller	Outdoor Device		
				Red LED	Green LED	
45	Cond. Pipe Sensor Error	Stop	CH45	Flashing 4 times	Flashing 5 times	1 time Within 1h
46	Suction Pipe Sensor Error	Stop	CH46	Flashing 4 times	Flashing 6 times	1 time Within 1h
47	D-Pipe Sensor Error (Constant-rate Comp)	Stop	CH47	Flashing 4 times	Flashing 7 times	1 time Within 1h
51	Over-Capacity Connection Error	Stop	CH51	Flashing 5 times	Flashing 1 time	1 time Within 1h
53	Communication Error between Outdoor Device Indoor Device	Stop	CH53	Flashing 5 times	Flashing 3 times	1 time Within 1h
60	EEPROM Check Sum Error	Stop	CH60	Flashing 6 times	-	1 time Within 1h
61	Outdoor Device Pipe Overheating Error	Stop	CH61	Flashing 6 times	Flashing 1 time	Infinite restart
62	Heat-sink Overheating Error	Stop	CH62	Flashing 6 times	Flashing 2 times	Infinite restart
65	Heat-sink Sensor Error	Stop	CH65	Flashing 6 times	Flashing 5 times	1 time Within 1h
67	Outdoor BLDC Fan Lock Error	Stop	CH67	Flashing 6 times	Flashing 7 times	10 time Within 1h
73	PSC/PFC Over-Current Error (SW)	Stop	CH73	Flashing 7 times	Flashing 3 times	10 time Within 1h

DIP switch setting

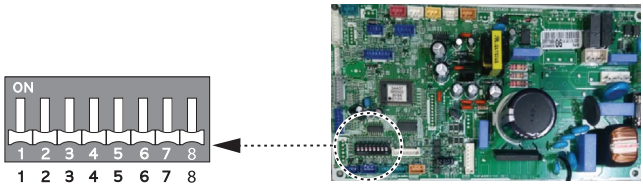
⚠ WARNING

When you set the DIP switch, you should turn off the circuit breaker or shut the power source of the product down.

⚠ CAUTION

- Unless the applicable DIP switch is set properly, the product may not work.
- If you want to set a specific function, request that the installer sets the DIP switch appropriately during installation.

Indoor Unit



▲ Factory Set : All OFF

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

Outdoor Unit

If you set the DIP Switch when power is on, the change in setting is not applicable.
The changing setting is enabled only when Power is reset.

DIP Switch		Function
1	2	
		Normal Operation (No Function)
		Pump Down
		Saving Power Consumption (Step 1)
		Saving Power Consumption (Step 2)
		Mode Lock (Cooling)
		Mode Lock (Heating)
		Night Quiet Mode (Step 1)
		Night Quiet Mode (Step 2)
		Mode Lock (Cooling) + Night Quiet Mode (Step 1)
		Mode Lock (Cooling) + Night Quiet Mode (Step 2)
		Mode Lock (Cooling) + Saving Power Consumption (Step 1)
		Mode Lock (Cooling) + Saving Power Consumption (Step 2)
		Mode Lock (Heating) + Saving Power Consumption (Step 1)
		Mode Lock (Heating) + Saving Power Consumption (Step 2)

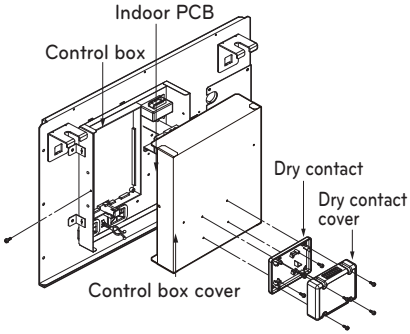
1 : 8.8 kW

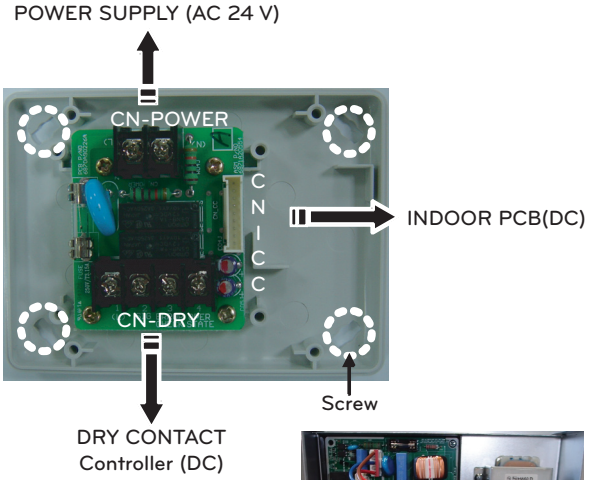
2 : 10.5 kW / 12.5 kW / 15 kW

ACCESSORY GUIDE

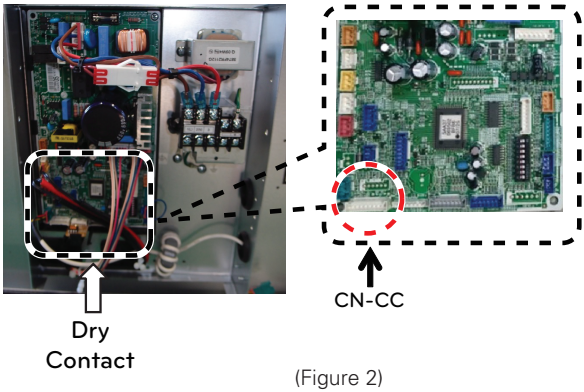
Dry Contact(Only AC 24 V)

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





(Figure 1)

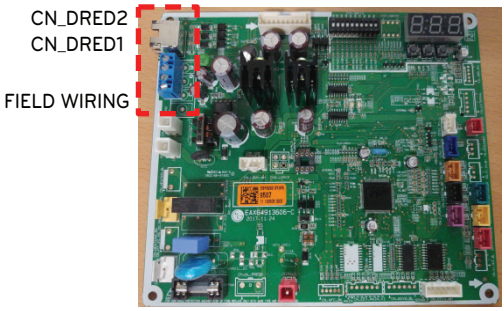


(Figure 2)

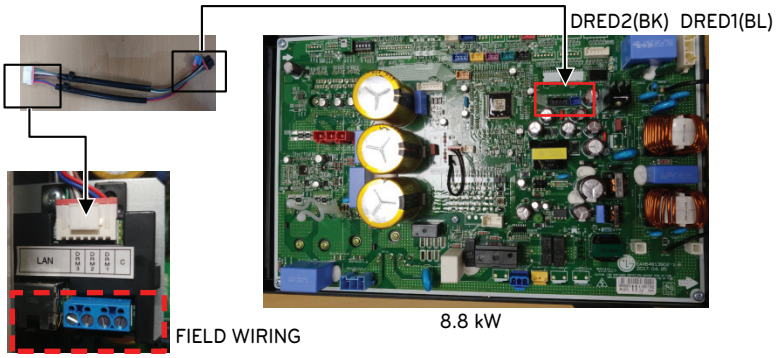
Connecting the DRED to the outdoor unit

This air conditioner is capable of DRM1, DRM2 and DRM3 and complies with standard AS/NZS 4755.3.1.

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



10.5 kW / 12.5 kW / 15 kW



8.8 kW

⚠ CAUTION

- The connecting DRED cable connected to outdoor PCB should be complied with following spec.
  - UL file no. : E477034
  - Mfr : 4 Cabling
  - Type no. : CM
  - Spec. : 24 AWG

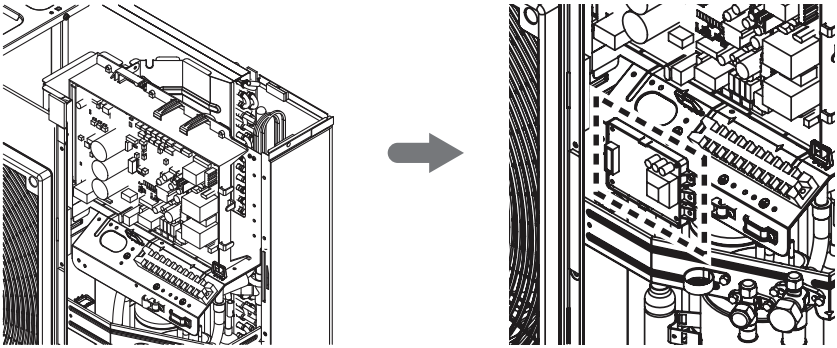


INSTALLATION PI485

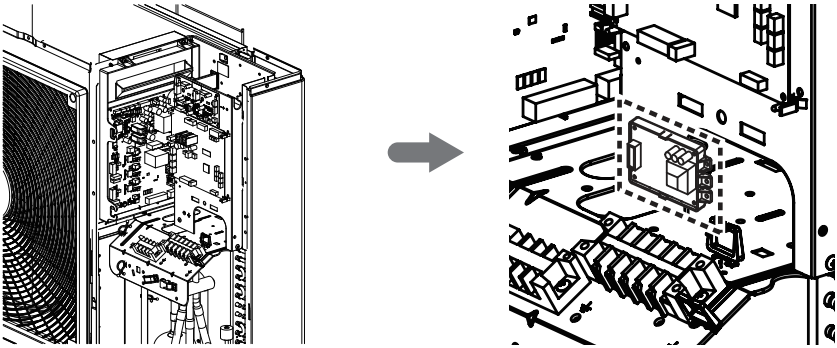
Fix the PI485 PCB as shown in below images.

For detailed installation method refer to PI485 Installation Manual.

8.8 kW



10.5 kW / 12.5 kW / 15 kW



* Other details, please refer to the Products manual.

Damper Controller

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

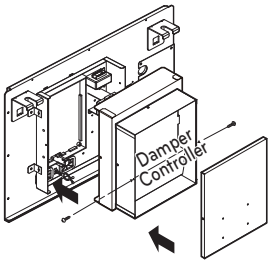
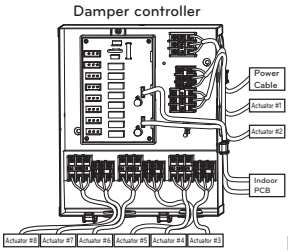


Figure 1



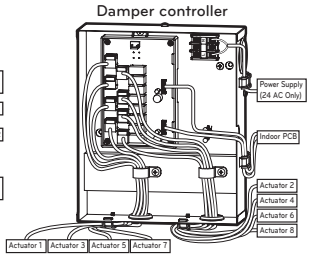
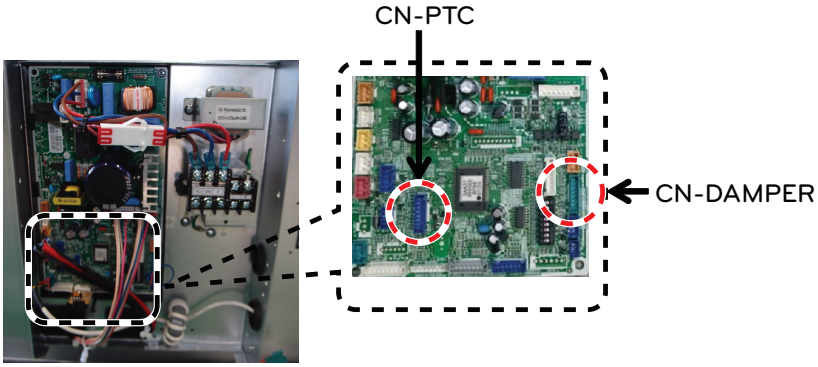
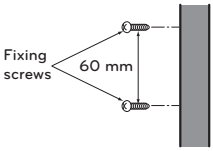


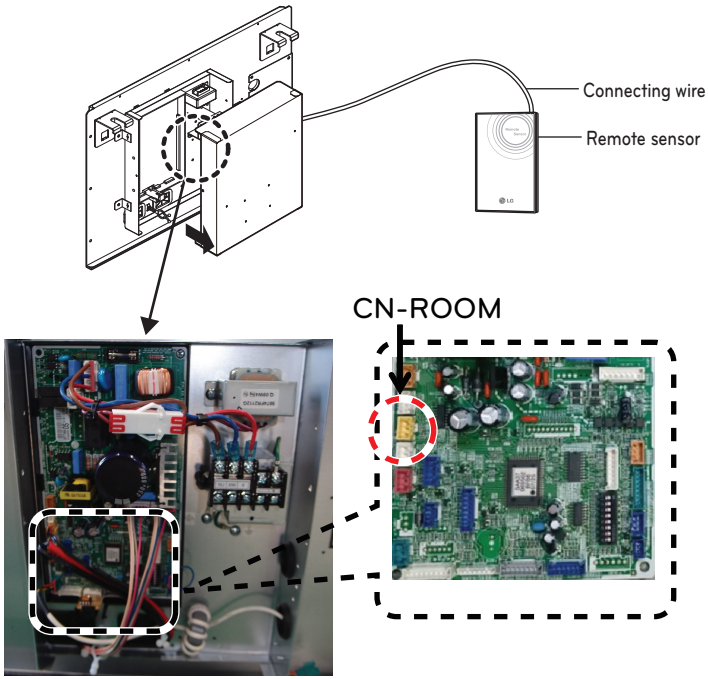
Figure 2



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



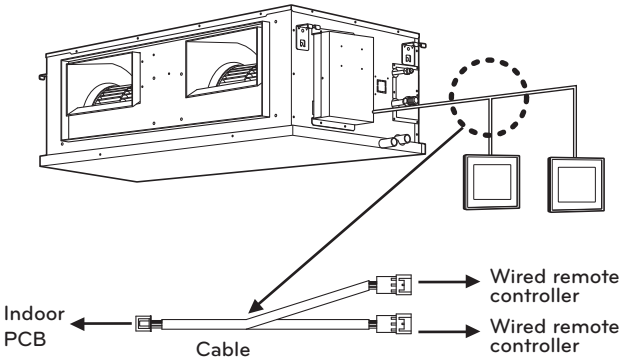


NOTE

PDRCUDC0 is a remote controller connected to 8 damper controller.

Two wired remote controller

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



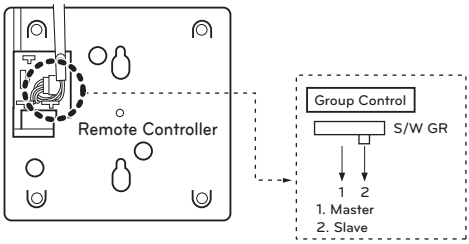


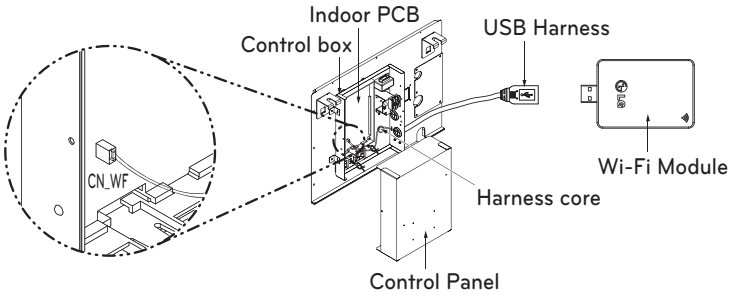
Figure 1

⚠ CAUTION

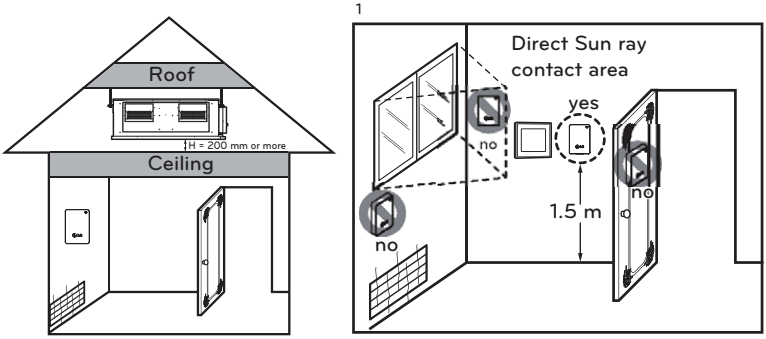
Two wired remote controllers should be same model name, otherwise it can cause unexpected problems.
For example) Using PQRCVSLOQW with PQRCVSLOQW is proper.
Using PDRCUDC0 with PDRCUDC0 is proper.
PQRCVSLOQW & PDRCUDC0 are improper.

WLAN module installation

1. Verify that indoor unit is turned off and power is cut off at the outdoor unit's input power circuit breaker.
2. Open the control panel of the indoor unit.
3. Connect USB connector to Indoor PCB (CN_WF).
   Put a cable tie connected with the harness core in the control panel hole.
4. Connect USB harness to Wi-Fi module.
5. Attach the Wi-Fi Module on the wall with the tape.



Example of the installation



1. Installation example on the wall beside wired remote controller

Precautions for Wi-Fi Modem Installation

- It must be installed by a professional installer.
- The wireless router should be installed within 10 meters.
  It is recommended to be installed near the product.
- Install in a place free from electromagnetic interference.
  It may cause malfunction of the product.
- If there is a wall or obstacle between the Wi-Fi modem and the
  wireless router, communication issues may occur
- If it is attached to steel structures such as H beams, steel plates, indoor cabinets, etc.,
  communication issues may occur
- Depending on the installation situation, use a 10 m extension cable (sold separately), but do not connect more than 10 m.
- Do not install the product in a place with high temperature or humidity such as a kitchen or bathroom.
- Install at least 1 cm away from the metal panel.

RF Radiation Exposure Statement

This equipment shall be installed and used at a minimum distance of 20 cm from the human body.

LG SmartThinQ Application Installation

- Search and install "LG SmartThinQ" from the Google Play Store or iOS App Store on your smartphone.
- Refer to the help in the application for how to use "LG SmartThinQ" in detail.

NOTICE

- The Wi-Fi only supports 2.4 GHz radio frequency.
- If the router's security method is WEP, product registration may not be possible. Change the security method of the router (WPA2 recommended) and register the product.
- When registering the product, be sure that the Wi-Fi function of your smartphone is turned on.
- The wireless router and Internet connection line are separate items required for the use of the application and must be installed separately.
- You may contact your Internet service provider or install the wireless router yourself to use the wireless network. When you install the wireless router yourself, be sure to refer to the manual that comes with the router.
- Install the wireless router close to the product. Depending on the installation location or distance between the product and the wireless router, the difference in the signal strength of the wireless network may occur, and the time taken to transmit and receive data may differ.
- It may not be connected depending on the network environment. If you cannot connect it or have trouble setting up the network, please contact your network administrator or Internet service provider.
- The wireless router's SSID (the name of the wireless router that appears when searching for Wi-Fi) must be set to an English, numeric or alphanumeric combination. We do not recommend using Korean letters (Hangeul) or special characters because the information is not sent to the product modem properly and connection may not be established smoothly.
- When connecting to the wireless network, not only the wireless router that you use but also other users' wireless routers used nearby may be searched. Using other users' wireless routers is illegal and may result in legal penalties when caught. Be sure to connect to a wireless router that you are permitted to use to use the network.
- The contents of this manual may differ depending on the version of "LG SmartThinQ" application, and some changes may be made without notice to the user.
- Features provided may vary by model.
- The accumulated power before Wi-Fi installation is not displayed.

NOTICE

* Depending on your smartphone, some functions may not work.
* An environment of Android 4.1.2, iOS 9.1.1 or a later version is recommended for the use of the application.
* The environment for the use of the application is subject to change for usability/design improvement and content enhancement.
* It may not work on a tablet.

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